

GRUBER & PETTERS

Untis  
User Manual

# Untis User Manual

grupet.at

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# 1 Master Data

## 1.1 Preface

Over the course of more than 30 years of development, Untis has become an extremely powerful tool. The large number of functions and possible settings, as well as the size of this manual, may have a daunting effect on newcomers to the application.

For this reason we would recommend that you first study the considerably shorter manual 'Getting Started'. 'Getting Started' uses easy-to-understand examples to guide you through all the steps of timetable creation with Untis, from installation, adding school data to your school's master data and entering lessons to the actual creation of the timetable using Optimisation, the diagnosis of the calculated timetable, possible manual changes and printing finished teacher, class and room schedules.

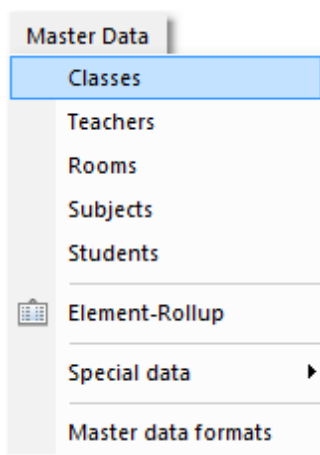
The structure of this manual is also based around this natural basic structure. However, it is intended to be more of a work of reference than a brief guide.

For this reason, use this manual when in the course of creating your timetable you encounter situations that are not dealt with in 'Getting Started', or when you wish to take the time to get to know Untis in greater detail in order to be able to work more effectively with the system.

## 1.2 Master data

This chapter describes the input and maintenance of master data and provides a detailed description of master data properties.

Master data are basic input details essential for the construction of school timetables. They include the particulars of [teachers](#), [classes](#), [rooms](#) and [subjects](#) which are used to form the lessons in the timetable, but also other important information such as [students](#) or [departments](#). You can generally enter new master data or modify existing master data via the menu item "Master Data" in the main tool bar (by clicking on the appropriate submenu).



Greyed-out items indicate functions that are currently inactive. This is normally the case when the use of the option requires an additional Untis software module.

**Note: Adding menu items to menus**

The figure shows additional entries below the menu item 'Master data formats' that are by default not displayed in your menu. The chapter [Managing views](#) explains how you can add several menu items to menus.

The master data categories 'Classes', 'Teachers', 'Rooms' and 'Subjects' are particularly important as they are the main building blocks for the construction of lessons. We will therefore refer to these types of master data s *elements* .

All master data are managed in so-called [views](#). Views are windows designed for the input of new master data and the maintenance (i.e. modification) of existing master data. All master data views are essentially very similar in use and structure. The following chapter describes the similarities between different master data views.

## 1.3 Master data views

Each type of master data element [classes](#) , [teachers](#) , [rooms](#) , [subjects](#) , [students](#) ) is managed in its own window.

All master data windows consist of three sections: a [toolbar](#) , a grid view and a form view.

**Grid view**

The grid view is a table with individual rows. Each row represents one element. The grid view displays all the attributes for the element activated (by the user) in the corresponding view. The activated attributes in the example are the fields name, full name, alternative room, room weighting, off-site code and capacity.

**Form view**

The form view concentrates on one element, and displays the one element with its attributes. In the example above, the form view displays the name of the selected room, the (more informative) full name of the room, the room capacity etc.

**Note:**

You can hide and display the form view using the button at the bottom left of the screen.

Rooms / Room

SH1

Name	Full name	Altern. room	Rm. Weight	Off-site codes	Capacity
SH1	Sports Hall 1	SH2	4		
SH2	Sports Hall 2	SH1	4		
PL	Physics lab.		3		
WS	Workshop		3		
TW	Textiles workshop		4		
HE1	Home Econ. room		4		
R1a	Class Room 1a	R1b	2		36
R1b	Class Room 1b	R2a	2		30
R2a	Class Room 2a	R2b	2		32
R2b	Class Room 2b	R3a	2		
R3a	Class Room 3a	R1a	2		
Ps1	Pseudo Room 1 (3b)	R1a	2		
Ps2	Pseudo Room 2 (4)	R2a	2		

Table view

General Room

SH2 Altern. room

4 Rm. Weight

Off-site codes

Room capacity

Dept.

Coridor (Break superv.)

External name

Form view

Room\*

The following topics are covered later:

[Toolbar](#)  
[Data entry](#)  
[Editing views](#)  
[Managing views](#)  
[Printing](#)

### 1.3.1 Toolbar functions

You will find the following buttons in many Untis windows:



#### Resize the window

This function adjusts the size of a window to match the table it contains.

#### Grid adjustment (display fields)

The functions of the grid adjustment dialogue are described in detail in chapter [Displaying/hiding columns](#).

#### New

This button opens a new element. You will find more information in the chapter [Data input](#).

#### Delete

This function deletes the active element. You can also mark several elements with the cursor and then use this button to delete them.

#### Serial change

Use this function to systematically change the contents of a field in all rows of the grid view in a single operation. This function is described in detail in the chapter [Serial change](#).

#### Sort

This function effects automatic permanent sorting and is explained in chapter [Sorting](#).

#### Show all fields with content

This is a very useful function that is used to temporarily activate all columns which contain at least one entry. Clicking on this button a second time restores the window to its original state.

#### Lock this display

If this function is active (button pressed) the view in question will not be affected by events taking place in other windows. Automatic synchronisation is deactivated.

#### Time requests

This function is used to enter time requests. The increments for time requests for elements range from '-3' (total block) to '+3', which indicates a strong desire for the element to be scheduled. Since time requests are of major significance for all elements and for lessons there is a chapter [Time requests](#) dedicated to this subject under [User tips](#).

#### Colour coding

Use this button to assign any desired foreground and background colour to an element or lesson. These colours will be used for screen element display (but not printing), for standard timetable printing and for the display of planning tools ([Scheduling dialogue](#), [Scheduling timetable](#)). Other Untis modules such as the Cover planning module also display elements in colour at the appropriate places.

**Tip: Colouring several elements**



You can specify the colour coding for several elements in one operation by first marking them (with the cursor) and then clicking on the <Colour coding> button.

**Note: Deactivating colours for printing**

If you wish to specify colours for screen display but not for printed timetables you can select the setting 'Print black & white' in <Settings> in the relevant timetable window.

## Settings

The <Settings> button allows you to change the font type, size and similar settings.

## Page layout

This option allows you to make settings for printing and to view the results at the same time. This function is described in greater detail under [Printing](#).

## Refresh window

Refreshes the view. Alternatively you can press F5.

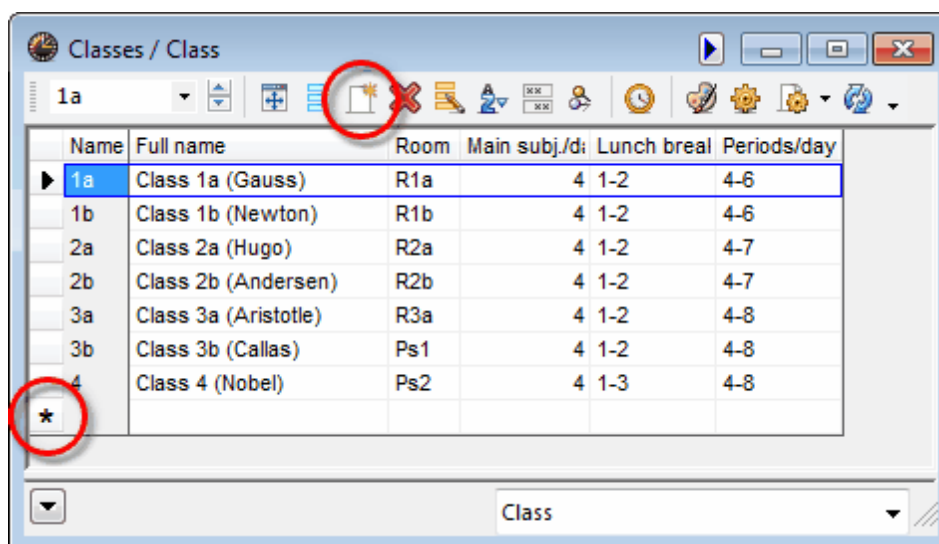
### 1.3.2 Data input

A new data element is always entered into a master data view in the last line of a grid view, which is marked with a '\*' asterisk.

As an alternative, you can click on the <New> button in the window's toolbar, which will then position the cursor in the last line of the grid view.

**Warning: Confirming input**

Always confirm your input with <ENTER> or <TAB> as otherwise the final entry may in some circumstances not be saved.



If you wish to make further entries, move the cursor to the relevant field using the mouse or cursor keys

and enter the desired data.

**Note: Changing the (short) name**

You can change the (short) name of an element by double-clicking on the 'Name' field of the element concerned.

### 1.3.3 Editing views

There is a large number of columns in every master data window. However, no school ever needs all the columns. For this reason you can specify which [columns should be displayed](#) and which should not.

You can also determine the [sort order of the rows and columns](#).

#### 1.3.3.1 Displaying/hiding columns

Basically you have two different ways of influencing how columns are displayed: either using <Grid adjustment> or via the form view.

**Tip: Show all fields with content**

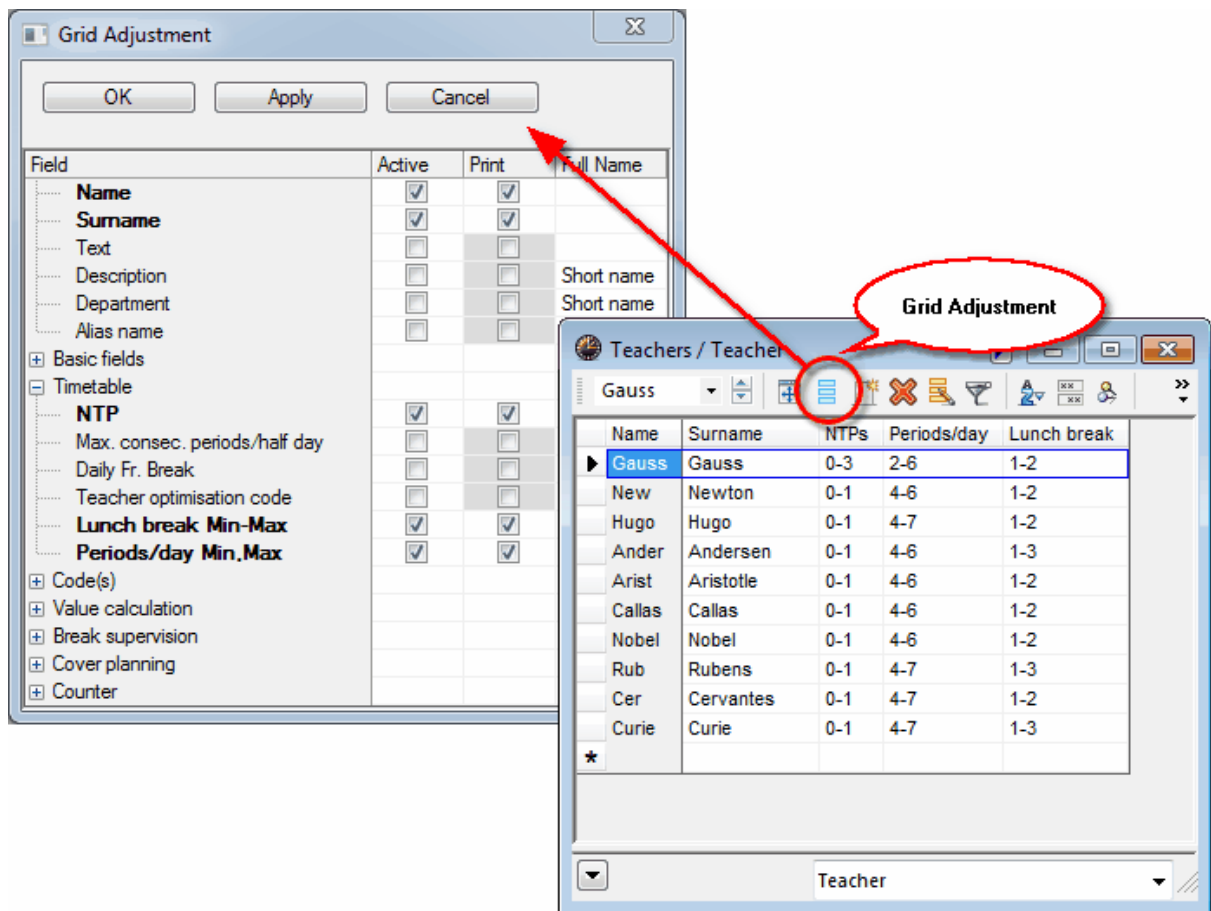
Clicking on the <Show all fields with content> button displays all columns which contain at least one entry. This function is particularly useful for tracking down any data entry fields.

### Grid adjustment

Click on the <Grid adjustment> button and check the columns (under 'Active') that you wish to display.

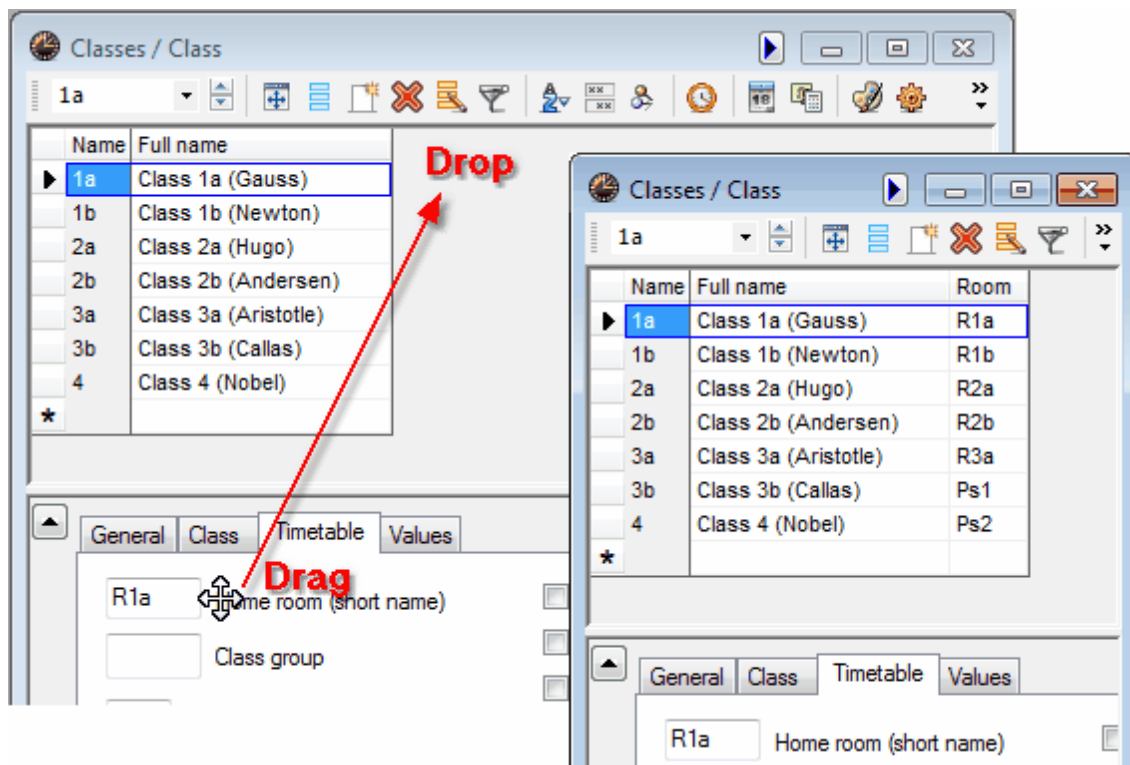
**Note: Additional possibilities**

You can use <Grid adjustment> to determine whether a column should be included in printing and whether the short name or full name of the element in question should be used.



### From the form view

Move the cursor in the [Form view](#) to the desired item until a four-headed arrow is displayed. You can now use drag&drop to drag this item into the grid view, where it will be displayed as a column.



If you wish to hide the column, hold the <CTRL> key pressed and drag it from the grid view at the top to the form view at the bottom.

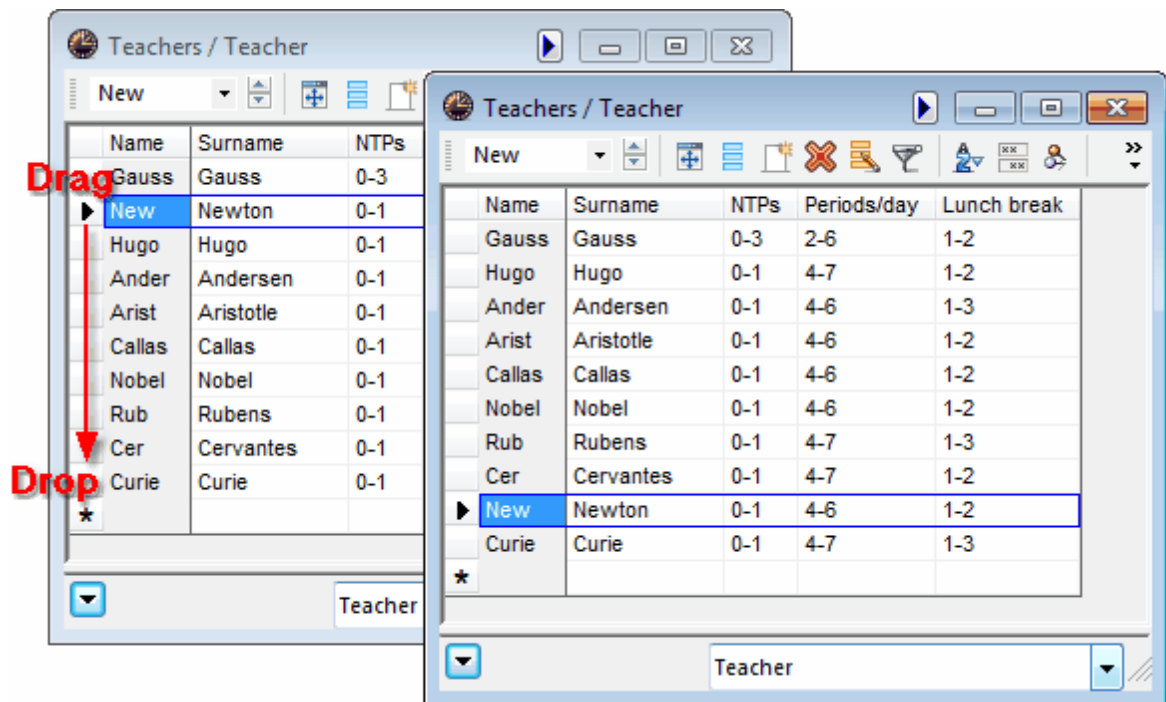
### 1.3.3.2 Sorting

There are three sorting options available to you.

#### Manual sorting using drag&drop

If you wish to re-order elements, simply click in the first (grey) column of the element that you wish to rearrange and hold the left mouse button pressed. Now drag the element to the desired position in the list.

You can also change the order of the columns using drag&drop.

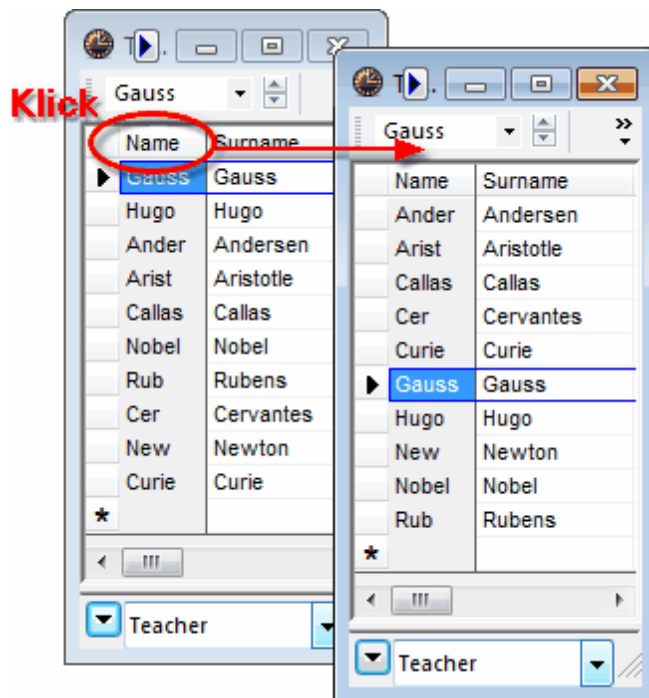


### Automatic temporary sorting


Clicking on the column heading will temporarily sort the table by the contents of the column in ascending order. A further click on the column will sort the data by this column in descending order.

#### **Warning: Temporary**

After closing and reopening the window, the original order will be restored.



### Automatic permanent sorting

Clicking on the <Sort> button  opens an additional window where you can specify up to five different sort criteria hierarchically.

Sort criteria

Sort by  
Short name  
☒ Ascending ☐ Descending

then by  
-None-  
☒ Ascending ☐ Descending

then by  
-None-  
☒ Ascending ☐ Descending

then by  
-None-  
☒ Ascending ☐ Descending

then by  
-None-  
☒ Ascending ☐ Descending

☒ Use this sorting in all drop-down menus

OK Cancel Apply

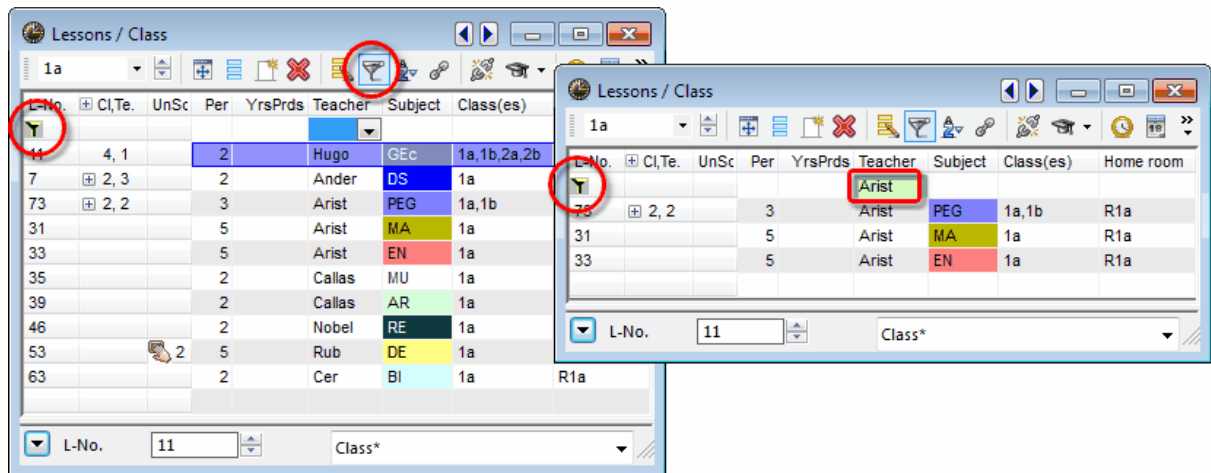
Select which fields the view is to be sorted by. When the option 'Use this sorting in all drop-down menus' is checked, the sort setting will be used at all points in the application where these elements are listed.

### 1.3.3.3 Filtering

If you wish to filter a specific view according to one or several criteria you can do this easily and quickly using the filter function.

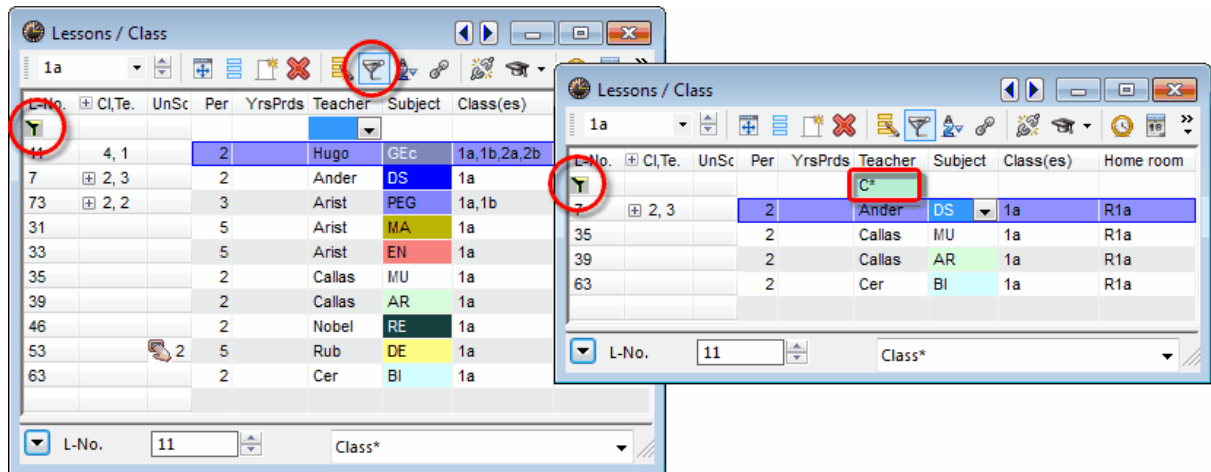
Clicking on the <Filter> button displays a row with the filter icon between the column headings and the table contents. You can enter the filter condition in the corresponding row of this column by which you wish to filter.

You can also define several conditions at the same time (mathematical AND relation).



### Note: Wildcards

You can also use the wildcards '?' and '\*' to represent any character or any string of characters.



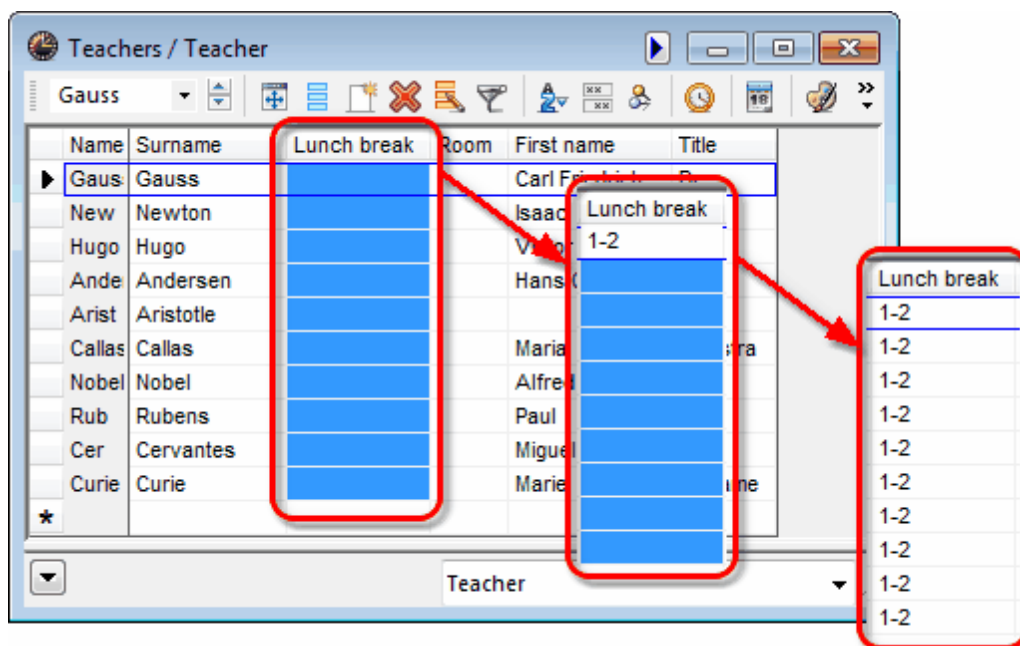
### 1.3.3.4 Serial change

Untis provides two ways of making serial changes.

#### Cursor marking

Move the cursor over (i.e. mark) the desired range so that the fields are highlighted blue. Now enter the desired value without clicking. This will be entered into each marked field.



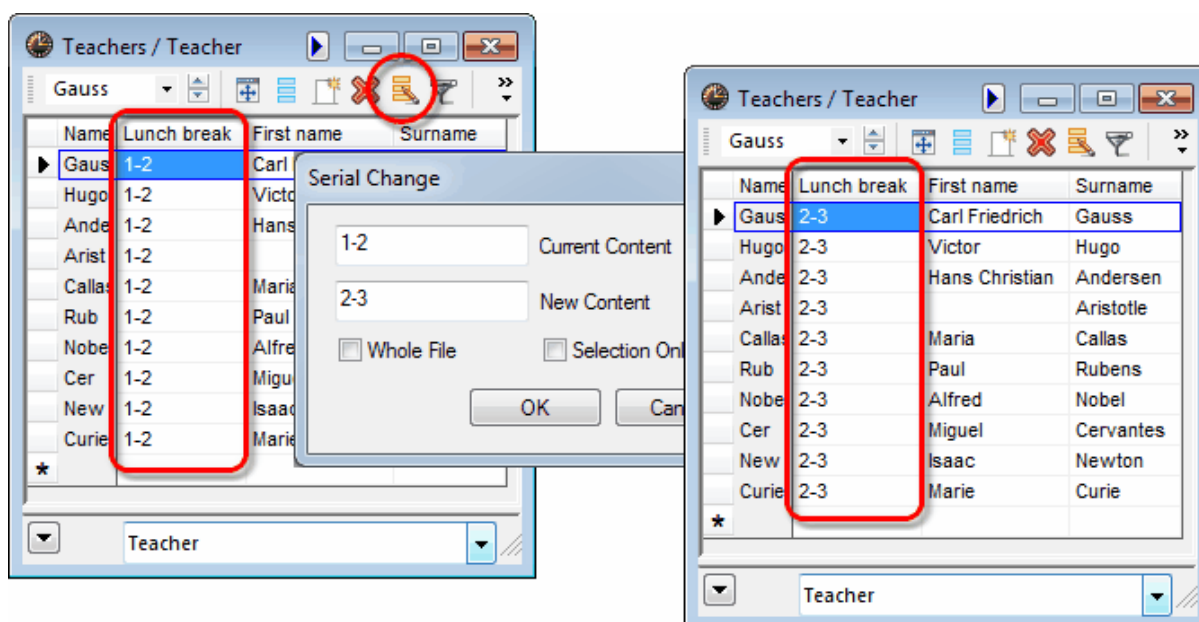


#### Note: Marking

You can also mark fields using the keyboard: <SHIFT>+<Down arrow> or <SHIFT> +<Up arrow>.

### Serial change function

You will find the <Serial change> button in the toolbar of the window. Clicking on this button opens the serial change dialogue allowing you to enter the value to be changed in the 'Current content' field and the new/desired value in the 'New content' field.



The change is always only effected for elements displayed in the current window. If you wish the change to apply to all elements of this type, check the option 'Whole file'.

If you have flagged elements with the ' [Marked \(m\)](#) ' code, you can limit the changes to those elements only.

**Note: Setting/removing check marks**

It is also possible to set or remove check marks. The value 'x' represents a check mark. Leave the field empty if no check mark is to be set.

### 1.3.4 Managing views

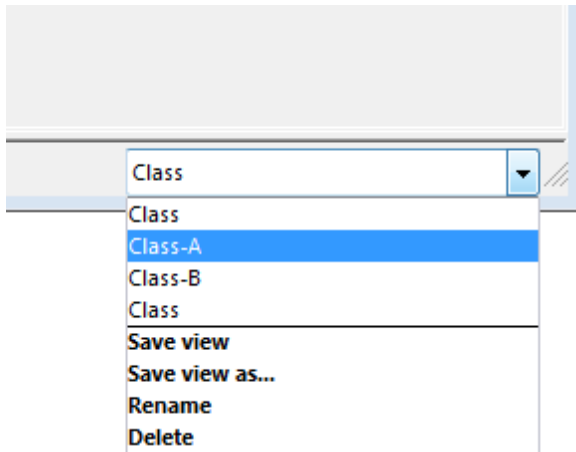
You can change or delete existing views or create new ones. In addition, you can also define specific views as standard views and add selected views to the menu for master data.

You will find the control elements for managing views in the drop-down list at the bottom right of each window or via the menu item 'Master Data | Master data formats'.

#### Drop-down list

Use the drop-down list at the bottom right of the window to switch between the existing views for this window or to save, rename or delete changed views.

The 'Save view as...' option creates a new view that is then displayed in the upper section of the list.

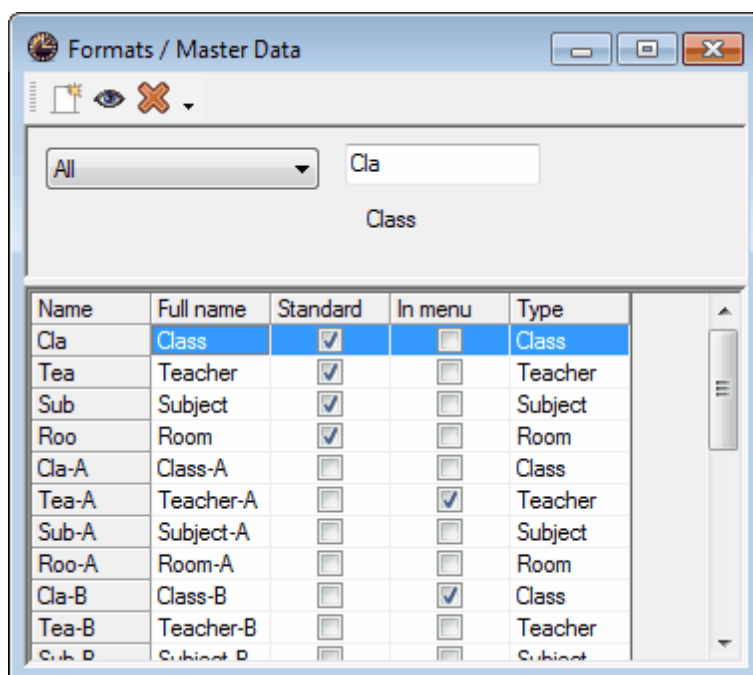


**Note: Modified view**

Once you modified a view, a '\*' (asterisk) will be displayed next to the name of the view at the bottom right of the window. You can now save this view or create a new view using 'Save view as...'.

### Master data formats / Lesson formats

You can display a complete list of all master data views via the menu item 'Master Data | Master data formats' ('Lessons | Overview formats') .



In the 'Standard' column you can select which view should be opened as the default view .


If you wish to add further views to the master data menu, simply check the box for the corresponding view in the 'In menu' column.

You can use the toolbar in this window to create a new view (the active view in the table will be used as a template), or to open or delete an existing view.



### 1.3.5 Printing

There are two places where you can make settings for printing.

#### 1. [Page layout](#)

Every master data and lessons window contains the <Page layout>  button. This is where you can make settings for printing and at the same time view the results.


#### 2. [Print selection dialogue](#)

When a view is active (i.e. has been clicked), you can access the print selection dialogue by clicking on the <Print>  or <Print preview >  buttons in the main toolbar.

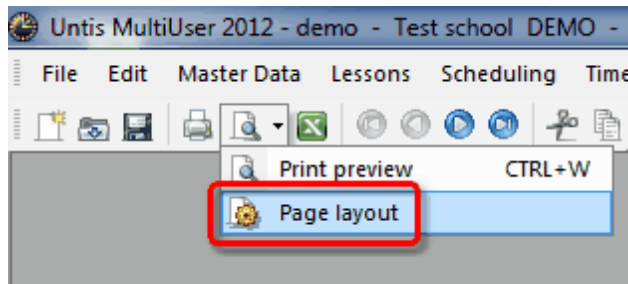
#### **Note: Copying via the clipboard**

You can mark part of the table or the whole table and use <CTRL>+C and <CTRL>+V to copy it into a word processor or spreadsheet.

#### 1.3.5.1 Page layout

All views (master data, lessons, cover planning) now provide the <Page layout>  button with which you can prepare the relevant list for printing. You will find the button in the toolbar of the relevant window or in

the main toolbar.



The figure shows a list of lessons for class 1a. The print layout toolbar allows you to make all printing-related settings.

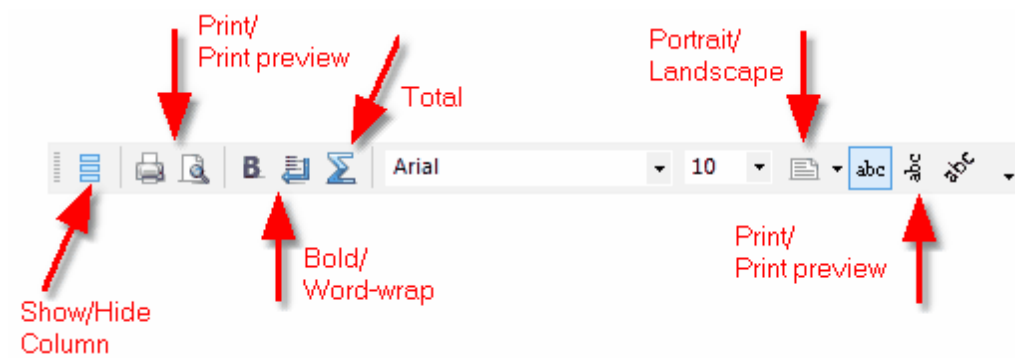
Use the <Selection> button to select the elements that are to be output.

If you wish to print a column in bold, click in the column and then on the <B> button.

demo.gpn:3

</

The meaning of the individual buttons is shown in the figure:



If you wish to change the column heading, click on one of the two heading rows and enter the desired expression.

Teacher: 10/10

Print only if changed after... 01.01.1970 01:00:00 Today

☐ Print heading on every page

Column Heading	Name	Surname	Room	allowed Non Teaching Periods	Periods/day	Lunch break	Max.Standbys	ES Max.
	Gauss	Gauss	0-3		2-6	1-2	0	
	New	Newton	0-1		4-6	1-2	0	
	Hugo	Hugo	0-1		4-7	1-2	0	

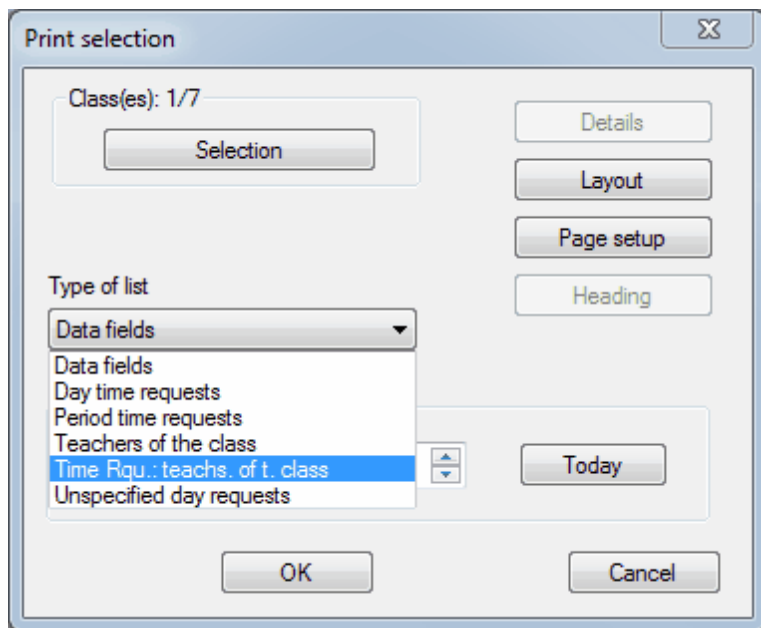
#### Note: Pagination

Please note that the window also displays the pagination. Thus the column PA Max in the figure would be printed on the second page.

#### 1.3.5.2 Print selection dialog

This window contains settings that can also be found in [Page layout](#) (<Selection> and <Layout> buttons).

Please note that further print functions are available via the combo box depending on the type of view.



These print functions are described in detail in the relevant chapter.

## 1.4 Master data properties

In principle, all you need to do to construct a timetable automatically is to enter a name in the *Name* field. As a general rule, it is always preferable to leave a field empty if its meaning is at all unclear rather than to restrict the optimisation algorithm by entering a large amount of unnecessary data.

### **Note: Do not enter too much at the beginning**

If you are unfamiliar with the application, we would recommend that you only enter master data in the small number of fields displayed in the standard grid view. All other input options should only be used at a later date (after initial optimisation results have been obtained).

There are properties that apply to all types of master data ( [element-independent properties](#) ) as well as properties specific to a particular type element. You will find information on this latter type in the relevant chapters dealing with

[Rooms](#)  
[Classes](#)  
[Teachers](#)  
[Subjects](#)

### 1.4.1 Input fields for all master data

The following fields are found in all types of master data.

Name	Full name	Text	Description	Stat. code(s)	Marked (m)	Lock (X)	Ignore (i)	Don't print (N)	(T)
1a	Class 1a (Gauss)	Everybody loves		r	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1b	Class 1b (Newton)	and everybody knows		r	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2a	Class 2a (Hugo)			r	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2b	Class 2b (Andersen)	Lorenz Petters		r	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3a	Class 3a (Aristotle)	for president!			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3b	Class 3b (Callas)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Class 4 (Nobel)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
*					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Name

This is the unique (short) name. The short name is used by the application internally to identify the element concerned. A name must be specified for every element.

### Note: No duplicate names

It is theoretically possible to give elements of different types the same name, e.g. 1a for class 1a and for room 1a. Names are also case-sensitive. It is therefore possible to name one class 1a and another class 1A. We would urge you not to take either of these approaches.

## Full name

This is where a (long) informative name can be specified that also appears on your printed reports. This entry is optional but recommended.

## Text

Explanatory text can be entered for each element.

## Description

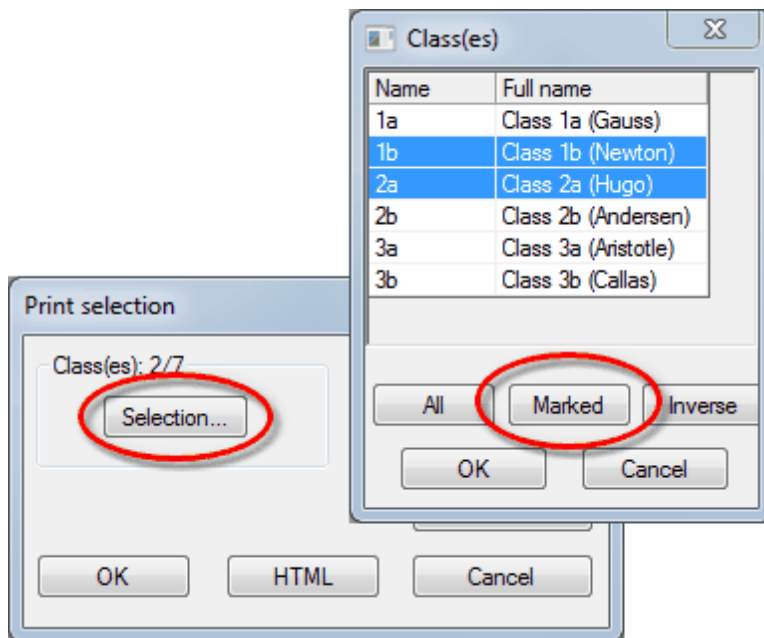
Descriptions are master data in their own right with (short) name and full name. They make sense when descriptions apply to several elements. You select to see the short or full name of the relevant descriptions when [printing](#) elements and in views.

## Statistics codes

You can define any number of statistics codes (separated by commas) for each element. You can for example create well-defined sub-categories for printed reports using these statistics codes. Please refer to chapter [Filtering](#) for more information.

## Marked (m)

The Marked (m) code can be set for any element. For certain functions such as printing (timetables or master data) or [serial changes](#) you can specify whether only the marked elements should be selected for editing.



### Lock (X)

Lessons containing an element that is locked will be 'frozen' in the timetable. The lesson periods will not be moved during subsequent optimisation.

### Ignore (I)

Lessons containing an element for which the 'Ignore' flag has been set will be ignored in the timetable, i. e. it will be neither scheduled nor displayed. The (period) value of the lesson will however be included when calculating totals for teachers and classes.

In addition, elements for which the ignore flag has been set will not be exported via some interfaces.

### Don't print (N)

If this flag is set no timetables or lesson overviews will be printed for the element concerned.

### Time requests

This field cannot be edited. The box is checked automatically whenever [time requests](#) are entered for an element.

## 1.4.2 Rooms

The following input fields relate exclusively to rooms master data.



The screenshot shows the 'Rooms / Room' application window. At the top, there is a dropdown menu set to 'SH1' and a toolbar with various icons. Below this is a table with the following columns: Name, Altern. room, Rm. Weight, Off-site codes, Capacity, Dept., Corrid, and Ext. name.

Name	Altern. room	Rm. Weight	Off-site codes	Capacity	Dept.	Corrid	Ext. name
SH1	SH2	4					
SH2	SH1	4					
PL		3					
WS		3					
TW		4					
HE1		4					
R1a	R1b	2		36			
R1b	R2a	2		30			
R2a	R2b	2		32			

Below the table, there are two tabs: 'General' and 'Room'. The 'Room' tab is selected, showing a form with the following fields:

- SH2 (text input) Altern. room
- 4 (text input) Rm. Weight
- (text input) Off-site codes
- (text input) Room capacity
- (text input) Dept.
- (text input) (text input) Corridor (Break superv.)
- (text input) External name

At the bottom right of the window, there is a label 'Room' and a dropdown arrow.

### Alternative room

An alternative room is a room that is functionally equivalent to the specified (desired) room and that Untis can use for scheduling purposes when the desired room is unavailable. Please see the chapter on [Room logic](#) for a detailed description of the alternative room function.

### Room weighting

Room weighting gives an indication of the importance of a room for a particular lesson scheduled to take place in that room.

- Room weighting 4: a lesson can only be scheduled if the desired room or one of its alternative rooms is available (e.g. PE classes).
- Room weighting 0: Untis can schedule lessons even when neither the desired room nor one of its alternative rooms is available (useful for lessons where no specific teaching aids are required).
- Room weighting 1-3: appropriate intermediate levels.

If no weighting is entered for a room, the weighting will correspond to 2.

**Note: Room optimisation**

Please note that the allocation of rooms is affected not only by room weighting, but also to a large degree by the slide control [Room optimisation](#) . Please refer to chapter [Room logic](#) for more information.

**Off-site codes**

Off-site rooms are classrooms and specialist subject rooms not located in the main building of the school but at an external site too distant to reach within the space of a normal break. Enter the values 1 to 9 for off-site locations with start-time graduation and the values A to E for off-site locations without start-time graduation Further details on the off-site function can be found in the section [Off-site rooms](#) .

**Room capacity**

This is where you can enter the maximum student capacity for a particular room.

Please read chapter [Room capacity](#) if you wish to include room capacity as a factor when assigning rooms for lessons.

**Dept.**

Department. Rooms can be allocated to a specific department. These details are largely for information purposes only and allow printouts of timetables and/or room lists to be produced for individual departments.

**Corridor (Break superv.)**

Use this field to enter up to two corridors that the room adjoins. These fields are only useful in connection with the additional module Break Supervision .

**External name**

The external name is only used when several schools are created in a multi-user database with shared inter-school resources. For more details please refer to chapter Shared resources in the MultiUser manual.

**1.4.3 Classes**

The input fields for classes are arranged in tabs in the [form view](#) . Depending on the number of additional modules you have installed, the number of tabs displayed for master data elements may differ from the examples shown in this manual.

- [Class tab](#)
- [Timetable tab](#)
- [Codes](#)
- [Class time grid](#)

**1.4.3.1 'Class' tab**

You will find the following input fields on the 'Class' tab.

The screenshot shows a software window with four tabs: 'General', 'Class', 'Timetable', and 'Values'. The 'Class' tab is active. It contains several input fields and labels. On the left, under 'Students', there are two input fields: 'Male' with the value '16' and 'Female' with the value '12'. Below these, the text '28 Students' is displayed. Under 'Time range', there are two input fields: 'From' and 'To'. On the right side, there are eight input fields with corresponding labels: 'Class teacher', 'Alias name', 'Lessons table', 'Previous year's name', 'Dept.', 'Class level', 'Regular school', and 'External name'.

### Male/Female

These fields allow you to enter the number of male and female students (pupils) in a class. The two figures are added up automatically and displayed below the input fields.

These figures are only important for use with the room capacity function. For further details on the room capacity function, please refer to chapter [Room capacity](#).

### Time range

The entries for the time range are only displayed if you have licensed the Multi-week timetable module and are described in the relevant manual.

### Class teacher

Several class teachers (form teachers) can be entered for a class. This field is used in conjunction with the weighting function [Class teacher at least once per day](#), when printing timetables (for display in the heading) and lists and in Cover planning.

### Alias (second name)

For certain purposes it may be desirable to use standardised designations instead of the usual names. Examples include printouts for local authorities and data exports to databases.

Alias names can be entered either for the element in question or under menu item 'Master data | Special data | Alias names'.

#### Note: One name for a group of classes

An alias can be defined for a group of classes via 'Master data | Special data | Alias names', e.g. '3abc' for '3a+3b+3c'.

### Lesson table

The [Lesson table](#) serves as a useful tool for checking subject distribution in the Lesson planning and Value calculation module and has no other significance outside of it

### Previous year's name

The class name from the previous year is required for use with the function < Last year's teacher . The name of the class in the previous year can be entered here to ensure the class teacher accompanies the class into the new school year. This function is available if you have licensed the Lesson planning and Value calculation module.

### Dept.

Department. Classes can also be allocated to a particular department. This function is largely for information only and allows timetables and/or class lists to be printed specifically for individual departments. This function is particularly important for use with the e Department timetables module.

### Class level

This function is only useful in connection with the modules Lesson planning and Value calculation , Students timetables or Course scheduling .

### Regular school

For use with certain import/export interfaces.

### External name

The external name is only used when several schools are created in a multi-user database with shared inter-school resources. For more details please refer to chapter Shared resources in the MultiUser manual.

#### 1.4.3.2 'Timetable' tab

This tab allows you to enter parameters and also to set [codes](#) .

### Home room

This is where you can enter the name of the classroom assigned to a particular class. This subsequently makes the task of [Entering lessons](#) easier. Please see chapter [Alternative rooms](#) in the User tips for details on classes with no designated classroom.

### Class group

This input field is designed specifically for use in Austrian teacher training colleges, British secondary

schools, Belgian Gymnasiums and German Realschulen where students have a choice between several main and minor subject areas (core and differentiation lessons) or several subject areas of equal standing.

**Warning:**

Please do not enter any data in this field if you are in any way unsure about the exact meaning of the function. You will find a more detailed explanation of class groups in chapter [User tips/ Class groups](#)

**Lunch break Min- Max**

This function allows you to specify the maximum and minimum duration of the lunch break for individual classes.

For lunch breaks of exactly one hour, enter '1,1'. If you wish Untis to schedule a lunch break of at least zero and at most two hours, enter '0,2'.

**Periods/day Min, Max**

Specify the minimum and maximum number of periods / lesson units the class may be taught per day.

For example, enter '4,6' for a class that should have at least 4 periods, but no more than 6 periods, per day.

**Max main subject pers./day**

You can activate the [main subject](#) for any desired subject. Use this field to specify how many main subject periods may be taught as a maximum on any one day.

**Max. consec. main subj. per/day**

This function determines how many main subject periods may be taught consecutively on any one day.

**Max. different less. /day**

In some countries (in particular those which have all-day schooling) the authorities only allow a certain maximum number of different subjects to be taught to a class on any one day.

You can enter this maximum value in the field 'Max. diff. less./day' for each class.

**Master class**

Enter the same master class for type-separated class components if you wish to print the timetables together in a single timetable. Please see chapter [User tips/ Type-separated class components](#) and chapter [Timetable creation / Several classes in one timetable](#) for further details.

### 1.4.3.3 Codes

**(P) NTPs allowed**

As a rule, NTPs (non-teaching periods) should be avoided at all costs. Possible exceptions are NTPs for pseudo classes and class components.

**(F) Lessons not on adjac. days**

Use this function for part-time classes that do not have lessons every day of the week if you wish to avoid scheduling lessons on consecutive days. In this case select this code.

**(H) Sched. a.m./p.m. not both**

This function ensures that lessons can only be scheduled for one half-day of the day, i.e. Untis can allocate lessons either in the morning OR in the afternoon of the same day.

### (Y) Keep curr. loading pattern

Tick this option if you wish to block the allocation of lessons before the first and after the last periods already scheduled (for use with a subsequent optimisation run).

	Mo	Tu	We	Th	Fr	Sa
1	EN	MA	GEC	MU	MA	BI
2	MU	EN	PEG	DE	RE	EN
3	BI	AR	MA	EN	EN	MA
4	PEG		DE	MA	DE	GEC
5		RE				
6						
7						
8		DS			PEG	

L-No.	Tea.	Subj.	Rm.	Cla.	Time	School week
31	Arist.	MA	R1a	1a		1-41
+3						


Time grid showing permitted scheduling options for use with a subsequent optimisation run where option Y is activated (the last morning lesson is period 5, the first afternoon lessons is period 6).

This means that in a subsequent optimisation already allocated lessons and NTPs may be rescheduled. This code is typically activated when you wish to leave non-teaching time for teachers and classes unchanged when scheduling the timetable. Extracurricular activities are not then affected by the new timetable

#### Warning

This function imposes considerable restrictions on subsequent optimisation runs and should not be activated without due consideration.

#### 1.4.3.4 Class time grid

You will only find the <Class time grid>  button in the toolbar under 'Master Data | Classes' (i.e. for no other element).

The function is used to separate the school day into double and single periods for each class. You can also prevent lessons from being the last period of the day if you have to take bus timetables into consideration when scheduling.

The class time grid allows you to specify that

- certain periods should be used for scheduling double periods and
- certain periods should (not) be the last lesson for that class on a particular day.

1. If you wish to schedule double periods by preference in the first two periods of the day (on every day of the week) as shown in the example, mark the desired range and click on the <Double periods> button in the 'Schedule' block .

2. If you wish to reserve a range of the day(s) for scheduling single periods, use the <Single periods> button accordingly.

**Warning: Sufficient double periods**

Please note that it is essential to define a suitable minimum and maximum number of double periods in the lessons window of the class in question in order for this setting to work.

3. You can also use the <No> button in the 'Last period' block to specify those periods after which lessons for the class may not end. This is important if you have to take local transport timetables (school buses) into consideration when preparing your school timetables.

**Note: Copying**

Use the <Copy> button to transfer the settings you have made here to other classes.

Class time grid / Class-71

1a Class 1a (Gauss)

Scheduling Substitute

Last period **3**

No

Yes

Scheduling **1**

Double periods

Single periods **2**

No preference

Copy

\*= No double period spanning the subsequent break

	1	2	3	4	5	6	7	8
	8:00	8:55	9:50	10:45	11:40	12:35	13:30	14:25
	8:45	9:40	10:35	11:30	12:25	13:20	14:15	15:10
Monday	2	*2	1	2	2			
Tuesday	2	*2	1	2	2	X		
Wednesday	2	*2	1	2	2			
Thursday	2	*2	1	2	2	X		
Friday	2	*2	1	2	2			
Saturday	<b>1</b>	*2	1	1	1			

**1** **2** **3**

OK Cancel Apply Help

The sample timetable corresponds to the settings made in the figure above.



	Mo	Tu	We	Th	Fr	Sa
1	MA	EN	PEG.	DE	MA	EN
2	BI	MU	MA	EN	DE	MU
3	DS.	DE	GEc	AR	PEG.	GEc
4			BI			
5		RE				
6						
7						
8						

L-No.	Tea. Subj. Rm.	Cla.	Time	School week
31	Arist, MA, R1a	1a		2-41
+3				

#### 1.4.4 Teachers

You can make the following settings on the 'Teacher' tab.

##### Title

This field is for information only and only affects printing and export.

##### First name

Enter the first name of the teacher. Untis uses this information in a variety of different printouts.

##### Personnel number

Enter the personnel/staff number only if this is required in printouts or transfer data for local authorities.

##### Teacher status

Use this field for special status information such as head teacher, librarian etc.

##### Department(s)

You can allocate any number of departments to an individual teacher. This function is particularly significant in connection with the [Department timetables](#) module. You can also, for example, print out separate timetables for individual departments.

##### E-Mail address

Use this field to enter teacher email addresses.

The email address is only used internally in combination with the [Info timetable](#) module. You can use this module to distribute timetables and substitution information [by email](#) to teachers for whom an email address has been entered.

### **Telephone number**

The telephone number field is currently used for administrative purposes only and is not used by the application at present.

### **Mobile number**

Use this field to enter mobile telephone numbers.

An entry in this field is only necessary in combination with the module [Info timetable](#). This module allows you to send information to teachers using text messages (SMS).

### **Alias name**

This function applies to teachers in the same way as it applies to classes. For certain purposes it may be desirable to use standardised designations instead of the usual (school-internal) names. Examples include printouts for local authorities or the export of data to databases. Alias names can be entered via the relevant element or under 'Master Data | Special data | Alias names'.

### **Birthdate**

This field is for information only and only affects printing and export.

### **Regular school**

This field is for information only and only affects printing and export.

### **Hourly rate**

This field is currently only required in the German federal state of North Rhine-Westphalia

### **Pers.No. 2**

In some countries, teachers may have two different personnel numbers. In these countries personnel number 2 is exported with relevant data.

### **External name**

The external name is only used when several schools are created in a multi-user database with shared inter-school resources. For more details please refer to chapter [Shared resources](#) in the [MultiUser manual](#).

### **Male/Female**

Apart from its informational character, this field is used in conjunction with the [Break supervisions](#) module, where you can specify that a particular break area should be supervised by male or female teaching staff only.

#### **1.4.4.1 'Teacher' tab**

You can make the following settings on the 'Teacher' tab.

Teacher			
Maestra	Title		Alias name
Maria	First name		Birthdate
	Personnel number		Regular school
	Teacher status		Entry date
D117	Department(s)		Exit date
arist@teacherem	E-Mail address		Hourly Rate
	Telephone number		Pers.No. 2
	Mobile number		External name

### Title

This field is for information only and only affects printing and export.

### First name

Enter the first name of the teacher. Untis uses this information in a variety of different printouts.

### Personnel number

Enter the personnel/staff number only if this is required in printouts or transfer data for local authorities.

### Teacher status

Use this field for special status information such as head teacher, librarian etc.

### Department(s)

You can allocate any number of departments to an individual teacher. This function is particularly significant in connection with the Department timetables module. You can also, for example, print out separate timetables for individual departments.

### E-Mail address

Use this field to enter teacher email addresses.

The email address is only used internally in combination with the Info timetable module. You can use this module to distribute timetables and substitution information by email to teachers for whom an email address has been entered.

### Telephone number

The telephone number field is currently used for administrative purposes only and is not used by the application at present.

### Mobile number

Use this field to enter mobile telephone numbers.

An entry in this field is only necessary in combination with the module Info timetable. This module

allows you to send information to teachers using text messages (SMS) .

### **Alias name**

This function applies to teachers in the same way as it applies to [classes](#) . For certain purposes it may be desirable to use standardised designations instead of the usual (school-internal) names. Examples include printouts for local authorities or the export of data to databases. Alias names can be entered via the relevant element or under 'Master Data | Special data | Alias names'.

### **Birthdate**

This field is for information only and only affects printing and export.

### **Regular school**

This field is for information only and only affects printing and export.

### **Hourly rate**

This field is currently only required in the German federal state of North Rhine-Westphalia

### **Pers.No. 2**

In some countries, teachers may have two different personnel numbers. In these countries personnel number 2 is exported with relevant data.

### **External name**

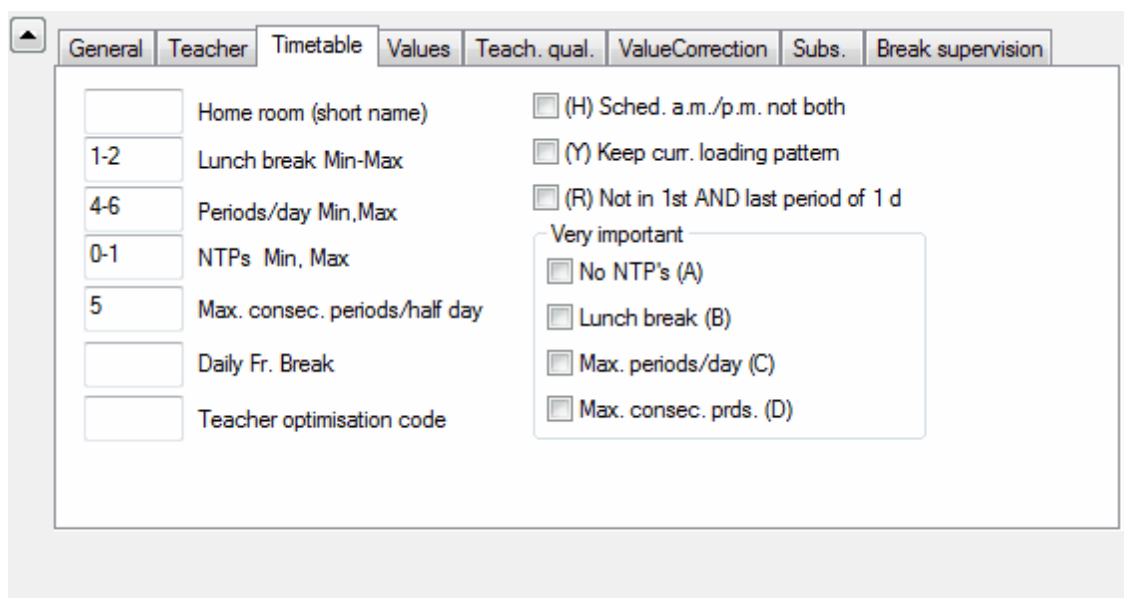
The external name is only used when several schools are created in a multi-user database with shared inter-school resources. For more details please refer to chapter [Shared resources](#) in the MultiUser manual.

### **Male/Female**

Apart from its informational character, this field is used in conjunction with the Break supervisions module, where you can specify that a particular break area should be supervised by male or female teaching staff only.

#### **1.4.4.2 'Timetable' tab**

You can make the following settings on the 'Timetable' tab .



The screenshot shows a software window with several tabs: General, Teacher, Timetable, Values, Teach. qual., ValueCorrection, Subs., and Break supervision. The 'Teacher' tab is selected, and within it, the 'Timetable' sub-tab is active. The interface contains several input fields and checkboxes. On the left, there are text boxes for 'Home room (short name)', 'Lunch break Min-Max' (containing '1-2'), 'Periods/day Min,Max' (containing '4-6'), 'NTPs Min, Max' (containing '0-1'), 'Max. consec. periods/half day' (containing '5'), 'Daily Fr. Break', and 'Teacher optimisation code'. On the right, there are checkboxes for '(H) Sched. a.m./p.m. not both', '(Y) Keep curr. loading pattern', and '(R) Not in 1st AND last period of 1 d'. Below these is a group box titled 'Very important' containing checkboxes for 'No NTP's (A)', 'Lunch break (B)', 'Max. periods/day (C)', and 'Max. consec. prds. (D)'.

### Home room

Use this field to assign a dedicated home room to a teacher. This makes [entering lessons](#) easier subsequently.

### Lunch break Min-Max

Enter the minimum and maximum duration of lunch breaks for individual teachers.

### Periods/day Min,Max

Input in this field determines the minimum and maximum number of periods a teacher should teach each day. Enter '2,5' for a teacher who should teach between 2 and 5 periods per day. Leaving this field empty allows Untis to schedule any number of periods for a teacher.

### NTPs Min,Max

Use this field to specify the minimum and maximum number of NTPs (free periods, non-contact periods) per week for an individual teacher. An empty field is equivalent to the entry '0,0'.

### Max. consec. periods/half day

This field allows you to specify the maximum number of consecutive periods a teacher should teach before an NTP (break) is scheduled.

### Daily Fr. Break

In schools where lessons continue until evening, it is often desirable to specify the length of time between the last period in the evening and the first period in the morning to allow a sufficiently long break between classes.

The time grid of a school shows a total of 11 periods per day. On Monday, teacher X teaches until period 9. A value of "4" entered under "Daily Fr. Break" means that Untis will attempt to keep periods 1 and 2 on Tuesday free for teacher , i.e. a total a total of 4 free periods.

### Teacher optimisation code

The teacher optimisation code is important when optimisation is performed using variable teacher assignment.

Permissible entries are either numbers 1 to 9 or letters A-Z.

Entering a number means that during optimisation with variable teacher assignment, the relevant teacher's lessons can only be exchanged with those of another teacher who shares the same optimisation code.

On the other hand, entering a letter results in lessons only being exchanged with teachers with a different (or no) optimisation code.

#### 1.4.4.3 Codes

##### **(H) Sched. a.m./p.m. not both**

Schedule half days only. This function ensures that lessons cannot be scheduled in the morning AND in the afternoon of the same day.

##### **(Y) Keep curr. loading pattern**

Activate this option if you want to block the allocation of a teacher before the first and after the last periods already scheduled for the half-day. This means that a subsequent optimisation run ignores the teacher for the periods outside the given range. You will find an example of how to use this field correctly in chapter [Master data properties / Classes](#) .

##### **(R) Not in 1st and last period**

You can use this code to avoid a teacher being scheduled in the first and last periods of a day (Scheduling | Weighting | Time Requests | Time requests for teachers).

##### **Very important**

The input block 'Very important' allows you to specify different timetabling priorities for each individual teacher.

##### **No NTPs (A)**

Activate this option to instruct the software to avoid scheduling NTPs for the teacher.

##### **Lunch break (B)**

Check this box if you want Untis to pay particular attention to lunch break compliance when creating the timetable.

##### **Max. periods/day (C)**

Activating this option ensures a high level of compliance with the specifications entered under 'Periods per day min,max'.

##### **Max. consec. prds. (D)**

Activating this option ensures a high level of compliance with the specifications entered under 'Max. consec. periods/half day'.

##### **Note: Do not set for all teachers**

Please set codes A-D for individual teachers. If great importance is attached e.g. to avoiding non-teaching periods for all teachers you can achieve this via optimisation.

## 1.4.5 Subjects

### 1.4.5.1 'Subjects' tab

#### Subject Group

When entering teaching qualifications for teachers, you can either enter single subjects or entire subject groups. This field is therefore only relevant for use with the Lesson planning and Value calculation module.

#### Alias name

For certain purposes (e.g. data export), it may be desirable to use standardised designations instead of the usual names. Alias names can be entered via the relevant element or under 'Master Data | Special data | Alias names'.

The screenshot shows a software window with five tabs: 'General', 'Subject', 'Timetable', 'Values', and 'Subs.'. The 'Subject' tab is active. It contains the following elements:

- Two text input fields at the top: 'Subject Group' and 'Alias name'.
- A list of checkboxes:
  - ☒ (M) Main subject
  - ☐ (F) Fringe period
  - ☐ (O) Optional subject
  - ☐ (2) More than once a day
  - ☐ (G) Not a fringe period
- A section titled 'Double periods' containing:
  - ☐ (D) Respect double periods
  - ☐ (E) Double pers. span \*-breaks
- At the bottom, two more checkboxes:
  - ☐ (P) No break supervision before/after
  - ☐ (S) Consultation hour

### 1.4.5.2 Codes

You can make the following settings on the 'Timetable' tab .

### Subject room (short name)

This function allows you to specify the name of a dedicated subject room for a subject. This subsequently makes task of entering lessons easier. Please see the chapter Room logic under User tips for further details.

### Afternoon pers./week (min,max)

The minimum and maximum number of afternoon periods for this subject. Use this field to specify the minimum and maximum number of periods per week that the subject should / must be scheduled in the afternoon.

### Periods/week (min,max)

Minimum and maximum number of weekly subject periods. This function is only relevant for use with the Lesson planning module where you can enter the minimum and maximum number of periods the subject should be taught per week (if at all).

### Subj. Sequ. - Teachers

The numbers 1-9 direct the software to construct teacher timetables where subjects with the same number are scheduled in consecutive periods. The letters A-F prevent the software from scheduling subjects in consecutive periods. Please also see chapter Subject sequence under User tips.

### Subj. Sequ. - Classes

The numbers 1-9 direct the software to construct class timetables where subjects with the same number are scheduled in consecutive periods. The letters A-F prevent the software from scheduling subjects in consecutive periods. Please also see chapter Subject sequence under User tips.

#### (A) In all classes

This field is only important in connection with the module 'Lesson planning and Value calculation'.

#### (M) Main subject

Check this box to categorise a subject as a main subject. For further details please refer to chapter 'User tips / Main subjects'.

#### (F) Fringe period

Use this option to categorise a subject as a fringe period subject. The attribute ensures that lessons of this subject are scheduled preferentially at the beginning or the end of a school day or half-day.



(depending on the grid). For further details please refer to chapter 'User tips / Free periods and fringe periods'

**(O) Optional subject**

This option allows you to categorise a subject as an optional (non-compulsory) subject. The attribute ensures that lessons of this subject are scheduled preferentially at the beginning or the end of a school day or half-day (depending on the grid). For further details please refer to chapter 'User tips / Free periods and fringe periods'

**(2) More than once a day**

This option should only be used in special circumstances. If it is active, the optimisation algorithm can schedule the subject at entirely irregular intervals and even several times a day. Checking this box deactivates the weighting settings for 'The same subject cannot be taught more than once on the same day' and 'Avoid errors with double periods'.

**(G) Not a fringe period**

Selecting this option causes the software to schedule lessons of this subject by preference in the middle of a half-day, avoiding fringe periods.

**D) Respect double periods**

**Warning**

*This option should only be activated in special circumstances. Please read chapter 'Lessons' before selecting this option.*

This function ensures that the automated optimisation tool will always schedule the number of permitted (or desired) double periods. For example, use this option to avoid splitting double periods or to force the software to schedule single periods.

- Please note that the correct treatment of double periods requires an appropriate input under option 'Double periods Min,Max'.
- This option is only effective when used sparingly and thoughtfully since it imposes considerable restrictions on the optimisation function, especially with regard to subjects with many double periods. Activate this function only when a previous optimisation run was unable to achieve the desired outcome and you have already increased the relevant weighting parameter ("Avoid errors with double periods") to '5'.

**(E) Double periods are allowed to span \*-breaks**

Breaks marked with an asterisk (\*) must not be bridged by double periods and will therefore affect the distribution of double periods. If this restriction is not desired for a particular subject, simply uncheck this option.

### 1.4.5.3 'Timetable' tab

You can make the following settings on the 'Timetable' tab .

The screenshot shows a software window with five tabs: General, Subject, Timetable, Values, and Subs.. The 'Subject' tab is active. It contains five input fields with labels to their right:

- Subject room (short name)
- Afternoon pers./week Min-Max
- Periods/week Min-Max
- Subj. Sequ. - Teachers
- Subj. Sequ. - Classes

### Subject room (short name)

This function allows you to specify the name of a dedicated subject room for a subject. This subsequently makes task of [Entering lessons](#) easier. Please see the chapter [Room logic](#) under [User tips](#) for further details.

### Afternoon pers./week (min,max)

The minimum and maximum number of afternoon periods for this subject. Use this field to specify the minimum and maximum number of periods per week that the subject should / must be scheduled in the afternoon.

### Periods/week (min,max)

Minimum and maximum number of weekly subject periods. This function is only relevant for use with the Lesson planning module where you can enter the minimum and maximum number of periods the subject should be taught per week (if at all).

### Subj. Sequ. - Teachers

The numbers 1-9 direct the software to construct teacher timetables where subjects with the same number are scheduled in consecutive periods. The letters A-F prevent the software from scheduling subjects in consecutive periods. Please also see chapter [Subject sequence](#) under [User tips](#).

### Subj. Sequ. - Classes

The numbers 1-9 direct the software to construct class timetables where subjects with the same number are scheduled in consecutive periods. The letters A-F prevent the software from scheduling subjects in consecutive periods. Please also see chapter [Subject sequence](#) under [User tips](#).

## 1.4.6 Students

There is an additional master data element if you use the Students timetables module – students. If you do not use the module, the menu item will be deactivated.

### Note

In some school systems or at some class levels it is not the class that determines the lessons. Instead,

students can select the courses they wish to take depending on their preferences. This results in students having their own individual timetables depending on the courses they choose. Untis provides two modules to help you manage these scheduling tasks: Student timetables and Course scheduling . The use of student timetables is useful when the majority of lessons take place for the class as a whole and a smaller share (up to approx. 25 %) is selected individually. The course scheduling module is used when no class exists in the traditional sense and students are (almost) fully free to choose their courses.

### 1.4.7 Departments

Additional master data You will find the following master data under menu item 'Master Data | Special data' :

#### Student groups

Student groups facilitate student assignment in WebUntis . They play no role in lesson scheduling.

#### Alias names

For some purposes it may be necessary to use different names than the names specified in master data for elements. For example:

- Standardised official specialist designations for authorities
- Standardised names for interfaces to official databases
- Timetable printing

If you wish to use the aliases specified here in timetable printouts, you must check the box 'For the timetable' and also set the appropriate code in the corresponding timetable view. Please refer to chapter [Alias](#) under [Timetable](#) for more information.

#### Descriptions

Descriptions are master data elements in their own right with (short) name and full name. They are useful when designations apply to several elements.

You can for example provide somewhat longer text in the full name of a description. It is then sufficient to enter the (short) name of the description in other master data elements in order to choose between the (short) name or full name of the corresponding description for printed reports and views.

The screenshot shows a software window titled 'Descriptions / Description'. It has a toolbar with icons for adding, deleting, and saving. Below the toolbar, there's a section for editing a description with fields for 'Name' and 'Perm', and buttons for 'Delete' and 'Change'. The main area contains a list of descriptions with columns for 'Name', 'Full name', and 'Stat.'. The 'Perm' entry is highlighted.

Name	Full name	Stat.
HM	Head Teacher	
Perm	Permanent Teacher	
Cont	Contract Teacher	
Sp	Special Class	
Ex	Voluntary Exercise	
Grl	For Girls Only	

## Departments

You can assign each master data element to a department (in the case of teachers, to several departments). This is only of further significance when used with the Department timetables module. If you do not use this particular module, entering a department name is mainly for informational purposes and can, for example, be printed out on timetables. However, some reports can be printed on a departmental basis.

## Corridors

Corridors must be specified for scheduling breaks (corridor supervision). These functions require a license for the Break supervision module.

# 2 Lessons

## 2.1 Lessons

A lesson is the combination of the elements [class](#) , [teacher](#) , [subject](#) and [room](#) with a specific number of periods and perhaps with additional parameters. A difference is made between **planned** and **scheduled** lessons.

A planned lesson would be e.g. that teacher Callas should teach two periods of music to class 1a in room R1a.

The scheduled lesson would also contain the position of the lesson in the timetable, e.g. the lesson takes place on Mo-2 and Th-1.

### Planned lessons

The 'Lessons / Class' window displays a table with the following data:

L-No.	CI,Te.	UnSched Prds	Per	YrsPrds	Class(es)	Teacher	Subject	Home room
96		2	2		1a	Callas	MU	R1a

Below the table, there are input fields for 'L-No.' (containing 96) and 'Class\*' (empty).

### Scheduled lessons

The '1a - Class 1a (Gauss) Time' window shows a weekly schedule grid for Class 1a. The grid has 8 rows (numbered 1-8) and 7 columns (Mo, Tu, We, Th, Fr, Sa). The 'MU' subject is scheduled for Monday, period 2 and Thursday, period 1.

	Mo	Tu	We	Th	Fr	Sa
1				MU		
2	MU					
3						
4						
5						
6						
7						
8						

Below the grid, a summary table shows the lesson details:

L-No.	Tea. Subj.	Rm.	Clas.	Time	School v
96	Callas, MU, R1a		1a		2-41

## 2.2 The lesson window

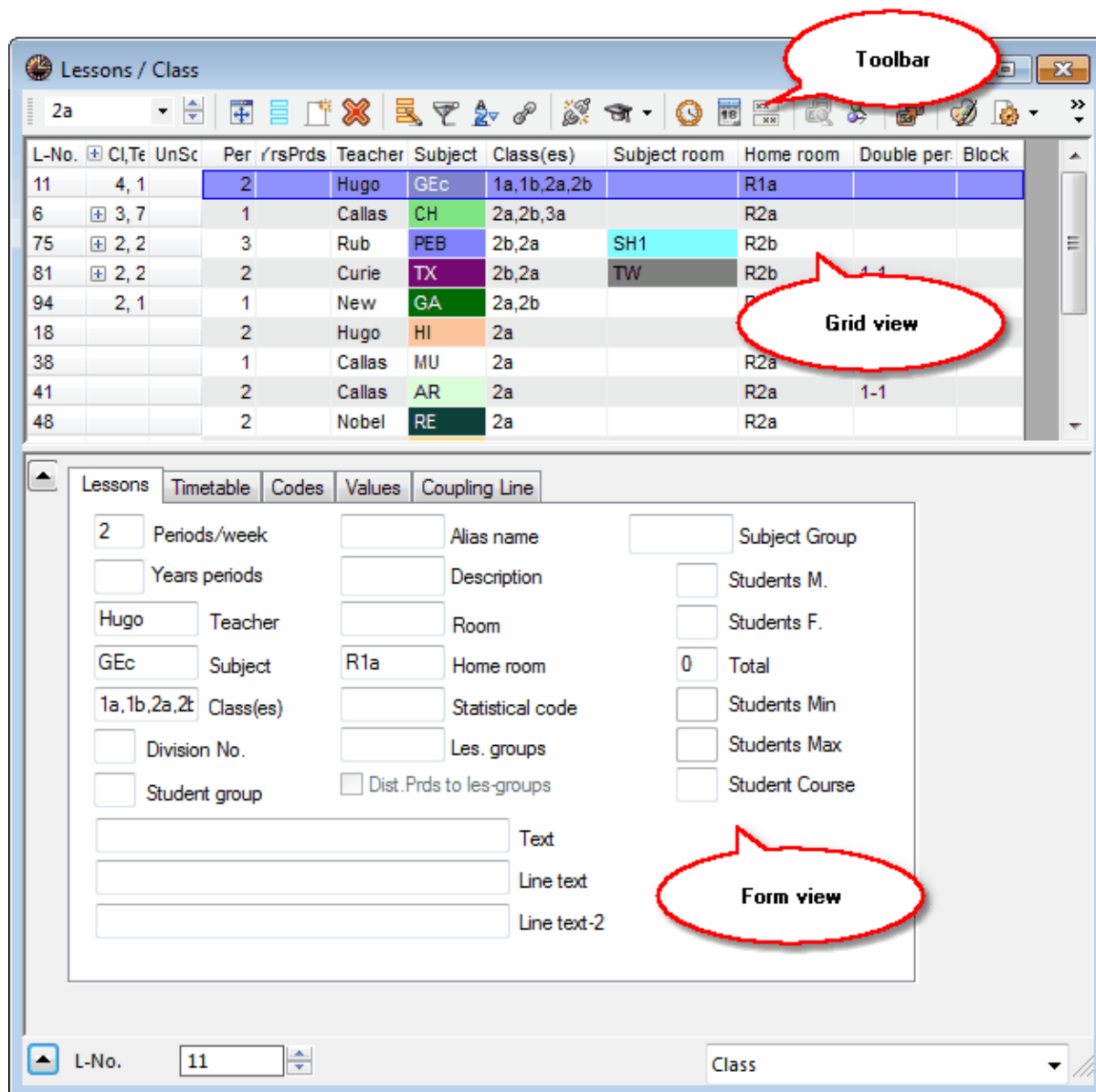
Similar to all [master data windows](#) a lesson window always comprises three sections: the [toolbar](#), the grid view and the form view.

The function of the form and grid views is the same as with [master data windows](#). The form view displays one lesson at a time with all the attributes belonging to the lesson while the grid view displays a table of all lessons. Each lesson is automatically assigned a lesson number (which you cannot alter) which the application uses as an internal ID.

### Note: Views

The lesson window is a view. This means that the information provided in chapter ' [Master data views](#) ' on the basic use of windows ( [Editing views](#) and [Managing views](#) ) also applies to lesson windows.

You can open the standard views for lessons sorted by class or by teacher via menu items 'Lessons | Classes' and 'Lessons | Teachers' respectively.



#### Warning: Coupled lessons

In the case of [coupled lessons](#) (lessons taking place simultaneously) you will see a + in the *Cl,Te* column. Clicking on this will display all the coupling rows of the lesson concerned.

## 2.3 Entering lessons

Lessons can be entered in the [form view](#) or in [grid view](#). Since there are different types of lessons they will be described here separately.

A coupling consists of lessons that have several elements of the same type and that must take place at the same time. In the case of a class coupling, several classes or parts of a class are taught by one

teacher, and in the case of a teacher coupling several teachers teach one or more classes at the same time.

- [Simple lessons](#)
- [Double period - block](#)
- [Couplings](#)

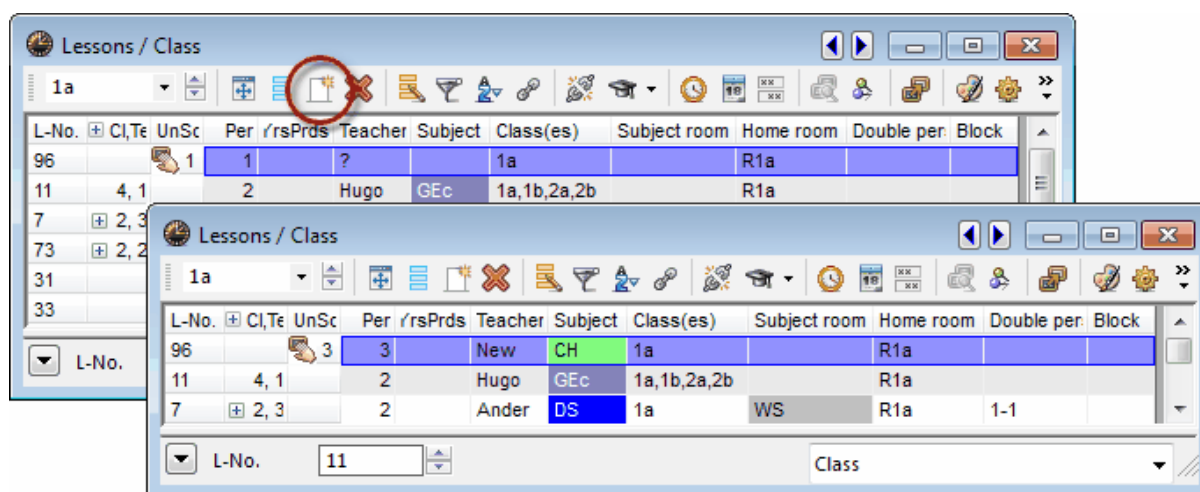
**Note: 'Cl,Te' field**

The value in the *Cl,Te* field indicates how many classes and how many teachers are involved in this lesson. A straightforward lesson involving one class and one lesson displays no value in this field.

L-No.	Cl,Te	UnSc	Per	Prds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
41			2		Callas	AR	2a		R2a	1-1	
11	4, 1		2		Hugo	GEc	1a,1b,2a,2b		R1a		
75	2, 2		3		Rub	PEB	2b,2a	SH1	R2b		
					Arist	PEG	2b,2a	SH2	R2a		

### 2.3.1 Simple lessons

Open a lessons window and click on the <New> button. This will create a new lesson with one period per week. Alternatively, you can create a new lesson in the last row of the lesson view. Simply enter all the elements involved for the lesson (class, teacher, subject, room) and if necessary change the number of periods per week.

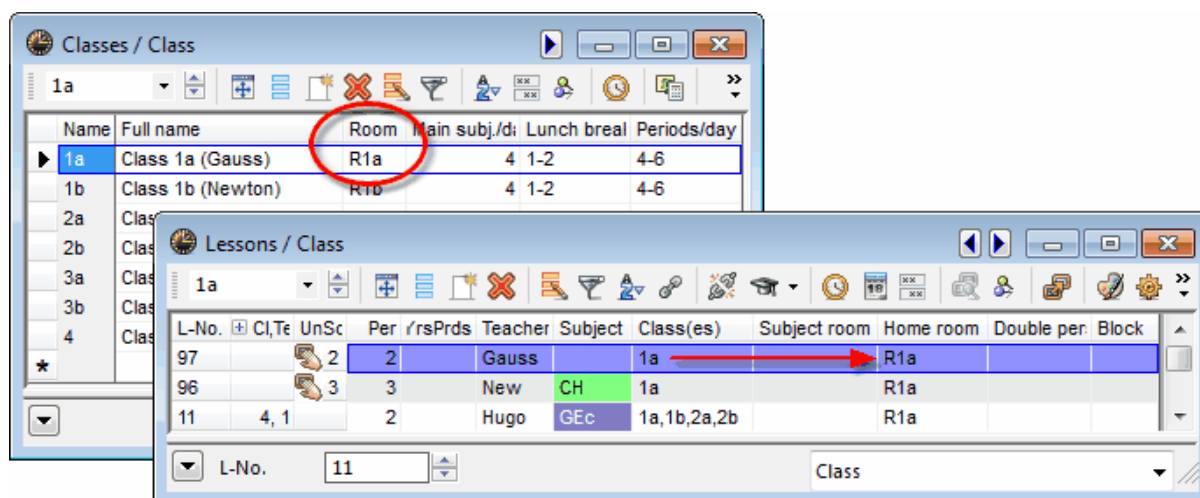


### Class / teacher

Depending on whether you have called 'Lessons | Classes' or 'Lessons | Teachers', the active class or the active teacher will be automatically entered for a new lesson.

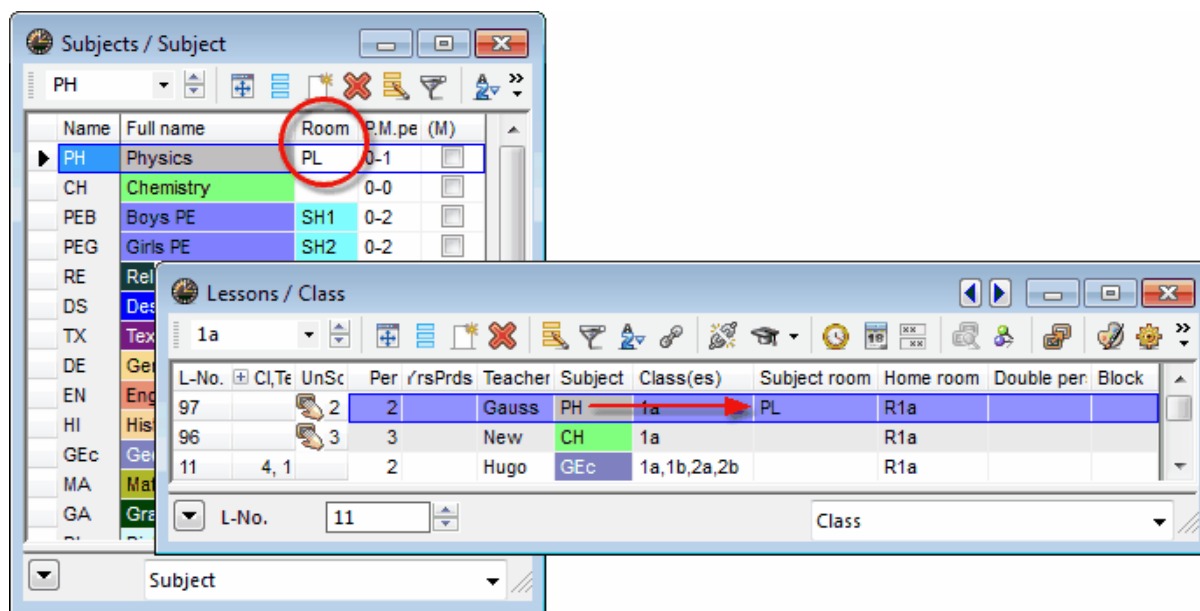
## Home room

If you have assigned a room to each class under 'Master Data | Classes', the room will be entered automatically in the [Home room](#) field as soon as you enter the class. A teacher can also be assigned a home room, in which case the home room will be entered automatically in the same way.



## Subject room

You can also assign rooms under 'Master Data | Subjects'. However, in this case it involves subject rooms, for example a gymnasium for the subject *PE and sport*. When you enter a subject with a [subject room](#), the *subject room* will be displayed automatically in the corresponding field.





**Note: Subject room + home room**

A subject room and a home room can be entered for a lesson. In this case, optimisation will first try to schedule the lesson in the subject room. If this is not possible, the lesson can be scheduled in the home room. Please refer to chapter [Room logic](#) for further information.

**2.3.2 Double period - block****Double period**

Lessons will be scheduled in single periods unless specified otherwise. Enter double periods in the column *Double pers.* if they are desired or permitted. Use this field to specify a permitted range of double periods:

An entry of 1-1 indicates that the range is from 1 to 1, i.e. the lesson should be scheduled in exactly one double period.

L-No.	Cl,Te.	UnSc	Per	r/sPrds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
7	2, 3		2		Ander	DS	1a	WS	R1a	1-1	

An entry of 0-1 means that a 2-period lesson can be scheduled in a double period, but it is not an absolute requirement (minimum 0, maximum 1 double period).

L-No.	Cl,Te.	UnSc	Per	r/sPrds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
3	1, 2		2		Gauss	GA	3a		R3a	0-1	

An entry of 1-2 means that a 4-period lesson can also be scheduled in one double period or two double periods. The timetable algorithm should decide which variant is best suited from the overall timetable perspective.

L-No.	Cl,Te.	UnSc	Per	r/sPrds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
76	2, 2		4		Arist	PEG	3a,3b	SH2	R3a	1-2	

**Tip: Double period condition**

If it is possible to allow variability in scheduling double periods (e.g. with the 0-1 or 1-2 options), please allow the algorithm to work with these freedoms since this can lead to a significantly better overall result.

**Block**

More than 2 periods scheduled consecutively are called a block of periods.

If you wish, for example, to schedule 3 periods consecutively, enter '3' in the column 'Block'.

L-No.	Cl,Te	UnSc	Per	rsPrds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
2			3		Callas	AR	1b		R1b		3

If you wish to schedule a 6-period lesson in two blocks of 3, simply enter '3.3'.

L-No.	Cl,Te	UnSc	Per	rsPrds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
33			6		Arist	EN	1a		R1a		3,3

### 2.3.3 Coupled lessons

In Untis terminology, coupled lessons (or couplings) are those in which more than one teacher and/or more than one class participate in the lessons and the lessons in the coupling are held at the same time.

#### Warning: General rule for entering coupled lessons

Several classes are entered together separated by commas but when there are several teachers each one must be entered in a separate coupling row.

#### Coupled lessons (several classes)

Teacher Rubens is to teach cookery to classes 1a and 1b for two periods in the home economics room.

Per	Teacher	Subject	Class(es)	Room
2	Rub	CK	1a,1b	HE1

Proceed as in the example of the simple lesson, but enter both classes 1a and 1b in the field 'Class(es)' separated by a comma. In this case the room will not be entered automatically because there is no room assigned to the subject cookery. For this reason, enter it in the 'Subject room' column .

Lessons / Klasse											
L-No.	Cl,Te	UnSc	Per	ds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
96	2, 1	2	2		Rub	KO	1a,1b	Ki	R1a		
31			5		Arist	MA	1a		R1a		
33			5		Arist	E	1a		R1a		

Now switch to class 1b. You will see that the lesson is automatically displayed for this class.

#### Coupled lessons (several classes and teachers)

We will now plan 4 periods of English in different sets for the students of the second year. This means that students in classes 2a and 2b will be taught in three sets by three teachers (Cer, Ander, Callas) in

three different rooms.

Per	Teacher	Subject	Class(es)	Room
4	Cer	EN	2a,2b	R2a
4	Ander	EN	2a,2b	R2b
4	Callas	EN	2a,2b	PS1

1. Switch the lessons window to class 2a.
2. Enter '4' in the 'Per' column and confirm this by pressing <TAB>.
3. Enter the (short) name 'Cer' and confirm again with <TAB>. It does not matter which of the three teachers you begin with.
4. Enter 'EN' for subject.
5. Now enter classes 2a and 2b in the 'Class(es)' column separated by a comma.
6. Class 2a's home room – R2a – will be entered automatically.
7. Move the mouse to the column 'Cl,Te' in the lesson you have just entered and click on '+'. Enter the name of the next teacher, "Ander", and again classes 2a and 2b in the empty row shaded grey.

95			2	New	PH	2a	Phys	R2a			
97	+	2, 1	4	4	Cer	DE	2a,2b		R2a		

95			2	New	PH	2a	Phys	R2a			
97	+	2, 1	4	4	Cer	DE	2a,2b		R2a		

8. Now change the room from R2a to room R2b since teacher Cervantes will be teaching his group in room R2a .
9. Make the same entries for teacher Callas in the third coupling row, making sure to enter a different room.

L-No.	Cl,Te	UnSc	Per	ds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.	Block
97	+	2, 3	4	4	Cer	DE	2a,2b		R2a		
					Ander	DE	2a,2b		R2b		
					Callas	DE	2a,2b		Ps1		
90			4	New	MA	2a			R2a		
95			2	New	PH	2a	Phys		R2a		

The '+' sign will now be permanently displayed in the 'Cl,Te' column. Clicking on this sign will display all the information on the lesson. You can decide whether you wish to view only the first row of the lesson or whether all coupling rows should be displayed.

**Tip: Expanding all coupling rows**

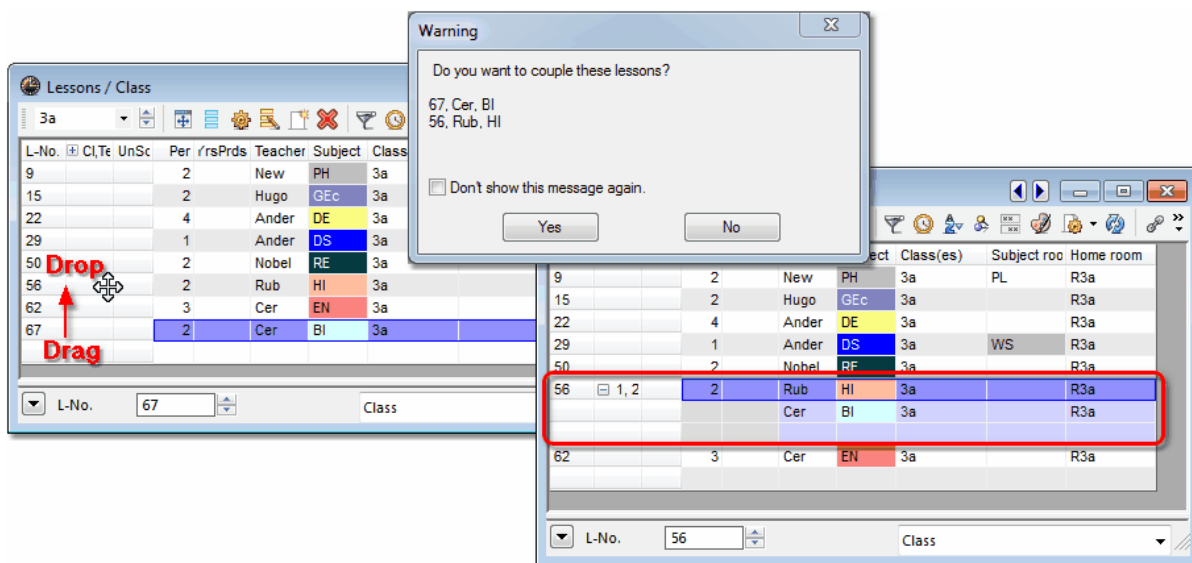
Clicking on <+> in the column heading of 'Cl,Te' will expand or collapse all coupling rows in one operation.

You can find further information on using coupled lessons in chapters [Coupling lessons](#) and [Decoupling lessons](#).

## 2.3.4 Coupling lessons

### Coupling using drag&drop

If you wish to couple two existing lessons, mark one of the lessons in the column 'Cl,Te' with the right mouse-button and drag it over to the lesson with which you wish to link it. When you release the dragged lesson, both lessons will be coupled.

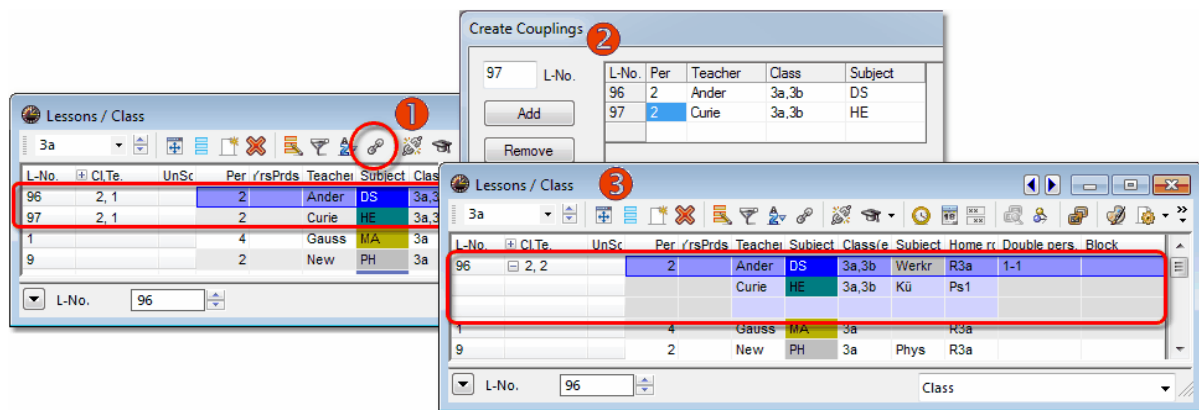


Decoupling coupled lessons is just as simple. Drag the coupling row that you wish to decouple out of the coupling by using the mouse in the 'Cl,Te' column and drop it. The lessons are now decoupled.

### Coupling via the toolbar

If you wish to couple two existing lessons, mark one of the lessons concerned and click on the <Create couplings> button in the toolbar. A dialogue window will be displayed already containing the marked lesson. There are three ways to add additional lessons:

- Double click on the lesson you wish to add in the lessons window.
- Mark the new lesson in the lessons window and then click on <Add>.
- Enter the lesson number and then click on <Add>.



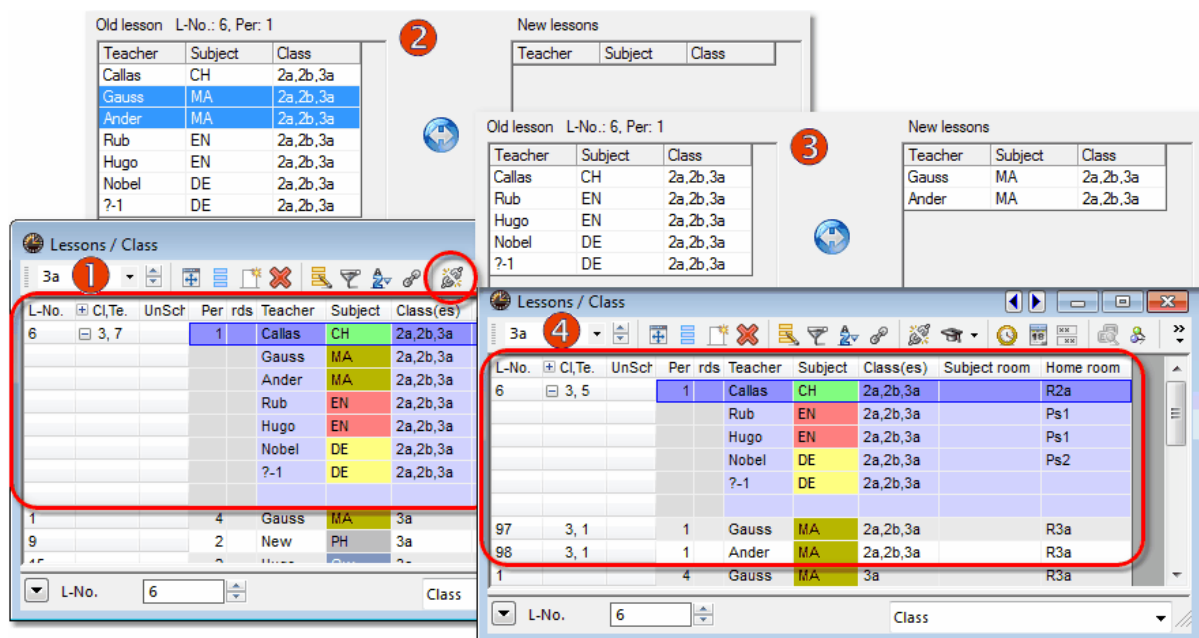
### 2.3.5 Decoupling lessons

The [previous chapter](#) described how you can decouple lessons using drag&drop.

#### Decoupling via button

This function allows you to convert individual [coupling rows](#) in a coupled lesson into lessons in their own right (with their own lesson numbers).

Mark a lesson coupling and click on the button <Extended decoupling>. A window will be displayed where you can select which coupling rows should be removed from the coupled lesson.



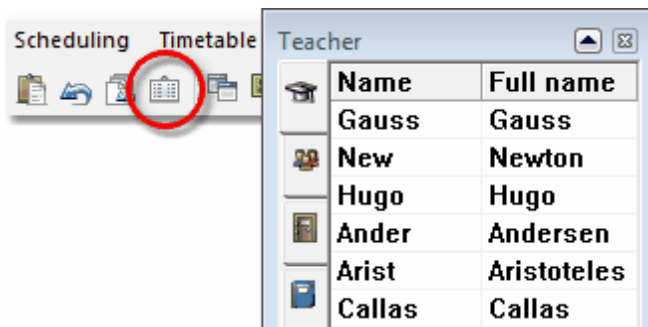
#### Warning: Split up all

Clicking on the <Split up all> button breaks up all class couplings. This can have a drastic impact on teaching load distribution.

If you only wish to split up a coupled lesson into all coupling rows but wish to retain the class couplings, mark all the rows concerned in the left section and click on the double-headed arrow in the centre of the window.

### 2.3.6 Entering lessons using drag&drop

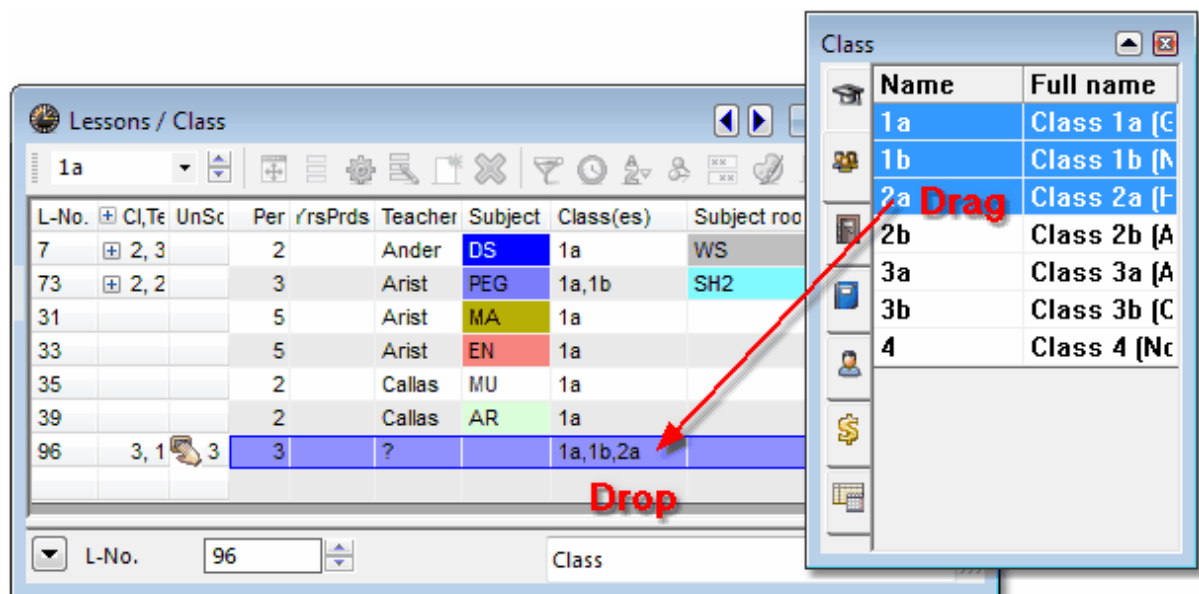
You can also use the Element-Rollup function to enter lessons using drag&drop. You can access the Element-Rollup function under 'Master Data | Element-Rollup' or via the button of the same name in the main toolbar.



In the Element-Rollup window you can choose between [master data](#) types and drag one or several elements into the [lessons](#) window.

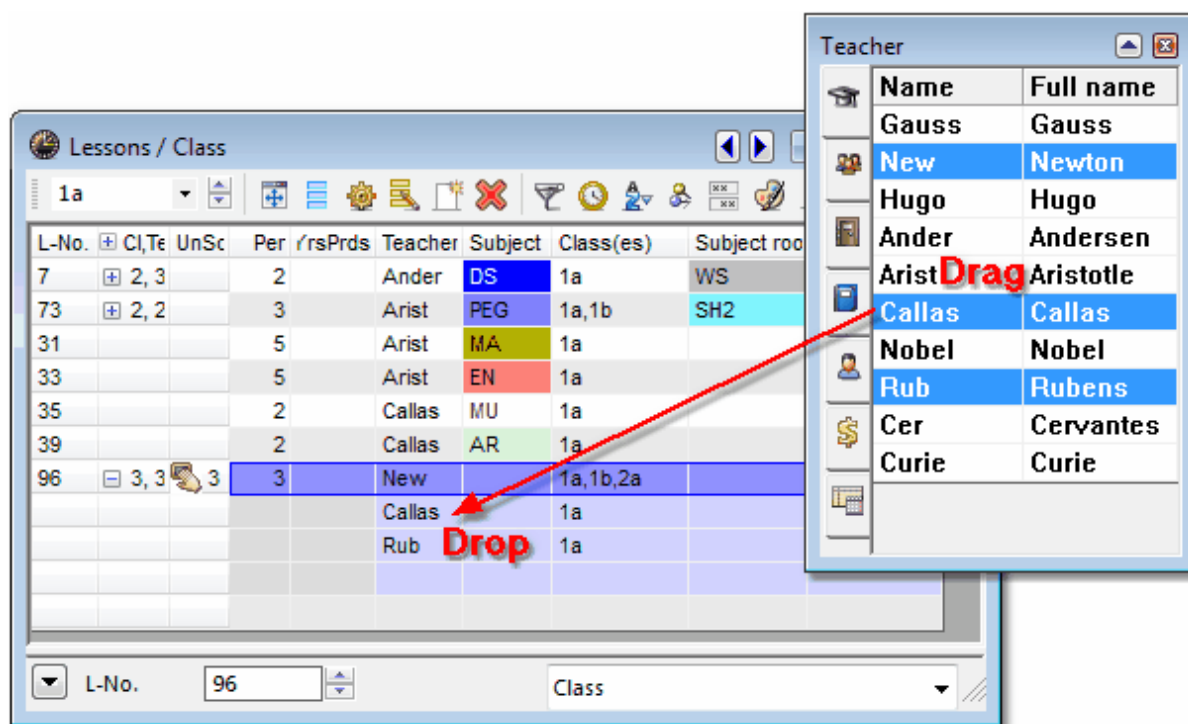
#### Note: Several elements

You can hold the <CTRL> key pressed and highlight several elements, which you can then drag into the lessons window together.



If you drag several classes into the lessons window, they will all be entered into one [coupling row](#).

However, if you drag several teachers into an existing lesson, a separate coupling row will be created for each teacher.



**Note: Double-click**

You can use a double click in the element window instead of the drag&drop method.

### 2.3.7 Clipboard

You can copy selected (highlighted) lessons to the clipboard. These functions can be accessed under menu item 'Edit', or you can use the following shortcuts:

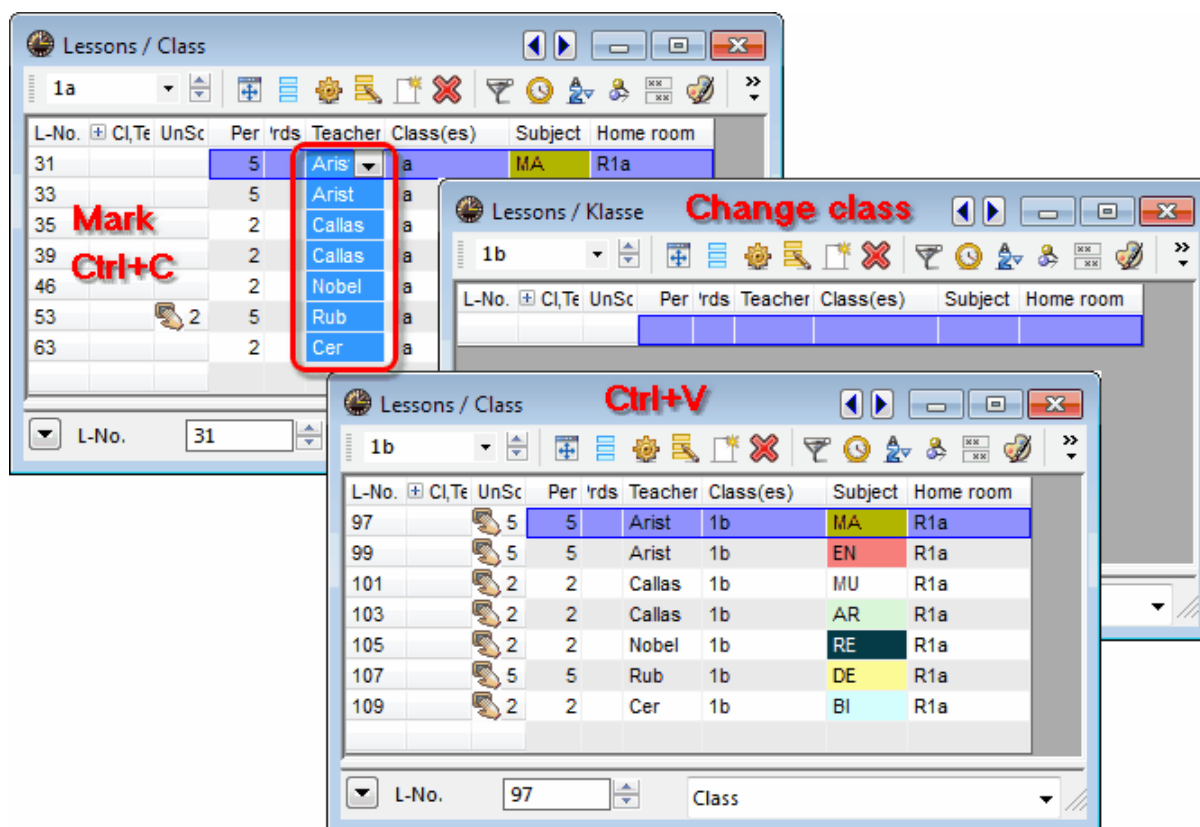
CTRL + X = Cut  
 CTRL + C = Copy  
 CTRL + V = Paste

#### Programme-internal use

The clipboard function allows you to copy one or more lessons of one class to another or from one term> to another (with the Multiple term module).

If you wish for example to copy all lessons from class 1a to class 1b

- highlight all lessons,
- select 'Edit | Copy',
- switch to class 1b (which still has no lessons) and
- select 'Edit | Paste'.



## Paste special

### Tip: Copying timetables

The 'Paste special' functions allows you to copy timetables.

In addition to the usual paste function, the 'Edit' menu also provides the 'Paste special' function. Besides inserting lessons, this function also inserts the timetable of the copied lessons, i.e. the timetable of the source class is also copied.

## Copying data to external programmes

You can also use the clipboard to export lessons (or other data) to external programmes such as spreadsheets or word processors.

Many views also offer the <Print in Excel> option allowing you to export directly to a spreadsheet.



The screenshot shows the 'Lessons' tab in the software interface. On the left, there is a 'Rooms / Room' panel with a list of rooms and their properties. The 'Lessons' tab is active, and a grid view of lesson data is displayed on the right. The grid has columns A, B, C, and D, and rows numbered 1 to 16. The data in the grid is as follows:

	A	B	C	D
1				
2	Name	Full name	Altern. room	Rm. Weight
3	SH1	Sports Hall 1	SH2	4
4	SH2	Sports Hall 2	SH1	4
5	PL	Physics lab.		3
6	WS	Workshop		3
7	TW	Textiles workshop		4
8	HE1	Home Econ. room		4
9	R1a	Class Room 1a	R1b	2
10	R1b	Class Room 1b	R2a	2
11	R2a	Class Room 2a	R2b	2
12	R2b	Class Room 2b	R3a	2
13	R3a	Class Room 3a	R1a	2
14	Ps1	Pseudo Room 1 (3b)	R1a	2
15	Ps2	Pseudo Room 2 (4)	R2a	2
16				

## 2.4 Lesson properties

You can specify many additional properties for lessons apart from the basic data. With the exception of time requests you can enter this data either in the grid view or in the form view. You will find all the tabs described below in the [form view](#).

- [Time requests](#)
- ['Lessons' tab](#)
- ['Timetable' tab](#)
- ['Codes 1' tab](#)
- ['Codes 2' tab](#)
- ['Values' and 'Coupling lines' tabs](#)

### 2.4.1 Time requests of lessons

You can choose between three different ways of displaying time requests:

#### Time requests of lessons

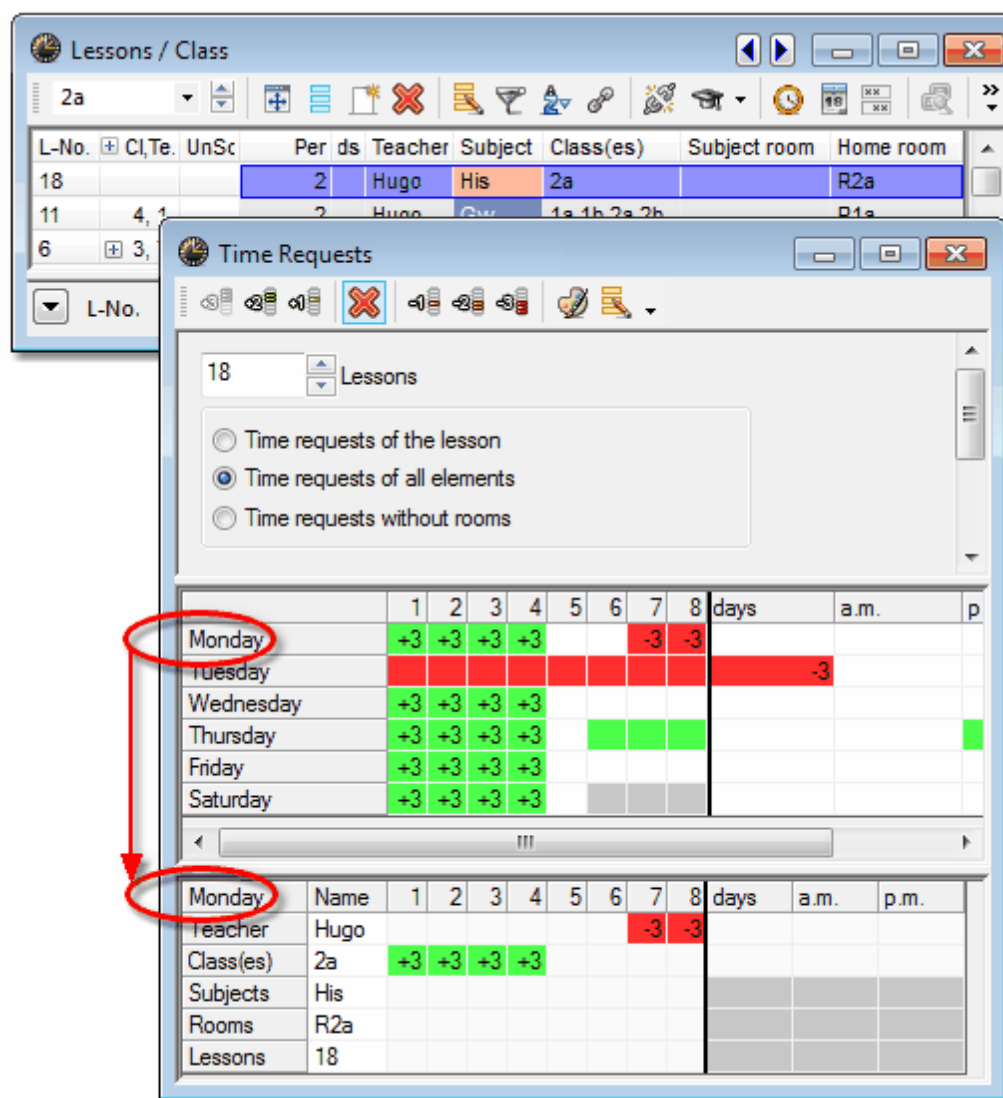
Each individual lesson can be assigned a special time request. The general time request function is described in chapter [Time requests](#) in the [User tips](#) section. However, a time request for a lesson cannot be given the value +3. In this case, you should schedule the lesson manually and lock it.

#### Time requests for all elements

Lessons inherit the time requests of the [master data involved](#). For example, if Victor Hugo's free day is Tuesday, no lesson can take place on a Tuesday if Hugo is involved.

The 'Time requests for all elements' option displays the time requests for all elements involved in this

lesson in the centre of the window. You can click on a day of the week in this section and the lower section will indicate exactly which of the elements involved is responsible for the time request.



### Time requests without rooms

Since [room allocation](#) can still be changed during optimisation, time requests for rooms are not as stringent as those for other elements. For this reason they can be hidden using the lower option.

#### 2.4.2 'Lessons' tab

You can specify the following settings on the 'Lessons' tab:

Lessons	Timetable	Codes	Values	Coupling Line
<input type="text" value="2"/>	Periods/week	<input type="text"/>	Alias name	<input type="checkbox"/> Expressive <input type="checkbox"/> Subject Group
<input type="text"/>	Years periods	<input type="text" value="Ex"/>	Description	<input type="checkbox"/> Students M.
<input type="text" value="Ander"/>	Teacher	<input type="text" value="WS"/>	Room	<input type="checkbox"/> Students F.
<input type="text" value="DS"/>	Subject	<input type="text" value="R1a"/>	Home room	<input type="text" value="0"/> Total
<input type="text" value="1a"/>	Class(es)	<input type="text"/>	Statistical code	<input type="checkbox"/> Students Min
<input type="checkbox"/>	Division No.	<input type="text"/>	Les. groups	<input type="checkbox"/> Students Max
<input type="checkbox"/>	Student group	<input type="checkbox"/> Dist.Prds to les-groups		<input type="checkbox"/> Student Course
<input type="text"/>			Text	
<input type="text"/>			Line text	
<input type="text"/>			Line text-2	

## Periods/week / Years periods, Teacher, Subject, Class(es), Room

The master data involved in the lesson together with the number of periods are the essential lesson parameters. Entering data was dealt with in chapter [Entering lessons](#) .

## Division number

The division number is required to ensure that the number of periods for a class are calculated correctly for divisions. A division occurs when for example English is taught in 2 groups but the lessons are not coupled, i.e. do not take place simultaneously. There are then two lesson rows each with 4 periods, but only 4 hours count towards the total number of class periods.

If both lesson rows (numbers) are assigned the same division number (permitted range of values: 0 to 255) the value units will be calculated as described above. A lesson with a division number of 0 will not count towards the total number of periods for the class.

You can assign the same division number for more than 2 lesson rows of the class. The largest number of periods covered by the division number will then count towards the class total.

## Alias name

You can assign an alias to lessons in the same way as for master data elements. Please refer to chapter [Master data – Class tab](#) for a description of this function .

## Room

This is where you can enter the desired (subject) room for the lesson. If a [subject room](#) has been defined for a subject, it will be automatically used when the lesson is created.

## Home room

If data is being entered in the view 'Lessons | Classes', the class' [home room](#) will be displayed here; if data is being entered in the view 'Lessons | Teachers', the teacher's home room will be displayed here.

## Les. groups

You can enter the lesson group here if you use the Multi-week timetable module. Please refer to chapter Lesson groups in section Multi-week timetable .

## Statistical code

Used in the same way as with master data. You can assign any number of statistical codes to each lesson. These codes are very useful when you wish to [filter](#) according to specific criteria.

## Subject group

If the lesson subject is assigned to a subject group, it will be displayed here. The use of subject groups is primarily of interest in connection with teacher qualifications and the lesson table (with module Lesson planning ).

## Students M./Students F./Total

This is where you can enter the number of students (male and female) participating in the current lesson. The total of all entries is displayed in the total field. These entries have an influence on room allocation during optimisation and [room optimisation](#) .

## Text

This field allows you to assign text of your choice to each lesson. This text is also displayed in the 'Special text' column of the timetable details window and can also be displayed in the timetable window itself .

L-No.	Cl,Te	UnSc	Per ds	Teacher	Subject	Class(es)	Text	Double pers.
45			2	Callas	AR	4	Handicraft work	1-1
5					MA			DE
6								
7		AR						
		Handicraft work						
8		PH						PEG.

L-No.	Tea. Subj.	Rm.	Cla.	Special text	Cluster	Line
45	Callas, AR, R2a (Ps2)		4	Handicraft work		

## Line text / Line text -2

You can use these fields to assign text to the individual [coupling rows](#) of a lesson.

### 2.4.3 'Timetable' tab

You can specify the following settings on the 'Timetable' tab:

Lessons	Timetable	Codes	Values	Coupling Line
<input type="checkbox"/> 1-1	Double periods Min, Max	Time range		
<input type="checkbox"/>	Periods in this subject room	<input type="text"/> From <input type="text"/> To		
<input type="checkbox"/>	Block size (no. consec. pers.)			
<input type="checkbox"/>	Scheduling priority	<input type="checkbox"/> Subj. Sequ. - Classes		
<input type="checkbox"/>	Teacher optimisation code	<input type="checkbox"/> Subj. Sequ. - Teachers		
0 Unscheduled periods		<input type="checkbox"/> Class Clash Code		
Clusters:				

### Double periods Min. Max.

Entering double periods and blocks was already dealt with in chapter [Double period - block](#).

### Periods in this subject room

If a subject room is defined for a lesson, the [optimisation](#) routine will attempt to schedule all periods of the lesson in this room. This is sometimes not desired when there is a shortage of rooms or when rooms are overbooked. If for example only two of three physics lessons are to be held in the physics lab, then enter a '2' here. As a rule, no entry is required in this field.

### Scheduling priority

When you launch optimisation, Untis will first calculate the level of difficulty for all lesson periods. A lesson is all the more difficult to place if there are a lot of elements involved in it and if there are restrictive time requests specified for the elements.

The algorithm that Untis uses to place a lesson starts with the most difficult periods first. You have the chance to influence the scheduling sequence by setting a scheduling priority. The smaller the number entered for the priority (1-9) the earlier the lesson will be placed and the greater the likelihood of finding a 'good' position.

If this field is left empty, a default priority of 5 will be assumed; values of 1-4 increase priority while values of 6-9 decrease it. Lessons with a scheduling priority of 9 will be processed last while those with a priority of 1 will be treated first.

#### Warning:

An entry in this field can have a drastic influence on the way optimisation works. As a general rule, it can have a negative impact on the overall result, which is why it should only be used for good reason and with due consideration.

### Teacher optimisation code

With the teacher optimisation code, the Lesson planning module offers the possibility of influencing [Teacher assignment](#) during optimisation. You will find details in chapter [Teacher optimisation](#) under

[Optimisation](#) .

### Unscheduled periods

This value indicates how many periods of the current lesson have not yet been scheduled in the timetable.

### Time range

The Multi-week timetable module allows you to set time restrictions for lessons.

### Subject sequence - Classes/Subject Sequence - Teachers

As with master data, there is also the field subject sequence for lessons. Permitted entries are 1 - 9 for a positive subject sequence and A - E for a negative subject sequence. Please also see chapter [Subject sequence](#) in the [User tips](#) section.

### Class Clash Code (Class Clash Code, CCC)

This code allows Untis to schedule two lessons at the same time even when the same class is involved in both lessons. Enter values 1 - 9 where a conflict is permissible between lessons with the same CCC, and A - H where a conflict is permissible between lessons with different non-numeric CCCs. Please also see chapter [Subject sequence](#) in the [User tips](#) section.

## 2.4.4 'Codes' tab part 1

There is a large number of codes available with which you can define lessons more precisely.

Lessons	Timetable	Codes	Values	Coupling Line
<input type="checkbox"/> (X) Locked		<input type="checkbox"/> (B) Lock conditionally		
<input type="checkbox"/> (i) Ignored		<input type="checkbox"/> (D) Respect double periods		
<input type="checkbox"/> (m) Marked		<input type="checkbox"/> (C) No single periods		
<input type="checkbox"/> (E) Double pers. span *-breaks		<input type="checkbox"/> (R) Place in a fringe period		
<input type="checkbox"/> (O) Optional subject		<input type="checkbox"/> (S) Schedule class group later		
<input type="checkbox"/> (G) No fringe period placement		<input type="checkbox"/> (2) Subject more than once/day		
<input type="checkbox"/> (K) No altern. room to be used		<input type="checkbox"/> (V) Variable teacher		
<input type="checkbox"/> (k) Exempt from data-analysis		<input type="checkbox"/> (L) Not in legend		
<input type="checkbox"/> (r) All prds. in the same room		<input type="checkbox"/> (U) p.m. only double periods		
<input type="checkbox"/> Teacher allocation locked		<input type="checkbox"/> (M) Schedule manually		
<input type="checkbox"/> Time requests				

### (X) Locked, (i) Ignore, (m) Marked

The way these codes work was already explained in chapter [Input fields for master data](#) .

In lesson views, ignored lessons are marked with the letter (i) next to the lesson number.

L-No.	Cl,Te	UnSc	Per	/rsPrds	Teacher	Subject	Class(es)
33		2	5		Arist	EN	1a
35	(i)		2		Callas	MU	1a
39	(i)		2		Callas	AR	1a
46		1	2		Nobel	RE	1a
53		2	5		Rub	DE	1a
63			2		Cer	BI	1a

### (E) Double pers. span \*-breaks

Double periods are not allowed to span breaks, which are marked in the timetable with a '\*'. Use the (E) code to deactivate this restriction for specific lessons.

### (O) Optional subject

Lessons for which this code is activated are treated during optimisation as if an optional subject were involved. For further details, please refer to chapter [User tips – Optional subjects and fringe periods](#).

### (G) No fringe period placement

Activate this code if a particular lesson should not be scheduled in a fringe period. For further details, please see chapter [User tips – Optional subjects and fringe periods](#).

### (K) No altern. room to be used

Lessons marked (K) may only be scheduled in the designated room. Scheduling in alternative rooms is not allowed.

### (k) Exempt from data analysis

Use this code to exclude a lesson from the automated data analysis function of the [diagnosis](#) tool.

#### Warning:

Activate this function only when you have made sure that the lesson in question will not obstruct the optimisation tool.

### (r) All prds. in the same room

All periods of a lesson marked with this code will take place in the same room. This code has a major influence on room optimisation. A lesson marked with the (r) code can even displace a class from its own home room. Please read chapter [User tips – Room logic](#) for further details before attempting to use this function.

### Teacher allocation locked

The teacher assigned to teach a class can be locked separately for each coupling line to ensure that the placement cannot be changed by the automated teacher allocation function (only possible with the 'Lesson planning and value calculation' module) (please see also chapter Optimisation).

### Time requests

This box will be automatically checked if [time requests](#) have been entered for this lesson.

## 2.4.5 'Codes' tab part 2

Below is a description of the codes in the second column.

Lessons	Timetable	Codes	Values	Coupling Line
<input type="checkbox"/> (X) Locked				<input type="checkbox"/> (B) Lock conditionally
<input type="checkbox"/> (i) Ignored				<input type="checkbox"/> (D) Respect double periods
<input type="checkbox"/> (m) Marked				<input type="checkbox"/> (C) No single periods
<input type="checkbox"/> (E) Double pers. span *breaks				<input type="checkbox"/> (R) Place in a fringe period
<input type="checkbox"/> (O) Optional subject				<input type="checkbox"/> (S) Schedule class group later
<input type="checkbox"/> (G) No fringe period placement				<input type="checkbox"/> (2) Subject more than once/day
<input type="checkbox"/> (K) No altern. room to be used				<input type="checkbox"/> (V) Variable teacher
<input type="checkbox"/> (k) Exempt from data-analysis				<input type="checkbox"/> (L) Not in legend
<input type="checkbox"/> (r) All prds. in the same room				<input type="checkbox"/> (U) p.m. only double periods
<input type="checkbox"/> Teacher allocation locked				<input type="checkbox"/> (M) Schedule manually
<input type="checkbox"/> Time requests				

### (B) Lock conditionally

Lessons marked with this code are treated as locked lessons during the first part of the optimisation run (placement run). During the subsequent optimisation run (swap run), however, the temporary locking function is automatically deactivated (please see also chapter [Optimisation](#) )

### (D) Respect double periods

Activate this function for a lesson (or a subject) if you wish the optimisation tool to adhere strictly to the number of permitted (desired) [double periods](#) . This also applies when double periods have been excluded for a lesson ('0-0' in the field 'Double periods min., max.'). The function is particularly useful when the optimisation errors 'Double per. split up', 'Unrequ. double pers. ' and 'Subject twice a day' are to be avoided at all costs.

#### Warning: Use sparingly

Please use this code sparingly (if in doubt, please do not use it at all), since it places severe restrictions on optimisation – especially for subjects with a large number of periods. If necessary, increase the corresponding weighting parameters ( [Avoid errors with double period](#) ) to 5 before using it.

- Please also note that to ensure the correct treatment of double periods, data must be entered in the 'Double periods min, max' field.
- Setting the (D) code excludes the use of codes (2) and (C).

### (C) No single periods

Setting the (C) code gives priority to scheduling the lesson in questions as block. Single periods will be avoided if at all possible.

- This code is only useful for lessons with more than 6 periods per week.
- Codes (2), (C) and (D) are mutually exclusive.

### (R) Place in a fringe period

Use this option to specify lessons that should be scheduled in fringe periods in the same way as fringe lessons. The attribute ensures that lessons marked in this way are scheduled preferentially at the beginning or the end of a school day or half-day (depending on the timetable). Please also refer to chapter [User tips / Fringe periods and optional subjects](#) .



**(S) Schedule class group later**

You can change the scheduling priority for the lessons when using [class groups](#) . The code instructs the [optimisation](#) tool to leave the scheduling of these lessons until after other classes of the same class group have been scheduled.

- Use this code only when you are familiar with working with class groups.

**(2) Subject more than once/day**

The Untis optimisation algorithm assumes that a subject should only be scheduled once a day for any one class (except [block lessons and double periods](#) ). You can use this flag to override this – highly weighted – boundary condition. Untis will then be allowed to schedule the subject as it thinks fit.

- The options (2), (C) and (D) are mutually exclusive.

**(V) Variable teacher**

When this code is set Untis may replace the teacher(s) involved in the lesson with more suitable teachers when bottlenecks are encountered during optimisation. Please refer to chapter [Optimisation](#) for further details.

**(L) Not in Legend**

No [legend](#) will be printed for lessons where this code is set.

**(U) p.m. only double periods**

This code ensures that the automated [optimisation](#) function will only schedule double periods (and no single periods) in the afternoon. This code only makes sense when

- double periods are permitted for the lesson and
- the subject is marked as a subject that can take place in the afternoon.

**(M) Schedule manually**

Lessons marked (M) are ignored by the optimisation tool. These lessons must be scheduled manually.

**2.4.6 'Values' and 'Coupling line' tabs****'Values' tab**

This tab will only be displayed with the module Lesson planning and value calculation . Please refer to chapter Values under Value calculation for details on the fields.

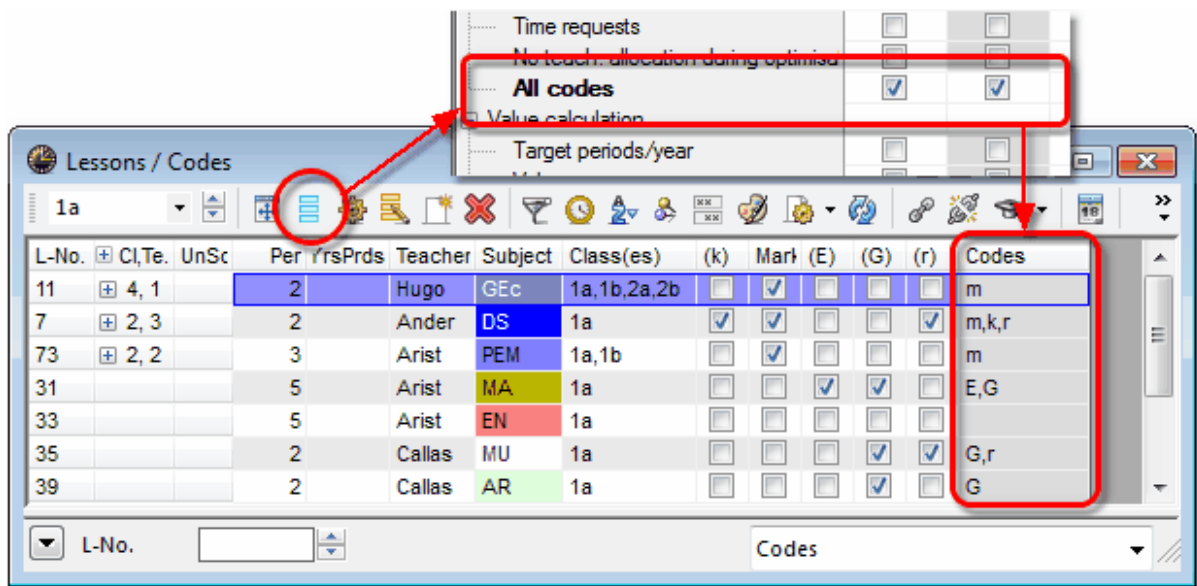
**'Coupling line' tab**

This tab contains fields that are only relevant for a coupling line but not for the entire coupled lesson. Most fields can be found on the ['Lessons' tab](#) and are described there.

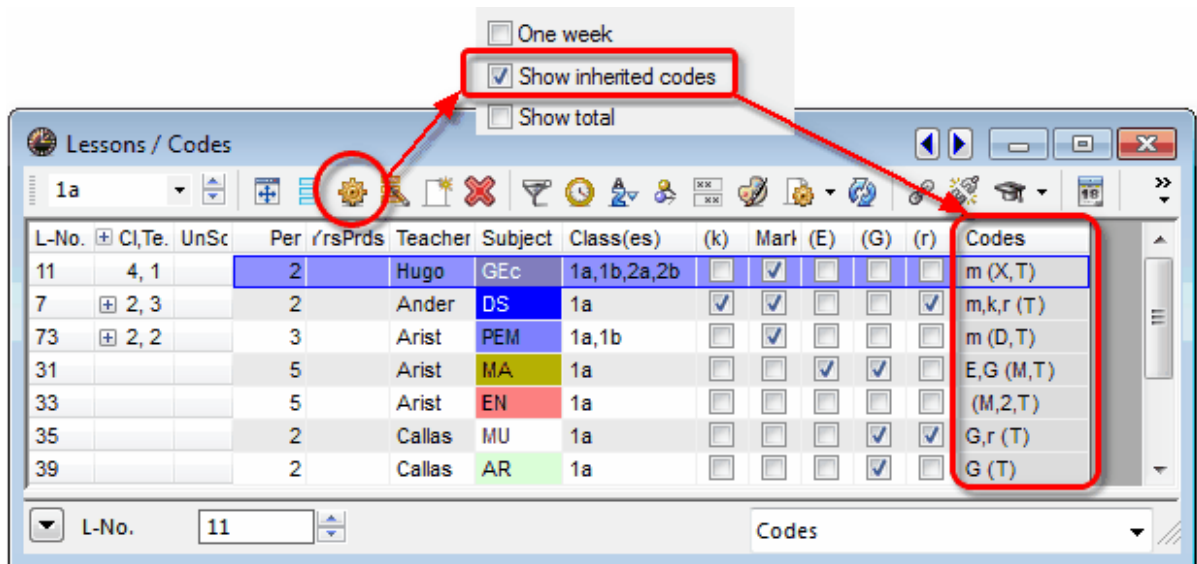
The fields 'Teacher allocation locked' and '(Teacher)' are described in chapter Automatic teacher assignment during optimisation under Lesson planning.

**2.4.7 All codes**

This field, which can only be activated in the grid view via the <Grid Adjustment> button, offers an excellent overview of the relevant timetable settings of a lesson. The 'Code' column clearly and comprehensively displays all the codes set for a lesson. The code Z denotes lessons where a time request has been entered.



Check the relevant box under <Settings> in this lessons window if you wish inherited codes, i.e. codes entered for a master data element of these lessons, to be displayed in parentheses.



## 2.4.8 Locked lessons

The menu item 'Lessons | Locked lessons' allows you to open a window listing all [locked lessons](#). It is irrelevant if the lessons in question have been locked as [individual periods](#), as [lessons](#) or via another [element](#) or lesson group.

Locked lessons

46% of the lessons are locked

	L-No.	Teacher	Subject	Class(es)	Lesson Locked	Group Lock	Class Lock	Teacher Lock	Room Lock	Home Room Lock	Subject Lock	Period Lock
▶	6	Callas	Ch	2a,2b,3a	<input checked="" type="checkbox"/>			Callas				<input type="checkbox"/>
	73	Arist	SportM	1a,1b	<input type="checkbox"/>				Th1			<input type="checkbox"/>
	75	Rub	SportK	2b,2a	<input type="checkbox"/>				Th1			<input checked="" type="checkbox"/>
	94	New	Gz	2a,2b	<input type="checkbox"/>							<input checked="" type="checkbox"/>
	43	Callas	Ke	3a,3b	<input type="checkbox"/>			Callas			Mus	<input type="checkbox"/>
	76	Arist	SportM	3a,3b	<input type="checkbox"/>				Th1			<input type="checkbox"/>
	35	Callas	Mus	1a	<input type="checkbox"/>			Callas			Mus	<input type="checkbox"/>
	39	Callas	Ke	1a	<input type="checkbox"/>			Callas				<input type="checkbox"/>

You can remove locked lessons from the window by clicking on the cell in question and then clicking on the <Delete> button in the toolbar.

**Note:**

It is not enough to select the row in question – you must click on the cell in the row that causes it to be locked. You can read more about locking in chapter [Locking](#) in the [User tips](#) section.

## 2.5 Toolbar functions

The general functions are explained in chapter [Master data / Toolbar functions](#).



You will only find the following special functions in the lessons window:

### Create coupling

Please refer to chapter [Coupling lessons](#).

### Extended decoupling

Please refer to chapter [Decoupling lessons](#).

### Teacher suggestion

Please refer to chapter Teacher suggestions under Lesson planning.

### Calendar

You can use the Multi-week timetable module to specify time restrictions for master data elements and lessons, and define lesson groups (time ranges). The school year calendar displays the selected lesson in green for the period in which the lesson can be held.

L-No.	Cl,Te.	UnSc	Per	Prds	Teacher	Subject	Class(es)	Les. groups	From	To
31			5		Arist	Mat	1a	Week A	3.10.	5.5.
63			2		Cer	Bio	1a			

	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo						
September																																			
October	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
November				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27					
December						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25					
January		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
February					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
March					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
April	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
May			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
June						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

## Lesson comparison

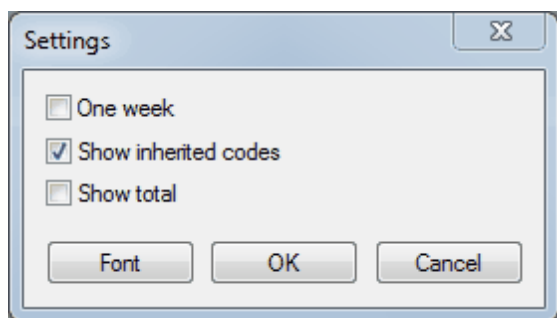
Please refer to chapter Lesson comparison under Lesson planning .

## Convert lesson(s) into course(s)

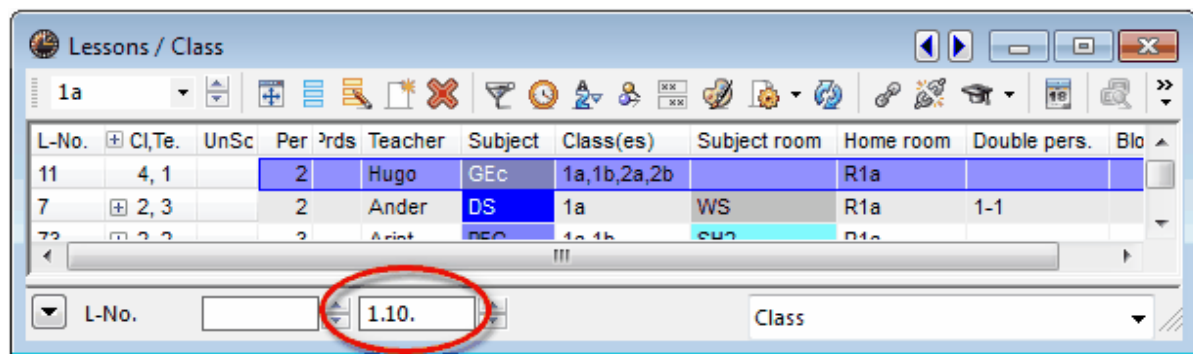
Please refer to chapter Specifying courses under Course scheduling

## Settings

You can select <Settings> to tailor the grid view of the [lesson window](#) to your requirements.

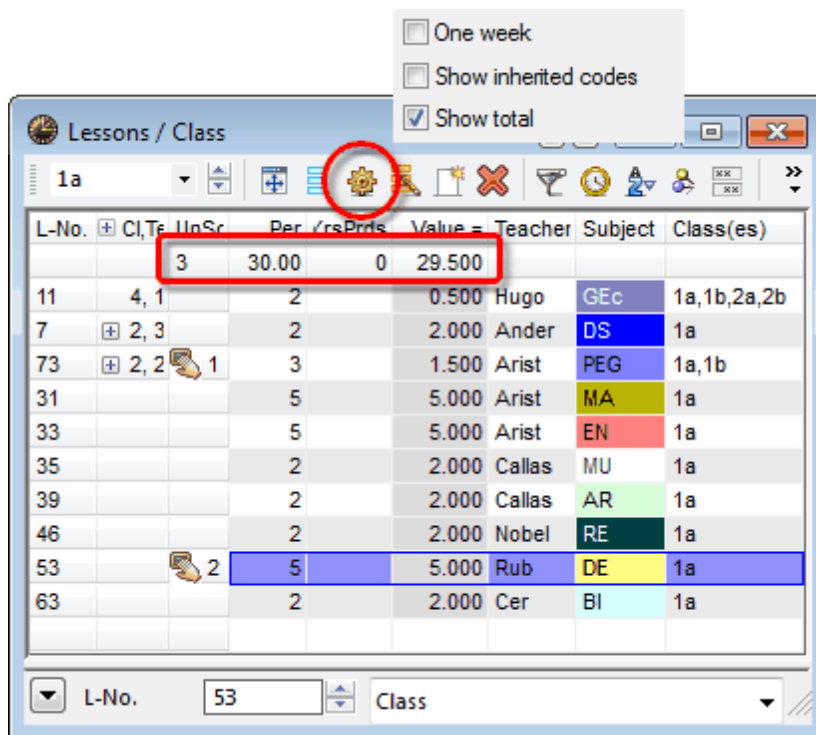


- **One week** - This check box is only activated if you use the Multi-week timetable module. Only those lessons taking place in a specific week will be displayed.



- **Show inherited codes** - This option affects the codes field. Please refer to chapter [Displaying codes](#)

- **Show total** - Use this setting to display a row with totals below the header row in the grid view. The value of individual fields will be totalled for numeric fields.



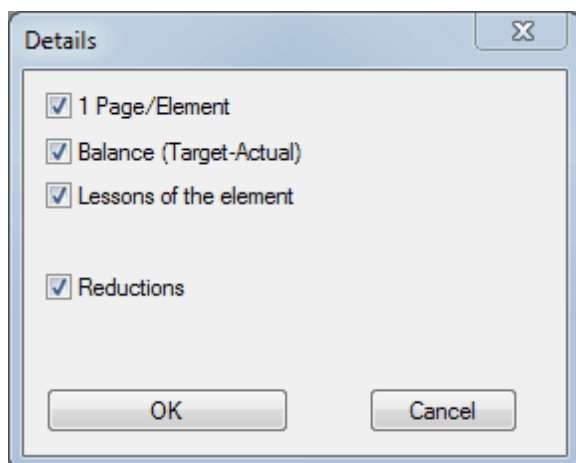
#### Tip: Context menu

You can also display the totals row by right-clicking on the header row.

## 2.6 Printing

The print function in the lesson views works in exactly the same way as the print function in the [master data views](#).

The <Details> window under print selection offers additional settings that are only relevant for lessons.



### 1 Page / Element

This option allows lessons of the various elements ( [Teachers](#) or [classes](#) ) to be printed on separate pages.

### Balance (Target-Actual)

This option prints a balance row. This function is only possible in combination with the module Lesson planning and value calculation .

### Lesson on one line

In the case of [coupled lessons](#) , this option deactivates the printing of rows that are not relevant for the active element.

☐ 1 Page/Element
 ☐ Balance (Target-Actual)
 ☐ Lessons of the element

## Gauss

L-No.	Cl,Te.	UnSc	Per	Yrs	Teacher	Subject	Class(es)
6	3, 7	1			Callas	CH	2a,2b,3a
					Gauss	MA	2a,2b,3a
					Ander	MA	2a,2b,3a
					Rub	EN	2a,2b,3a
					Hugo	EN	2a,2b,3a
					Nobel	DE	2a,2b,3a
					?-1	DE	2a,2b,3a
7	2, 3	2			Ander	DS	1a
					Gauss	DS	1b
					Curie	Tw	1a,1b
1		4			Gauss	MA	3a
3	1, 2	2			Gauss	GA	3a
					Curie	Tw	3a
4	1, 2	2			Gauss	GA	3b
					Curie	Tw	3b
5		2			Gauss	GA	4
82	1, 2	4			Ander	MA	4
					Gauss	MA	4

☐ 1 Page/Element
 ☒ Balance (Target-Actual)
 ☒ Lessons of the element

## Gauss

L-No.	Cl,Te.	UnSc	Per	Yrs	Teacher	Subject	Class(es)
6	3, 7	1			Gauss	MA	2a,2b,3a
7	2, 3	2			Gauss	DS	1b
1		4			Gauss	MA	3a
3	1, 2	2			Gauss	GA	3a
4	1, 2	2			Gauss	GA	3b
5		2			Gauss	GA	4
82	1, 2	4			Gauss	MA	4

**21.000** (Actual+Red.) - **22.000** (Target) = **-1.000**



**Lessons / Class**

L-No.	Cl, Te.	UnSc	Per ds	Teacher	Subject	Text	Class(es)
96			1	Gauss	PH TH	Theory	1a
97			1	New	PH LA	Laboratory	1a

**Lesson sequence**

Lesson sequences:

Lessons:

Display: ☒ Lesson number ☐ Subject ☐ L-No. + Subject

Name	Block	(V)	L-No.	L-No.	L-No.	L-No.	L-No.
G1	2	<input checked="" type="checkbox"/>	96	97			

	Mo	Tu	We	Th	Fr	Sa
1	MA	EN	EN	GEc.	BI	MU
2	RE	MA	PEG.	MA	RE	DE
3	BI	AR	MU	DE	EN	MA
4	PEG.		DE	EN	PEG.	GEc.
5						
6				PH T		
7		DS.		PH L		
8						

**Note: Entering with double-click**

Lesson numbers for lesson sequences can also be entered by double-clicking on the lesson number in question (in the 1st column of the lessons view).

**Variable fixed (subject) sequence**

In the case of a variable fixed subject sequence, the lessons still follow on from each other but their sequence is variable. In the above example, Untis would be able to choose whether to schedule the theory or practical (lab) lesson first.

Name	Block	(V)	L-No.	L-No.
G1	2	<input checked="" type="checkbox"/>	96	97



## 2.7.2 Sequence in a week

The week sequence allows you to specify the order of class lessons during the week. This function is designed for use with lessons with one or two periods per week.

Access ' [Lessons|Lesson sequences](#) ', set the drop-down list at the top right to *Sequence in a week* and enter the lessons that are to be scheduled in sequence.

### Example

The chemistry theory lesson for class 1b is to be scheduled, with the chemistry lab lesson following sometime later in the week.

If a sequence is now entered for the week as shown in the example, Untis will schedule lesson 98 before lesson 99.

The screenshot displays the 'Lessons / Class' window and the 'Lesson sequences' window. The 'Lessons / Class' window shows a list of lessons for class 1b, with lesson 98 (CH TH) and lesson 99 (CH LA) highlighted. The 'Lesson sequences' window shows a sequence of lessons, with lesson 98 followed by lesson 99. A red circle highlights the 'Sequence in a week' button. A calendar view on the right shows the schedule for class 1b, with lesson 98 on Wednesday and lesson 99 on Thursday. A callout bubble points to these lessons, stating: 'First CH TH followed by CH LA later this week.'

A maximum of 3 lesson numbers are possible in the week sequence.

## 2.7.3 Simultaneous lessons

In certain circumstances, for example in combination with the course scheduling module, it may be desirable but not essential to schedule different lessons at the same time. You can define this condition here.

Access ' [Lessons|Lesson sequences](#) ', set the drop-down list at the top right to *Simultaneous lessons* and enter the lessons that are to be scheduled in sequence.

The difference between simultaneous lessons and [coupled lessons](#) is that the optimisation tool is permitted to split simultaneous lessons. Coupled lessons, on the other hand, can never be split.

## 3 Optimisation

### 3.1 Timetable optimisation

The following chapter describes the timetable [optimisation](#) function and the diagnosis tools used before and after an optimisation run.

The program starts with an empty time grid and proceeds to fill the grid with periods. Since this alone would not necessarily produce the best results, the constructed timetable then undergoes a series of specific period swaps to improve the final outcome. In the end, the [weighting settings](#) you have specified will determine the actual quality of the timetable.

### 3.2 Weighting

The weighting function forms the basis of the automated timetable [optimisation](#) tool. Untis offers six levels of importance ranging from 'unimportant' (0) to 'extremely important' (5), which allow you to specify the level of priority given to the individual settings.

**Note:**

Some weighting points only become effective after specific data has been entered in the master data or lesson window (see chapter "Data input"). Other weightings, by contrast, are data independent and affect every optimisation run.

The function "Respect the maximum and minimum number of periods per day for teachers", for instance, is a dependent weighting item since it depends on data entered under "Periods day Min, Max" on the "Timetable" tab under "Master Data | Teachers" (e.g. "2-4"). The weighting determines the level of importance of these settings (i.e. the degree of compliance with the settings). Leaving the field empty means that the weighting has no effect on the optimisation process.

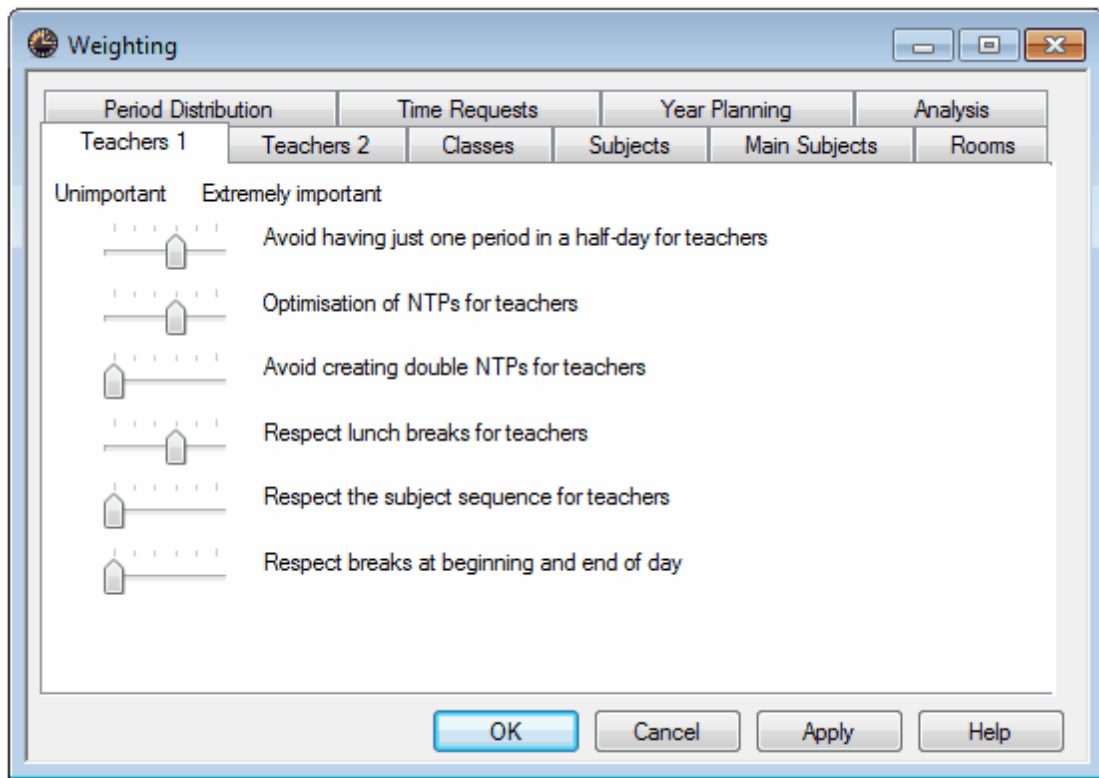
Independent weighting points, by contrast, involve general settings such as "Avoid non-teaching periods (NTPs)" or "Avoid having just one period in a half-day for teachers" since window periods and single periods do not require additional specifications to be entered under [master data](#) or [lessons](#) .

The [weighting settings](#) can be accessed via the menu item "Scheduling | Weighting".

The weighting dialogue that is then displayed contains the different weighting parameters sorted by topic and organised on a number of different tabs. Increase or decrease individual weighting settings by using the slider provided. From left to right, the weighting sliders offer the following 6 levels of importance

- Position 0 - unimportant
- Position 1 - not very important
- Position 2 - fairly important
- Position 3 - important

- Position 4 - very important
- Position 5 - extremely important



The following chapter briefly describes the individual [parameters](#) with reference to the [master data](#) and [lesson](#) data settings relevant for dependent weighting points.

### 3.2.1 Weighting parameters

You can set weighting parameters according to topic on various tabs.

[Teachers 1 tab](#)

[Teachers 2 tab](#)

[Classes tab](#)

[Subjects tab](#)

[Main Subjects tab](#)

[Rooms tab](#)

[Period Distribution tab](#)

[Time Requests tab](#)

[Analysis tab](#)

### 3.2.1.1 Teachers 1 tab

Period Distribution	Time Requests	Year Planning	Analysis
Teachers 1	Teachers 2	Classes	Subjects
		Main Subjects	Rooms

Unimportant      Extremely important

Avoid having just one period in a half-day for teachers

Optimisation of NTPs for teachers

Avoid creating double NTPs for teachers

Respect lunch breaks for teachers

Respect the subject sequence for teachers

Respect breaks at beginning and end of day

#### **Avoid having just one period in a half-day for teachers**

When a teacher teaches in a half day this weighting parameter means that he/she should have more than one period in that time.

#### **Optimisation of NTPs for teachers**

You defined minimum and maximum number of non-teaching periods under "Master Data | Teachers". This setting controls how these values should be respected.

#### **Avoid creating double NTPs for teachers**

Besides controlling individual NTPs, you can give penalty points for any double NTP scheduled by the software during optimisation.

#### **Respect lunch breaks for teachers**

Works in connection with the minimum and maximum values for lunch break entered under "Master Data | Teachers".

#### **Respect the subject sequence for teachers**

Controls the level of importance of the subject sequence codes entered under "Lessons | Teachers" or "Master Data | Subjects". Please refer to chapter "User tips - Subject sequences" for further details.

#### **Respect breaks at beginning and end of day**

**Controls the level of importance of breaks between days entered on the "Timetable" tab under "Master Data | Teachers". Please refer to chapter "Master data properties" for further details on breaks between days.**

### 3.2.1.2 Teachers 2 tab

**Respect the maximum and minimum number of periods per day for teachers** Controls how the maximum and minimum number of periods per day for teachers set under "Master Data | Teachers" will be respected.

**Respect the maximum number of consecutive periods per day** Controls how the maximum number of consecutive periods per day set under "Master Data | Teachers" will be respected.

#### Input block "Periods in last morning slot"

##### *Maximum*

Teachers scheduled to have lessons on the last period of the morning are often at a disadvantage. You can therefore specify the maximum number of last morning periods each teacher should teach.

##### *Weighting*

Indicates the level of importance you attach to this rule.

The weighting for NTPs, lunch break, maximum number of periods per day and maximum periods in sequence for individual teachers can be increased further on the "Timetable" tab under "Master Data | Teachers", .



### 3.2.1.4 Subjects tab

Use these weighting settings to control the level of compliance with the specifications entered for optional subjects and fringe periods (codes (F) and (R) under "Master Data | Subjects" or "Lessons | Subjects". In many cases these are subjects that are not taken by all the students in a class. For this reason they should be scheduled at the beginning/end of a half day in order to avoid non-teaching periods for the other students.

You can define the following rules for optional subjects or fringe periods using the three check boxes:

- 'in the first period', if the first period of the day is to be allowed for scheduling
- 'in the last period', if the last period of the day is to be allowed for scheduling
- 'between morning and afternoon', if the time between the morning and afternoon is to be allowed for scheduling

The only differences between optional subjects and fringe period subjects are the different weighting settings that you specify.

**Note:**

You can of course control the scheduling of fringe period subjects and optional subjects exclusively via the time request function. However, the weighting settings here provide a higher level of flexibility for the optimisation tool.

**Lesson not to be held in fringe period if code = G**

A subject or lesson for which this code is set is not to be scheduled in a fringe period but in the middle of the day.

This weighting setting controls the importance of the checked box

### 3.2.1.5 Main Subjects tab

Period Distribution		Time Requests		Year Planning		Analysis	
Teachers 1	Teachers 2	Classes	Subjects	Main Subjects	Rooms		
<div> <div>Unimportant</div> <div>Extremely important</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> <div>Respect maximum number of main subjects per day for classes</div> </div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> <div>Respect max. no. of consecutive main subj. periods for classes</div>							

Weighting for the boundary period

4

Boundary period for the following aspects

Main subjects max. once after boundary period

Main subject at least once up to boundary period.

Main subjects are defined as such under "Master Data | Subjects" .

#### **Respect maximum number of main subjects per day for classes**

Controls the level of compliance with the maximum number of main subjects per day entered on the "Timetable" tab or in the grid view under ["Master Data | Classes"](#) .

#### **Respect max. no. of consecutive main subject periods for classes**

You can specify the number of main subjects that may be scheduled in sequence for a class on the "Timetable" tab or in the grid view under ["Master Data | Classes"](#) . Use this setting to control the importance of this parameter.

#### **Input block 'Weighting for the boundary period'**

*Boundary period for the following aspects*

Use this input field to specify any boundary period desired.

#### *Main subjects max. once after boundary period*




Controls the priority with which a main subject is to be scheduled once per week after the boundary period.

#### *Main subject at least once up to boundary period*

Controls the priority with which a main subject is to be scheduled once per week prior to or in the boundary period.



### 3.2.1.6 Rooms tab

Period Distribution		Time Requests		Year Planning		Analysis	
Teachers 1	Teachers 2	Classes	Subjects	Main Subjects	Rooms		
Unimportant		Extremely important					
		Optimisation of room allocation					
		Optimisation of the off-site rooms					
		Take room capacity into consideration					

#### Optimisation of room allocation

Use the "Room weighting" tab under "Master Data | Rooms" to specify how important the room is for the lesson. A room with no special equipment can easily be substituted with another room (a value of 0) while sport only makes sense when the gym is free at the time in questions (a value of 4).

The 'Optimisation of room allocation' weighting setting allows you to control the importance of the room weighting.

#### Caution:

If the slider control for this weighting setting is on position 5 ('extremely important') or 4 ('very important'), and if the room weighting for the subject room is 4, a period cannot be scheduled if there is no suitable subject room available.








#### Optimisation of the off-site rooms

Controls the level of compliance with the specified walking times required to reach off-site buildings (external sites). (Please refer to chapter ["User tips | Off-site rooms"](#) for further details.)

#### Take room capacity into consideration

The optimisation tool and the room optimisation function generally attempt to allocate a room with a [room capacity](#) appropriate for the number of students in the lesson. If this presents a problem, the program searches for a room that is slightly larger than required. In extreme cases, the software may allocate a room that is slightly smaller than required.

### 3.2.1.7 Period Distribution tab

Teachers 1	Teachers 2	Classes	Subjects	Main Subjects	Rooms
Period Distribution		Time Requests		Year Planning	Analysis
<div> <div>Unimportant</div> <div>Extremely important</div> </div> <div>  <div>The same subject cannot be taught more than once on the same day</div> </div> <div>  <div>Avoid errors with double periods</div> </div> <div>  <div>2 periods/week - subjects not on consecutive days</div> </div> <div>  <div>3 periods/week - subjects not on consecutive days</div> </div> <div>  <div>Even distribution of periods of a subject across the day</div> </div> <div>  <div>Try to place the same lesson at the same time on different days</div> </div> <div>  <div>Large blocks in fringe periods on half-days</div> </div>					

#### **The same subject cannot be taught more than once on the same day**

A subject may only be scheduled once per day (even when it occurs in various coupled lessons).

#### **Avoid errors with double periods**

There are two types of double period errors in Untis: the breaking up of intended double periods and the "chance" creation of unintended double periods when the same subject is scheduled in consecutive periods. The [optimisation tool](#) assigns a higher priority to the preservation of desired double periods.

This weighting setting is connected with codes "(2) More than once a day" and "(D) Respect double periods". You can find these settings in the master data and the lesson windows. The two codes are mutually exclusive.

The code "(2)" sets the weighting for 'Avoid errors with double periods' to 0 ('unimportant') while the code "(D)" boosts its importance. This boost may go so far as to prevent a lesson from being scheduled if the double period condition cannot be respected.

When you set the weighting for "Avoid errors with double periods" to 5 (extremely important), the optimisation tool rates the importance of the double period condition very high right from the very beginning of the optimisation run and even increases the importance during the run so that at the end of the optimisation process all lessons are treated automatically as if the lessons had been set with the code "(D) Respect double periods".

#### **Caution:**

You should only use flag '(D)' explicitly in exceptional cases or not at all. Excessive use will impair optimisation results.

#### **2 periods/week - subjects not on consecutive days**

This weighting factor refers to lessons with 2-period blocks (single, double or block periods) and is intended to ensure that lessons are distributed evenly over the week. A high weighting factor prevents

the periods being held on consecutive days. It also prevents a block from being scheduled with one lesson on the last day of the week and the other on the first day of the week.

### 3 periods/week - subjects not on consecutive days

This weighting applies in the same way as the previous one, but for 3-period blocks.

### Even distribution of periods of a subject across the day

If, for example, a class has a subject in the third period on Mondays, the third period should be avoided on other days of the week. This weighting setting controls the importance of the rule.

### Try to place the same lesson at the same time on different days

If, for example, a class has a subject in the third period on Mondays, the third period on other days should also be selected for this subject. This weighting setting controls the importance of the rule.

### Large blocks in fringe periods on half-days

It is often desirable to schedule block periods at the beginning or end of a half-day for a variety of reasons. For example, a half-day consisting of 6 periods can accommodate 2 blocks of 3 periods each.. On the other hand if a block of periods is slightly shorter than the sum of the single periods (for instance, because there are no breaks between periods), students will be able to leave school early or start school later than the normal start time.

#### 3.2.1.8 Time Requests tab

Time Requests tab

The screenshot shows the 'Time Requests' tab in a scheduling application. The interface includes a toolbar with tabs for 'Teachers 1', 'Teachers 2', 'Classes', 'Subjects', 'Main Subjects', and 'Rooms'. Below the toolbar, there are sub-tabs: 'Period Distribution', 'Time Requests' (which is selected), 'Year Planning', and 'Analysis'. The main content area contains five sliders, each with a 'Unimportant' label on the left and an 'Extremely important' label on the right. The sliders are for: 'Time requests for teachers', 'Time requests for classes', 'Time requests for subjects', 'Time requests for rooms', and 'Time requests for lesson periods'. Each slider has a small house icon indicating the current setting.

You can enter time requests in the master data or in lessons windows by clicking on the corresponding button in the toolbar. Please refer to chapter ["User tips | Time requests"](#) for further details.

#### Time requests for teachers

Controls compliance with time requests specified under ["Master Data | Teachers"](#).

#### Time requests for classes

Controls compliance with time requests specified under ["Master Data | Classes"](#).

**Time requests for subjects**

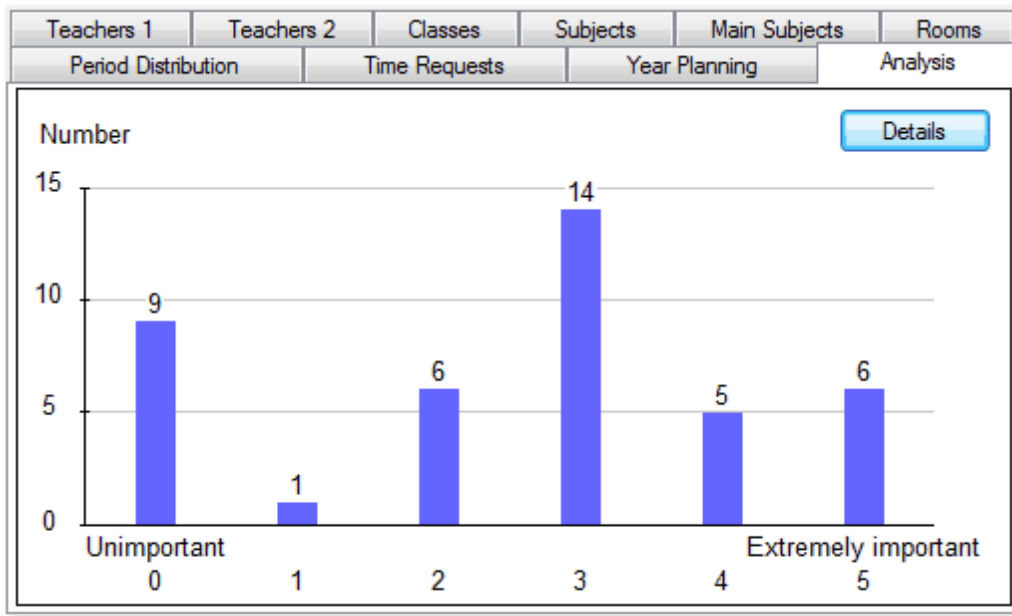
Controls compliance with time requests specified under "[Master Data | Subjects](#)".

**Time requests for rooms**

Controls compliance with time requests specified under "[Master Data | Rooms](#)".

**Time requests for lesson periods**

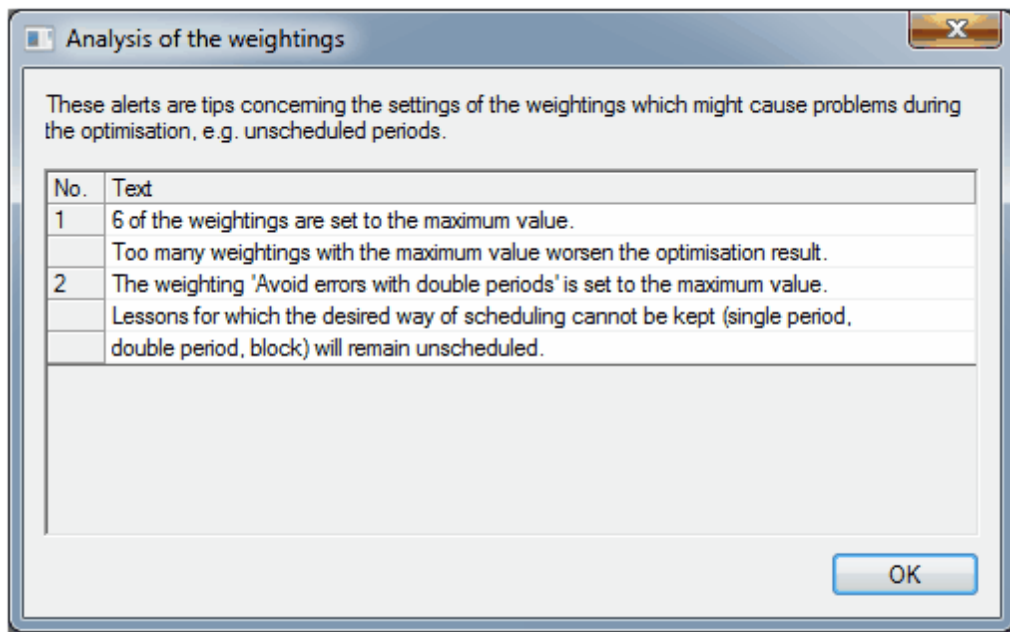
Controls [time requests](#) specified under lessons.

**3.2.1.9 Analysis tab**

A well-balanced distribution of the weightings is the prerequisite for a good optimisation result. The Analysis tab offers an overview of the frequency of the different individual weighting levels given.

In the example about six [weighting parameters](#) have been set to the highest weighting level 5 (extremely important).

You can display more information about possible problems due to the distribution of the weighting parameters by clicking on <Details>.



### 3.2.2 General notes

If you have not worked with setting [weighting parameters](#) before, we would suggest you proceed as follows:

First, familiarise yourself with all the weighting parameters and their functions.

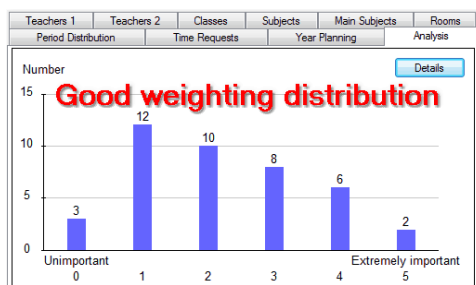
Move the slide controls for all the attributes that **do not apply to your school under any circumstances** to the very left (position 0 = 'unimportant'). This might be the case for example for "Optimisation of the off-site rooms" if your school has no off-site rooms.

**Note:**

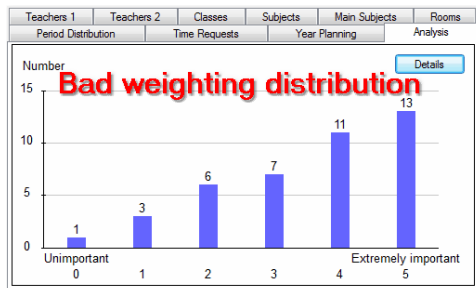
If in doubt about the relative importance of an attribute, set the slide control to position 1 ('not very important') instead of 0.

Next, adjust the remaining slide controls in order of increasing importance from 'not very important' to 'extremely important'.

Keep an eye on the frequency with which you assign the different levels of importance. We recommend that you assign higher weightings less frequently, as illustrated in the diagram.



You should never end up with a distribution where the majority of weightings are set to 0 or 1 (unimportant/not very important) or to 5 (extremely important). It is also undesirable if frequency increases with increasing weighting importance.



**Caution:**

The difference between the weighting level 4 and 5 is much higher than between 3 and 4. If you have selected too many settings of "extremely important", the optimisation tool will be restricted to the extent that it can only schedule a fraction of the periods. For this reason on set parameters to level 5 if it is absolutely necessary

### 3.3 Optimisation

#### 3.3.1 Control data for optimisation

The optimisation dialogue is accessed via the menu item "Scheduling | Optimisation". The following section describes the individual input fields in this window.

**Control Data for Optimisation**

Optimisation Run

Optimisation strategy (A,B, ...)

A - fast optimisation

3 Optimisation series: No. of TTs (1-20)

2 Optimisation level (1-9)

Teacher assignment during optimisation

☐ No optimisation of teach. assign.

☐ No swap with other subjects

☐ Swap only less. with equal periods

☐ Swap only within one class level

Re-assign original teachers

OK Cancel

☐ % of periods to be scheduled (blank=100%), then STOP

4 Similarity to previous TT: 0=not similar..., 4=very similar

☐ Lock timetable conditionally

☐ Only requested days off for tea.

☒ Consider room capacity

☐ Off site buildings by the half day

For strategy D:

5 Increment percentage

☐ With pre-optimisation

10% Double periods

☐ Special 'double periods'-optimisation

### 3.3.1.1 Optimisation process

You have a choice of different strategies and optimisation depths for the optimisation run.

[Strategy A - fast optimisation](#)

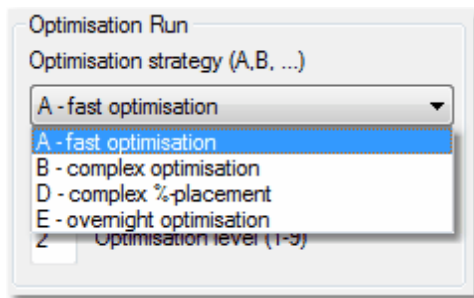
[Strategy B - complex optimisation](#)

[Strategy D - complex %-placement](#)

[Strategy E - overnight optimisation](#)

#### 3.3.1.1.1 Optimisation strategy (A, B, D, E)

Untis offers four different strategies for the creation of your timetable. These strategies offer different levels of complexity, with strategy A representing the lowest and strategy E the highest level of complexity. As a general rule, the more complex the optimisation strategy, the better the result, but the longer it takes the software to compute the result. The differences between the individual strategies are described in detail later.



### [Strategy A - fast optimisation](#)

### [Strategy B - complex optimisation](#)

### [Strategy D - complex %-placement](#)

### [Strategy E - overnight optimisation](#)

#### 3.3.1.1.2 Optimisation series: No. of TTs (1-20)

Use this option to specify how many different timetables you wish the software to create per series. If the option 'Save the results of the optimisation in work files' on the 'Auto-save' tab under "Settings | Miscellaneous" is activated, each timetable will be saved in a dedicated file (work x .gpn where x is the number of the file) in the active Untis directory. (However, it is advisable, to enter a dedicated path for these *work files* on the "Directories" tab under "Settings | Miscellaneous".) Depending on the selected [optimisation strategy](#), the program will carry out further optimisation runs on the timetables.

#### 3.3.1.1.3 Optimisation level (1-9)

This function allows you to specify the extent of the software's "pre-calculation function" for each [optimisation run](#). Like a chess game program, Untis calculates before each "move" (i.e. before each placement of a lesson) how the move will affect the situation as a whole. As a general rule, the longer it takes the computer to arrive at a result, the better the final outcome. In the early stages of creating a timetable, however, long optimisation runs are often counter-productive since initial results often indicate that certain changes need to be made to the input data.

#### 3.3.1.1.4 % of periods to be scheduled

This option allows you to specify the percentage of periods at your school you wish the software to schedule. Leaving the field empty means that the [optimisation](#) tool will attempt to schedule all the available periods.



**Tip:**

The percentage refers to the periods of the entire school. So if you specify 10% of a total of 1,000 lessons then Untis will select those 100 lessons that are regarded as to be the most difficult ones. This is useful way of finding out quickly which lessons the algorithm considers difficult to schedule.

## 3.3.1.1.5 Similarity to previous TT

This field allows you to specify if and how much the next timetable should resemble the previously created timetable. Input options range from 0 (no similarity) to 4 (high similarity). the new timetable always reflects the modifications you make in the [scheduling dialogue](#) between optimisation runs. Leaving this field empty equals a value of 0 (no similarity).

## 3.3.1.1.6 Lock timetable conditionally

If you lock created timetable conditionally, the next optimisation run will skip the placement run and only carry out a swap run. This means that the resulting timetable will be very similar to the previous one. This constitutes an even higher level of similarity than the highest similarity setting (4 = great similarity) in the function described above.

When you combine the two functions described above by ticking the box "Lock timetable conditionally" and increasing the percentage under "% of periods to be scheduled", the software proceeds by first locking the previous timetable, then scheduling the remaining periods and finally carrying out a swap optimisation run for all the periods

## 3.3.1.1.7 Only requested days off for teachers

Activate this option to instruct the software to schedule only the free days specified under time requests for teachers (and no additional days).

#### 3.3.1.1.8 Consider room capacity

Activate this function to instruct the optimisation tool to compare the specified [room capacity](#) with the number of students in a class or lesson and allocate rooms accordingly.

#### 3.3.1.1.9 Off site buildings by the half day

This option is only active if you have entered off-site codes in "Master Data | Rooms". The algorithm tries to avoid classes and teachers having to move from one site to another during one half-day.

#### 3.3.1.1.10 Increment percentage

This field is relevant only with strategy [D](#) and is discussed in the relevant chapter.

#### 3.3.1.1.11 Special optimisation for double periods

You can check this option when at least 80 % of the lessons you have entered are to be scheduled as double periods. Special importance is then attached to scheduling double periods in subsequent optimisation.

Internally, this process halves the time grid and the number of periods for the lessons meaning that only single and half periods need to be scheduled during the run.

#### **Caution:**

Please ensure that there is an even number of periods defined in the morning in the time grid. If the time grid has a total of 10 periods per day, only 4 or 6 periods should be declared for the morning, and not 5.

### 3.3.1.2 Teacher assignment during optimisation

When the software encounters bottlenecks during the optimisation run (see also chapter ["CCC analysis"](#)), the program attempts to bypass them by swapping teachers. If the software finds a suitable teacher and if a swap with this teacher would improve the quality of the timetable, the program automatically proceeds with the swap during the optimisation run.

The module *Lesson Planning* offers an extended version of this function.

Automated teacher swaps can only be carried out when at least one of the following two conditions can be met:

- The code ["\(V\) Variable teacher"](#) is active for some lessons;
- The function ["? teachers"](#) is active for some lessons (for use with the module 'Lesson Planning and Value Calculation')

#### 3.3.1.2.1 (V) Variable teacher

A teacher may only be swapped if the code "(V) Variable teacher" has been activated. You can find this option on the ["Codes"](#) tab under "Lessons | Teachers". A teacher who is the cause of an optimisation bottleneck and for whom the code (V) is active may be replaced with another teacher.

☐ (R) Place in a fringe period  
☐ (S) Schedule class group later  
☐ (2) Subject more than once/day  
☒ (V) Variable teacher  
☐ (L) Not in legend  
☐ (U) p.m. only double periods  
☐ (M) Schedule manually

As a rule, the code (V) applies to *all* the teachers of a lesson. Check the option "Teacher allocation locked" in the appropriate row in the lesson details window (under "Lessons | Teachers") if an individual teacher involved in the lesson is not to be swapped under any circumstances. This deactivates the code (V) *for this particular teacher* in this coupled lesson (see example).

Lessons / Teacher										
L-No.	CI,Te	UnSc	Per	rsPrds	Teacher	Subject	Class(es)	Subject room	Home room	Double pers.
43	2, 2		2		Ander	MU	3a,3b		Ps1	1-1
					Callas	AR	3a,3b		R3a	
81	2, 2		2		Ander	DS	2b,2a	WS	R2a	1-1
79	2, 2		2		Ander	DS	3a,3b	WS	R3a	1-1
28			1		Ander	HI	1b		R1b	

### 3.3.1.2.2 ? - teacher

For use with the "Lesson Planning" module. This function enables the software to search for a suitably qualified teacher for the lessons for which this function is active.

L-No.	CI,Te	UnSc	Per	rsPrds	Teacher	Subject	Class(es)	Subject room	Home room	Double per	Block
11	4, 1		2		Hugo	GEc	1a,1b,2a,2b		R1a		
7	2, 3		2		?	DS	1a	WS	R1a	1-1	
73	2, 2		3		Arist	PEG	1a,1b	SH2	R1a		
31			5		Arist	MA	1a		R1a		
33			5		Arist	EN	1a		R1a		

### 3.3.1.2.3 Settings

The automated teacher swap function is controlled via the optimisation dialogue. The following settings are available:

Teacher assignment during optimisation

☐ No optimisation of teach. assign.

☐ No swap with other subjects

☐ Swap only less. with equal periods

☐ Swap only within one class level

Re-assign original teachers

### No optimisation of teacher assignment

Checking this box deactivates the teacher swap function. All "(V) Variable teacher" codes will be ignored.

The following two input options are only available for use with the "Lesson Planning" module.

### No swap with other subjects

Teachers can only be swapped between lessons of the same subject.

### Swap only lessons with equal periods

Teachers can only be swapped between lessons with the same number of periods.

### Swap only within one class level

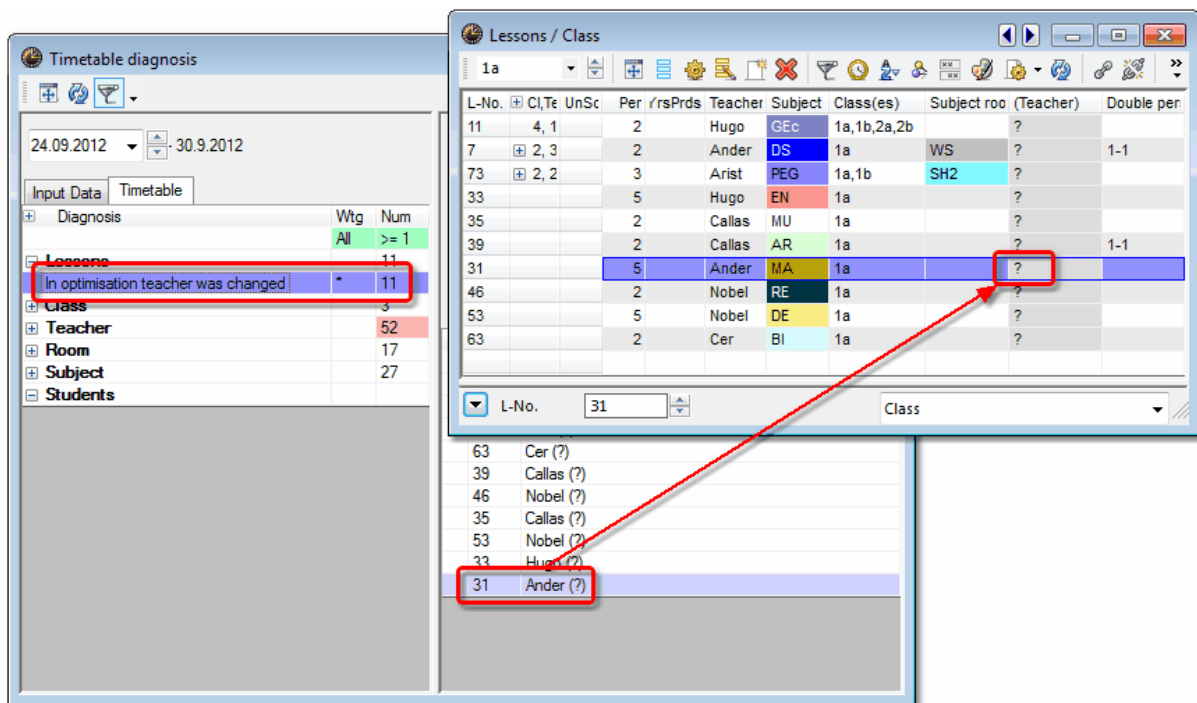
If this option is activated, lessons can only be swapped between variable teachers when the classes involved in the lessons are at the same level (in the same year/grade).

#### 3.3.1.2.4 Re-assign original teachers

Press this button to delete all teacher swaps carried out in previous optimisation runs. This means that each subject will again be taught by the teacher originally assigned to the lesson under "Lesson | Teachers"

After a successful teacher swap, a display of all swapped and originally assigned teachers can be viewed with the diagnosis function ( ["Scheduling | Diagnosis"](#) ). The figure shows a situation where teacher 'Arist' has been replaced by teacher 'Gauss' for lesson 79.

The lesson details window displays the current and the replaced teacher (see figure).



### 3.3.1.2.5 Teacher optimisation code

With the teacher optimisation code, the Lesson Planning module offers a further method of limiting swaps with variable teachers.

You can find the code in "Master Data | Teachers" and in the lesson windows. The codes in these two types of windows are independent of each other.

The codes can be used to select a pool of lessons or teachers in which swaps are possible. Identical codes mean that the teachers of the marked lessons can be swapped.

You can assign the codes 1-9 and A-Z. The codes are always an additional limitation. For instance, if you have activated the option "Swap only within one class level" and you have entered the code 1 for the teachers Gauss and Newton then swaps of Newton's lessons are only possible with lessons of Gauss in the same class level.

Name	Surname	Room	NTPs	Periods/c	Lunch br	TeOptCo
Gaus	Gauss	0-3	2-6	1-2	1	1
New	Newton	0-1	4-6	1-2	1	1
Hugo	Hugo	0-1	4-7	1-2		
Ande	Andersen	0-1	4-6	1-3		
Arist	Aristotle	0-1	4-6	1-2		
Callas	Callas	0-1	4-6	1-2		
Nobel	Nobel	0-1	4-6	1-2		
Rub	Rubens	0-1	4-7	1-3		
Cer	Cervantes	0-1	4-7	1-2		
Curie	Curie	0-1	4-7	1-3		

### 3.3.2 Strategies

Untis provides four different optimisation strategies for the creation of your timetable:

[Strategy A - fast optimisation](#)

[Strategy B - complex optimisation](#)

[Strategy D - complex %-placement](#)

[Strategy E - overnight optimisation](#)

#### 3.3.2.1 Strategy A - fast optimisation

This is the fastest optimisation variant. It does not return the best results but is ideally suited to discovering errors in the input data. For this reason, use this strategy at the start of scheduling until major data errors in master data and lessons have been remedied.

**Tip:**

Errors in input data prevent good optimisation results. Work with strategy A and with the input data under 'Diagnosis' in order to find errors.

#### 3.3.2.2 Strategy B - Intensive optimisation

Strategy B - complex optimisation This strategy returns very good results and does not take too long. Run this variant after running strategy A and look at the results. If necessary, adjust the weighting slide controls if the timetables do not match your expectations.

**Tip: Developing weighting parameters**

There is an enormous difference between weighting values of 4 and 5. A weighting value of 5 will impair the result even though a value of 4 would be sufficient. For this reason you are recommended to set the

slide controls to a maximum of 4 and only to change individual controls to 5 if the timetables generated do not match your expectations.

### 3.3.2.3 Strategy D - complex %-placement

Depending on the school strategies D or B may return better results. However, since strategy D takes considerably longer to run, you should not invoke it until you have developed weighting parameters using strategy B. In this variant the algorithm proceeds step by step, i.e. does not process all lessons in one go. For this reason you must enter the start and incremental percentage in the optimisation dialogue.

**Tip: Start and incremental percentage**

We recommend a starting percentage value of 30% and incremental percentage value of 20%.

### 3.3.2.4 Strategy E - overnight optimisation

As the name implies, this strategy can take a long time to run, but in most cases returns the best results.

Use it at the very end of optimisation, i.e. after using the other strategies. How long this optimisation takes to run depends very much on the size of the school, the number of timetables to be computed, the optimisation steps per timetable and on how powerful the computer is that you are using. It can therefore very well take the whole night to run.

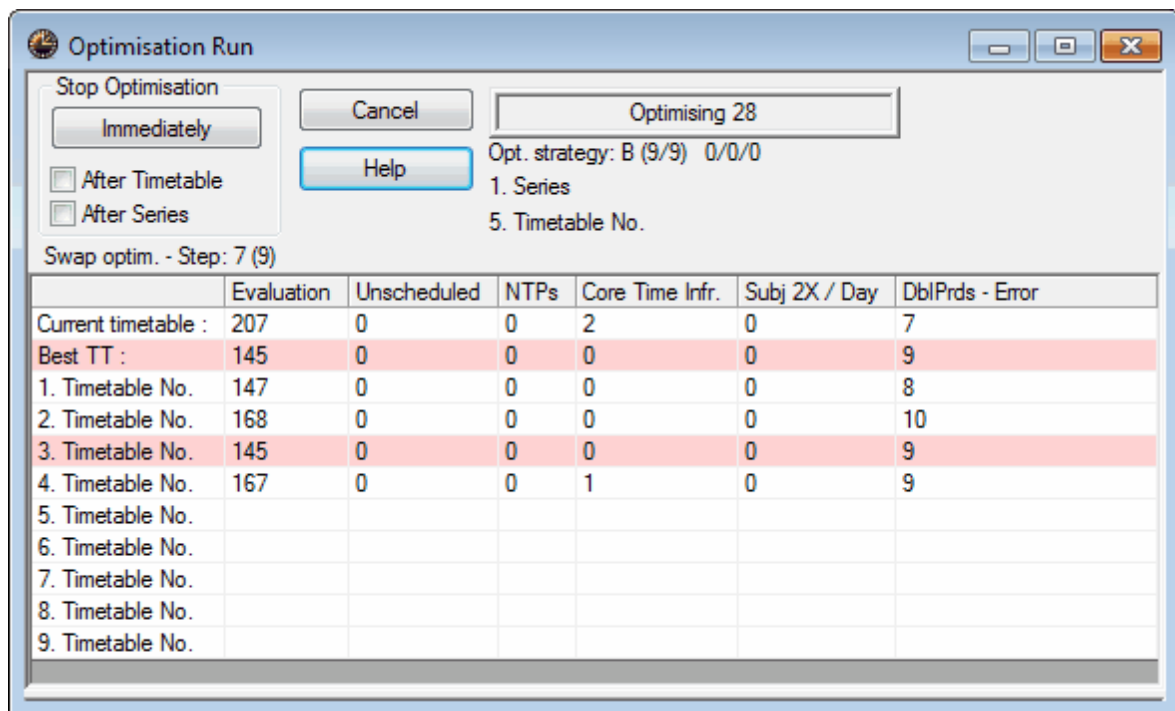
## 3.3.3 The accompanying window

Start the [optimisation](#) process by opening the optimisation dialogue under "Scheduling | Optimisation", entering the desired settings and clicking on <OK>.

If the data analysis window appears, check the displayed messages and/or rectify the displayed errors and click on <OK>

An accompanying window appears which consists of two panes. The upper part of the window is the information window containing functions for the management of the optimisation process (pause, cancel etc.).

The window also provides a continuous display of key data of the current optimisation run: an evaluation of the current timetable (penalty points), the number of unscheduled periods, window periods (for classes) and core time infringements (these are periods with a time request of +3 that the software is unable to fill for some reason). The windows also shows how often double-period conditions were infringed and how often a subject was scheduled twice on the same day for a particular class. These data provide a first, rough impression of the quality of the timetable being created. The tools for more detailed diagnostic runs are described in chapter ["Diagnostics tools"](#) below.



When the yellow-blue <OK> button appears on the screen, the optimisation run is complete.

**Note:**

Each timetable is evaluated ('Evaluation' column). The lower the number of point for a timetable, the better it is. The number of points depends on the quantity of data and on the weighting settings. It therefore makes no sense to compare the number of points at your school with those of a neighbouring school.

### 3.3.4 Viewing optimisation results

When the [optimisation](#) is completed the best result is loaded. Via the optimisation window you can switch to other timetables, too. Click on the relevant line in the upper section of the window.

>Every individual timetable can be stored as a separate file (work1.gpn to work *n* .gpn) by selecting the option "Save the results of the optimisation in work files" on tab "Auto-save" under "Settings | Miscellaneous". This gives you the possibility to load, view and analyse all the results at any time.

After clicking on the yellow-blue <OK> button to confirm, the individual results can be loaded with via the work.gpn files or via menu item "Scheduling | Optimised timetables". The latter option is only available in the Untis session in which optimisation was launched, i.e. the option will be greyed out if the application was closed and reopened.



**Optimisation Run**

Optimised schedules 09

Opt. strategy: A (9/9) 0/0/0

1. Series

	Evaluation	Unscheduled	NTPs	Core Time Infr.	Subj 2X / Day	DblPrds - Error
Best TT	152	0	0	1	0	5
Timetable 2	157	0	0	0	1	9
Timetable 3	159	0	0	1	0	8
Timetable 4	162	0	0	1	0	8
Timetable 5	165	0	0	2	0	5
Timetable 6	171	0	0	1	0	8
7	181	0	0	1	0	9
8	204	0	0	2	0	9
9	218	0	0	2	0	10

**1a - Class 1a (Gauss) Tim**

Time range

	Mo	Tu	We	Th	Fr	Sa
1	MA	MA	EN	DE	MA	EN
2	RE	EN	PEG	GEc	RE	BI
3	BI	AR	MA	MA	EN	MU
4	PEG		MU	EN	DE	GEc
5	DE	DE			PEG	DE
6						
7						
8						

**1a - Class 1a (Gauss) Tim**

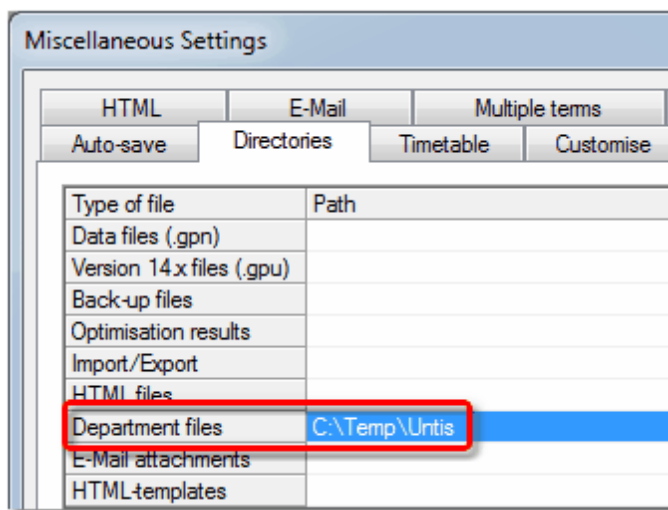
Time range

	Mo	Tu	We	Th	Fr	Sa
1	EN	MA		GEc	MA	EN
2	DE	EN	PEG	DE	RE	DE
3	RE	AR	MA	EN	EN	MA
4	PEG		MU	MA	DE	GEc
5	BI				BI	MU
6		DE				
7		DS				
8					PEG	

**Click**

**Tip:**

You can change the directory of the work.gpn files by entering a path in the "Optimisation results" field on the "Directories" tab under "Settings | Miscellaneous".



### 3.4 Diagnostics tools

The master and lesson data of your school contain a vast store of information and it is often difficult to keep track of the amount of data. This means that it is easy for inaccuracies, mistakes and errors to creep in when entering or modifying data. Searching for these inaccuracies and errors is a cumbersome but necessary task for which Untis provides a number of aids.

This chapter not only deals with errors, but also with so-called "input weaknesses". Input weaknesses are data that, while not technically wrong, can cause inferior or unexpected results.

#### [Percentage planning](#)

#### [Diagnosis](#)

#### [Overall diagnosis](#)

#### 3.4.1 Percentage planning

After finishing your data entry, you should initially carry out a percentage planning run (e.g. at 30%) to identify lessons that the Untis software categorises as "difficult". As a rule, the program attempts to place such lessons as quickly as possible to prevent them from causing an obstruction later during the process.

##### **Note:**

The "difficulty" of a lesson is determined by the number of unavailable lesson elements, the number of element couplings and the size of the lesson block.

If Untis encounters problems during the scheduling of the very first 30% of periods and if this very first [optimisation run](#) is unable to schedule certain periods, the first thing to do is to increase the number of timetables to be created and the number of optimisation steps. If this fails to bring about improvements, the input data should be examined for errors.

##### 3.4.1.1 Example

Errors and input weaknesses are described in greater detail below. The following example provides a brief introduction to the percentage planning function.

1. Open the file *demo.gpn*.
2. Delete all timetables via the menu item "Scheduling | Delete the complete timetable".
3. An information window appears. Click on <OK>.
4. Carry out a timetable [optimisation run](#) (via "Scheduling | Optimisation"), entering value of 30 in the field "% of periods to be scheduled".
5. Display the timetable for class 1a ("Timetable | Classes").

The timetable for class 1a should correspond approximately to the timetable shown in the figure. There may be slight variations in display depending on the software version you are using.

As mentioned before, the percentage applies to the entire school and not to individual classes. The example shows that fewer than 30% of the periods for class 1a have been scheduled but proportionately more for the other classes. This indicates that this class has fewer difficult lessons than the other classes.

Click on the subject "Design".

The screenshot shows a software window titled "1a - Class 1a (Gauss) Time". It features a toolbar with various icons, a dropdown menu set to "1a", and a "Time range" field. Below this is a grid representing the timetable. The grid has 8 rows (periods) and 7 columns (days: Mo, Tu, We, Th, Fr, Sa). The cells contain lesson abbreviations: AR (Monday, period 8), PEG. (Tuesday, period 3; Wednesday, period 2; Thursday, period 3), GEC. (Wednesday, period 4; Friday, period 4), and DS. (Friday, period 6). A yellow border highlights the cell for Friday, period 6 (DS.). Below the grid is a table with 4 columns: L-No., Tea. Subj. Rm., and Cla. (Class).

L-No.	Tea. Subj. Rm.	Cla.
7	Ander, DS, WS	1a
	Gauss, DS, WS	1b
	Curie, TX, TW	1a, 1b

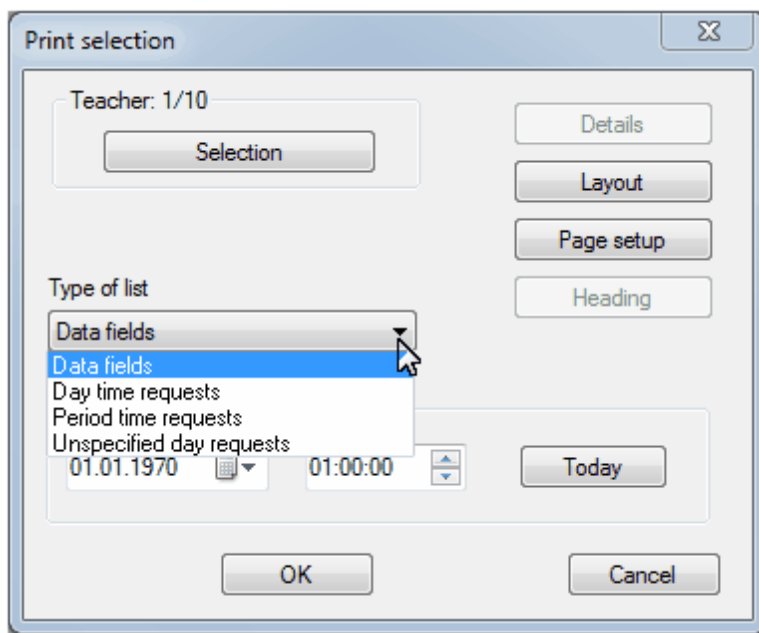
The period details window shows that the subject Design is difficult to schedule because three teachers are involved in the lesson (Andersen, Gauss and Curie) and two rooms are required (the workroom and the textiles workroom). Furthermore, another class (1b) takes part in the lesson. If Untis attempted to schedule this lesson towards the end of the optimisation run, the software would find it much more difficult to find a slot on the timetable that would suit all teachers, rooms and classes involved in the lesson.

As already mentioned, you can assume that inaccuracies and errors during data input are to blame when the percentage planning function is unable to schedule periods.

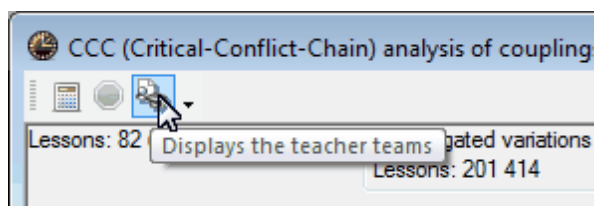
### 3.4.2 Time requests

[Time requests](#) are another frequent reason why the software may find it difficult to construct the perfect timetable. A number of predefined lists can help you search for input weaknesses and errors caused by time requests. Most of these lists can be accessed by clicking on <Print> or <Print Preview> in the master data or lesson windows.

Under "Print selection", a number of different types of lists are available (e.g. time requests, day requests, etc.).



The following example is based on the conflicting period requests of a teacher team. If you have the module Lesson Planning select "Teacher teams" as type of list in "Master Data | Teachers" . If not, you can obtain this list by using the toolbar button <Display the teacher teams> under "Scheduling | CCC-Analysis | Diagnostics tools", .



The example shows that the only day not blocked for any of the teachers involved is Thursday.

**1 Teacher team**

Name	Mo	1	2	3	4	5	6	7	8	Tu	1	2	3	4	5	6	7	8	We	1	2	3	4	5	6	7	8	Th	1	2	3	4	5	6	7	8	Fr	1	2	3	4	5	6	7	8
Callas																																					-	-	-	-	-	-	-	-	-
Gauss	3	3	3	3	3	3	3	3	3																												3	3	3	3	3	3	3	3	3
Ander	2	2	2	2	2	2	2	2	2																																				
Rub																			3	3	3	3	3	3	3	3	3																		
Hugo																																					+	+	+						
Nobel										3	3	3	3	3	3	3	3	3	+	+	+	+	+	+	+	+	+										-	-	-	+	+	+	+	+	+
?-1																			2	2	2	2	2	2	2	2	2										3	3	3	2	2	2	2	2	2

A lesson consisting of three single periods could not be scheduled for this teacher team without violating a block (something the optimisation tool would never do) or the single period condition (something the optimisation tool might do, depending on your weighting settings for conditions such as "Avoid errors with double period"). Please refer to chapter ["User tips | Teacher teams"](#) for further information on teacher teams.

### 3.4.3 Options

Options An important point is the distinction between " *must* " and " *can* ".

An entry of "2-2" for a 4-period lesson in the 'double period' field **forces** Untis to schedule two double periods. An entry of "1-2" allows the algorithm to decide whether two of the four periods should be scheduled as two single or one double period. The more freedom the optimisation process has, the better the results will be.

### 3.4.4 Locked periods

Locked periods furthermore, try not to restrict the [optimisation](#) tool by scheduling a large number of lessons manually. Reconsider if some periods really need to be scheduled manually (see also chapter ["Manual timetabling"](#)).

### 3.4.5 Weightings

When the software is unable to schedule large numbers of periods, it makes sense to call up the [weighting dialogue](#) again and to determine if the setting "extremely important" (5) is appropriate in all of the cases. It is often sufficient to reduce the setting of one or two items by one level to "very important" (4) in order to resolve a problem, (see also chapter ["General notes"](#) under "Weighting" above).

Increase the [percentage](#) of the periods to be scheduled step by step until you are certain that all the input weaknesses have been resolved.

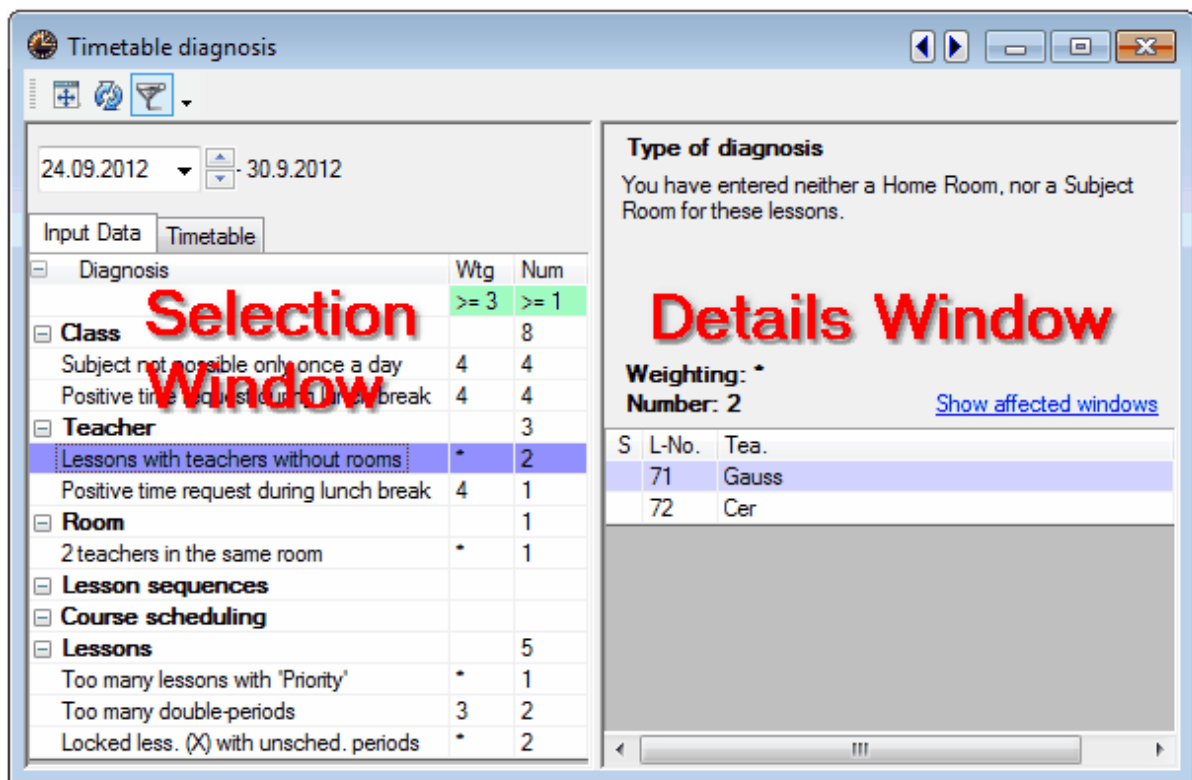
Use the more complex [optimisation strategies](#) only when you are certain that all entries are correct.

Important aids for identifying and locating input errors as well as violations of conditions are the ["Diagnosis"](#) and ["Overall Diagnosis"](#) tools. These are described in the following chapter.

### 3.4.6 Diagnosis

After optimising your timetable, you can analyze the results with the diagnosis function of the Untis software using a number of different criteria.

Access the diagnosis window via the menu item "Scheduling | Diagnosis". The window is divided into two sections – the [selection window](#) on the left and the [details window](#) on the right..



#### 3.4.6.1 Selection window

Selection window The selection window consists of two sections:

- Possible problems with input data

- Infringements in the timetable

You can switch between the two halves of the window using the two tabs in the upper section of the window. Both sections are arranged under headings that group the individual diagnosis items into different categories. The total number of infringements for each topic is displayed on the right. A number on a red background indicates that there is at least one serious (highly weighted) problem. As with Windows Explorer, you can expand the topics by clicking on individual '+' symbols.

The weighting for each diagnosis item is displayed in the 'Wtg' column. The figure shows that the diagnosis topic 'Subj 1/day imposs.' was given a weighting of 5. The weightings themselves are managed in the [Weighting dialogue](#). Those diagnosis items displaying a '\*' in the 'Wtg' column cannot be weighted. The 'Num' column displays how many infringements there are for the corresponding diagnosis item.

Diagnosis	Wtg	Num
All	All	>= 1
<b>Class</b>		46
Subject not possible only once a day	5	6
Positive time request during lunch break	4	40
<b>Teacher</b>		1
Lessons with teachers without rooms	*	1
<b>Room</b>		2
2 teachers in the same room	*	2
<b>Lesson sequences</b>		
<b>Course scheduling</b>		
<b>Lessons</b>		1
Too many lessons with 'Priority'	*	1

By default, only those diagnosis items are displayed for which infringements exist. This can be seen from the activated <Filter> button in the dialogue window toolbar and the filter fields shaded green (entry >=1 in the 'Num' column).

The figure shows how the display of diagnosis items can be restricted to infringements that have a weighting of 4 or higher.

The screenshot shows the 'Timetable diagnosis' window with the 'Input Data' tab selected. The date range is set to 24.09.2012 to 30.9.2012. The 'Diagnosis' section is expanded, showing a list of issues. A red box highlights the 'Wtg' and 'Num' columns, and a red arrow points to the 'Timetable' tab.

Category	Issue	Wtg	Num
Lessons	Lessons with no teacher specified	-	1
Class	+3 time request not respected		
Teacher	Too many NTP's	3	7
	Double Non-Teaching-Period	0	2
	Lunchbreak too short	3	2
	Teacher's free day moved	4	1
	Day request not achieved	4	1
	Half day request not achieved	4	2
	Not enough periods per day	2	13
	Too many periods per day	2	1
	Too many consecutive periods	3	9
	Just one period on a half day	3	13
	Scheduled in a -3 timed period	*	21
Room	Period(s) without a room	3	22
Subject	Un-requested double periods	3	8
	Less. with 2 perds/week on consec. days	3	12
	Illegal morning period	2	4
	Illegal afternoon period	2	1
	Main subject too often after period n (n=4)	3	2
	Main subject not in per. 1-n (n=4)	3	3
	Fringe period request not respected	5	3
Students			

<Complete display>

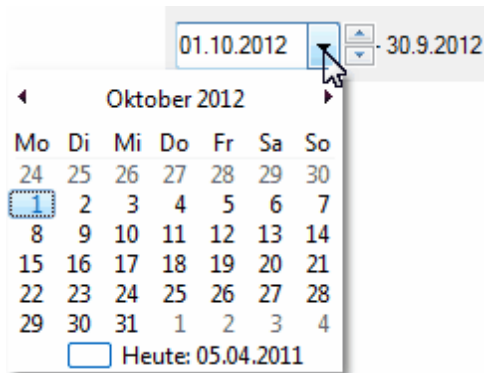
Click on this button to resize the window to its optimum size.

<Refresh list>

Clicking on this button causes the diagnosis to be performed once more. (The diagnosis window will be recalculated even when you close it and access it once more via "Planning | Diagnosis".)

Please note that the diagnosis tool only diagnoses the timetable for one week – an essential precaution when using the modules Multi-Week Timetable or Multiple Terms Timetable, where different timetables may be in use in different consecutive weeks (e.g. for term teaching or block lessons). When analysing such timetables, you can use the date setting (below the control elements) to specify which week you want to analyse.

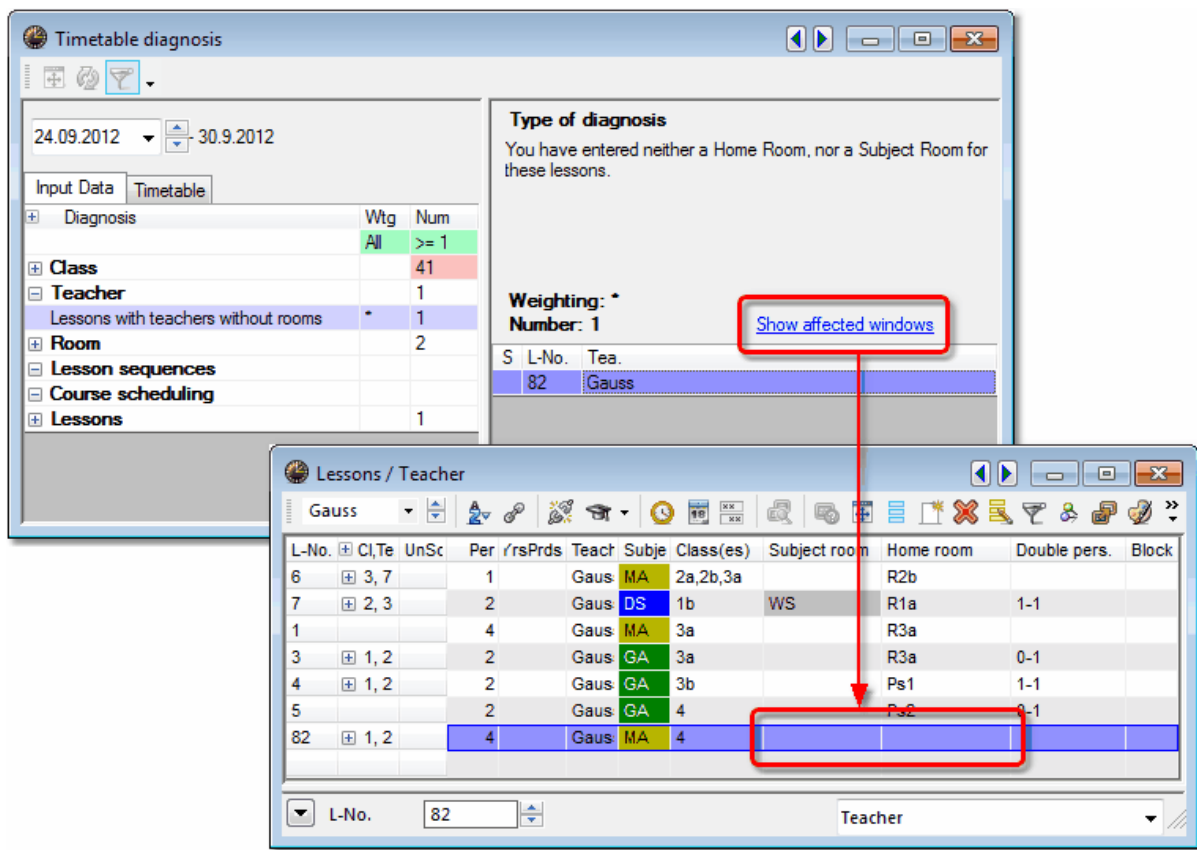




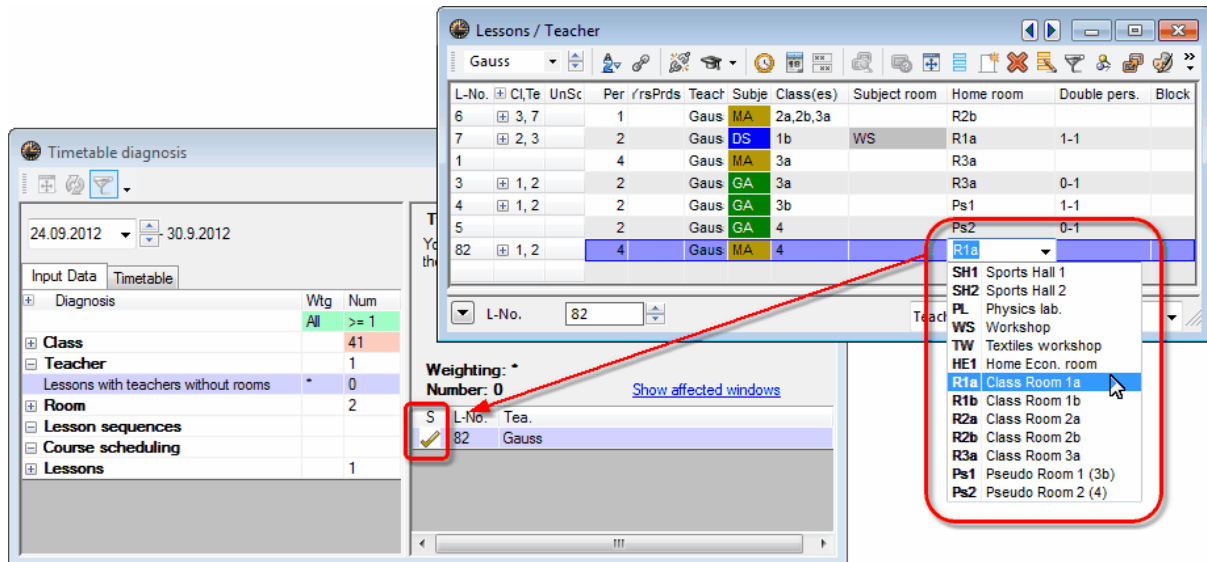
### 3.4.6.2 Details window

The details window on the right of the diagnosis window allows you to display further information about individual items by selecting the item in the selection window.

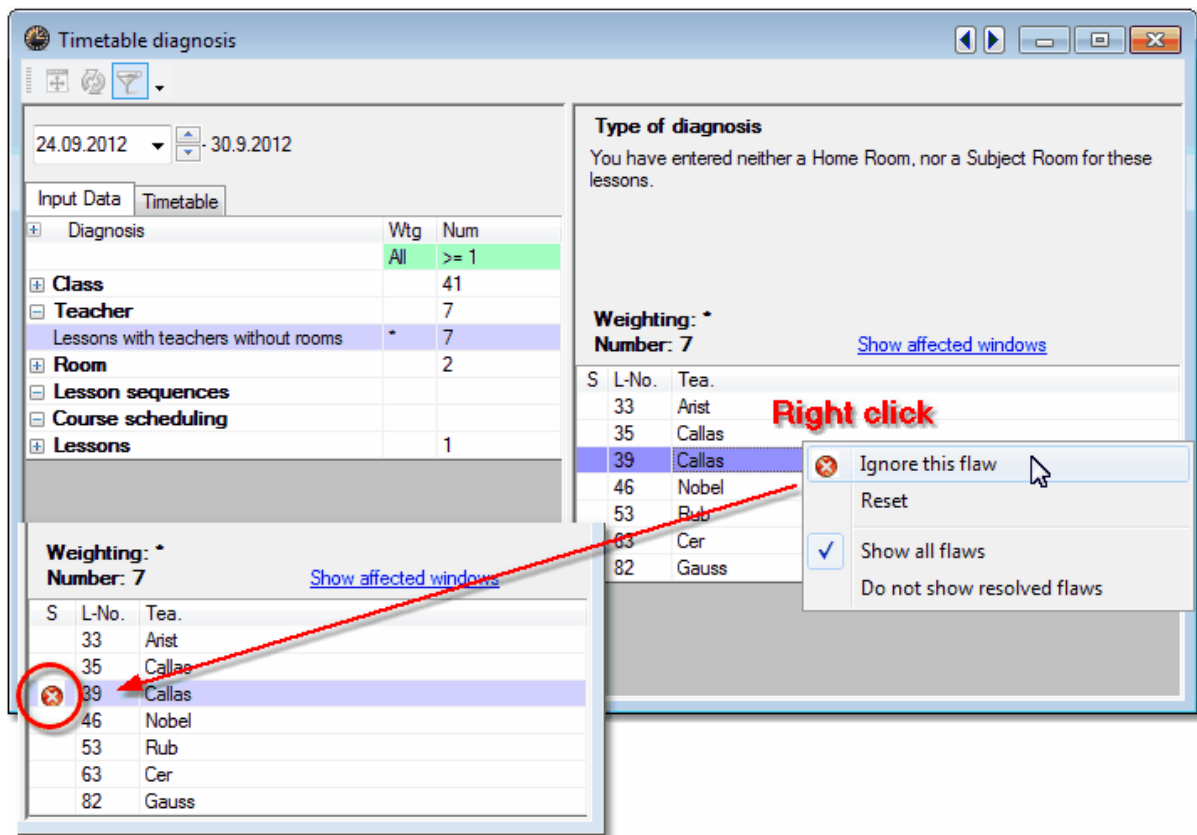
Clicking on the link 'Display affected windows' opens the dialogues that are relevant for the diagnosed problem. The figure shows for example that no room was specified for teacher Gauss for lesson 82.



As soon as the problem is solved, 'S' (status) column in the diagnosis window is checked. As soon as a diagnosis is performed once more the item will no longer be displayed.



The diagnosis indicates possible problems in the data or in the timetable. However, it might be that you have e.g. defined a lesson without a room. In such cases you can either choose to ignore the entry in the diagnosis window and right-click with the mouse to select 'Ignore infringement' in order to mark the item as ignored. If you also deactivate the option 'Display all infringements' in the context menu any diagnosis items marked in this way will be hidden.

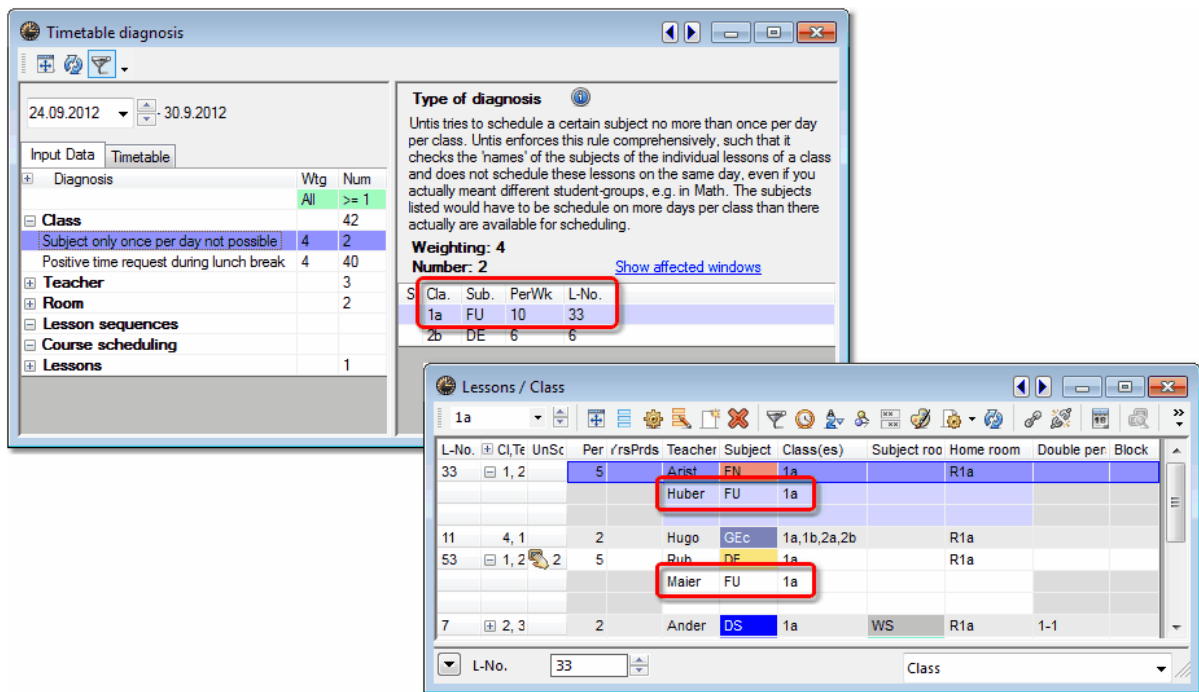
**Note:**

The item 'Ignore infringement' offered in the diagnosis context menu is only intended to support clarity within the diagnosis. It has no effect on any timetable optimisation performed subsequently.

### 3.4.6.3 Subject 1/day impossible

An explanatory text is displayed in the details window of the diagnosis for each diagnosis item. However, the item 'Subject 1/day impossible' under the heading 'Input Data | Class' deserves special attention. By default, the scheduling algorithm attempts to schedule a subject only once per day. The relevant subjects will be listed in the diagnosis if this is not possible since too many periods have to be spread over the days available.

The figure below shows that a special tuition teacher is scheduled to take class 1a for the subject ST comprising 5 periods each of English and German. This means that 10 weekly periods are defined for the subject SN with class 1a. Untis would attempt to schedule this subject just once per day. However, since 10 individual periods cannot be fitted into a 5-day week, the issue will be listed.



Possible solutions for this concrete example:

- Set up double periods or block conditions
- Activate the '(2) More than once a day' option for the subject ST in the subjects master data
- Change the subject name of one of the lessons taught (e.g. 'ST\_GE' for special tuition in German)

### 3.4.7 Overall diagnosis

The overall diagnosis function provides an overview of the classes and teachers that have ended up with the worst timetables (measured against your settings). It is accessed via "Scheduling | diagnostic tools | Overall diagnosis".

As with the [diagnosis function](#), the overall diagnosis function applies to only one week.

Depending on the setting (class or teacher) the window lists all the elements of your school row by row. The elements are sorted by the 'Points' column. The points are an evaluation of the quality of the timetable for the element in question. A high number of points indicates a poor timetable.

The other columns display the three periods with the worst assessment for each element. The figure indicates that the 6th period on Tuesday is the worst period for class 4. Clicking on the points score displays why the period has such a poor valuation (in the 'Reason' column). An accompanying timetable will also switch display automatically to the period in question. The example indicates the reason as 'one period in half-day'. A better valuation could be achieved by scheduling an additional period on the same afternoon.

Overall diagnosis

24.09.2012

Class(es)

Refresh

School week: 2

Penalty points (total): 12 707

Calendar week: 39

Total unsch. per.: 6

Print

The 3 worst periods								
	Points	UnSc	1. Points	2. Points	3. Points	Reason		
4	2587	2	Tu-6 66	Fr-2 62	Th-6 60	Just one period on a half day		
1a	2381	2	Fr-8 60	Fr-5 50	Fr-7 50	Just one period on a half day		
2a	2208		We-2 645	We-3 645	Fr-5 247	Subject twice a day		
2b	2146	1	Sa-2 308	Sa-3 308	Sa-1 140	Subject twice a day		
1b	1924	1	Sa-2 311	Sa-3 311	Sa-1 140	Subject twice a day		
3a	1007		We-2 323	We-6 229	Mo-7 84	Subject twice a day		
3b	454		Mo-5 57	Tu-3 49	Tu-4 49	Main subjects - Boundary period		

4 - Class 4 (Nobel) Timetable

4 Time range

28 Periods/week

	Mo	Tu	We	Th	Fr	Sa
1	PEG.	DS.	GA	PH	BI	MA.
2	CK		RE	HI	GA	
3	HI	MU	MA.	CK	RE	DE
4	DE	BI	GEc	DE	GEc	EN
5						
6	AR	PEG.		PEG.		
7						
8						

An empty field under "Reason" indicates that the timetable for this class or teacher is already very good (i.e. has relatively few penalty points) In relation to the other periods, the displayed period may be one of the three worst rated ones. It is unnecessary, therefore, to change the period manually..

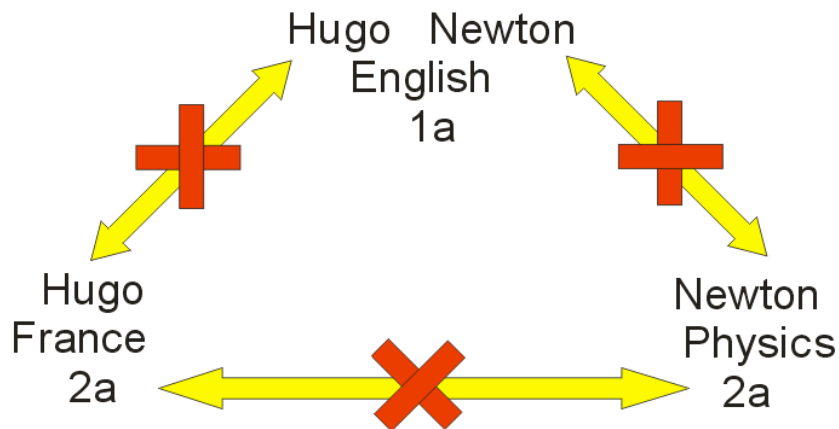
In short, the diagnosis function provides an overview of all timetables while the overall diagnosis function

targets the worst timetables in the school and aims to improve them. The overall diagnosis window also displays the causes of violations.

### 3.4.8 CCC analysis

In order to obtain a good timetable, it is important to locate possible bottlenecks that might cause an obstruction for the scheduling tool, and to eliminate these **before** [optimisation](#) .

Such bottlenecks occur in the form of critical conflict chains (CCCs). These are defined as groups of lessons that cannot be scheduled at the same time due to a conflict between classes and/or coupled teachers.



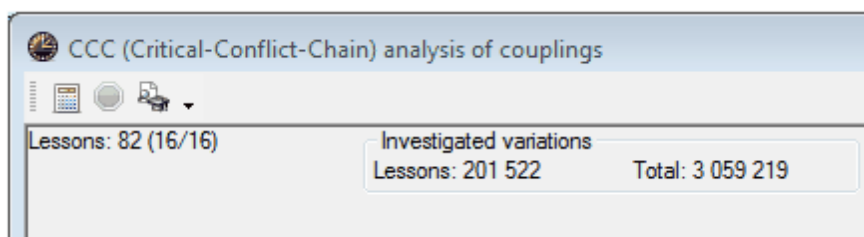
**Note:**

The total number of periods per week involved in a chain is a measure of how difficult it is for the software to schedule the lessons in the chain. If this number is greater than the number of periods available in the time grid, it is mathematically impossible to schedule all the lessons in this chain.

Start the analysis by accessing the menu item "Scheduling | Diagnostic tools | CCC-Analysis" in order to locate the longest conflict chains. The analysis can take up to several minutes, depending on the size of your school.

#### 3.4.8.1 Information during analysis

During the analysis you will see the number of the lesson currently being processed in the upper part of the window (to the right of the word "Lesson") The two numbers in parentheses denote the number of couplings the software has finished analysing and the total number of couplings to be analysed respectively.



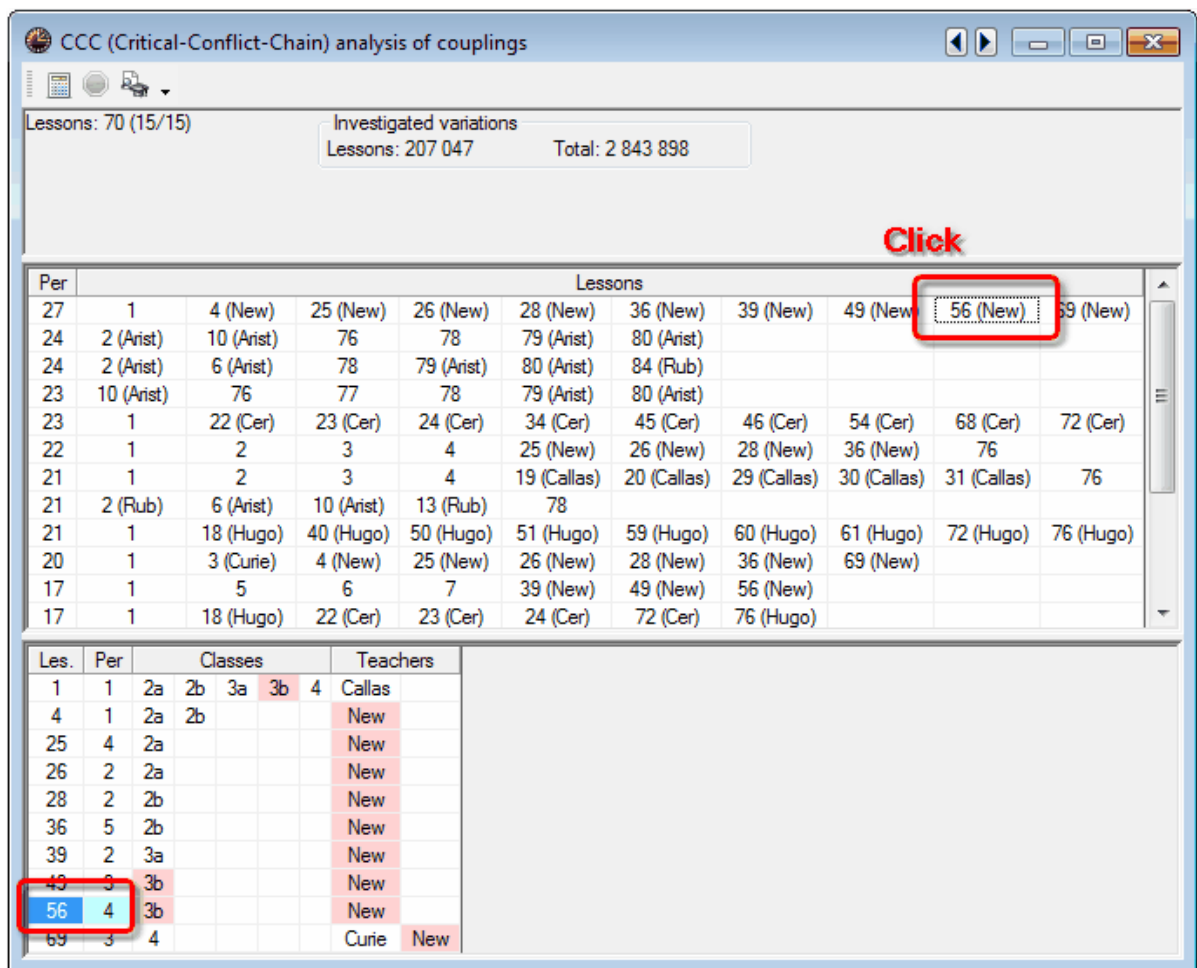
Use the <Cancel> or <Start analysis> buttons in the dialog toolbar to cancel the current analysis or to launch another analysis.

### 3.4.8.2 The CCC window

As you can see in the example, there are 70 lessons and 15 couplings, resulting in over 2.8 million combinations that need to be analysed.

#### Middle section of the window

The middle section of the window lists all CCCs in rows. The first column contains the total number of periods per week involved in each chain. The figures to the right are the numbers of the lessons involved in the chains. The table also displays the short names of teachers in parentheses next to some of the elements. The purpose of this function is described later.



CCC (Critical-Conflict-Chain) analysis of couplings

Lessons: 70 (15/15) Investigated variations  
Lessons: 207 047 Total: 2 843 898

**Click**

Per	Lessons									
27	1	4 (New)	25 (New)	26 (New)	28 (New)	36 (New)	39 (New)	49 (New)	56 (New)	59 (New)
24	2 (Arist)	10 (Arist)	76	78	79 (Arist)	80 (Arist)				
24	2 (Arist)	6 (Arist)	78	79 (Arist)	80 (Arist)	84 (Rub)				
23	10 (Arist)	76	77	78	79 (Arist)	80 (Arist)				
23	1	22 (Cer)	23 (Cer)	24 (Cer)	34 (Cer)	45 (Cer)	46 (Cer)	54 (Cer)	68 (Cer)	72 (Cer)
22	1	2	3	4	25 (New)	26 (New)	28 (New)	36 (New)	76	
21	1	2	3	4	19 (Callas)	20 (Callas)	29 (Callas)	30 (Callas)	31 (Callas)	76
21	2 (Rub)	6 (Arist)	10 (Arist)	13 (Rub)	78					
21	1	18 (Hugo)	40 (Hugo)	50 (Hugo)	51 (Hugo)	59 (Hugo)	60 (Hugo)	61 (Hugo)	72 (Hugo)	76 (Hugo)
20	1	3 (Curie)	4 (New)	25 (New)	26 (New)	28 (New)	36 (New)	69 (New)		
17	1	5	6	7	39 (New)	49 (New)	56 (New)			
17	1	18 (Hugo)	22 (Cer)	23 (Cer)	24 (Cer)	72 (Cer)	76 (Hugo)			

Les.	Per	Classes				Teachers
1	1	2a	2b	3a	3b	4 Callas
4	1	2a	2b			New
25	4	2a				New
26	2	2a				New
28	2	2b				New
36	5	2b				New
39	2	3a				New
49	3	3b				New
56	4	3b				New
69	3	4				Curie New

#### The CCC details window

Clicking on the middle section of the window updates the details window. In the example, lesson '56 (New)' has been activated. The details window now displays field with lesson number 56 together with the number of periods shaded light blue. Some fields are also shaded red.

The entries in the details window can be interpreted as follows: The elements involved in lesson 56 with a

total of 4 periods per week are class 3b and teacher Newton (short name "New").

Some lessons involve several classes or several teachers (e.g., no. 69,1,4). In such cases the "Classes" and "Teachers" columns list all the relevant elements next to each other.

The cells shaded red highlight the reason why the displayed lesson cannot be scheduled at the same time as the lesson selected in the middle section of the window Lesson 56, for example, cannot be scheduled at the same time as lesson 1 since both lessons involve class 3b. Lesson 25, in contrast, involves a different class but the same teacher (Newton) and therefore cannot be scheduled at the same time as lesson 56.

### 3.4.8.3 Shortening CCCs

The longest chain – the first row in the middle section of the window – contains 27 periods that cannot be scheduled at the same time. Of course, time requests or additional conditions may have been defined for each teacher, class or lesson.

**Note:**

A large number of chains with many periods can soon cause serious timetabling bottlenecks.

You now have the option of shortening the chain by assigning a different teacher to individual lessons.

The teacher whose swap would cause the greatest shortening of the chain is referred to as the *critical element*. The [CCC analysis](#) indicates the teacher's short name in parentheses next to the lesson number in the middle section of the window.

A swap is unlikely to bring about an improvement if no critical element is indicated, for example when there are a large number of classes involved.

#### 3.4.8.3.1 List of teacher teams

You can use the buttons <Display the teacher teams> or <Print the teacher teams> in the CCC window to gain an overview of the composition the teams of teachers.

## 4 Manual Scheduling

### 4.1 Manual scheduling

Untis offers several different possibilities for manual scheduling (the scheduling, shifting and deleting of periods): the manual [scheduling in the timetable](#), the [scheduling timetable](#) and the [scheduling dialogue](#). The most important functions such as scheduling, shifting, swapping, locking and deleting of periods as well as the manual room allocation are possible with all three tools. The scheduling timetable and the scheduling dialogue offer special functions and additional information.

### 4.2 Scheduling periods in the timetable

The simplest way of scheduling periods, which does not even involve learning new windows, is by scheduling in the regular timetable. The following tasks can be carried out manually on a normal class or teacher timetable:

- plan [unscheduled lessons](#),
- [lock periods](#),



- [swap periods](#) that have already been scheduled,
- [delete periods](#) and
- [allocate rooms](#) manually.

### 4.2.1 Scheduling periods

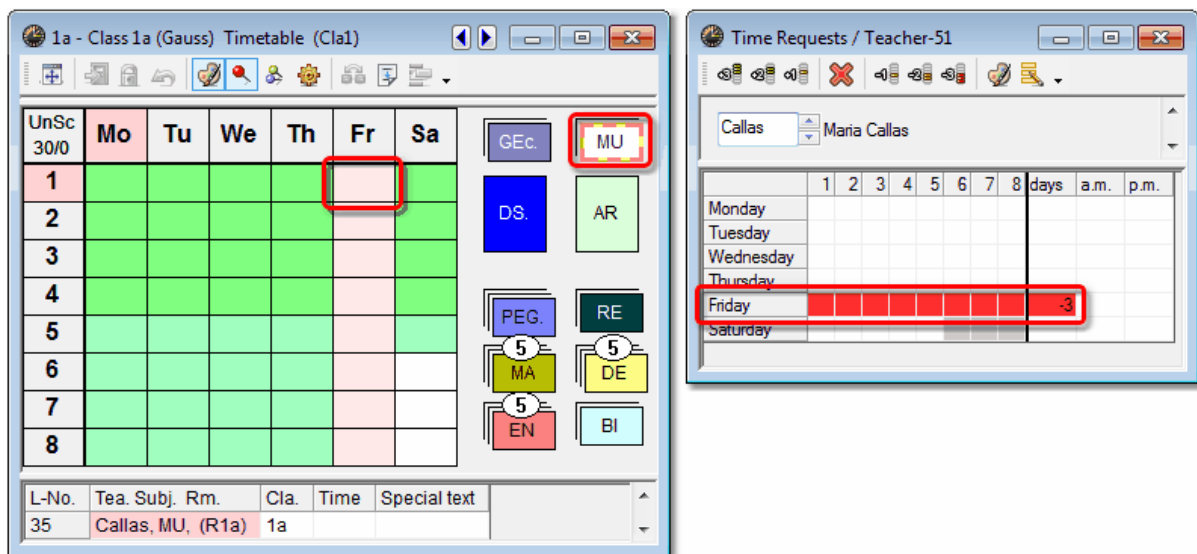
The aim of the first exercise is to place periods in an empty timetable and lock them to prevent the automated scheduling tool from moving them during a later optimisation run.

1. Open the file demo.gpn and delete the current timetable via "Scheduling | Reset the timetable"
2. Unscheduled periods will now be displayed next to the timetable and can be placed in the timetable using drag & drop.

Clicking on a period that you wish to schedule will display possible time slots in the timetable.

Fields which are highlighted green indicate that these would be good slots to place the period avoiding the risk of a clash.

The software also takes into consideration any additional settings you have made. For instance, Friday is not displayed as a possible day for the lesson 'Mus' for class 1a because teacher 'Callas' has been allocated a day off on Friday ("Master Data | Teachers | Time Requests").



#### Tip:

You can use the <Colour coding> button in the 'Time requests' window to specify the display colours for the different time requests. This is necessary if for example there are difficulties in distinguishing between red and green.

If you click on the <Settings> button and then check the box 'DragDrop: colours same as time requests' on the 'Layout 2' tab, the settings will also be used for manual scheduling in the timetable.

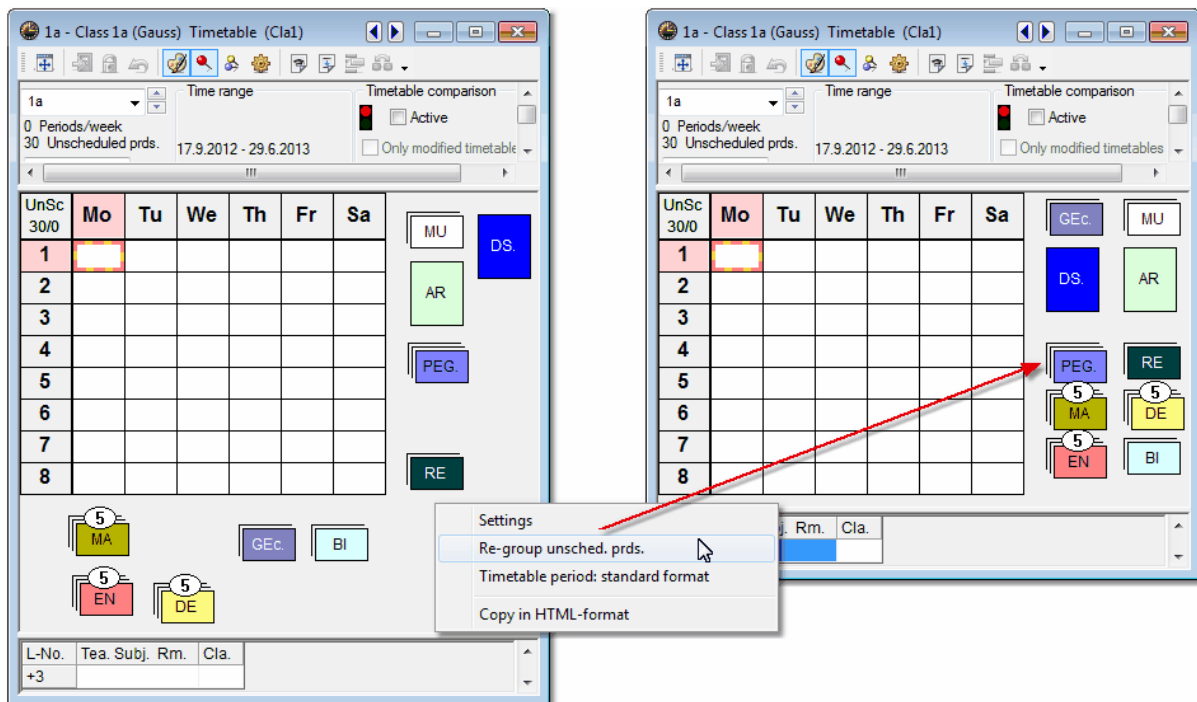
Lessons are automatically displayed and scheduled as single or double periods (or blocks) in accordance with settings made for double periods under lessons.

5				
6		DS.		
7				
8				
L-No.	Tea.	Subj.	Rm.	Cla.
+3				

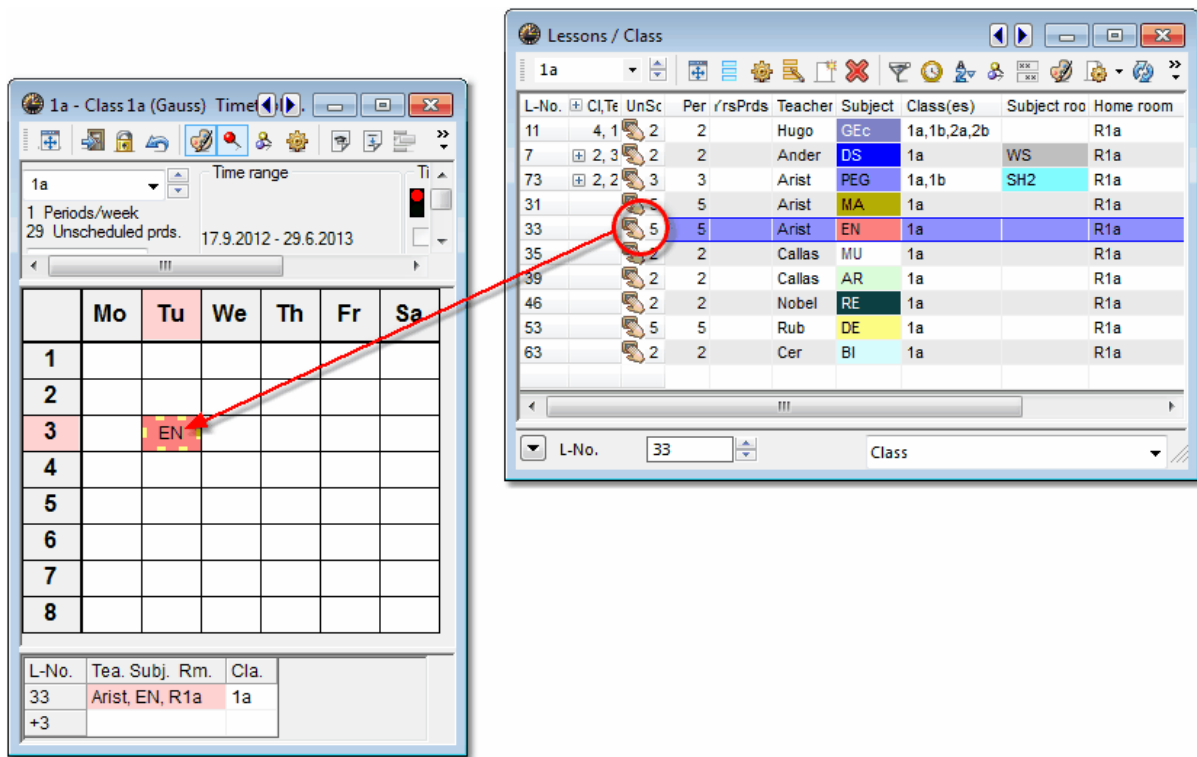
When there is more than one unscheduled period of a particular lesson, the individual periods will be displayed stacked. When there are more than three periods, the number of unscheduled periods will also be indicated.

The screenshot shows the '1a - Class 1a (Gauss) Timetable (Cla1)' window. The main area displays a timetable grid with columns for days (Mo, Tu, We, Th, Fr, Sa) and rows for periods (1-8). The 'UnSc' column shows 30/0 periods. A red box highlights a stack of lesson blocks on the right side of the grid, including GEC, MU, DS, AR, PEG, RE, MA, DE, EN, and BI. The bottom of the window shows a table with columns L-No., Tea., Subj., Rm., and Cla., with a row containing '+3'.

You can determine the position of unscheduled periods yourself by simply grouping the stack around the desired position in the timetable. After right-clicking and selecting 'Re-group unsched. prds.' the stacks will be automatically repositioned.



Alternatively, you can schedule the periods from the lessons window. To do this, click on the relevant period in the 'Unsched Prds' column and use drag & drop to position it in the timetable.



### Room allocation

Lesson cells highlighted purple indicate that it is possible to schedule the lesson without a conflict as far

as class and teacher are concerned but that room availability (i.e. the room allocated to the lesson and all alternative rooms are not free) prevents the lesson being scheduled (see figure).

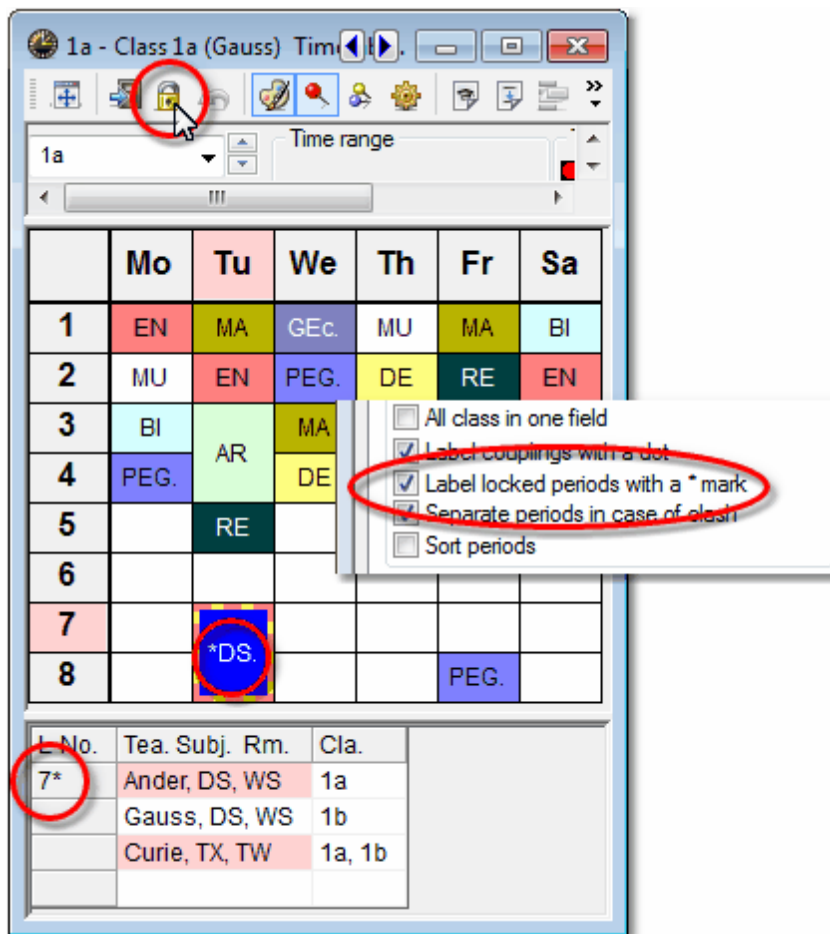
If you position a period on a purple cell, the lesson will be scheduled without a room being allocated. The room allocation of the lesson already scheduled in this position will not change. A short beep will be issued as an additional warning to indicate that the lesson has been scheduled without a room (please refer to chapter ["Allocating rooms" for further details.](#) )

### 4.2.2 Locking periods

Lock a period in place by clicking on <Lock period> in the tool bar of the timetable. This will prevent the automated scheduling tool from moving the period during a subsequent optimisation run. Alternatively, lock the selected period by pressing <F7>. The same key can be used to unlock a period.



Locked periods are marked with an asterisk (\*) in the period details window next to the lesson number. You can also choose to display the asterisk in the timetable period (on the "Layout 2" tab under <Timetable Settings>).

**Tip:**

You can see all locked periods in the window "Lessons | Locked Lessons". This window also allows you to unlock the lessons at the different levels. Please refer to chapter "Locked lessons" for more details.

### 4.2.3 Moving periods

Periods can easily be moved from one slot in the timetable to another using drag & drop.

Empty green cells denote slots in the timetable where a lesson may be scheduled without risk of conflict. The different shades of green indicate the suitability of the positions for the dragged lesson. The darker, the better. The evaluation depends on the parameters you have entered (time requests, double periods, weighting, etc.).

Red fields indicate that the scheduling would be possible without clashes but the timetable would be significantly worse because of e.g. a blocking (time request -3). The details window shows which element is blocked. The timetable details window shows which element is blocked.

6			DS.		
7	BI		DS.	AR.	
8		BI		AR.	
L-No.	Tea.	Subj.	Rm.	Cla.	
-3	3a	Tu-8:	-3		

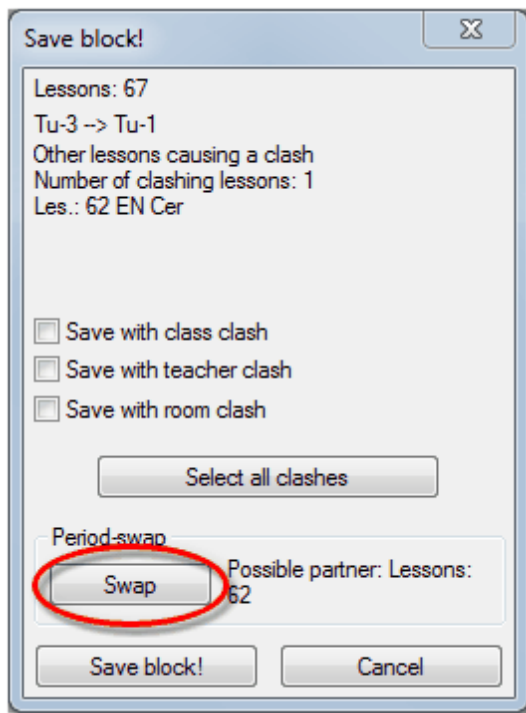
Cells highlighted purple indicate that the room allocated to the lesson is not available.

Move double periods and lesson blocks in the same way as you would move single periods. However, if you only want to move one period of a lesson block or a double period, press the <Ctrl> key prior to selecting the period you want to schedule. This means that the periods are then displayed as single periods and can be moved individually.

MA		*CH.	EN	
		DS.	Ctrl+Click	
BI		DS.	AR.	

#### 4.2.4 Swapping periods

Periods highlighted green (green cells occupied by a period) can be swapped with other periods highlighted green. Drop a period on a green cell and a window will appear where you can specify if you wish to swap the period or if you wish to create a conflict.



## Swap suggestions

Swap suggestions can be displayed via the 'Suggested swaps' function in the timetable window. 2-way and 3-way swaps are suggested for the class. The 'Gain' column indicates whether the timetable would be improve (positive values) or deteriorate (negative values) based on the data entered.

The 'Conseqnc.' column displays the worst conflict that the swap in question would cause if the timetable is likely to see a deterioration. If, on the other hand, the timetable is likely to see an improvement (positive value in the 'Gain' column) the category where the largest improvement is likely to take place will be displayed.

Possible swap suggestions are indicated in the timetable by red arrows. Clicking on the <Swap button> performs the selected swap.

**Suggested swaps**

	Conseqnc.	Gain
1	Day time requests	177
2	Day time requests	171
3	Day time requests	132
4	Day time requests	128
5	Day time requests	-57
6	Subject twice a day	-194
7	Subject twice a day	-341
8	Subject twice a day	-380
9	NTPs	-436
10	Subject twice a day	-466
11	Subject twice a day	-478
12	NTPs	-480
13	NTPs	-660
14	NTPs	-704

Swaps: ☐ 2-way ☐ 3-way ☒ Both

☐ With class leaps ☐ Only different teachers ☐ Show details

**Swap** (circled in red)

Print Close

**3a - Class 3a (Aristotle) Ti**

3a Time range

32 Periods/week

	Mo	Tu	We	Th	Fr	Sa
1	HI	EN	PEG.	PH	DE	GEc
2	EN	RE	DE	DS	PEG.	
3	PEG.	BI	HI	GA	MA	DE
4	GA	DE	MA	MA	RE	PH
5	MA		*CH.	EN		
6						
7	BI		DS.	AR.		
8						

L-No. Tea. Subj. Rm. Cla. Time

67 Cer, BI, R3a 3a

### Cross-class suggestions

It is often necessary to perform swaps across several classes. To do this, check the box 'With class leaps' in the 'Suggested swaps' window.

Example:

The German period for class 1b on Mo-5 (Monday, 5th period) is to be swapped. The swap displayed in the figure would bring an improvement of 238 points ('Gain' column). The potential gain is high because this would remove a core time violation (time request). However, it can only be performed without a conflict if a second swap is effected at the same time.

Teacher Rubens, who teaches German to class 1b, has a lesson planned with class 1a in Monday-5. The so-called leap class is therefore 1a and is indicated in the 'Leap cl.' column. The possibilities of moving this lesson to where Rubens takes class 1a are displayed in the lower section of the 'Suggested swaps' window. The best possibility would however lead to a deterioration in the schedule of class 1a of 66 points since it would result in an unallowed double period of German. The difference in the evaluations of both swaps (+238 for the swap for 1b and -66 for the swap for 1a) is displayed in the 'Total' column (+172).



The screenshot displays the 'Suggested swaps' window on the left, which lists various swap types and their associated gain or loss. The 'Only different teachers' checkbox is checked. To the right, two class timetables are shown: '1b - Class 1b (Newton) Timet...' and '1a - Class 1a (Gauss) Timetabl...'. Both timetables show a weekly schedule from Monday to Saturday. Red arrows indicate specific swaps between subjects in different classes. For example, in Class 1b, a swap is shown between 'DE' and 'TX' on Friday. In Class 1a, a swap is shown between 'MA' and 'DE' on Tuesday. Below the timetables, a table shows the details of the selected swap: L-No. 54, Tea. Rub, DE, R1b, Cla. 1b.

Conseqnc.	Leap cl.	Gain
1 Period time requests	4	248
2 Main subjects - Boundary period	1a	258
3 Main subjects - Boundary period	4	258
4 Period time requests	1a	258
5 Main subjects - Boundary period	3a	16
6 Period time requests	1a	161
7 Period time requests	2a	-148
8 Main subjects - Boundary period		-9
9 Main subjects - Boundary period		-42
10 Subject twice a day		-53

Conseqnc.	Gain	Total
1 Double period error	-66	172
2 Period time requests	-168	79
3 Period time requests	-176	62
4 Period time requests	-176	62
5 Period time requests	-168	59
6 Period time requests	-232	8
7 Period time requests	-247	-9
8 Period time requests	-265	-27
9 Subject twice a day	-442	-264

### Only different teachers

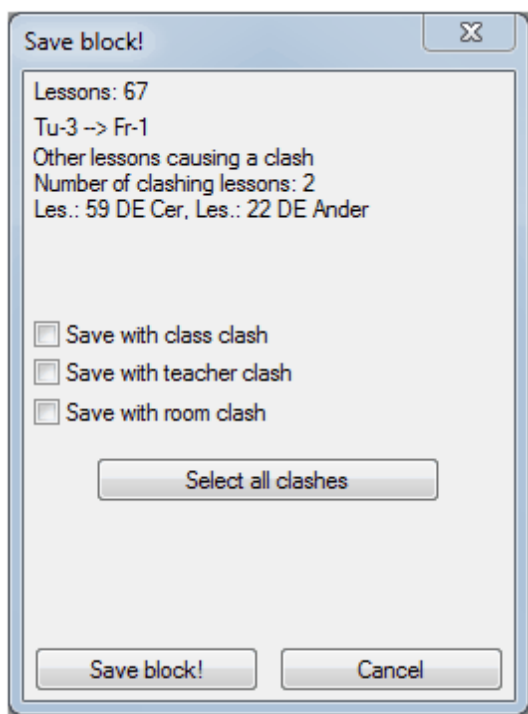
If a teacher takes a class for more than one subject it is often undesirable for swaps to be offered between these subjects. Checking the 'Only different teachers' box results in such swaps not being displayed.

## 4.2.5 Scheduling periods with clashes

Moving a period to a non-highlighted cell is not possible without creating a clash. The lesson details window displays the lesson number and details of the lesson in conflict with the moved period.

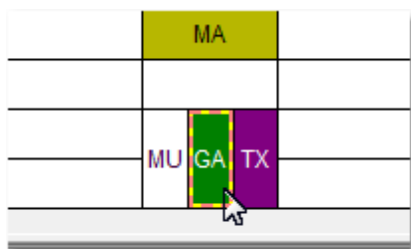
If you decide to drop the period in such a cell, a window will appear showing the following two options:

- <Cancel> - cancels the move.
- <Save block> - the 'dragged' (i.e. active) period will be scheduled and the original period will be unscheduled.
- Use the combo boxes save with teacher, class or room clash to schedule a lesson with conflicts.



The period details window displays all the elements of the lessons scheduled at this time. Display conflicts in the timetable by activating the option "Separate periods in case of clash" ("Layout 2" tab under <Timetable Settings>). Please also see chapter "Layout 2" in the section "Timetable display" ).

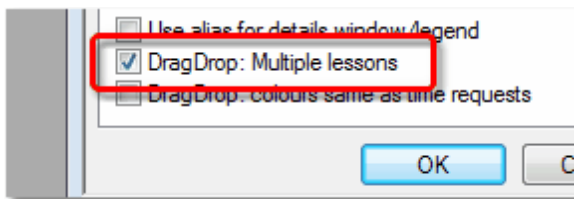
Each of these lessons can be selected and moved separately.



You can also move all lessons that lie on one position (either as clashes or as a cluster in course planning).

#### **Timetable in the cluster mode**

If you wish to switch the timetable to the cluster mode altogether then check "Drag Drop: Multiple lessons" on tab "Layout 2" in the timetable settings.



### Selection with the <CTRL> key

If you usually wish to select just single lessons (courses) but occasionally you also wish to shift the whole cluster, then press <CTRL> and click on the relevant position. You can move all lessons in this period in a single operation.

	Mo	Di	Mi	Do	Fr
1	k1 ku2	M1	C L1 E2	C E1 P	C L1 P
2	E1 M1	e1 m2	ch bi	ru sm1 sw1	k1 ku2
3	ch bi ru	Bl W G		Bl W G	g m k e
4	Bl W G	et d2 inf		ch bi ru	or w e d
5	ch m e2	C E1 P		M1 m2	E1 M1
6					
7			C E1 P		
8					
9					
10					

Diagram illustrating the drag and drop process for moving a lesson cluster. A red circle highlights the cluster in period 1, days Do and Fr. A red arrow labeled "Drag" points from this cluster to period 7, day Mi. A red box labeled "Drop" is shown in period 7, day Mi, indicating the target location for the dragged cluster.

### Decoupling

A coupled lesson can be decoupled direct in the timetable and the new lesson that is thereby created can be scheduled in another position.

Example: The coupled lesson in periods 7 and 8 on Tuesdays is to be decoupled as teacher 'Ander' is to teach his group on Thursdays. Click on the period with the right mouse button and select "Decouple". The lesson is then decoupled and the new lesson with teacher 'Ander' can be easily rescheduled using drag and drop.

The top screenshot shows a timetable grid with a context menu open over a period. The menu options are: Settings, Period window, Allocate/Delete this room, **De-coupling** (highlighted with a red circle), Timetable period: standard format, and Copy in HTML-format. Below the grid is a table with the following data:

L-No.	Tea.	Subj.	Rm.	Cla.	Time	S
7		Ander, DS, WS		1a		1
		Gauss, DS, WS		1b		
		Curie, TX, TW		1a, 1b		
Total						57

The bottom screenshot shows the same timetable grid. A period labeled 'DS' is being dragged from its original position to a new position in the grid. A red arrow indicates the movement. Below the grid is a table with the following data:

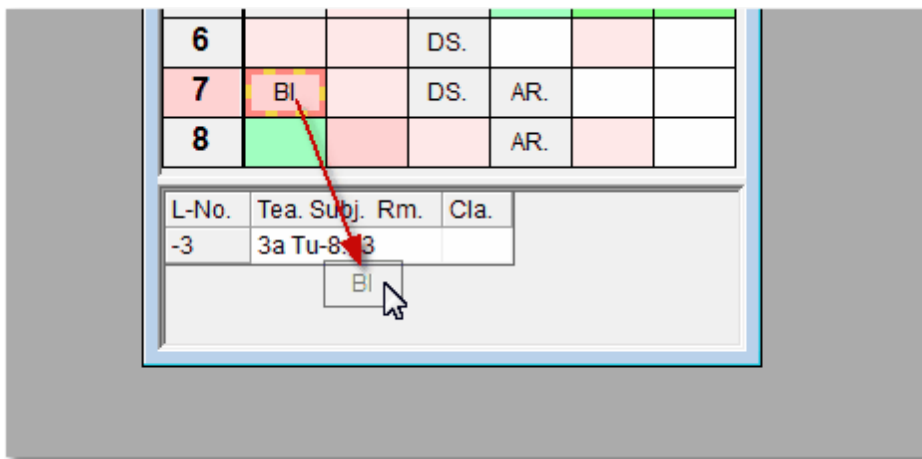
L-No.	Tea.	Subj.	Rm.	Cla.	Time	School week	Stud.	Speci
43		Callas, AR, R3a		3a, 3b		1-41		
		Ander, MU, R1a (Ps1)		3a, 3b				

Below this table is another table with the following data:

L-No.	Tea.	Subj.	Rm.	Cla.	Time	School week	Stud.	Speci
97		Ander, DS, WS		1a		1-41	28	Volur

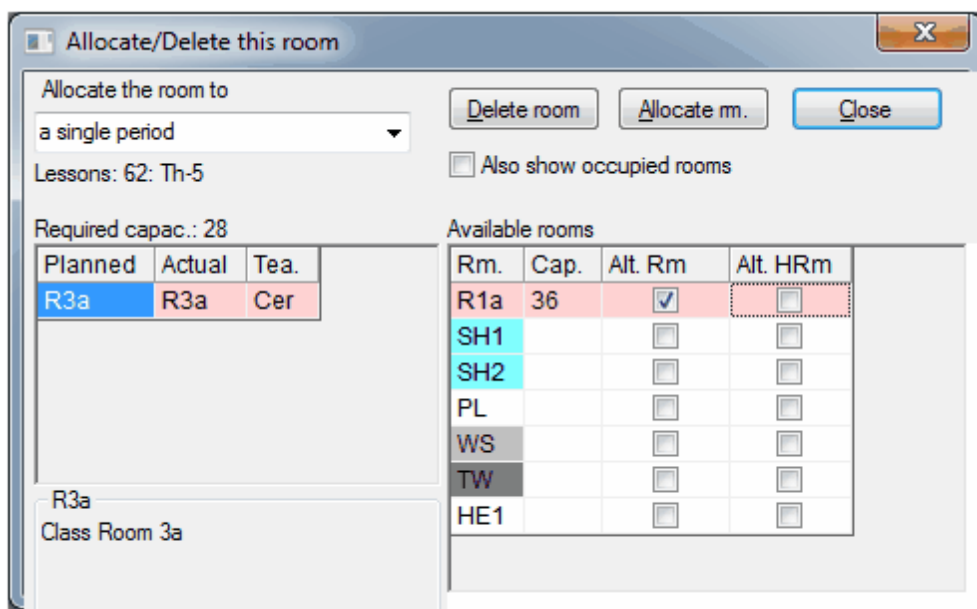
#### 4.2.6 Unscheduling periods

You can also unschedule periods by dragging them into the section with the unscheduled periods or into the timetable details window and dropping them there.



#### 4.2.7 Allocating rooms

You can also manage room allocation directly in the timetable window. Use the <Allocate/delete this room> button to allocate rooms to scheduled periods or to delete already scheduled rooms. A detailed description of this function can be found in chapter "Scheduling timetable | Allocating rooms".



#### Tip:

All alterations to the timetable can be undone step by step by clicking on the <Undo> button .

#### Changing rooms in the overview timetable

As an alternative to the room allocation dialogue you can also alter rooms in the room overview timetables. Simply drag the period from one room to another. If the room is already occupied, a room swap will take place.

TW - Textiles workshop Timetable (Roo20A)

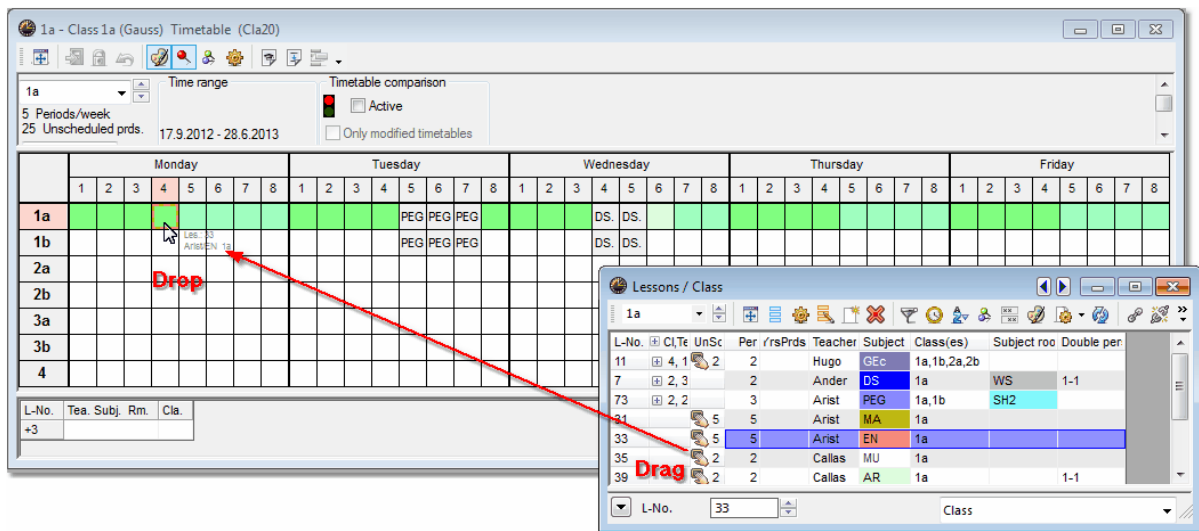
Time range: 19.9.2011 - 30.6.2012

Timetable comparison: ☐ Active ☐ Only modified timetables

	Monday											
	1	2	3	4	5	6	7	8	1	2	3	
SH1	4 New PEB		3a,3 Rub PEB	1a,1 Rub PEB							2b,2 Rub PEB	
SH2	4 Curi PEG		3a,3 Arist PEG	1a,1 Arist PEG							2b,2 Arist PEG	
PL				3b New PH				4 Arist PH				2 M F
WS									4 And DS	4 And DS		
TW				3a Curi TX					4 Curi TX	4 Curi TX	3b Curi TX	
HE1				3a Curi TX								
R1a	1a Arist EN	1a Calla MU	1a Cer BI	4 Hug DE	3b New MA				1a Arist MA	1a Arist EN	1a Calla AR	1 C A

#### 4.2.8 Planning in the overview timetables

You are not limited to the single timetables for manual planning. You can also use the overview timetables for classes and teachers. This helps you keep an overview of all teachers and classes.



### 4.3 Scheduling timetable

You can also make manual changes to your timetable in the scheduling timetable. All functions for manual scheduling described in chapter "Scheduling in the timetable" are also available in the scheduling timetable. This tool also provides additional functions for scheduling lesson periods manually.

- Open the file demo.gpn.
- Open the scheduling timetable by selecting "Scheduling | Scheduling timetable" from the main menu.

The scheduling timetable will open displaying the additional information relevant for scheduling for class AA.

Les.:53 - 1a Scheduling timetable

1a

Lessons

53

19.9.2012 - 30.6.2013

DE

Unscheduled Information History

Les.	Uns	Time	Cla.	Tea.	Sub.
53	2		1a	Rub	DE
30	1		1b	Arist	MA
34	1		2b	Callas	DE
21	1		4	Hugo	DE

	Mo	Tu	We	Th	Fr	Sa
1	EN	MA	GEc	MU	MA	BI
2	MU	EN	PEG	+ DE	RE	EN
3	BI	AR	MA	EN	EN	MA
4	PEG	AR	+ DE	MA	+ DE	GEc
5	x	RE	*X*			
6	-		-	-		
7	-	DS	-	*X*		
8	-	DS	-	*X*	PEG	

L-No.	Tea. Subj. Rm.	Cla.
33	Arist, EN, R1a	1a
+3		

You can see the active class (1a) at the top left of the scheduling timetable. The "Unscheduled" tab lists all lessons with unscheduled periods. Click on lesson 53 in the list of unscheduled periods. 2 periods are still not scheduled.

In addition to all scheduled periods, the actual timetable section of the window shows additional information about the active lesson.

The active lesson in the example is lesson 53 – German for class 1a with teacher Rub. Accordingly, you can also see class 1a timetable.

If you now wish to schedule a period of the lesson for the 1st period on Thursday, this would prevent teacher Callas' music ('MU') lesson with class 1a.. However, this is not the only lesson that would prevent conflict-free scheduling on Thu-1. A lesson with teacher 'Rub' is also already scheduled for this slot. The details window of the scheduling dialogue displays this information, too.

The details window of the scheduling dialogue therefore indicates all lessons that would prevent a conflict-free scheduling of the currently active lesson.



Les.:53 - 1a Scheduling timetable

1a

Unscheduled Information History

Les.	Uns	Time	Cla.	Tea.	Sub.
53	2		1a	Rub	DE

	Mo	Tu	We	Th	Fr	Sa
1	EN	MA	GEc	MU	MA	BI
2	MU	EN	PEG	+ DE	RE	EN
3	BI	AR	MA	EN	EN	MA
4	PEG	AR	+ DE	MA	+ DE	GEc
5	x	RE	*X*			
6	-		-	-		
7	-	DS	-	*X*		
8	-	DS	-	*X*		

Active lesson

L-No.	Tea.	Subj.	Rm.	Cla.
53	Rub	DE	R1a	1a
+3				

Preventing lessons Thursday-1

### 4.3.1 Scheduling periods

**+** .... Denotes a period of the active lesson, (in the example, the three already scheduled periods of lesson 53).

**\*** .... Locked period of the active lesson (please refer to chapter "Locking periods")

**x**.... Fields marked x are already blocked by the teacher For instance, teacher Rub is already scheduled to teach class 1a on Mon-5, which means that lesson 53 with teacher Rub cannot be scheduled for Mon- 5 without creating a conflict.

**X**.... A capital X shows a coupling involving the teacher (e.g. Wed-5).


**\*x\*, \*X\*, \*&\***.... A marker with two asterisks denotes locked periods creating a conflict (e.g. the PE lesson on Thu-7,8 involving teacher Rub). Locked periods cannot be moved by the automated scheduling tool (see the chapter "Locking periods").

**&**.... Denotes periods with several unavailable elements (classes and/or teachers).

**-** .... Some periods, in which neither the class nor the teacher are busy, are marked with a "-" (e.g. on Monday, Tuesday and Wednesday). This indicates that it is not possible to schedule in these periods. The reason for this is that class 1a is blocked due to a time request on three afternoons in the week (please see "Master data | Classes" <Time requests>).

You can schedule the active lesson in a period if a field is free.


	Mo	Tu	We	Th	Fr	Sa	
1	EN	MA	+ G	asted	days	a.m.	p.m.
2	MU	EN	PE	-3	0	0	0
3	BI	AR	MA	-2	0	0	0
4	PEG	AR	DE	-1	0	0	0
5	&	RE	*X*	&	X		
6	-	-	-	-	X		
7	-	DS	-	*X*	&		
8	-	DS	-	*X*	PEG		

Schedule the unscheduled period of lesson number 53 on Fr-5. You can do this by double-clicking on the field or by clicking on the button .


#### Room allocation

Click on lesson 21 on the "Unscheduled" tab. As you can see, some periods are highlighted purple. This indicates that the allocated room (and all alternative rooms) are already occupied.

	Mo	Tu	We	Th	Fr	Sa
1	PEG	DS	GA	PH	BI	MA
2	CK	DS	RE	HI	GA	MA
3	HI	MU	MA	CK	RE	+ DE
4	+ DE	BI	GEc		GEc	EN
5		MA	*X*	+ DE		
6	AR	-				
7	AR	-		PEG		
8	PH	-		PEG		

For purposes of clarity, the colour codes defined under master data and displayed in the scheduling timetable can be deactivated by clicking on "Show lesson colours" .

### 4.3.2 Locking periods

Lock scheduled periods by clicking on <Lock period> if you wish the scheduling tool to ignore them during the optimisation run. The locked lesson will now be marked with asterisks (, \*x\*, \*X\*) and cannot be moved by the optimisation tool.



### 4.3.3 Swapping periods


Find a suitable swap partner for a period on the same class timetable by dragging the period away (hold down the left mouse button). Every period on the timetable suitable for swapping will be highlighted in green and marked with a double arrow. Drop the period in a slot of your choice and confirm the move by clicking on <Swap>

### 4.3.4 Scheduling periods with clashes

As a rule, Untis assumes that each teacher, class and room can only be involved in a single lesson at any one time. The software displays a warning whenever you are attempting to schedule an element (class, teacher, room) that is unavailable for the period in question.

In a similar way to scheduling in the timetable, lessons can also be scheduled with collision (see chapter 'Scheduling in the timetable | Scheduling with clashes').

### 4.3.5 Deleting periods

Deleting periods Delete scheduled periods by selecting the period and clicking on <Delete Period>  or by pressing the <DEL> key. The lesson will appear in the "Unscheduled" window again. (Alternatively, delete the active lesson with a double click.)

### 4.3.6 Allocating rooms

Use the button <Allocate / Delete this room> to allocate a room to a specific period or to delete (or change) rooms already allocated. You can call this function from the timetable, the scheduling timetable of the scheduling dialogue.

The craft lesson in the 7th and 8th periods on Tuesday is to be allocated a different room.

1. Open the file demo.gpn and then open the scheduling timetable ('Scheduling | Scheduling timetable').
2. Position the cursor on Tu-7 and select the <Allocate / Delete room> button. Alternatively,, you can open the window with the key combination <CTRL>+R.



The left pane of the dialogue that is then displayed lists the rooms involved in this lesson.

You can select which lessons are to be affected by the room change from the option "Allocate the room to":

- a) a single period
- b) the period block
- c) all periods of the lesson

Planned the desired room entered for the lesson

Actual the room actually planned

Teacher the teacher scheduled for the lesson

- 3 In this example. the room allocation is to be changed for the double period, and so 'the period block' is selected.

Allocate/Delete this room

Allocate the room to  
the period block

Lessons: 7: Tu-7, Tu-8

Delete room Allocate rm. Close

☐ Also show occupied rooms

Planned	Actual	Tea
WS	WS	Ander
TW	TW	Curtis

WS  
Workshop

Available rooms

Rm.	Cap.	Alt. Rm	Alt. HRm
R1a	36	<input type="checkbox"/>	<input checked="" type="checkbox"/>
R1b	30	<input type="checkbox"/>	<input checked="" type="checkbox"/>
R2a	32	<input type="checkbox"/>	<input checked="" type="checkbox"/>
R2b		<input type="checkbox"/>	<input checked="" type="checkbox"/>
R3a		<input type="checkbox"/>	<input checked="" type="checkbox"/>
SH1		<input type="checkbox"/>	<input type="checkbox"/>
SH2		<input type="checkbox"/>	<input type="checkbox"/>
PL		<input type="checkbox"/>	<input type="checkbox"/>
HE1		<input type="checkbox"/>	<input type="checkbox"/>

The pane on right lists the rooms available. The columns indicate:

Rm.: The (short) name of the room

Cap.: The capacity of the room (if defined in the master data)

Alt. Rm.: The room in question is an alternative room for the room entered for the lesson

Alt. HRm.: >The room in question is an alternative room for home room of the class

4 Now select a room (e.g. R1a) and click on the <Allocate rm> button. Room R1a will now be allocated instead of the workshop.

5 Click on the second row in the left pane and substitute the room 'TW' with another room (e.g. 'PL'). Instead of using the <Allocate rm.> button, you can allocate the new room with a double click.

**Allocate/Delete this room**

Allocate the room to  
the period block

Lessons: 7: Tu-7, Tu-8

☐ Also show occupied rooms

Planned	Actual	Tea.
WS	R1a	Ander
<b>TW</b>	<b>PL</b>	<b>Curie</b>

PL  
Physics lab.

Available rooms

Rm.	Cap.	Alt. Rm	Alt. HRm
<b>TW</b>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
SH1		<input type="checkbox"/>	<input type="checkbox"/>
SH2		<input type="checkbox"/>	<input type="checkbox"/>
WS		<input type="checkbox"/>	<input type="checkbox"/>
HE1		<input type="checkbox"/>	<input type="checkbox"/>
R1b	30	<input type="checkbox"/>	<input type="checkbox"/>
R2a	32	<input type="checkbox"/>	<input type="checkbox"/>
R2b		<input type="checkbox"/>	<input type="checkbox"/>
R3a		<input type="checkbox"/>	<input type="checkbox"/>

The scheduling timetable details window will now display the newly allocated rooms for periods 7 and 8. The original rooms entered for the lesson appear in parentheses.

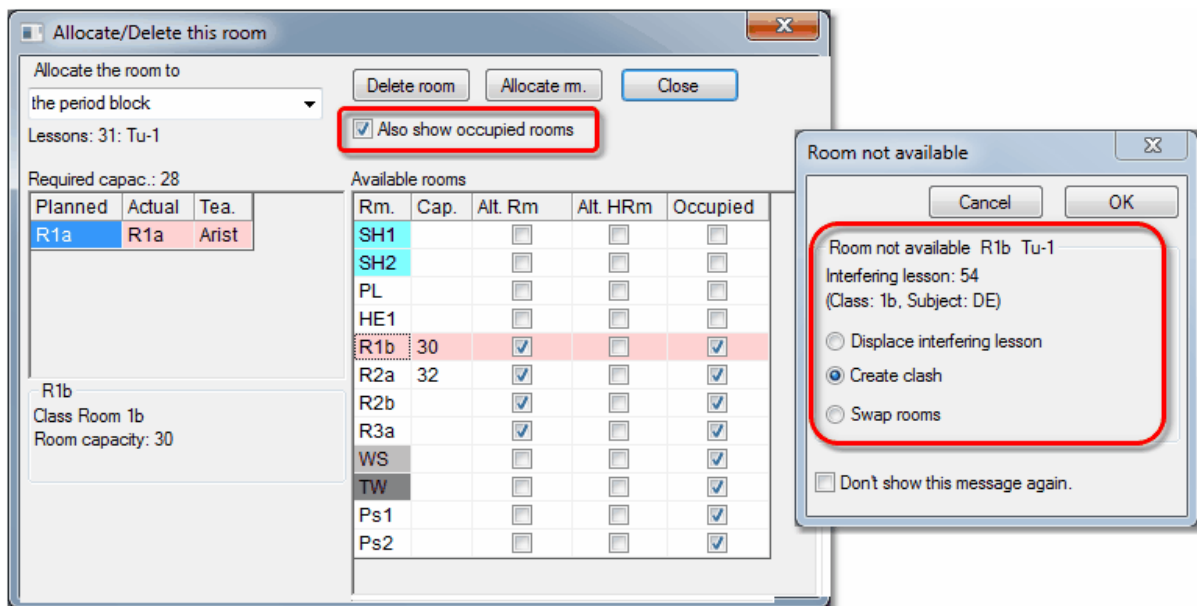
8	-	DS	-	*X*
---	---	----	---	-----

L-No.	Tea. Subj. Rm.	Cla.	Time
7	Ander, DS, R1a (WS)	1a	
	Gauss, DS, R1a (WS)	1b	
	Curie, TX, PL (TW)	1a, 1b	

You can use <Delete room> to delete a room that has already been scheduled.

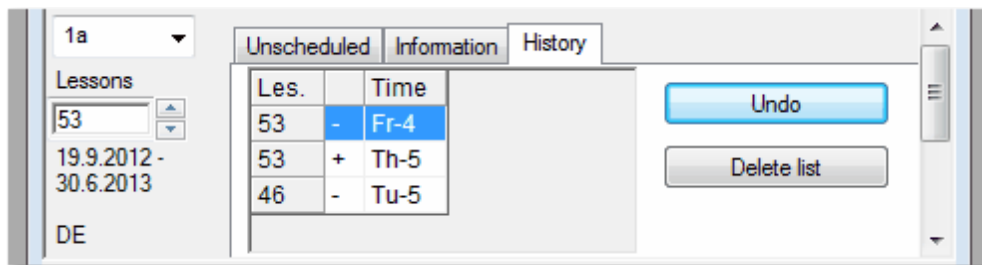
If you select the option "Also show occupied rooms" in the room allocation dialogue, you will also see those rooms which are occupied in the current period. If you wish to assign one of these rooms you can

- create a room conflict,
- force a lesson currently scheduled in the room from the room or
- perform a room swap.



### 4.3.7 Undo

Each planning step carried out in the timetable or the scheduling timetable is logged on the "History" tab and can be undone – step by step – using the <Undo> button. Clicking on <Delete list> will delete all the planning steps shown in the list.



All the functions described in chapter "Scheduling timetable" can also be called from the scheduling dialogue.

## 4.4 The scheduling dialogue

The scheduling dialogue provides functions for placing and moving periods manually. Similar to a peg board, the periods of the week are arranged in columns at the top and the elements (teachers, classes, rooms) in rows along the side.

The following example provides an overview of the type of information displayed in the scheduling dialogue

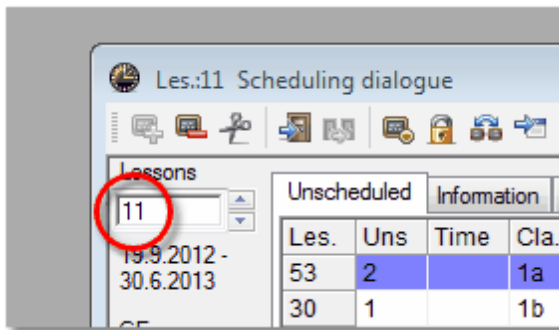
### 4.4.1 Allgemeines

Die Informationen, die im Planungsdialog angezeigt werden, sollen anhand eines Beispiels beschrieben werden.

- Öffnen Sie die Datei demo.gpn und „Planung | Planungsdialog“.

#### 4.4.1.1 The input field

Selection field Enter the number of the lesson you wish to view or modify (lesson 11 in the example) in the selection field.



#### 4.4.1.2 The period details window

The lower section part of the scheduling dialogue shows information relating to the active lesson. This corresponds to the display of the period details window in the timetable. Please see chapter "Timetable display" for a detailed description of the fields.

The centre section contains details on all the classes, teachers and rooms involved in the active lesson for the entire week

#### 4.4.1.3 Lesson search

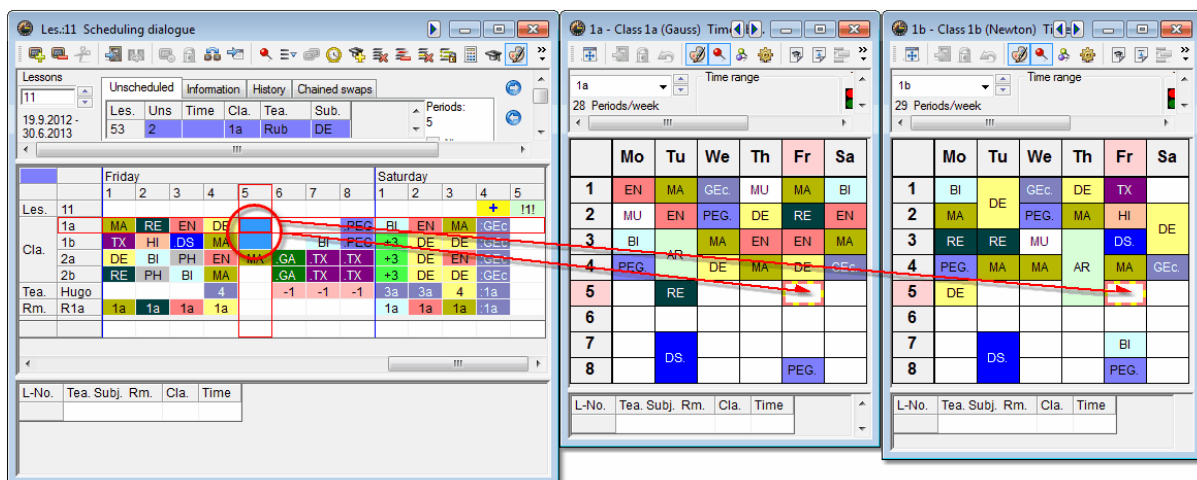
Instead of entering a lesson number, you can use the selection field to search for a particular lesson by entering a combination of details (classes, teachers and/or subjects involved), separated by a comma.

- Entering 1a,DE will display the lessons of subject DE for class 1a
- Entering Arist,1b will display the first lesson teacher Aristotle teaches to class 1b

#### 4.4.1.4 Period availability

Lesson 11 is scheduled to take place on Wednesday, period 1, and Saturday, period 4, as clearly shown by the icon 🗓️ in first row.

An empty cell in the grid denotes a period available for scheduling an element (teacher, class or room) In the example, Fri-5 is still free for classes 1a and 1b. You can easily verify this by cross-checking the details in the class timetable.



#### 4.4.1.5 Time requests

Any time requests entered for the lesson (in the lesson row) or the elements involved in the lesson are highlighted with their appropriate colour code. Time requests entered under the master data of a subject are displayed in a separate row. The example shows that a time request has been entered for subjects "DS" and "HE".

If you have entered unspecified time requests, you can assign these a different colour in the time request window (e.g. purple for -3 for class 3b).

		Monday								Tuesday		
		1	2	3	4	5	6	7	8	1	2	3
Les.	79											
Cla.	3a	HI	EN	PEG	GA	MA			BI	EN	RE	BI
	3b	HI	GEc	PEG	PH	MA	-3	-3	-3	RE	BI	GA
Tea.	Ander	-2	-2	-2	-2	-2	-2	-2	-2	4	4	4
	Curie	4			3a					4	4	3b
Rm.	WS											
	HE1											
Sub.	DS	-1	-1	-1	-1	-1				-1	-1	-1
	HE	-2	-2	-2	-2	-2				-2	-2	-2

Time requests entered under master data or lessons can be deleted direct in the scheduling dialogue by clicking on the <Delete period> button or by pressing the <Delete> key, or modified in the time request window.

#### 4.4.1.6 Saving individual settings

When using the Untis software on two different computers (e.g. at school and at home), you will rarely be working with two identical systems. Differences in hardware (screen display, graphics cards etc.) can necessitate annoying and time-consuming adjustments when switching from one system to another.

Your individual settings for the scheduling dialogue (e.g. font size, column width etc.) are therefore saved



in the view.ini file which is held locally on your computer.

This saves you the trouble of having to re-enter your settings when opening the file on another computer.

#### 4.4.1.7 'Information' tab

This is where you will find additional information on the active lesson such as the number of unscheduled periods or the total of scheduled periods for the class per week and per year.

### 4.4.2 Window logic

Like most functions in the Untis application, the scheduling dialogue communicates with all other windows.

#### Synchronisation

When you open a lesson view (or a timetable) and select a lesson, the scheduling dialogue automatically displays the active lesson and, vice versa, the lesson window (or the timetable) always displays the lesson selected in the scheduling dialogue.

#### Locking the view

Activate the button <Lock Period> to lock the display of the scheduling dialogue.



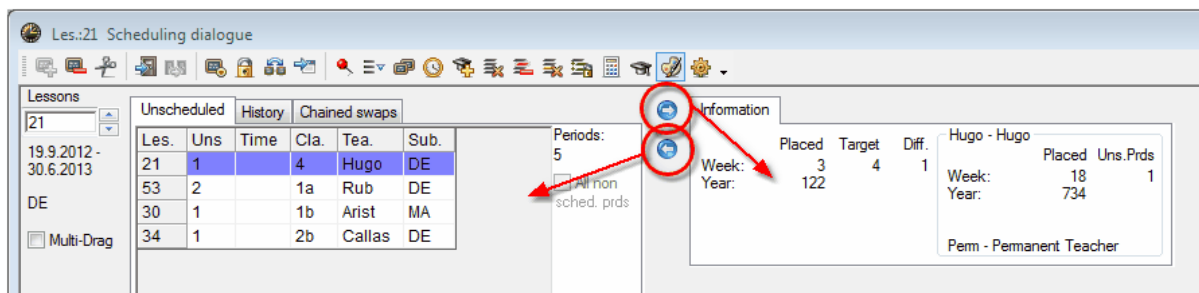
#### Window in the background

As a rule, you can bring a window to the front (i.e. activate a window) by clicking on any part of the window. The scheduling dialogue allows you to suppress this behaviour by activating the option "Window in the background" under <Settings>.



#### Moving tabs

The individual tabs of the scheduling dialogue (Unscheduled, Information...) can be placed next to each other, too. This allows you to make better use of the timetable area and increases clarity.



### 4.4.3 Planungsfunktionen

Im Planungsdialog stehen Ihnen eine Reihe von verschiedenen Planungsfunktionen zur Verfügung:

[Stunden verplanen](#)

[Stunden löschen](#)


[Mit Kollision verplanen](#)

[Verschieben von Stunden mit Drag&Drop](#)

[Rückgängig](#)  
[Raum zuordnen](#)  
[Ausweichraum anzeigen](#)  
[Neuer aktueller Unterricht](#)  
[Stunden fixieren](#)  
[Optimierung](#)  
[Bewertung zur aktuellen Zeit](#)  
[Lehrer im Unterricht ändern](#)


#### 4.4.3.1 Scheduling periods

Scheduling periods Schedule periods using one of the following options:

- By double clicking on a period
- By clicking on the button <Schedule the period> 
- By pressing the key K
- Via the context menu (right mouse button) ( See chapter "Deleting period blocks".)
- Using drag & drop from the grid view of unscheduled periods or from the lesson view

#### 4.4.3.2 Deleting periods

Delete (i.e. de-schedule) periods using one of the following options:

- By double clicking on an active period
- By clicking on the <Delete period> button 
- By pressing the <Delete> key
- Via the context menu (right mouse button) (see example)
- Using drag & drop in the period details window (see chapter "Deleting periods")

##### Deleting periods of a row

Click on <Delete periods of one row> if you wish to delete the entire timetable row of a particular element (e.g. class 1a).



##### Delete, Activate lesson

If you wish to delete a non-active period and re-schedule it immediately, click on <Delete, Activate Lesson> This de-schedules the lesson and automatically activates it so that you can schedule it in a different slot straight away. Alternatively, use the key combination <CTRL>+X.



#### 4.4.3.3 Scheduling periods with clashes

Untis will warn you if you attempt to schedule a lesson that is already occupied by another class, teacher or room. In this case, perform a clash as described in chapter "Scheduling in the timetable | Scheduling with clashes".

#### 4.4.3.4 Moving periods with drag & drop

Periods in the scheduling dialogue can be moved in the same way as periods in the timetable and the scheduling timetable.

Click on a period in the scheduling dialogue and drag it away holding the left mouse-button pressed.

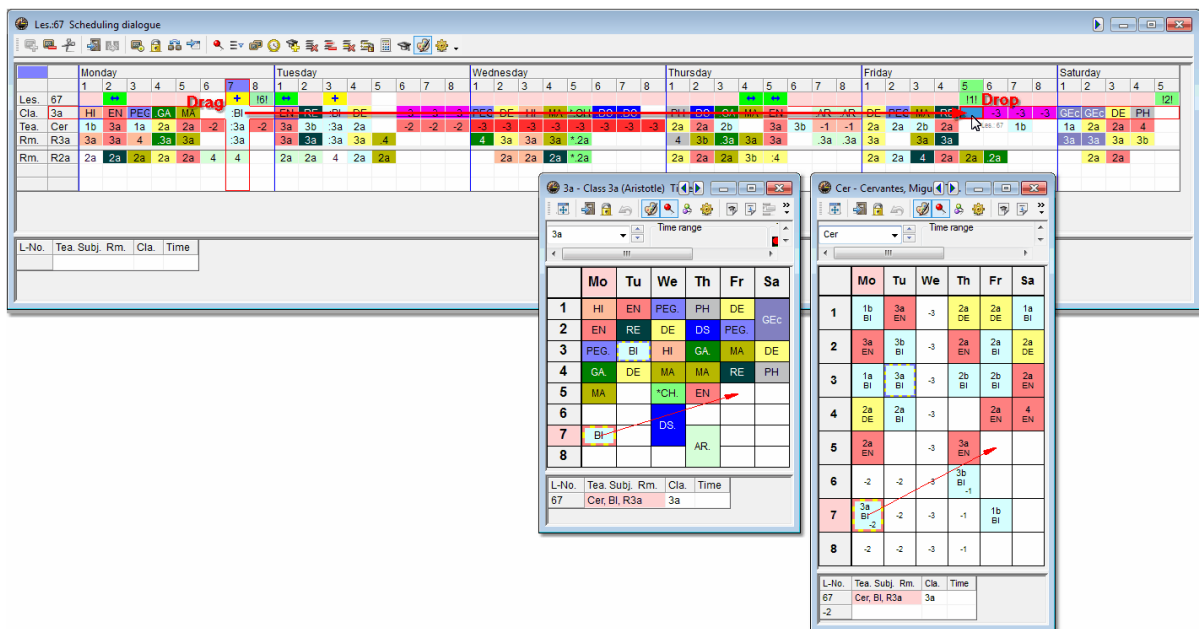
All periods where the lesson can be scheduled are highlighted green in the lesson row.

When the arrow passes over a scheduled period, the details of the lesson automatically appear in the period details window.

For purposes of clarity, red arrow markings show the possible slots in the timetable where the lesson can be moved. This enables you to see at a glance if the move would be advantageous for classes and/or teachers.

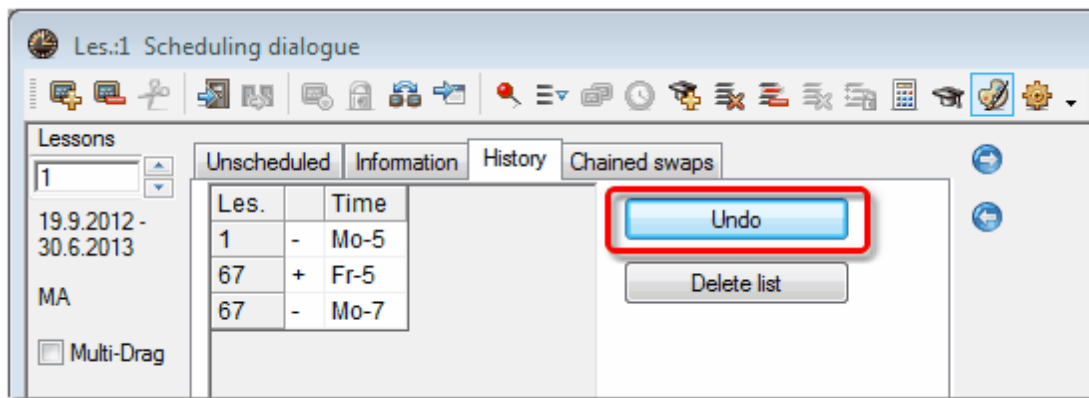
Drop the period in a suitable slot (e.g. Fri-5) by releasing the left mouse-button.

Periods marked with the  icon are available for swapping.



#### 4.4.3.5 Undo

Undo Each planning step carried out in the timetable or the scheduling timetable is logged on the "History" tab and can be undone – step by step – using the <Undo> button. Clicking on <Delete> will delete all the planning steps shown in the list.



#### 4.4.3.6 Allocating rooms

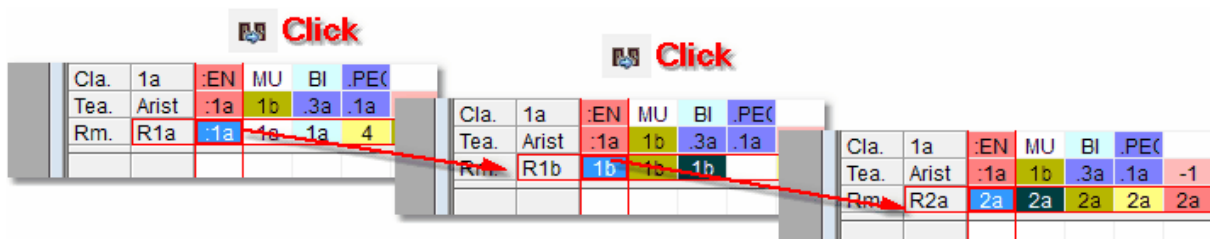
Allocating rooms Use the <Allocate/Delete room> option in the context menu of the scheduling dialogue (accessible via right mouse-click) to open the room allocation dialogue, or press <CTRL>+R. The functionality of the room allocation dialogue is described in chapter "Scheduling timetable | Allocating rooms".

When the cursor is placed in the room row under the active lesson and you click on the <Allocate/Delete this room> button, the room already allocated is deleted immediately and replaced with the designated room.

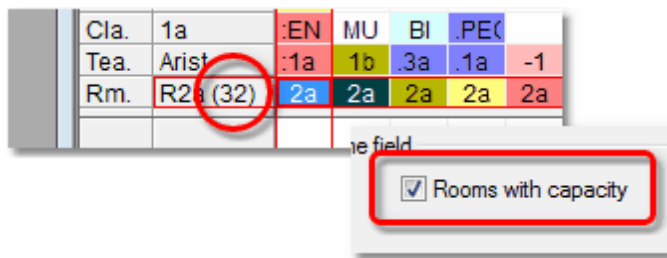


#### 4.4.3.7 Displaying alternative rooms

When the cursor is placed in the room row, the function <Alternative room> becomes active. Click on this button to display the next alternative room specified under master data. In the example, this is the room R1b (first alternative room for R1a). Click again to show the second alternative room (R2a) etc.



You can also show the capacities of the rooms in the settings of the scheduling dialogue via the settings if the capacities have been entered under master data.



#### 4.4.3.8 Activate new lesson

Place the cursor on a lesson and click on the <Activate lesson> button to activate it. Alternatively, use the key combination <CTRL>+<ENTER> or double click on the lesson you wish to activate.

#### 4.4.3.9 Locking periods

Click on <Lock period> to lock the cursor-selected period (or to unlock an already locked period). Locked periods will not be moved by subsequent optimisation runs. Locked periods are marked with a lock icon in the lesson row of the scheduling dialogue and with an asterisk (\*) in the element row.



You can also highlight an entire area in the scheduling dialogue and then click on <Lock period> to lock all the selected periods. The same function is available via the context menu accessible by clicking with the right mouse-button.

#### 4.4.3.10 Optimisation



This function allows you to start the optimisation process from the scheduling dialogue.

The timetable is locked conditionally. When a timetable is locked conditionally, the periods already scheduled will not be affected by the placement optimisation process. The optimisation tool will only place unscheduled periods. The subsequent swap optimisation tool, however, may swap all the unlocked periods.

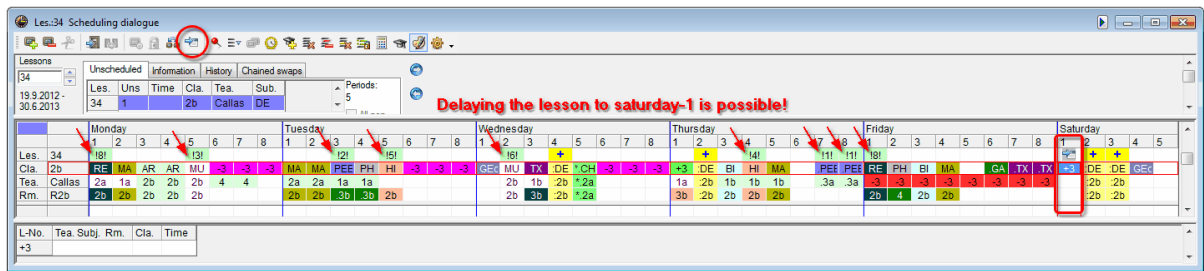
A timetable is calculated using strategy A.

#### 4.4.3.11 Assessing the active time slot

This function assesses all the periods of the week to determine their suitability for scheduling at a specific time.


Position the cursor on a free period of the class and click on the  button in the scheduling dialogue toolbar. The slot for which a lesson is looked for is indicated by the  icon in the lesson row.

The software now assesses all the periods of the week to determine their suitability for scheduling in the selected time slot. The assessment results are displayed in the lesson row. The lower the value, the more suitable the time slot.



#### 4.4.3.12 Replacing teachers

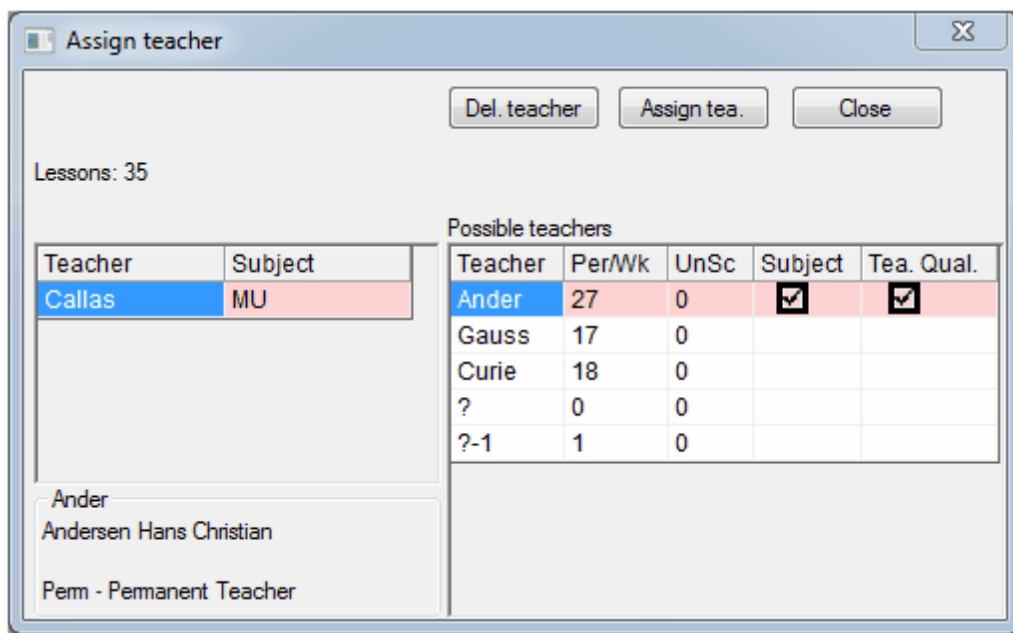
Use this function in the scheduling dialogue to replace a lesson teacher with another.

Activate a lesson and click on . A dialogue will open where you can change the teacher for the lesson.

The left pane of the window displays the teacher(s) of the active lesson. The right pane displays all the teachers available (based on their own timetables) to take on ALL the periods of the active lesson. The following additional details are provided to facilitate the decision-making process:

- Per/Wk: Number of periods per week taught by the teacher
- UnSc: Number of those periods that remain to be scheduled
- Subject: Teacher already teaches this subject.
- Tea. Qual. Teacher is qualified to teach this subject

The example shows that "Ander", "Gauss" and "Curie" could take the lesson. However, only "Ander" has the qualification for the subject. Click on <Assign tea.> to assign the teacher to the lesson.



#### 4.4.4 Display functions

The functions described below can be used to change the scheduling dialogue display.

##### 4.4.4.1 Displaying all teachers of a class

Place the cursor in a class row to display the timetables of all teachers involved in this class. Teachers not assigned to teach a class in this period are listed first, followed by uncoupled teachers.

Place the cursor in a teacher row to display the timetables of all classes in which the teacher is involved.



##### 4.4.4.2 Display all classes, teachers and rooms

Use this function to display all classes, teachers and rooms in your school in the timetable rows of the scheduling dialogue. If you only wish to display classes, hold down <SHIFT> key when invoking the function.

Place the cursor in a teacher row if you want all the teachers to be listed first (under the active lesson). In the same way, place the cursor in a room or class row if you wish to list rooms or classes first.



##### 4.4.4.3 Display a 2nd lesson

This function displays not only the active lesson, but also the lesson on which the cursor is placed. The function also allows you to display additional information on the cursor-selected lesson.



##### 4.4.4.4 Deleting rows

Use this function to delete all the rows in the timetable window below the cursor position. Please note that the active lesson will still be displayed on the screen.



>

##### 4.4.4.5 Show lesson colours

The colours defined for master data elements and individual lessons can be activated and deactivated using the <Show lesson colours> button.



#### 4.4.4.6 Settings

This function provides various settings affecting the layout of the scheduling dialogue.



#### 4.4.4.7 Displaying a particular element

To call up the timetable for any element (or lesson), simply enter the name of the element or the lesson number in any part of the timetable window and press <ENTER>

The example shows that the (short) name of Sports Hall 1, SH1, has been entered. The software responds by displaying the room availability.

Tea.	Hugo	3b	3b	4	4	
Rm.	R1a	1a	1a	1a		
		SH1				

Tea.	Hugo	3b	3b	4	4	
Rm.	R1a	1a	1a	1a	4	3b
Rm.	SH1	.4		.3a	.1a	

If you wish to switch to another lesson but still wish to see the availability of SH1 then you can lock this row (like any other row) by clicking on <Do not hide rows>. The element is now marked with a "+" in front of the name and is displayed until you remove it by clicking on <Hide selected rows>.



Tea.	Hugo	3b	3b	4	4	
Rm.	R1a	1a	1a	1a	4	3b
Rm.	+SH1	.4		.3a	.1a	

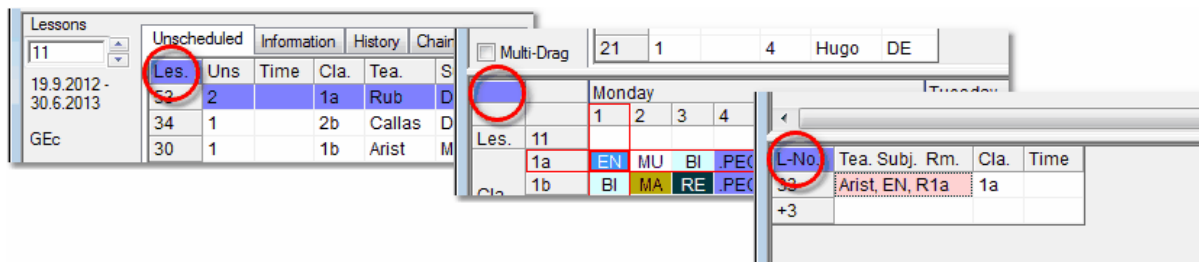
#### 4.4.5 Shortcut keys

Most of the scheduling dialogue functions can be activated with shortcut keys (i.e. without the use of the mouse).

Use <CTRL> +<TAB> to switch between individual windows within Untis.

When the scheduling dialogue is open, a purple rectangle highlights the active part of the scheduling dialogue.





Switch between the different parts of the window using <F6> or <SHIFT>+<F6>.

In the upper part of the scheduling dialogue, use <ALT> +<Left Arrow> and <ALT> -<Right Arrow> to move from tab to tab. Within a tab, use the <TAB> key to move between individual elements.

In the centre section of the scheduling dialogue, use the cursor keys to control the cursor. The following key combinations are also available:

<CTRL> + <Right Arrow>: last period of the week <CTRL> + <Left Arrow>: first period of the week  
 <ALT> + <HOME>: first period of the day  
 <ALT> + <END>: last period of the day  
 <CTRL> + <Arrow Up>: first row <CTRL> + <Arrow Down>: last row <CTRL> + <Right Arrow>: next day  
 <CTRL> + <Left Arrow>: previous day

Various scheduling dialogue functions can also be invoked using the following shortcut keys:

<INSERT>: Schedule period  
 DEL>: De-schedule period  
 <CTRL> + <X>: Delete, activate lesson  
 <F7>: Lock period  
 <CTRL> + <ENTER>: New active lesson  
 <CTRL> + <R>: Room dialogue  
 <CTRL> + <SHIFT> + <ENTER>: 2nd active lesson  
 <F8>: Alternative room  
 <Insert>: Schedule period  
 <Delete>: De-schedule period  
 <Ctrl> - <X>: Delete, activate lesson  
 <F7>: Lock period  
 <Ctrl> - <Enter>: New active lesson  
 <Ctrl> - <R>: Room dialogue  
 <Ctrl> - <Shift> - <Enter>: 2nd active lesson  
 <F8>: Alternative room


## 4.5 Swapping periods

In addition to the period swap function using drag & drop, the scheduling dialogue (and to a limited extent, the scheduling timetable) offers additional functions for swapping already scheduled periods. Use these functions when the timetable requires further improvements

- Suggested swaps
- Consecutive swaps
- Chained swaps

### 4.5.1 Suggested swaps

This function offers swap suggestions for a cursor-selected period on a class timetable. To this end, Untis evaluates the timetable based on your weighting settings and indicates if the quality of the timetable would be better or worse.

Open this function by clicking on the <Suggested swaps> button in the scheduling dialogue. 

These functions are described in chapter 'Scheduling periods in the timetable | Swapping periods'.

In practice, you may want to move a lesson to a different slot on the timetable already occupied by another lesson. This lesson would be displaced and would have to be moved to yet another slot. The same swap rules also apply to the second lesson: either the software finds a suitable slot for the lesson on the timetable or the lesson will displace yet another lesson. This chain of events will continue until a suitable slot has been found for every lesson.

Untis supports this intuitive planning method with the functions "Consecutive swaps" and "Chained swaps".

The main difference between the two swap functions is that consecutive swaps can be carried out using drag & drop and also allow period swaps across classes.


### 4.5.2 Consecutive swaps

Carry out consecutive swaps in either the scheduling dialogue or in the scheduling timetable using drag & drop. This is similar to working with a peg board, where you schedule a lesson by displacing another lesson, activate the lesson you have displaced and schedule it in a different slot, activate the next lesson you have displaced (if any) and schedule it in yet a different slot etc.

1. Load the file demo.gpn and open the scheduling dialogue and a class timetable.

You wish to move the PE lesson (no. 73) of class 1a on Fri-8 to a better (earlier) slot on the timetable.


2. Try dragging the lesson to a different position on the timetable while holding the <CTRL> key pressed.

All slots in the timetable where scheduling is blocked by a single element are displayed with the  icon. For instance, if both the class and the teacher of the lesson to be scheduled in this slot are already involved in different lessons, two lessons would be displaced and the chain would be broken.

3. Drop the PE lesson (still holding down the <CTRL> key) on Thu-5. This slot is blocked by lesson 2 (Callas, AR, 1b). You will not be asked if you wish to create a conflict.

**"PE" in 1A and 1B**

Thursday								Friday							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
	!6!			+								!4!	!2!		+
MU	DE	EN	MA		-3	-3	-3	MA	RE	EN	DE				PEG
DE	MA	AR	AR	AR	-3	-3	-3	TX	HI	DS	MA			BI	PEG
4	1b	1a	1a	-1	-2	*2b	*2b	1a	.3a	1a	1b	-1	-2	-2	1a
1b	1a	4	2b			*2b	*2b	4	.3a		1a				1a
						.4	.4		.3a						1a
						.4	.4		.3a						1a
-1	-1	-1	-1	-1				-1	-1	-1	-1	-1			
-1	-1	-1	-1	-1				-1	-1	-1	-1	-1			

The PE lesson will now be scheduled in this position and lesson 2 for class 1b, the lesson originally placed in this slot, automatically becomes the active lesson. Drag this lesson to another position marked  and drop it, thereby continuing the chain, or alternatively place the lesson on a suitable unoccupied slot.


Keep the <CTRL> key pressed, otherwise if you release the key the swap is interrupted and cannot be continued.


4. A suitable slot for this lesson is Sat-1 where lesson 2 can be scheduled without causing a conflict (as indicated by the !1! symbol). This completes the swap chain.

**"AR" in 1B**

Thursday								Friday								Saturday				
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5
		+	+																	
DE	MA	AR	AR	PEG	-3	-3	-3	TX	HI	DS	MA			BI		!1!				!2!
1a	2b	1b	1b			.3a	.3a	-3	-3	-3	-3	-3	-3	-3	-3	+3	DE	DE	GEc	
1b	1b	1b	1b					4	1b		1b			1b			2b	2b		
-1	-1	-1	-1	-1				-1	-1	-1	-1	-1				-1	-1	-1	-1	-1
				1a		.4	.4		.3a											

The PE lesson has now been moved from Fri-8 without requiring the de-scheduling of another lesson.

Slots marked with the  icon when a period is dragged away denote positions where a period swap is possible.

The  icon indicates that a period can be scheduled in this position without displacing another lesson. The lower the value, the better the position for scheduling the period.

	Mo	Tu	We	Th	Fr	Sa
1	EN	MA	GEc.	MU	MA	BI
2	MU	EN	PEG.	DE	RE	EN
3	BI	AR	MA	EN	EN	MA
4	PEG.	AR	DE	MA	DE	GEc.
5		RE		PEG.		
6						
7		DS.				
8						

Please note that consecutive swaps may be carried out across different classes. The only restriction is that the swap path for the continuation of a chain must always be unique. Where there is a fork in the path (e.g. both teacher and class are already scheduled elsewhere), the software will ask you how you wish to proceed (create a conflict, cancel etc.) and the chain must be restarted at that point.

### 4.5.3 Chained swaps

The chained swaps function is accessible from the <Chained swaps> tab in the scheduling dialogue.

1. Open the file demo.gpn, the scheduling dialogue and a class timetable.

The aim of this exercise is to swap the cursor-defined lesson (lesson 38, Callas, MU, 2a) with a lesson in a different slot.

2. Start the swap chain by clicking on <Start> on the "Chained swaps" tab.

The screenshot shows the 'Les:38 Scheduling dialogue' window. The 'Chained swaps' tab is active, displaying a grid of lessons. A red box highlights the 'Start' button, and another red box highlights the 'Les: 38 Mo-1 -> ?' button. A red arrow points from the 'Start' button to the 'Les: 38 Mo-1 -> ?' button. Another red arrow points from the 'Les: 38 Mo-1 -> ?' button to the '2a - Class 2a (Hugo)' timetable. Red text annotations 'Swapping possible, e.g. 3!!' and 'Scheduling possible, e.g. !1!' are present. The bottom of the window shows a table with columns: L-No., Tea, Subj., Rm., Cla., Time. The row for lesson 38 shows: 38, Callas, MU, R2a, 2a, +3.

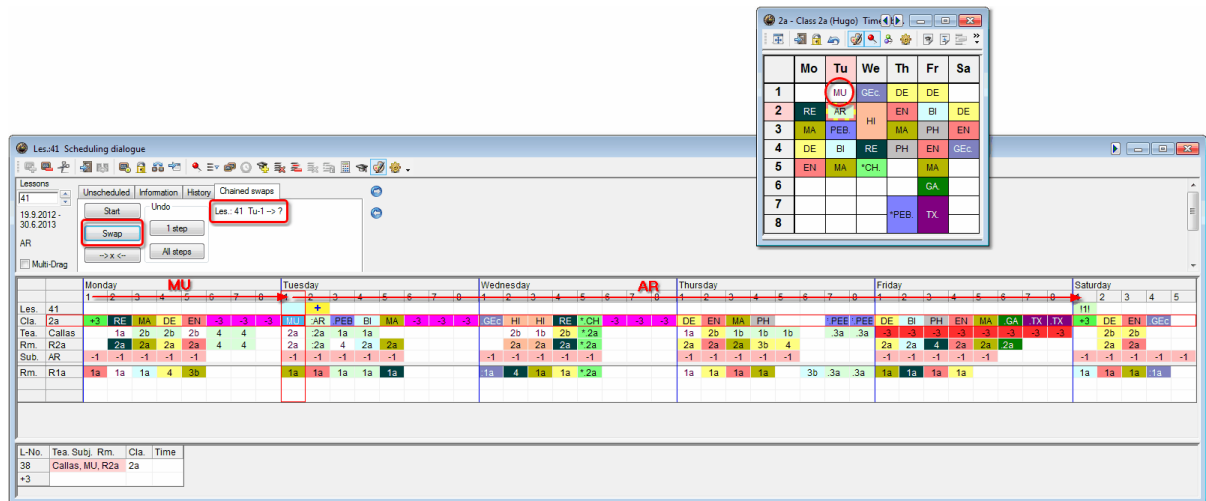
The lesson row now displays a series of number symbols in some of the cells in the time grid. The lower the value, the better the Untis evaluates the position. Two exclamation marks after the number (e.g. **2!!**) indicate that a swap to this position would displace a lesson already scheduled for this slot. One exclamation mark before and one after the number (e.g. **!1!**) indicate that a swap would not cause a

displacement of another lesson, completing the swap chain.

You wish to move lesson 38 (Callas, 2a, MU) from Mon-1 to Tue-1. This will displace one period of lesson 41 (Callas, 2a, AR)..

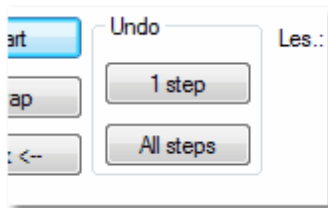
3. Position the cursor on Tue-1 and click on <Swap>.

The original period of lesson 38 has now been moved to Tue-1. The change is also reflected on the timetable Lesson 41 with one displaced period automatically becomes the active lesson.



Again, Untis marks suitable swap positions with numbers displayed in the lesson row.

If you are dissatisfied with the swap results, you can undo individual steps of the process or even the entire swap chain



You now wish to schedule the displaced period of lesson 41 for Sat-1. The **!1!** indicates that this will not displace any further lesson and the swap chain will be complete.

4. Position the cursor on Sat-1 and click on the <Swap> button.

Lesson 41 (Callas, 2a, AR) displaced from Tue-1 has been moved to Sat-1. The swap chain is now complete.

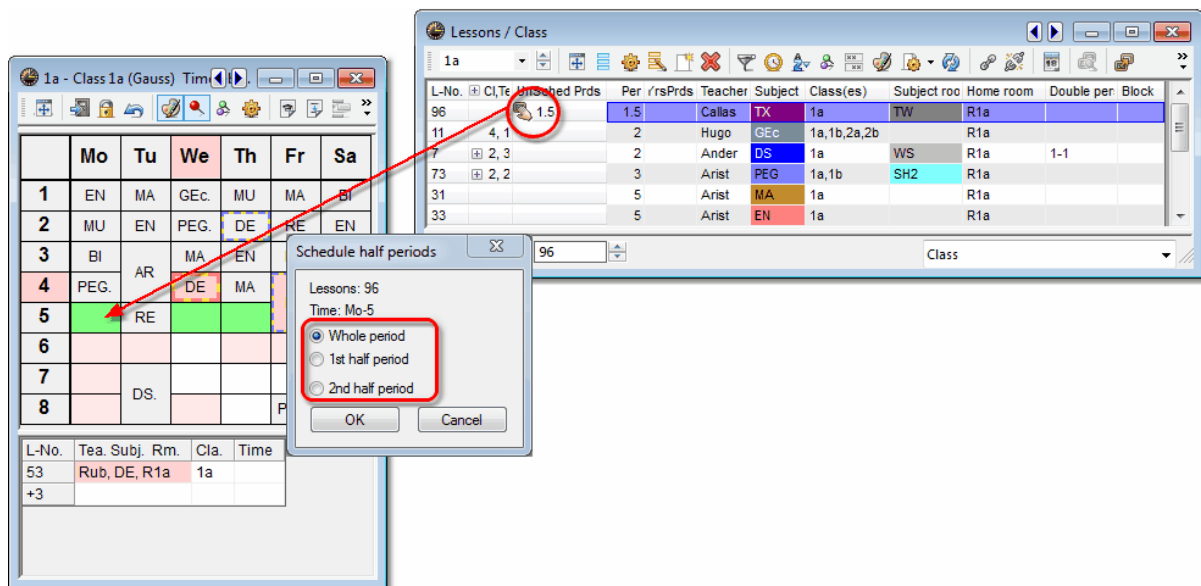
Please note that function "Chained swaps" only supports swaps that do not result in a significant decrease in timetable quality (based on the weighting settings you have entered). This means that only the swap partners identified in the lesson row can be used for swapping.

	Mo	Tu	We	Th	Fr	Sa
1		MU	GEc.	DE	DE	AR
2	RE	AR	HI	EN	BI	DE
3	MA	PEB.		MA	PH	EN
4	DE	BI	RE	PH	EN	GEc.
5	EN	MA	*CH.		MA	
6					GA.	
7				*PEB.	TX	
8						

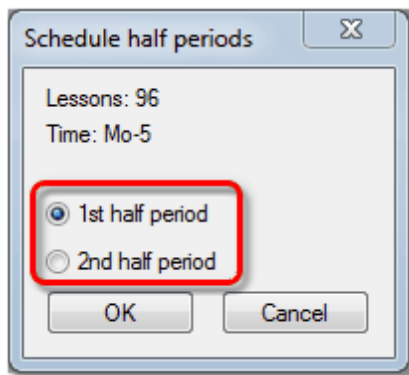
## 4.6 Scheduling half periods

If you do not always schedule full lessons you will have to decide in which part of the period the half lesson should occur.

When scheduling a lesson block (e.g. 1.5 periods) Untis will ask whether you wish to schedule the complete second period or whether the half lesson should be scheduled in the first or second period.



In the case of a lesson lasting a half period, you must decide whether lesson should take place in the first or second half of the period.



## 4.7 Multi-timegrid

If you are using different time grids, the display in the scheduling dialogue depends on the active lesson. The time grid of the active lesson is also the active time grid. Periods of the active time grid that are completely or partly blocked by periods of the other time grid are marked with the symbol O This applies to the scheduling timetable, too.

# 5 Timetable Display

## 5.1 Timetable display

When the timetable is complete, the information needs to be presented in a clear and unambiguous fashion. Untis offers a number of different timetable layouts and numerous timetable display options. The following chapter provides an overview of predefined timetable displays and shows the different methods of shaping timetable layouts to suit individual requirements.

## 5.2 Window set-up

You can open ready-made timetables for classes, teachers, rooms and subjects under "Timetables" in the main menu. You can also display timetables for individual students when using the Student timetable or Course scheduling modules.

Basically, a timetable window consists of the tool bar and three separate sections: the selection window at the top, the actual timetable in the middle and the period details window at the bottom.

**1a - Class 1a (Gauss) Timetable (Cl1)**

Time range: 17.9.2012 - 29.6.2013

Timetable comparison: ☐ Active ☐ Only modified timetables

**Selection window**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 8:00 8:45	EN Arist <u>R1a</u>	MA Arist <u>R1a</u>	GEc Hugo <u>R1a</u>	MU Callas <u>R1a</u>	MA Arist <u>R1a</u>	BI Cer <u>R1a</u>
2 8:55 9:40	MU Callas <u>R1a</u>	EN Arist <u>R1a</u>	PEG Arist <u>SH2</u> PEB Rub <u>SH1</u>	DE Rub <u>R1a</u>	RE Nobel <u>R1a</u>	EN Arist <u>R1a</u>
3 9:50 10:35	BI Cer <u>R1a</u>		MA Arist <u>R1a</u>	EN Arist <u>R1a</u>	EN Arist <u>R1a</u>	MA Arist <u>R1a</u>
4 10:45 11:30	PEG Arist <u>SH2</u> PEB Rub <u>SH1</u>	AR Callas <u>R1a</u>	DE Rub <u>R1a</u>	MA Arist <u>R1a</u>	DE Rub <u>R1a</u>	GEc Hugo <u>R1a</u>
5 11:40 12:25		RE Nobel <u>R1a</u>				
6 12:35 13:20						
7 13:30 14:15		DS Ander <u>WS</u>				
8 14:25 15:10		TX Curie <u>IW</u>			PEG Arist <u>SH2</u> PEB Rub <u>SH1</u>	

**Timetable window**

L-No.	Tea.	Subj.	Rm.	Cl.	Time	School week	Stud.	Special text	Cluster	Line text-2
33		Arist, EN, R1a		1a		2-41	28			
+3										

**Period details window**

### Toolbar

The toolbar is usually located at the top of the window, but can be moved to any window edge – right, left or bottom – and can even be dragged out of the window altogether. You can also remove unwanted buttons from the toolbar ('Add or remove buttons' option).



The screenshot shows a software window titled "1a - Class 1a (Gauss) Timetable". The window contains a weekly timetable grid for Class 1a, showing periods 1 through 8 across the days of the week (Mo to Sa). The grid is color-coded by subject: EN (English), MA (Mathematics), GEc (Geography), MU (Music), RE (Religion), BI (Biology), AR (Art), DS (Drama), and PEG (Physical Education). Below the grid is a table with columns: L-No., Tea. Subj. Rm., Cla., Time, School week, and Stu. The first row shows "33" in L-No., "Arist, EN, R1a" in Tea. Subj. Rm., "1a" in Cla., and "2-41" in School week. Below this table is a scroll bar.

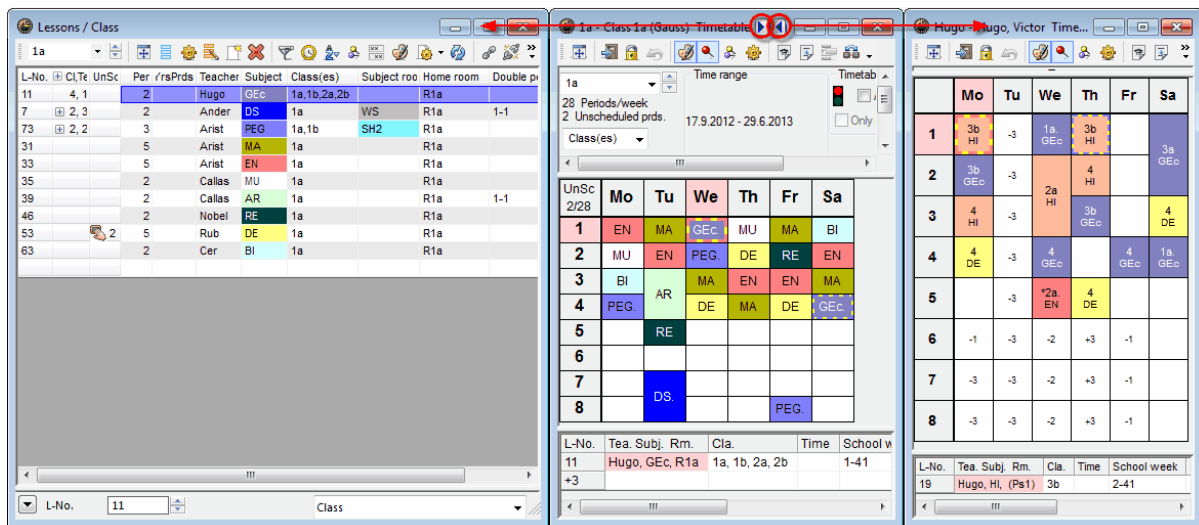
On the right side of the window, a menu titled "Add or Remove Buttons" is open, listing various functions that can be added to the toolbar. The functions listed are:

- ✓ Resize the window
- ✓ Allocate/Delete this room
- ✓ Lock Period <F7>
- ✓ Undo changes
- ✓ Show lesson colours
- ✓ Lock Type
- ✓ Lock this display
- ✓ Settings
- ✓ Other element in period
- ✓ Next element in period
- ✓ TT of per. element
- ✓ Suggested swaps

### Pop-up windows

Let us assume that we have opened a class timetable and perhaps now wish to view the associated teacher timetable or wish to make a small change in the relevant lesson window. You can use the two arrows at the top of the screen to quickly open and close these windows.

For example, from a class timetable you can click on the right arrow to open a teacher timetable and the left arrow to open a lesson timetable for classes.

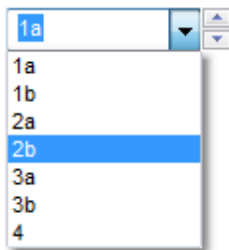


## 5.2.1 Selection window

The selection window in the upper section of the timetable allows you to select the type of timetable you wish to display. The selection pane displays various items of information such as number of periods per week and unscheduled periods.

### Input field

Use the input field to enter the name of the element whose timetable you wish to display. Switch between different elements by using the spin controls located on the right window edge or by placing the cursor in the input field and pressing <Page Up> and <Page Down> or the up and down cursor keys.



### Timetable comparison

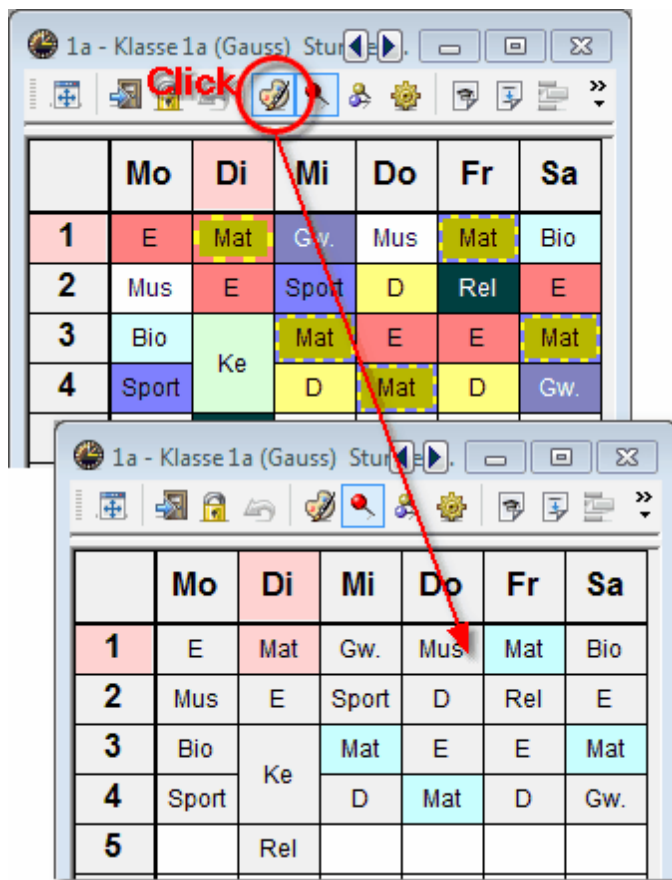
The two selection boxes "Timetable comparison" and "Only modified timetables" are for use with the "Timetable comparison" function described in greater detail in a later chapter.

### Periods per week

Displays the number of periods per week and the number of unscheduled periods (per week) for the active element.

## 5.2.2 Timetable window

The middle part of the timetable window shows the actual timetable for the active element. The display offers a variety of different settings and options that allow you to customise it to suit your individual requirements. Please refer to chapter "User-defined views" for a detailed description of these settings.



Clicking on a (scheduled) period on the timetable activates the period and causes the cell to be outlined in red-yellow. All other periods associated with the active lesson are highlighted in blue-yellow. If the display of colours in the timetable has been deactivated (colour palette icon), the active period will be displayed pink and the other periods associated with it light blue. This shows you at a single glance how the periods of this lesson are distributed throughout the week.

### Resize the window

This function adjusts the window frame to the size of the displayed timetable window.

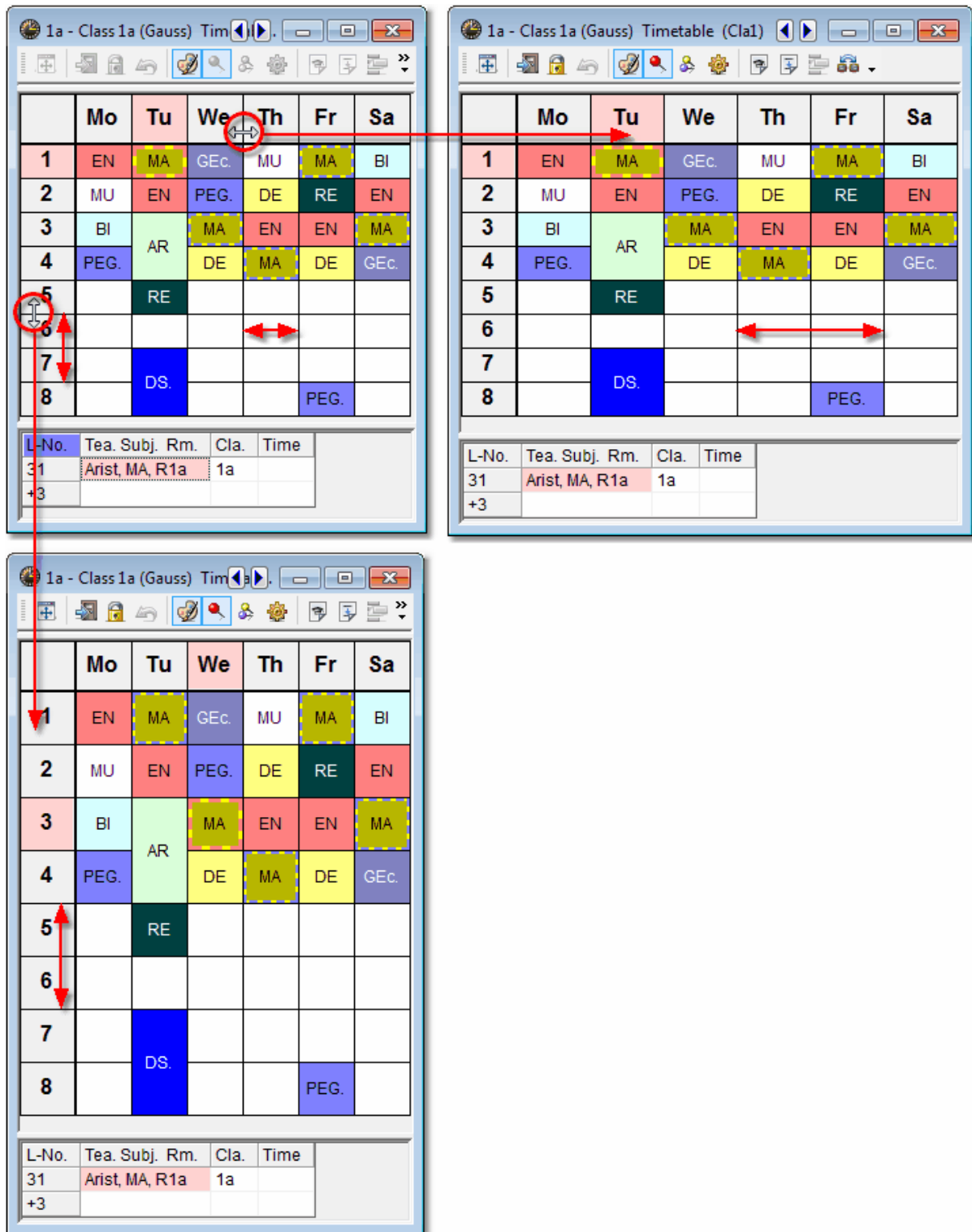


### Note:

The buttons <Lock period>, <Undo> and <Allocate/delete room> are intended for performing manual changes to the timetable and are therefore described in chapter "Manual timetabling".

### Change size

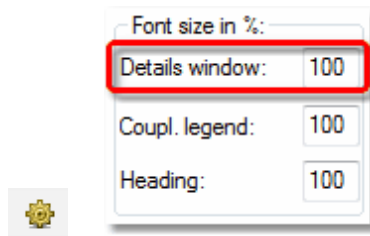
You can easily change the size of timetables in the timetable window. Drag the dividing lines between the columns apart or together to alter the size of the timetable accordingly.



### 5.2.3 Period details window

Since there is often not enough space in the individual cells of the timetable to display all the relevant data for the active period, Untis provides a third window for the display of such information – the period details window. The font size used in the period details window can be changed via <Settings>. The

period details window provides details on the currently active lesson.



### L-No.

In the example the "L-No." column shows lesson number 74. Below the lesson number, you will see the time request entered for the active period under "Master Data | Classes" (" +3").

7	MA			PEG.		
8	PH					

L-No.	Tea. Subj. Rm.	Cla.	Time	Stud.	Spe
74	Curie, PEG, SH2	4		23	
+3	New, PEB, SH1	4		23	
				46	

### Tea. Subj. Rm.

The second column shows all the teachers, subjects and rooms involved in the lesson. The period details window displays one row for each coupling.

If the optimisation tool has allocated a different (alternative) room instead of the home room entered for the lesson, the name of the home room is shown in parentheses. The example shows that room Ps1 is the room entered for the lesson, but the actual scheduled room is the alternative room R1a.

L-No.	Tea. Subj. Rm.	Cla.	Time	Stud.	S
92	New, MA, R1a (Ps1)	3b		22	

### Cla.

This column displays the class(es) involved in the active lesson (classes 1a and 1b in the example).

L-No.	Tea. Subj. Rm.	Cla.	Time	Stud.	Spe
73	Arist, PEG, SH2	1a, 1b			For
+3	Rub, PEB, SH1	1a, 1b			

### Time

The "Time" column displays time restrictions and/or periodicities – a particularly important function for use with the Multi-week timetable module. For instance, the GA lesson in the example takes place on a fortnightly basis in weeks of type A.

L-No.	Tea. Subj. Rm.	Cla.	Time	Stud
94	New, GA, R2a	2a, 2b	AweekA	

### Students

Shows the number of students entered for the lesson or elective subject (for use with the Course scheduling module). Lesson 6 in the file demo.gpn, for instance, contains the student numbers for the individual special classes.

L-No.	Tea. Subj. Rm.	Cla.	Time	Stud.	Special text	Cluster	Line text-2
6*	Callas, CH, R2a	2a, 2b, 3a		9	Special Class		
	Gauss, MA, R2b	2a, 2b, 3a		11			
	Ander, MA, R3a	2a, 2b, 3a		9			
	Rub, EN, R1a (Ps1)	2a, 2b, 3a		6			Beginners
	Hugo, EN, R1a (Ps1)	2a, 2b, 3a		12			Advanced
	Nobel, DE, (Ps2)	2a, 2b, 3a		7			
	?-1, DE	2a, 2b, 3a		8			
				62			

### Special text

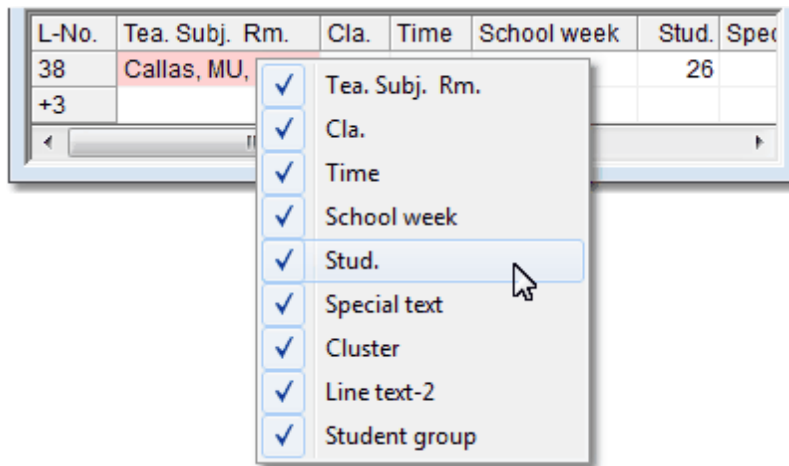
The column "Special text" contains the text or the description entered for the lesson, and the line text entered in the lesson details window. Lesson 6 in the file demo.gpn, for instance, contains the description "Special Class".

### Line text-2

In addition to the line text, the "Line text 2" field in the period details window can be used to define a second, independent line of text. In the example, a line text has been defined ("Beginners" and "Advanced") for each of the coupling lines with the subject EN (English).

### Hide and show columns

Individual columns can be hidden or shown in the period details window. Right-click on the heading row in the period details window and deactivate the desired column.



#### Tip

Columns displayed in a timetable period details window are printed in the legend when the timetable is printed. If the legend takes up too much space in the printout, you can simply hide columns in the corresponding timetable view.

## 5.3 Timetable interaction

Timetables can be called up manually or set to open automatically (if desired) when an element is selected in a different window. The automated function means that you will always have up-to-date information on the screen without having to search for it.

#### Communication between timetables

Open the file demo.gpn and call up a timetable for classes, teachers and rooms, and arrange the timetables next to each other. Click on Monday, period 1 ("EN") in the timetable of class 1a. As you can see, the teacher timetable automatically switches to the timetable of the teacher involved in the lesson (i.e. Aristotle, "Arist") and the room timetable switches to the room allocated to this lesson ("R1a").

Click

	Mo	Tu	We
1	EN	MA	GEc.
2	MU	EN	PEG.
3	BI	AR	MA
4	PEG.		DE
5		RE	
6			
7		DS.	
8			

	Mo
1	1a EN
2	1b MA
3	3a. PEG.
4	1a. PEG.
5	-1
6	-2
7	
8	4 PH

	Mo	Tu	We	Th	Fr	Sa
1	Arist	Arist	Hugo.	Callas	Arist	Cer
2	Callas	Arist	Nobel	Rub	Nobel	Arist
3	Cer		Arist	Arist	Arist	Arist
4	Hugo	Callas	Rub	Arist	Rub	Hugo.
5	New	Nobel	*Rub.			
6				Cer		
7				Ander.		
8						

L-No.	Tea.	Subj.	Rm.	Cla.	Time	School week
33	Arist	EN, R1a		1a		2-41

Clicking on the coupling row in the period details window also synchronises all other open timetables.



The image displays three overlapping timetable windows from a software application. The windows show class schedules for different classes and teachers.

**Window 1: 1a - Class 1a (Gauss) Time**

Time range: 1a  
28 Periods/week

	Mo	Tu	We	Th	Fr
1	EN	MA	GEc.	MU	MA
2	MU	EN	PEG.	DE	RE
3	BI	AR	MA	EN	EN
4	PEG.		DE	MA	DE
5		RE			
6					
7		DS.			
8					

**Window 2: Ander - Andersen, Ha**

Time range: Ander  
27 Periods/week

	Mo	Tu	We	Th	Fr	Sa
1		4.			3a	4.
2		4.	3a	3a	1b	
3		4	4.		1b.	3a
4		3a	3b	3b	3b	3b
5		4.	*2a.			
6			3a.			
7		1a.		3a.	2b.	
8						

**Window 3: Curie - Curie, Marie T**

Time range: Curie  
18 Periods/week

	Mo	Tu	We	Th	Fr	Sa
1	4.				1b	
2		4.	3b			
3		3b.	2b	3a.		
4	3a.	3b.				
5						
6			3a.			
7		1a.		4.	2b.	
8						

**Legend:**

L-No.	Tea	Subj.	Rm.	Clas.
7		Ander, DS, WS		1a
		Gauss, DS, WS		1b
		Curie, TX, TW		1a, 1b

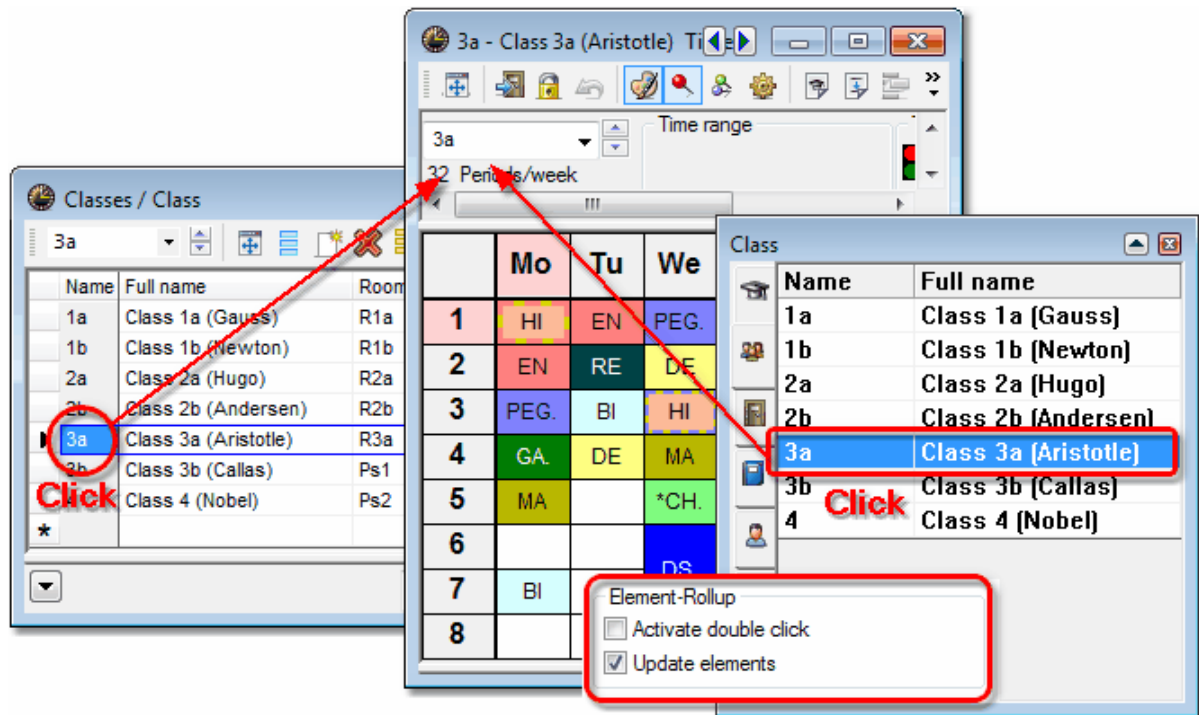
Red arrows and "Click" labels indicate interactions with specific cells in the timetables:

- Click on the cell containing "DS." in the 1a - Class 1a (Gauss) timetable (Row 7, Column Tu).
- Click on the cell containing "1a." in the Ander - Andersen, Ha timetable (Row 7, Column Tu).
- Click on the cell containing "4." in the Curie - Curie, Marie T timetable (Row 1, Column Mo).

### Communication with other windows

Open a class timetable and the master data window for classes. Click on a class in the master data window and you will see that the timetable automatically switches to the timetable of that class.

The same occurs when you switch elements in a lesson window or in the element-rollup ("Customise" under "Settings | Miscellaneous").



### Locking timetable types

In the previous examples, the type of timetable was always locked. Open the file demo.gpn, a teacher timetable and call up the window 'Master Data | Teachers'. In the master data view, click on one teacher after another. The timetable window always shows the timetable of the currently selected teacher. Clicking on a class name, however, has no effect on the timetable view, i.e. the type of timetable – here the teacher timetable – remains unchanged.



### Unlocked timetables

Deactivate the type locking function by clicking on <Lock Type>. Switch between teachers, classes and rooms in the master data views. You will see that the timetable always displays the active element, irrespective of the type of element (classes, teachers, rooms or subjects). The displayed element changes, as does the type of displayed element.

#### Tip

*Unlocked timetables are particularly practical when used together with the diagnosis tool, since this allows the user to switch rapidly between teacher and class schedules without having to open a second*

*timetable window. You can read more about diagnosis in chapter "Diagnosis".*

### **Locking elements**

*Lock the timetable of a selected element – for instance a specific teacher – on the screen by "pinning" it to the screen using the <Lock this display> button. When a timetable is locked with two pins, the displayed element does not change.*



## **5.4 Timetable formats**

Untis offers over 50 different predefined timetable layouts. The layouts are accessible via the menu item "Timetable | Timetable formats".

Each timetable layout has a unique short and long name. Click on <Show the TT > or double click on the full name of a format to open the timetable.

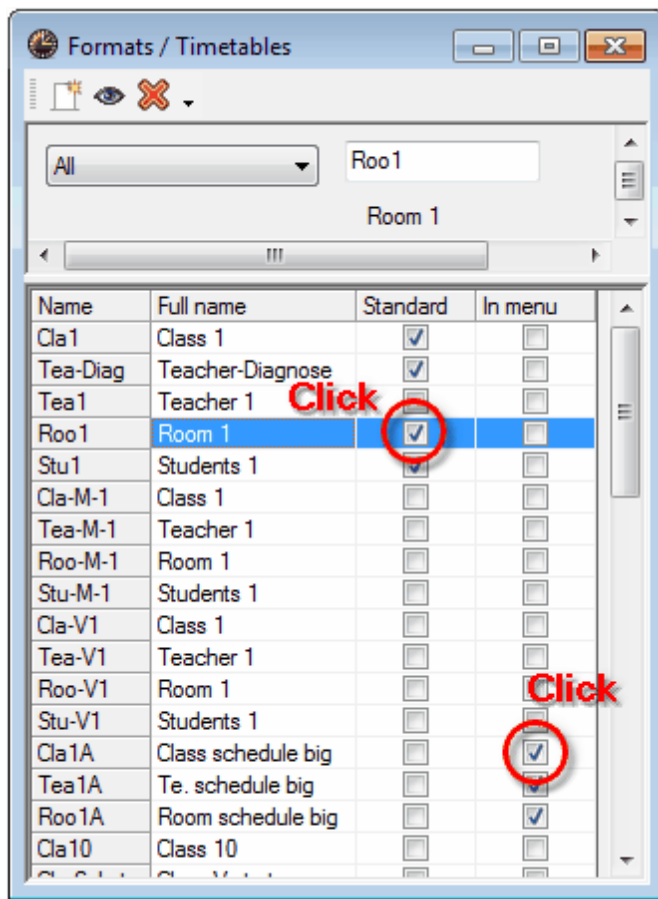


### **Standard format**

Select the desired standard format, i.e. the format that will be used when you select a timetable from the "Timetable" menu, by checking the relevant "Standard" box on the list of timetable layouts in the "Formats / Timetables" window.

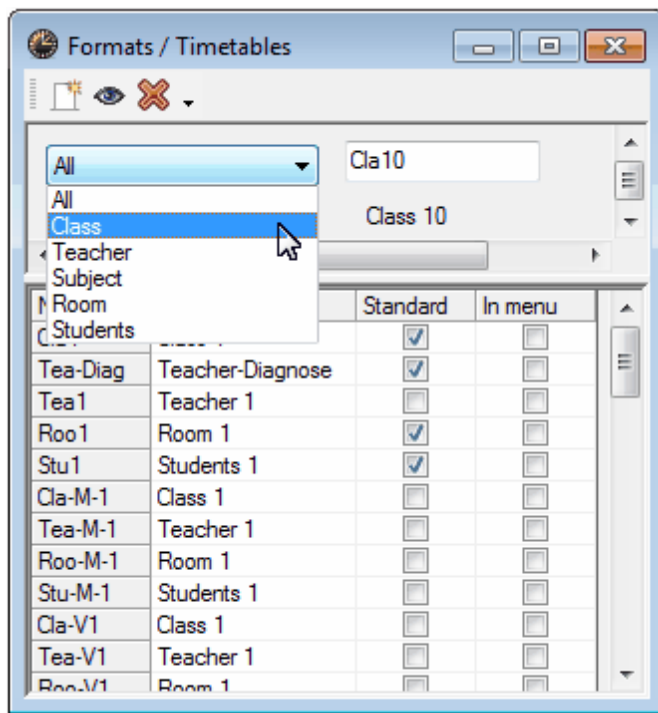
### **Timetables in the menu**

In addition, you can specify which timetables you wish to include in the menu, i.e. which timetables you wish to be able to access quickly.



### 5.4.1 Predefined formats

By default, the "Timetable | Timetable formats" list displays the predefined layouts for all the different types of timetable. If you wish, you can limit the view to individual elements (class, teachers etc.).



The names of the predefined layouts obey the following rules:

#### 5.4.1.1 Keywords

**Key words** e.g. **Cla** 1A

Timetable names containing the key word "Cla" are class timetables. "Roo" denotes room timetables, "Tea" teacher timetables, "Sub" subject timetables and "Stu" indicates student timetables.

#### 5.4.1.2 Layout details: Layout 1

Format details: Format 1 **Format details** e.g. Cla**1** A

Format 1: This layout displays the days of the week in columns and the periods of the day in rows (see figure). The subformat detail, e.g. Cla**1**A, indicates that the layout is a variant of the master format. The full name of this timetable format is "Class schedule big". The format is also included in the menu by default.

1a - Class 1a (Gauss) Timetable (Cla1A)

1a  
28 Periods/week  
2 Unscheduled prds.  
Time range: 17.9.2012 - 29.6.2013  
Timetable comparison: ☐ Active  
☐ Only modified timetables

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 8:00 8:45	EN Arist R1a	MA Arist R1a	GEc Hug R1a	MU Calla R1a	MA Arist R1a	BI Cer R1a
2 8:55 9:40	MU Calla R1a	EN Arist R1a	PEG Arist SH2 PEB Rub SH1	DE Rub R1a	RE Nobel R1a	EN Arist R1a
3 9:50 10:35	BI Cer R1a	AR Calla R1a	MA Arist R1a	EN Arist R1a	EN Arist R1a	MA Arist R1a
4 10:45 11:30	PEG Arist SH2 PEB Rub SH1		DE Rub R1a	MA Arist R1a	DE Rub R1a	GEc Hug R1a
5 11:40 12:25		RE Nobel R1a				
6 12:35 13:20						

The name of the layout can also be found on the "General" tab of a timetable under <Settings>.

Layout 01 - Individual timetable with days across the top

General Selection range Layout 1 Layout 2 HTML

View: Cla1A Class schedule big ← **Full name**

Layout Layout 01 - Individual timetable with days across the top

Font Arial 9.0

**Short name** Column heading Day names heading

Row heading Periods heading

Period window Contents (fields) of a teaching period

Heading individ. TT Heading for individual TT's (print-out)

Font size in %:

Details window: 100

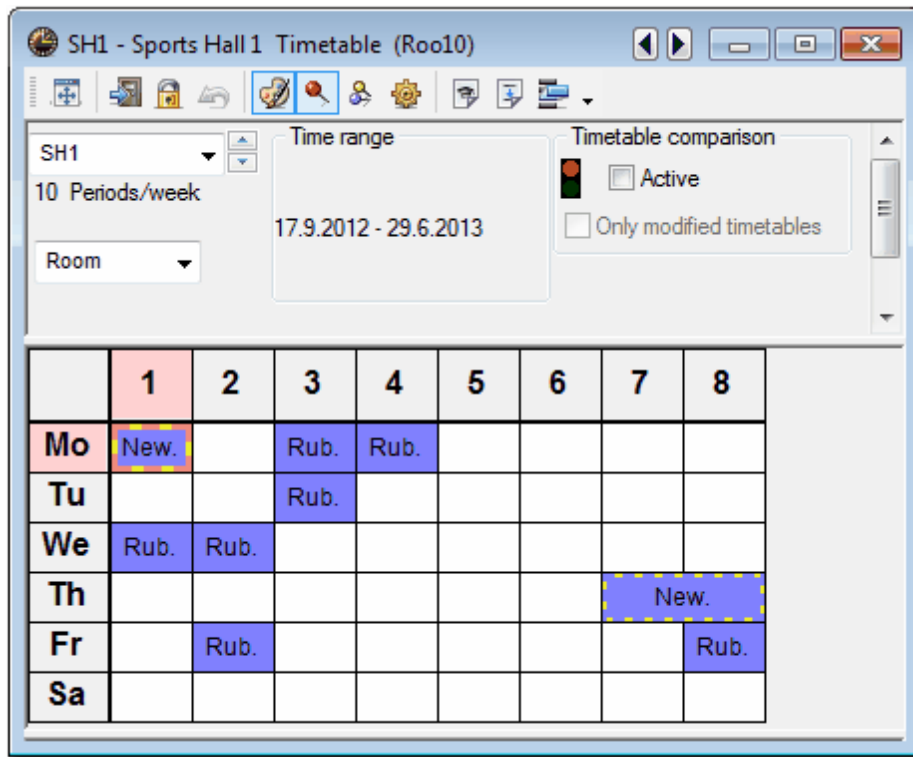
Coupl. legend: 100

Heading: 100

Print details

### 5.4.1.3 Format details: Format 10

Format 10: This format displays the days of the weeks in rows and the periods of the day in columns. The example shows a room timetable with layout "Roo10A".



### 5.4.1.4 Format details: Format 11

Format 11: This layout is important for use with the Multi-week timetable module. It shows the individual weeks of the school year in columns and the periods of the week in rows and provides a clear display of two-weekly alternating lessons and lesson interruptions.

The example shows the timetable of class 11Wa for Mondays of school weeks 1 to 16. The lessons for this vocational school class take place Mondays in weeks 2-3, 6-7 and 12-13.

**Note:**

Format 11 also allows terms, instead of weeks, to be displayed column by column in periods. To achieve this, activate the check box "One term per column" on the "Layout 2" tab under the timetable <Settings>.

		School week															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mo-1	Before school starts		E Fa	E Fa			E Fa	E Fa					E Fa	E Fa			
Mo-2			G Tut	G Tut			G Tut	G Tut					G Tut	G Tut			
Mo-3																	
Mo-4			Bw	Bw			Bw	Bw					Bw	Bw			
Mo-5																	
Mo-6			M Fo	M Fo			M Fo	M Fo					M Fo	M Fo			
Mo-7																	
Mo-8			D Str	D Str			D Str	D Str					D Str	D Str			
Mo-9																	
Mo-10																	
		Fall break								Christmas break							

#### 5.4.1.5 Format details: Subject timetable

##### Subject timetable

The layout of the subject timetable is identical to that of a class, teacher or room timetable. Subject timetables display all the periods of the selected subject. The available formats are formats 1, 10 and 11. The example shows a subject timetable for German.





#### 5.4.1.7 Format details: Format 30

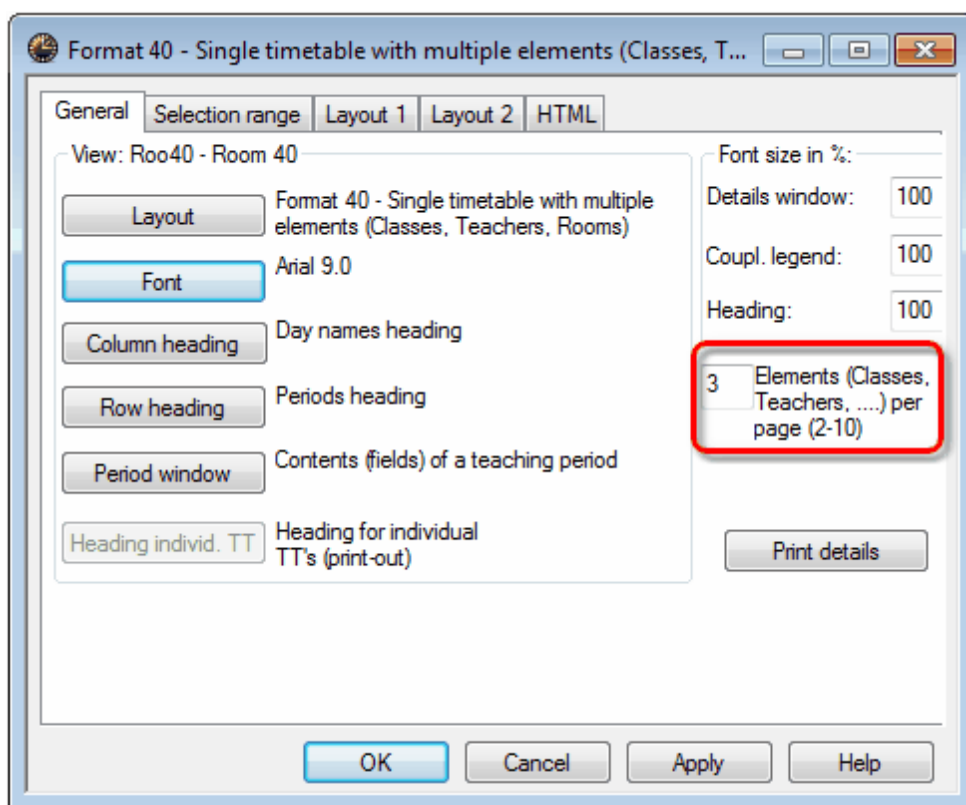
Format 30: This layout also provides a week's overview of all elements. In contrast to layout 20, the elements are arranged in columns and the periods in rows.

The screenshot shows a software window titled "1a - Class 1a (Gauss) Timetable (Cla...)" with a toolbar and a control panel. The control panel includes a dropdown for "1a", a "Time range" field showing "17.9.2012 - 29.6.2013", and a "Timetab" section with a green/red indicator and an "Only" checkbox. Below the control panel is a grid representing a weekly timetable.

	1a	1b	2a	2b	3a	3b	4
Mo-1	EN	BI	MU	RE	HI	HI	PEG.
Mo-2	MU	MA	RE	MA	EN	GEc	CK
Mo-3	BI	RE	MA	AR	PEG.	PEG.	HI
Mo-4	PEG.	PEG.	DE		GA.	PH	DE
Mo-5		DE	EN	MU	MA	MA	
Mo-6							AR
Mo-7					BI		
Mo-8							PH

#### 5.4.1.8 Format details: Format 40

Format 40: his overview is similar to the individual timetable view such as Cla1A. However, the difference is that several elements can be displayed underneath the days. This makes it easy, for example, to view the timetables for the specialist subject rooms in one timetable. You can determine how many elements should be shown per screen using <Settings>.



	Monday			Tuesday			Wednesday			Thursday			Friday			Saturday		
	SH1	SH2	PL	SH1	SH2	PL	SH1	SH2	PL	SH1	SH2	PL	SH1	SH2	PL	SH1	SH2	PL
1	New.	Curie.					Rub.	Arist.				New			New			
2							Rub.	Arist.					Rub.	Arist.	New			
3	Rub.	Arist.		Rub.	Arist.										New			New
4	Rub.	Arist.	New			New						New						New
5																		
6																		
7										New.	Curie.		Rub.	Arist.				
8			Arist.															

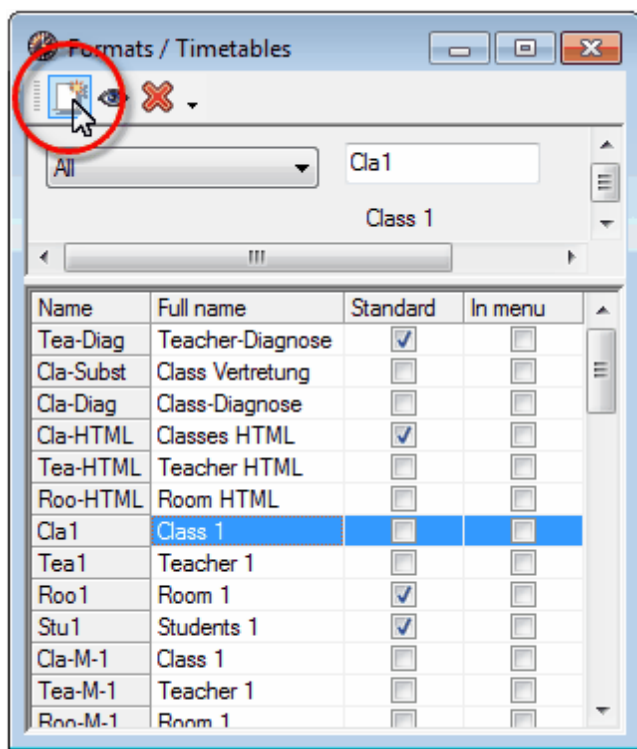
## 5.5 User-defined views

Timetable views in Untis can be customised quickly and easily to meet the individual requirements of your school. This chapter describes how to customise the timetable display to reflect your personal preferences.

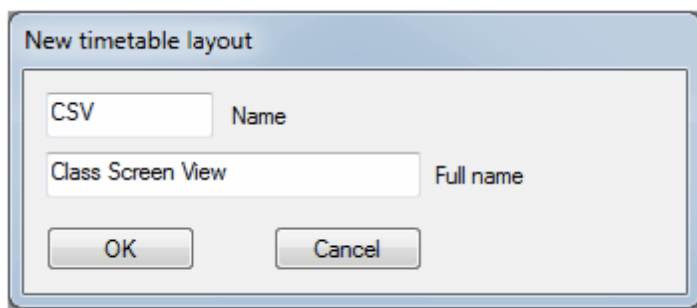
You wish to create a customised screen display based on the standard timetable for classes in the demo.gpn file.

### 5.5.1 New timetable view

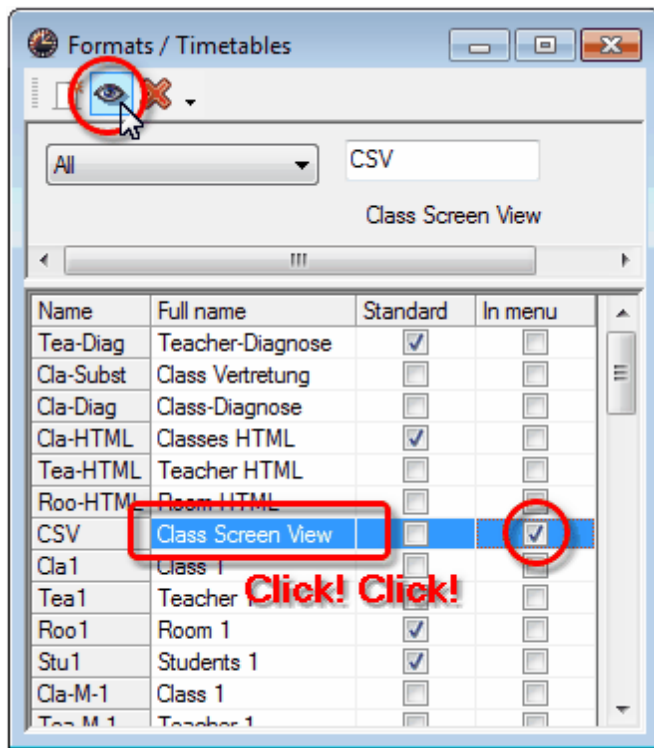
1. Open the file demo.gpn and call up the timetable overview under ("Timetable |Timetable formats").
2. Click on the first timetable format class 1 and click on <New> to create a copy of this timetable view.

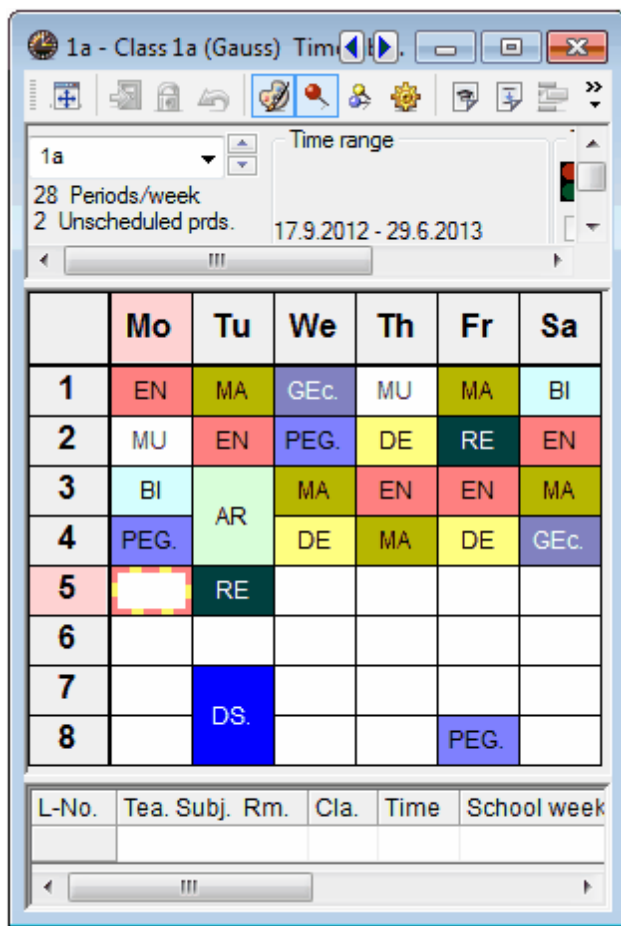


3. Assign a new short name and a descriptive full name to the view (e.g. CSD, Class Screen Display).



4. The new timetable view appears. Access this view by double clicking on the full name of the view or by clicking on <Show the TT>. Check the column "In menu" to include the view in the menu.





## 5.5.2 Timetable period window

The next steps describe how to modify the contents of the period window (timetable period).

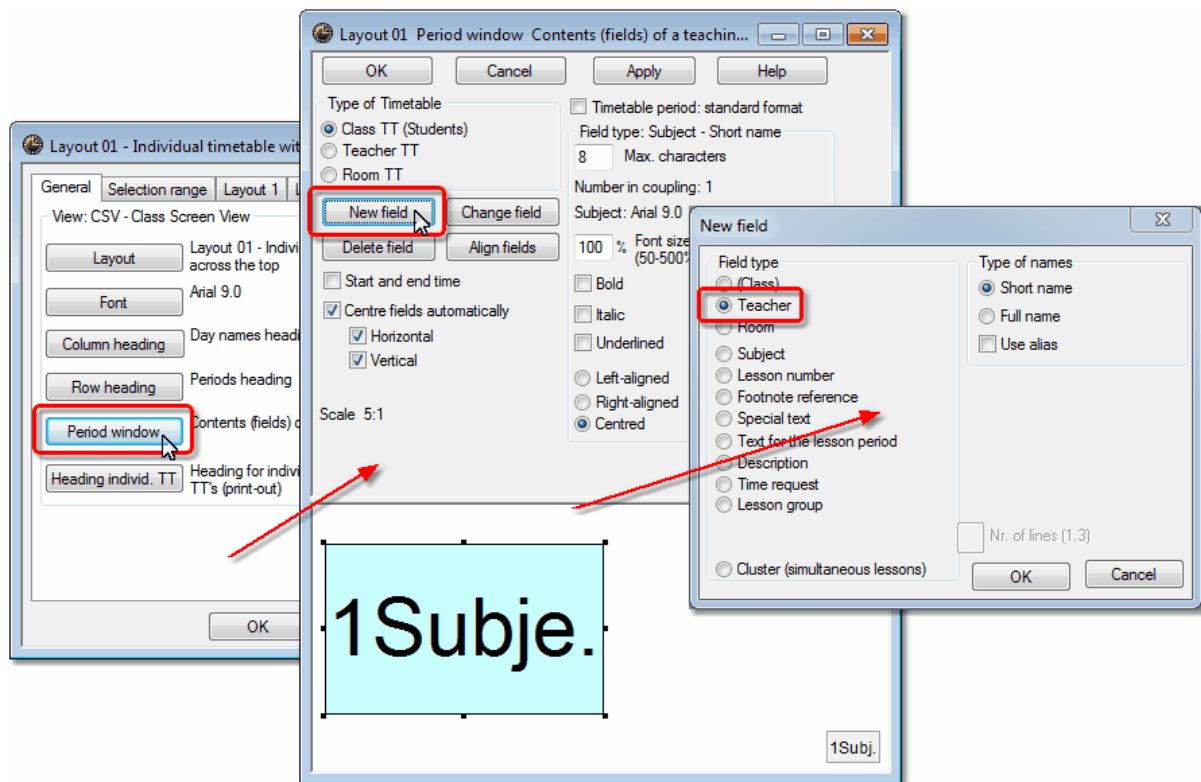
### 5.5.2.1 Several fields - timetable period window

#### Several fields - timetable period window

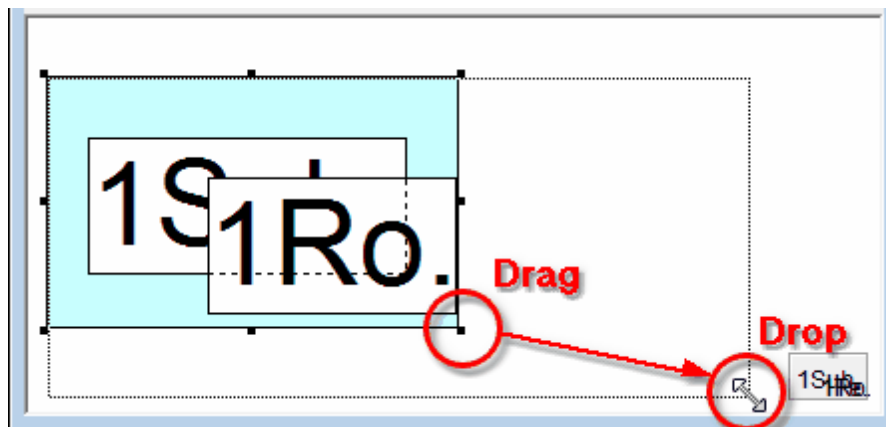
1. Open the new timetable view (or open the demo.gpn file and open "Timetable | Classes" ), click on <Settings> and select "Period window". This will open the graphics editor that can be used to modify the contents of the timetable period window. Currently, only the subject is displayed in the period



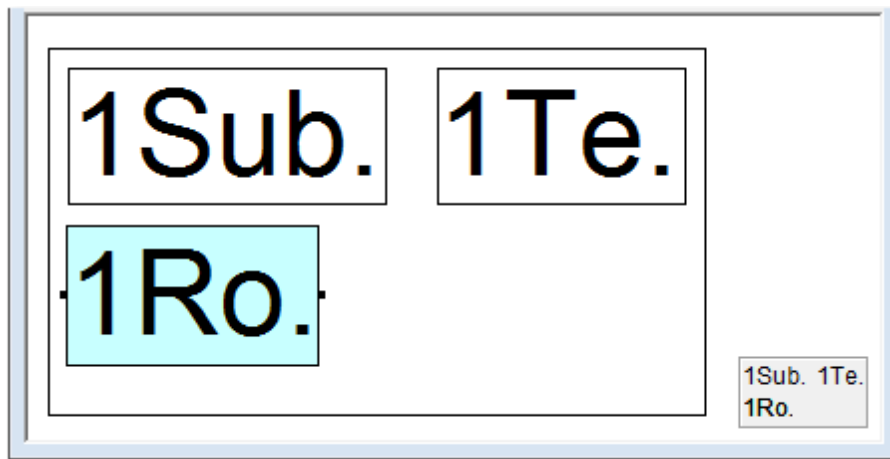
2. In addition to the subject, you now wish to display the teacher and the room of the lesson. Click on <New field>. In the "Field type" section, select "Teacher" and click on <OK>. Repeat the same process for the room.



3. The next task is to arrange the three fields for subject, teacher and room next to each other in such a way that they are easy to read. First, enlarge the period window by clicking on it (the background will turn blue) and dragging the edges until it is the desired size.



4. Arrange the three fields as shown in the example. Click on the field you wish to move. While the field is blue, the cursor will change to a cross, allowing you to move the field with the cursor. When all three fields have been arranged to your satisfaction, confirm with <OK>



5. The timetable now displays the subject, teacher and room for each period:

1a - Class 1a (Gauss) Timetable (CSV)

1a Time range Timetable comparison

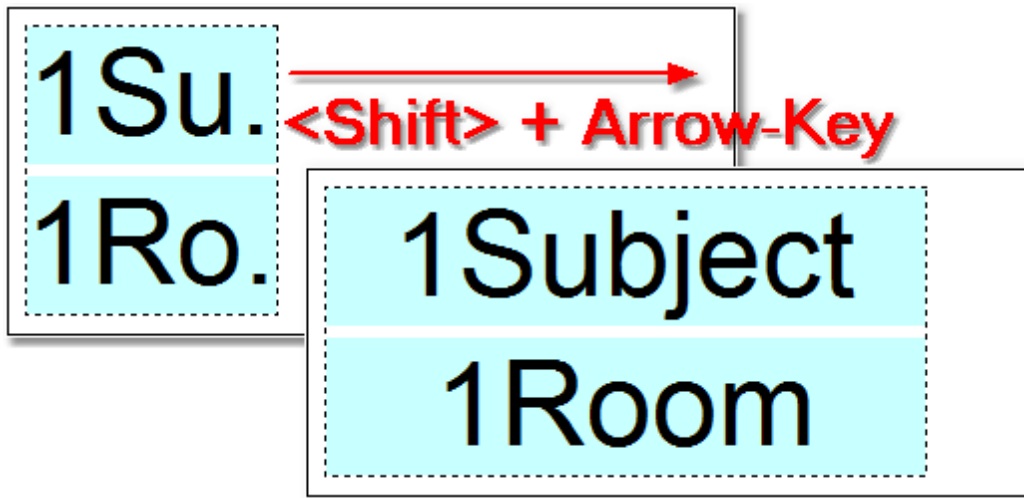
28 Periods/week ☐ Active

	Mo	Tu	We	Th	Fr	Sa
1	EN Arist R1a	MA Arist R1a	GEc. Hug R1a	MU Call R1a	MA Arist R1a	BI Cer R1a
2	MU Call R1a	EN Arist R1a	PEG. Arist SH2	DE Rub R1a	RE Nob R1a	EN Arist R1a
3	BI Cer R1a	AR Call R1a	MA Arist R1a	EN Arist R1a	EN Arist R1a	MA Arist R1a
4	PEG. Arist SH2		DE Rub R1a	MA Arist R1a	DE Rub R1a	GEc. Hug R1a
5		RE Nob R1a				
6						
7		DS. And WS				
8					PEG. Arist SH2	



**Tip**

Holding the <CTRL> key pressed allows several fields to be marked in the graphics editor and to be moved all together using the arrow keys. If several fields are marked, you can hold the <SHIFT> key pressed and shrink or enlarge all fields using the arrow keys.

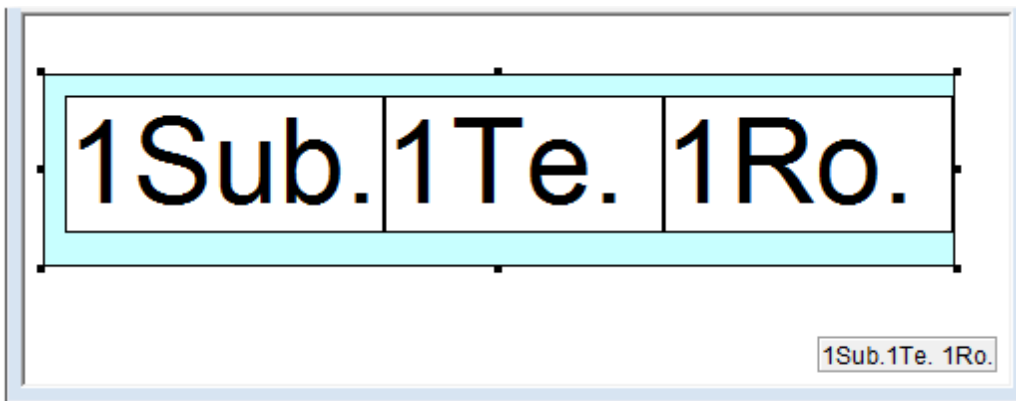


### 5.5.2.2 Coupled lessons

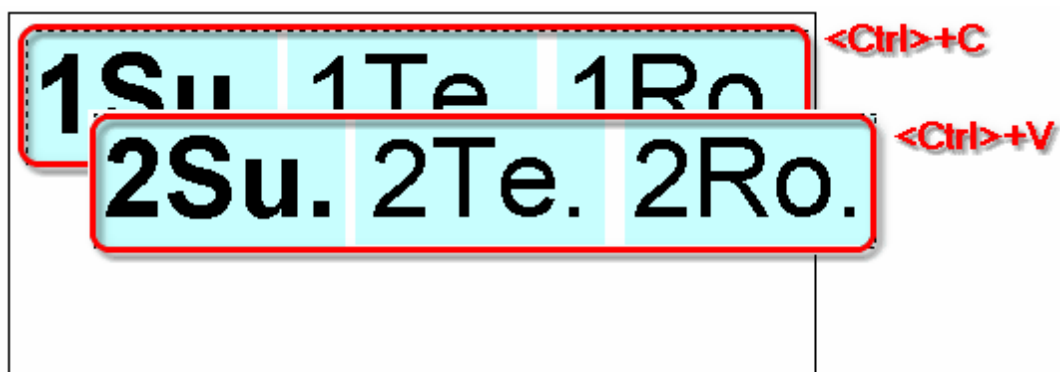
#### Coupled lessons

If you also wish to display the details of lesson couplings, proceed as follows:

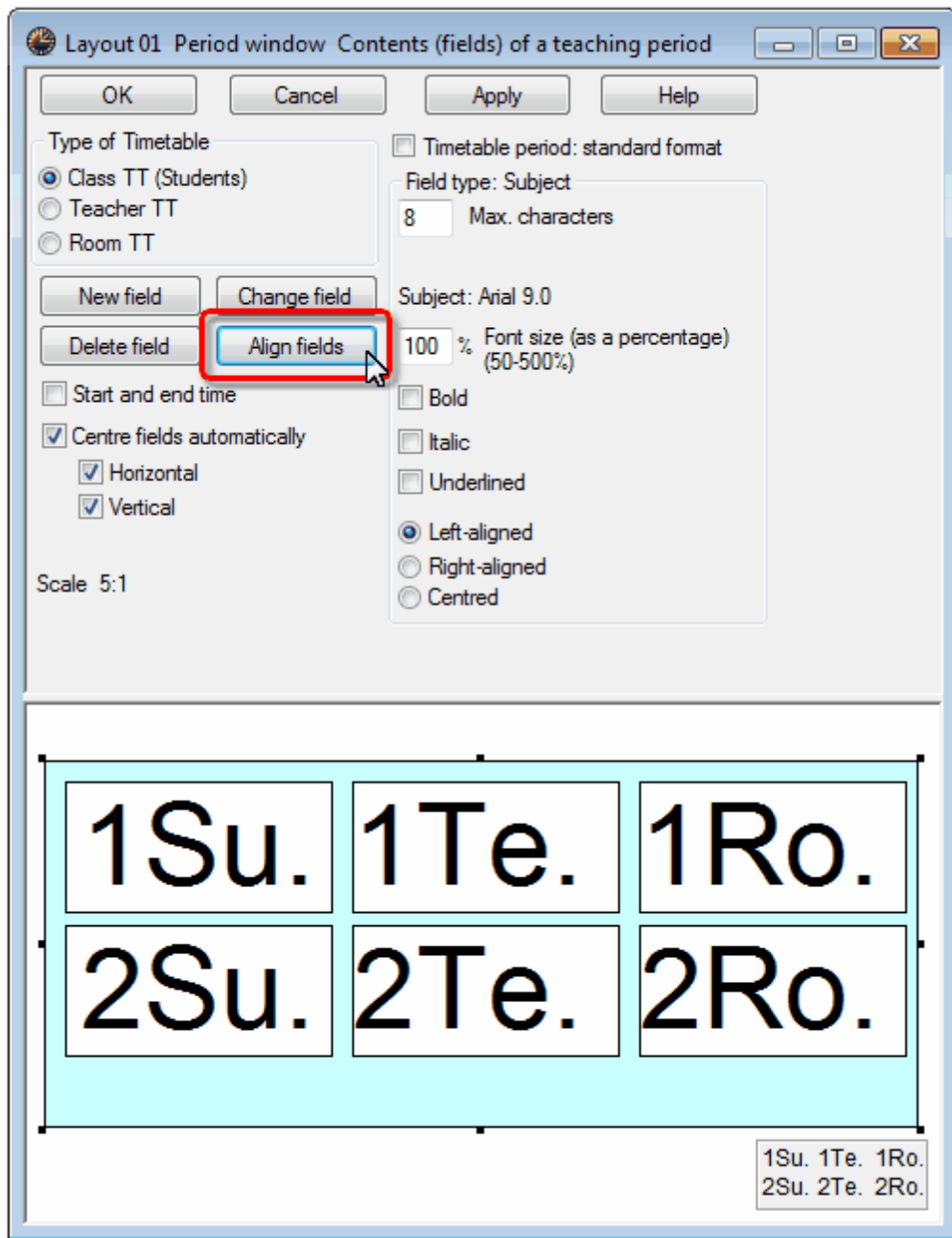
1. First, enlarge the period window by clicking on it (the background will turn blue) and dragging the edges until it is the desired size. Details on subjects, teachers and rooms are to be displayed side by side.



2. Highlight the fields for subject, teacher and room using <STRG>+click and insert them using <CTRL>+C and <CTRL>+V. Use the mouse to move them to the desired position.



3. Once the field is approximately the right size and approximately in the correct position, click on the <Align fields> button. This function adjusts all fields that are approximately the same size to a standard size and aligns all fields that have approximately the same vertical or horizontal edge to a standard vertical/horizontal line.



- The timetable now displays the details of the first and second coupling row in the timetable period

1a - Class 1a (Gauss) Timetable (CSV)

1a  
28 Periods/week

Time range

Timetable comparison  
☐ Active

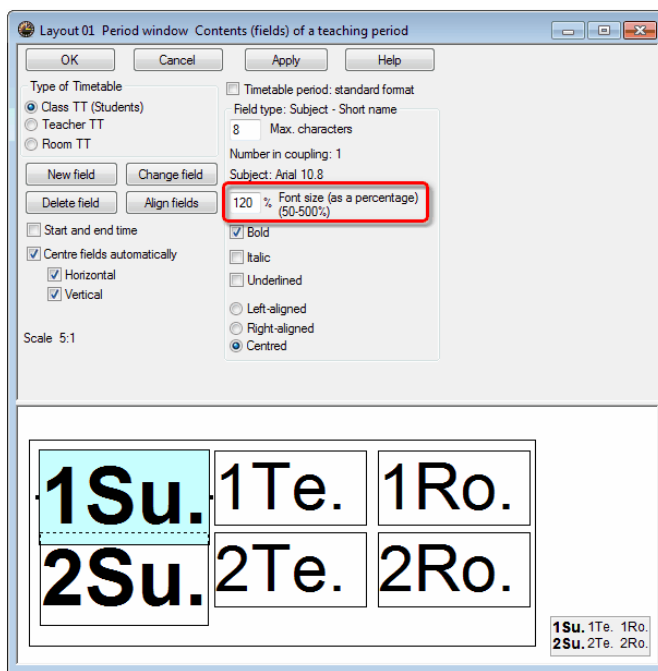
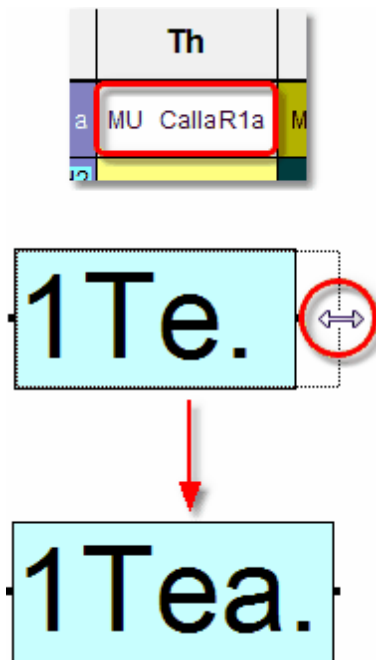
	Mo	Tu	We	Th	Fr	Sa
1	EN Arist R1a	MA Arist R1a	GEc. Hug R1a	MU CallaR1a	MA Arist R1a	BI Cer R1a
2	MU CallaR1a	EN Arist R1a	PEG. Arist SH2 PEB Rub SH1	DE Rub R1a	RE Nob R1a	EN Arist R1a
3	BI Cer R1a	AR CallaR1a	MA Arist R1a	EN Arist R1a	EN Arist R1a	MA Arist R1a
4	PEG. Arist SH2 PEB Rub SH1		DE Rub R1a	MA Arist R1a	DE Rub R1a	GEc. Hug R1a
5		RE Nob R1a				
6						
7		DS. AndeWS				
8		TX Curi TW			PEG. Arist SH2 PEB Rub SH1	

L-No.	Tea. Subj. Rm.	Cla.	Time	School week	Stud.	Special text	Cluster	Line text-2
73	Arist, PEG, SH2	1a, 1b		2-41		For Girls Only		
+3	Rub, PEB, SH1	1a, 1b						

### 5.5.2.3 Layout field

#### Layout field

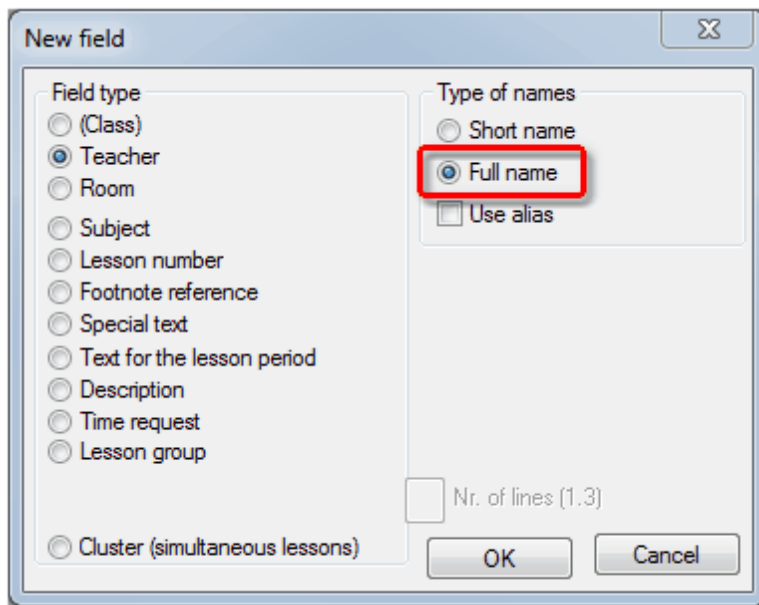
A field that is too short to display the entire name (e.g. Callas Thursday, period 1) can be easily modified. You can resize any field in the timetable period by clicking on a button on the edge of the field and dragging it to the desired size. You can also change the font size for each separate field. The example shows how to change the font type of the subject to bold and the font size to 120% of the preset value (Arial 9).

[illegible]

#### 5.5.2.4 Full name

##### Full name

Alternatively, you can display the full name or the alias name defined under master data. The example shows how the full name of the teacher (12 character max.) can be displayed in the timetable.



The screenshot shows a 'New field' dialog box with the following options:

- Field type:**
  - ☐ (Class)
  - ☒ Teacher
  - ☐ Room
  - ☐ Subject
  - ☐ Lesson number
  - ☐ Footnote reference
  - ☐ Special text
  - ☐ Text for the lesson period
  - ☐ Description
  - ☐ Time request
  - ☐ Lesson group
- Type of names:**
  - ☐ Short name
  - ☒ Full name
  - ☐ Use alias
- Nr. of lines (1..3):**
- ☐ Cluster (simultaneous lessons)

At the bottom are 'OK' and 'Cancel' buttons. The 'Full name' option under 'Type of names' is highlighted with a red rectangle.

Layout 01 Period window Contents (fields) of a teaching period

OK Cancel Apply Help

Type of Timetable

☒ Class TT (Students)  
☐ Teacher TT  
☐ Room TT

New field Change field  
 Delete field Align fields

☐ Timetable period: standard format  
 Field type: Teacher - Full name  
 12 Max. characters  
 Number in coupling: 1  
 Teacher: Arial 9.0  
 100 % Font size (as a percentage) (50-500%)  
☐ Bold  
☐ Italic  
☐ Underlined  
☒ Left-aligned  
☐ Right-aligned  
☐ Centred

☐ Start and end time  
☒ Centre fields automatically  
☒ Horizontal  
☒ Vertical

Scale 5:1

1Su. 1\*Teacher-xx

1Sub. 1\*Teacher-xx

1a - Class 1a (Gauss) Timetable (CSV)

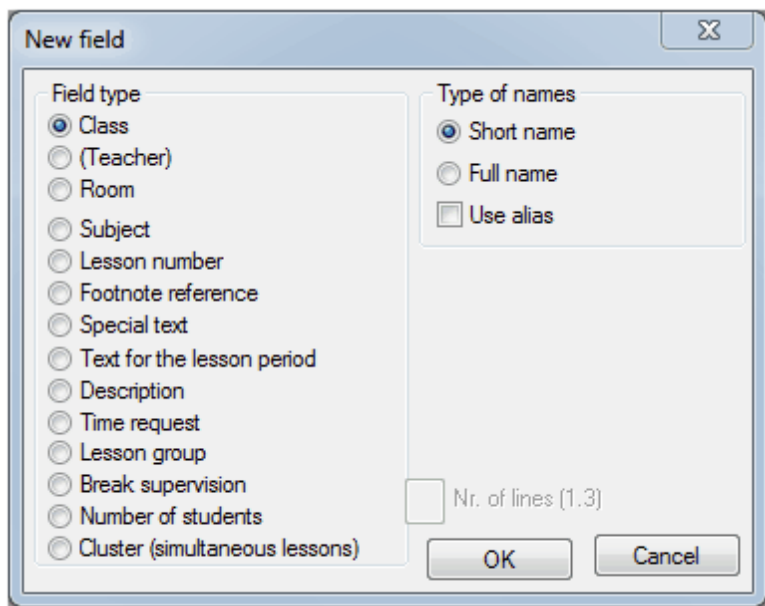
1a 28 Periods/week

Time range Timetable comparison

☒ Active

	Mo	Tu	We	Th	Fr	Sa
1	EN Aristotle	MA Aristotle	GEc. Hugo	MU Callas	MA Aristotle	BI Cervantes
2	MU Callas	EN Aristotle	PEG. Aristotle	DE Rubens	RE Nobel	EN Aristotle
3	BI Cervantes	AR Callas	MA Aristotle	EN Aristotle	EN Aristotle	MA Aristotle
4	PEG. Aristotle		DE Rubens	MA Aristotle	DE Rubens	GEc. Hugo
5		RE Nobel				
6						
7						
8		DS. Andersen			PEG. Aristotle	

In addition to the class, teacher, room, subject and footnote reference fields, the following additional information can be displayed in the period window of a timetable.



The image shows a 'New field' dialog box with a close button (X) in the top right corner. It contains two main sections: 'Field type' and 'Type of names'. The 'Field type' section has a list of radio buttons: Class (selected), (Teacher), Room, Subject, Lesson number, Footnote reference, Special text, Text for the lesson period, Description, Time request, Lesson group, Break supervision, Number of students, and Cluster (simultaneous lessons). The 'Type of names' section has radio buttons for Short name (selected) and Full name, and a checkbox for Use alias. At the bottom, there is a text input field labeled 'Nr. of lines (1..3)' and two buttons: OK and Cancel.

#### 5.5.2.5 Lesson number

##### **Lesson number**

The unique lesson number used to designate the lesson can also be displayed as an additional item of information in the timetable..

#### 5.5.2.6 Special text

##### **Special text**

The special text field contains the text or the description entered for the lesson, and the line text entered in the lesson details window. The number of text rows can also be selected.



3a - Class 3a (Aristotle) Timetable (Cla1)

3a  
32 Periods/week  
0 Unscheduled prds. 17 9 2012 - 29 6 2013

Time range: 17 9 2012 - 29 6 2013

Timetable comparison: ☐ Active ☐ Only modified timetables

Per	/rsPrds	Teacher	Subject	Class(es)	Subject room	Home room	Text	Double per	Block
1	1	Callas	CH	2a,2b,3a	R2a				
2	2	Callas	AR	3a,3b	R3a		This is a very interesting voluntary exercise	1-1	
3	3	Arist	PEG	3a,3b	SH2	R3a			

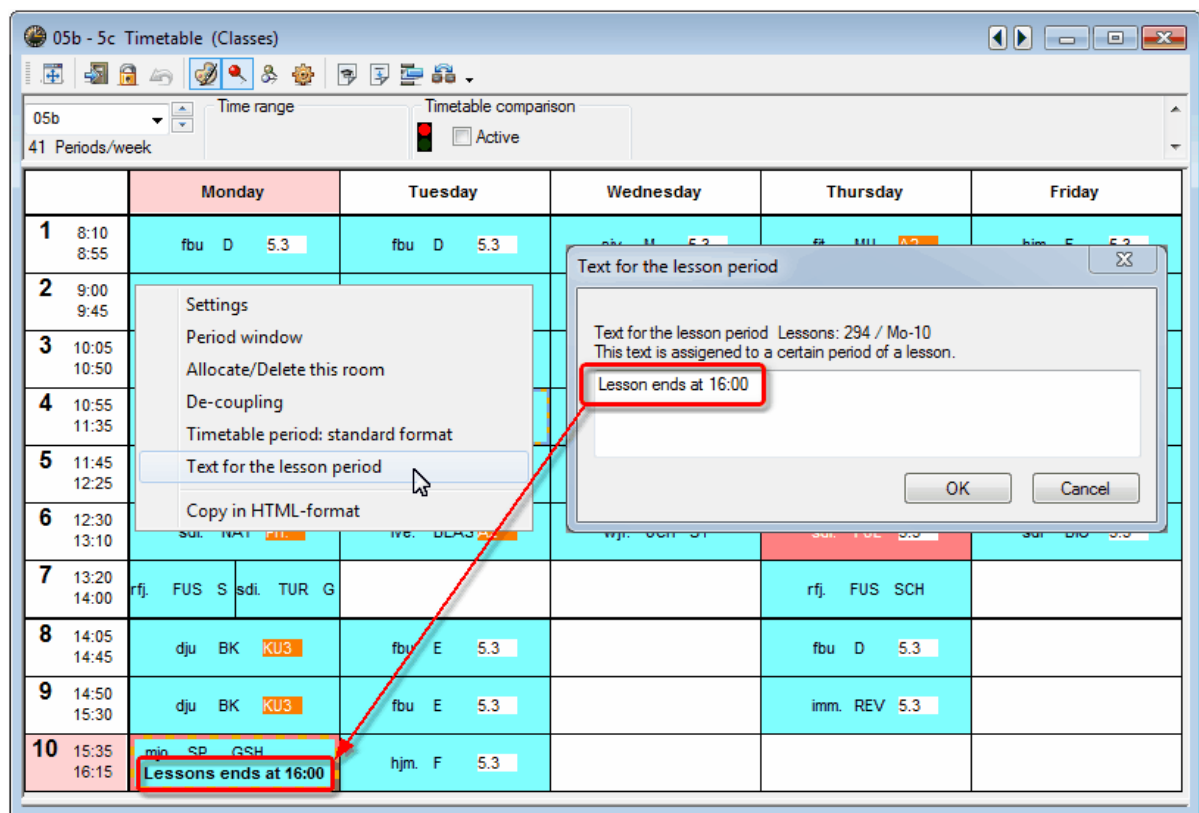
1Su. 1Tea. 1Ro. 1Text

GA. Gauss MA Gauss DE Ander  
MA Gauss RE Nobel PH New  
EN Cer 3 Nr. of lines (1.3)  
OK Cancel  
AR Callas  
This is a very interesting voluntary exercise

L-No.	Tea.	Subj.	Rm.	Cla.	Time	Special text
43	Callas, AR, R3a			3a, 3b		This is a very interesting voluntary exercise
	Ander, MU, R1a (Ps1)			3a, 3b		

#### 5.5.2.7 Text for the lesson period

Displaying this field in the timetable allows text relating to each period to be entered direct in the timetable. right-click on the period concerned and select the option 'Text for the lesson period'. The text entered here will only be displayed in this period of the lesson even if several periods of the lesson are scheduled.



### 5.5.2.8 Description

#### Description

Besides the text, the description entered for the lesson is also displayed.

### 5.5.2.9 Time requests

#### Time requests

The time requests entered in the master data for the element in question can be displayed in the timetable either in colour or in black/white.

	Mo	Tu	We	Th	Fr	Sa
1	4.		-3	3a	3b	
2	2b	2b	-3	3b	2b	3b
3	2a		-3	2a	2a	3b
4	3b	2b	-3	2a	2b	3a
5	3b	2a	-3	2b	2a	
6			-3	+3	2a.	
7	-2	-2	-3	4.		
8	-2	-2	-3	+3		

### 5.5.2.10 Lesson group

#### Lesson group

Displays the lesson group assigned to the lesson (for use with the Multi-week timetable module). The example shows the DS lesson in weeks of type A and the PE lesson in weeks of type B.

7		DS.				
8		Week A		PEG.	Week B	

L-No.	Tea. Subj. Rm.	Cla.	Time	Special text
73	Arist, PEG, SH2	1a, 1b	Week B	For Girls Only
	Rub, PEB, SH1	1a, 1b		

### 5.5.2.11 Break supervision

#### Break supervision

Break supervisions can be displayed in teacher timetables. This function is only available with the Break supervision module.

The screenshot shows a software window titled "Hugo - Hugo, Victor Time". Below the title bar is a toolbar with various icons. Below the toolbar is a control panel with a dropdown menu set to "Hugo", a "Time range" input field, and a "18 Periods/week" indicator. The main area is a timetable grid with columns for days of the week (Mo, Tu, We, Th, Fr, Sa) and rows for periods (1-6). The grid contains various lesson codes and break supervision labels.

	Mo	Tu	We	Th	Fr	Sa
1	3b Ra Ar1			Ar2 3D Ra		Bas 3a R3a
2	3D Ra		2a R2a	4 R3a		Bas 4 Ra
3	4 R3a			3b Ra Ar1	4 PL	
4	4 R1b		4 PL	4 R1b		
5			4 R1b	4 R1a	4 R1a	
6						

### 5.5.2.12 Number of students

#### Number of students

The number of students registered for the lesson or the number of students who have selected the course can be displayed in teacher timetables (for use with the Course scheduling module).

### 5.5.2.13 Cluster (simultaneous lessons)

#### Cluster (simultaneous lessons)

The Course scheduling module allows the names of clusters (groups of simultaneous lessons) to be displayed in the timetable.

### 5.5.2.14 Alias (alternative names)

#### Alias (alternative names)

If you wish to display a name on the timetable and the printout other than the usual name, define an alias name for subjects, classes or teachers under "Master Data | Special data | Alias names". To display the alias on the timetable, check the box "Timetable" in the "Alias" window and the box "Use alias" in the timetable period.

You can also define one alias name for several classes. For example, if a teacher teaches all third-year classes, classes 3a, 3b etc. can be combined under one name "Year 3".

The screenshot shows the 'Ander - Andersen, Hans Christian Timetable (Te...)' application. The main window displays a timetable grid for 'Ander' with 27 periods/week. The grid shows days of the week (Mo, Tu, We) and periods (1-8). The 'Year 3.' cell is highlighted with a red box. Below the grid is a table with columns: L-No., Tea, Subj., Rm., Cla., Time, and Special text. The table shows two rows: 79, Ander, DS, WS, 3a, 3b, and Curie, HE, HE1, 3a, 3b. Two dialog boxes are open. The 'Change field' dialog shows 'Field type' as 'Class' and 'Type of names' as 'Short name'. The 'Use alias' checkbox is checked and highlighted with a red box. The 'Alias name' dialog shows a list of alias names: Year 1, Year 2, Year 3. The 'Timestable' column is highlighted with a red box.

**Change field dialog:**

- Field type: ☒ Class, ☐ (Teacher), ☐ Room, ☐ Subject, ☐ Lesson number, ☐ Footnote reference, ☐ Special text, ☐ Text, ☐ Description, ☐ Time, ☐ Lesson, ☐ Break, ☐ Number, ☐ Class
- Type of names: ☒ Short name, ☐ Full name, ☒ Use alias

**Alias name dialog:**

Alias name	Authority	Timestable	Element
Year 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1a, 1b
Year 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2a, 2b
Year 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3b, 3a

### 5.5.2.15 Start and end time

#### Start and end time

Activating this option will display two additional fields in the timetable period that show the times of the start and the end of lessons. The fields can be moved and resized in the usual manner.

	<b>Monday</b>
<b>1</b> 8:00 - 8:45	8.00 PEG. Curie SH2 PEB New SH1 8.45
<b>2</b> 8:55 - 9:40	8.55 CK Rub 9.40
<b>3</b> 9:50 - 10:35	9.50 HI Hugo R3a 10.35

In addition to the editing options in the timetable period, the application also offers a number of additional functions that can be used to customise screen displays and printouts.

#### 5.5.2.16 Standard format

The functionality of the standard format allows the timetable to display all coupling lines with information on classes, teachers, rooms and subjects. Optimal use is made of the space available within the timetable cell, and the size of the type face for couplings is reduced accordingly where necessary.

The standard format can be activated and deactivated in any timetable by clicking the right mouse button and selecting 'Timetable period: standard format'.

The screenshot shows two windows of the '1a - Class 1a (Gauss) Timetable (Cla1)' application. The top window displays a basic timetable with columns for days of the week (Mo, Tu, We, Th, Fr, Sa) and rows for periods (1-8). A context menu is open over the 'Mo' column, with the option 'Timetable period: standard form' highlighted. A red arrow points from this menu item to the bottom window. The bottom window shows the same timetable but with a more detailed layout, including teacher names and room numbers in the cells. Below the timetable is a table with additional details for period 33.

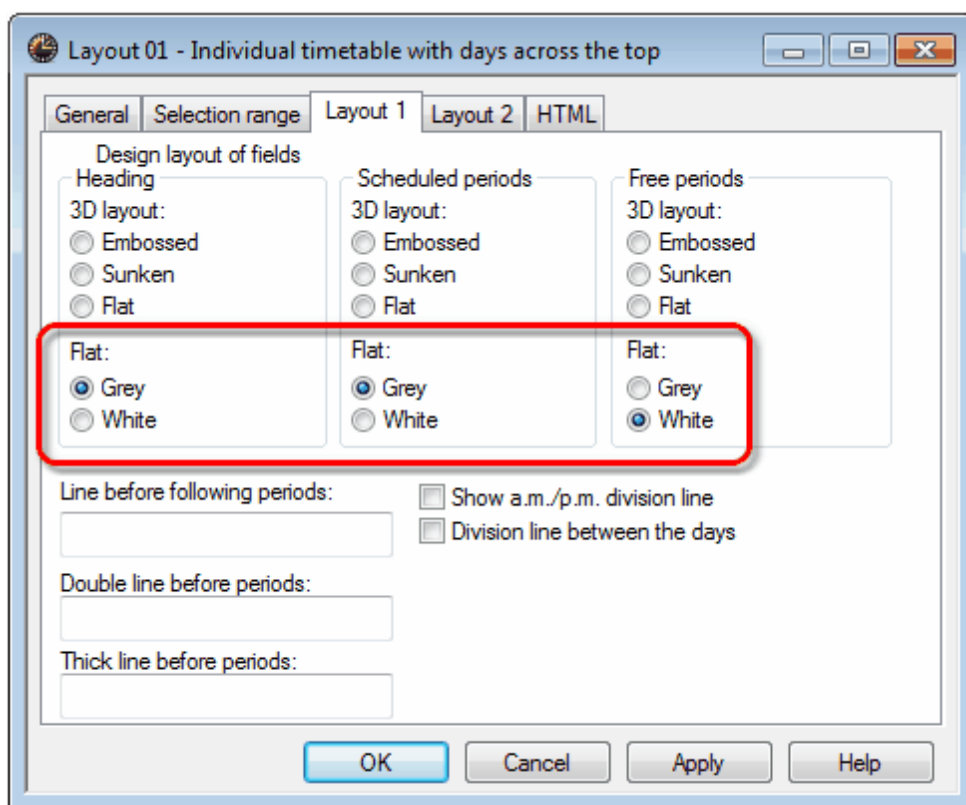
L-No.	Tea.	Subj.	Rm.	Cla.
33	Arist	EN	R1a	1a
+3				

L-No.	Tea.	Subj.	Rm.	Cla.	Time	School week	Stud.	Special text	Cluster	Line text-2
33	Arist	EN	R1a	1a		1-41	28			
+3										

### 5.5.3 Layout 1

The settings on the "Layout 1" tab under <Settings> can be used to change the timetable display on the screen and the printout. The settings offer options for customising the layout of headings (e.g. weekday, period number), scheduled periods and free periods.



4 - Class 4 (Nobel) Timetable

Time range

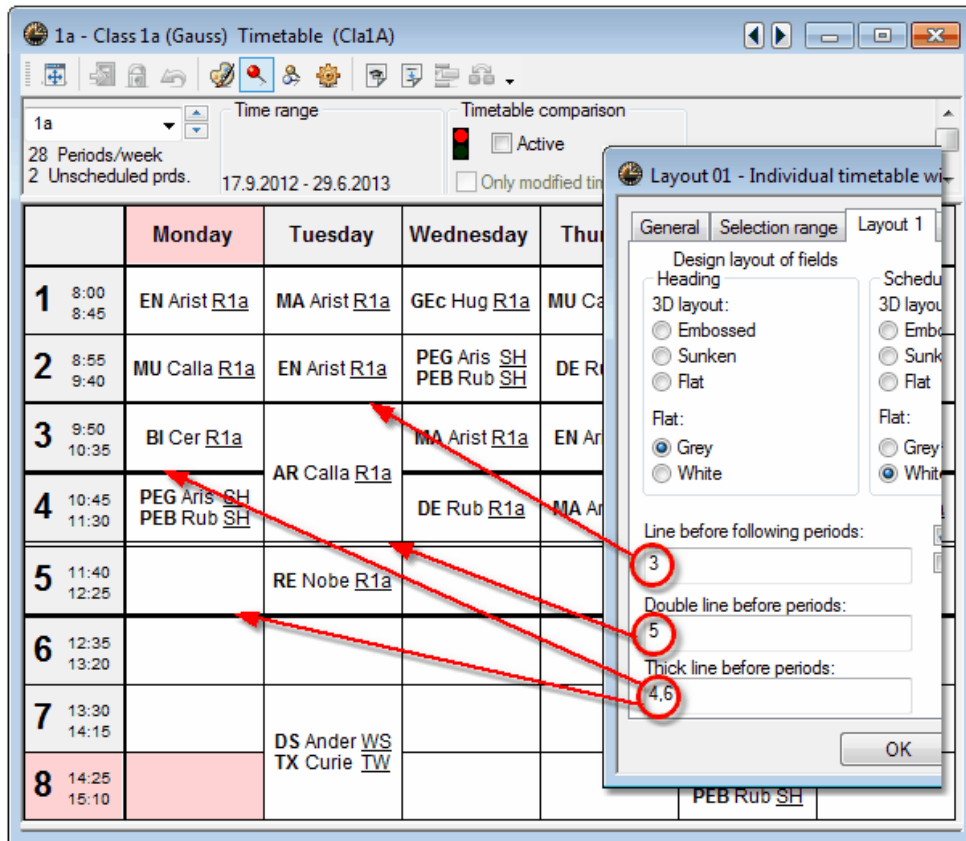
4

30 Periods/week

	Mo	Tu	We	Th	Fr	Sa
1	PEG.	DS.	GA	PH	BI	MA.
2	CK		RE	HI	GA	
3	HI	MU	MA.	CK	RE	DE
4	DE	BI	GEc		GEc	EN
5		MA.		DE		
6	AR					
7				PEG.		
8	PH					

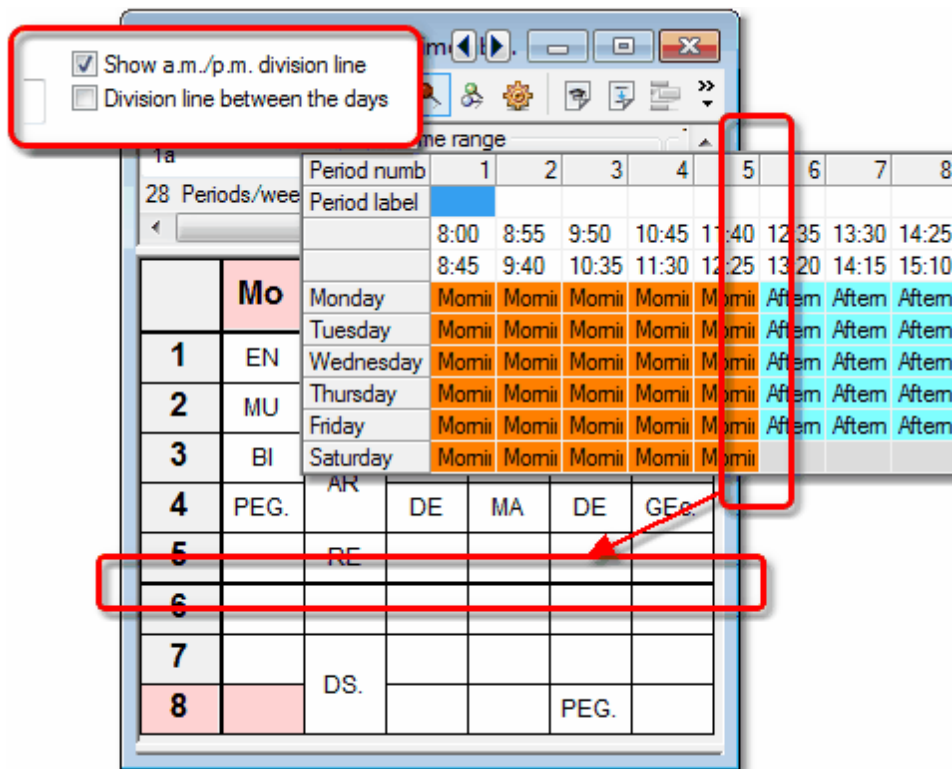


The Layout 1 tab also provides the possibility of displaying lines in the display and on the printout in order, for example, to indicate the different lengths of breaks



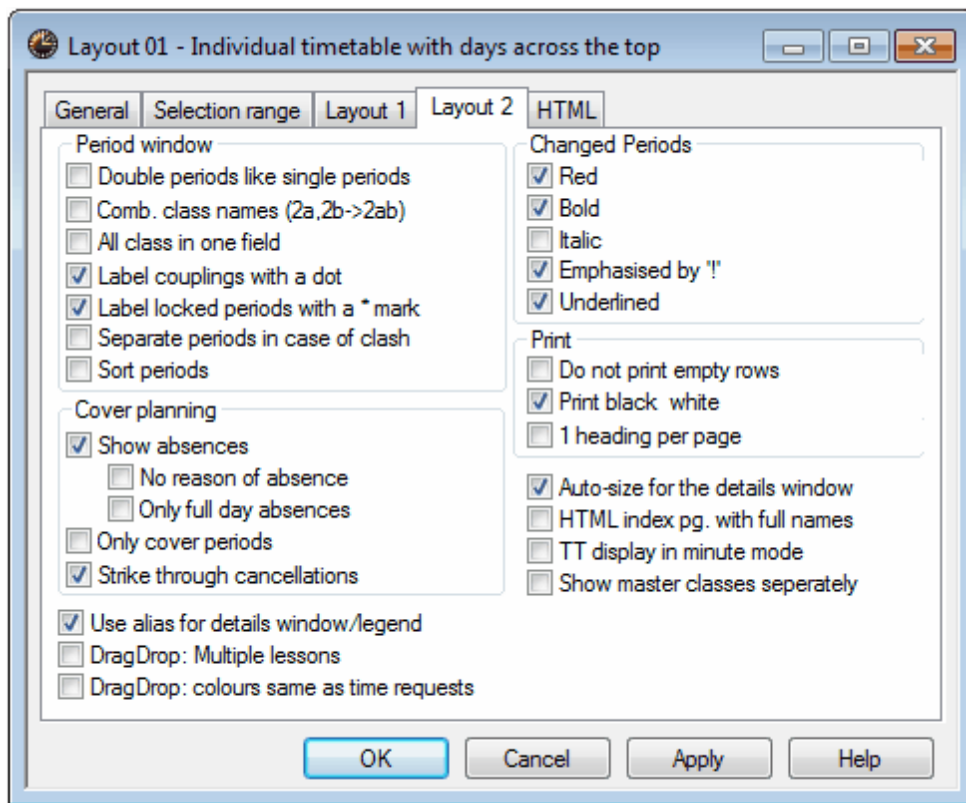
The "Show a.m./p.m. division line" check box allows the division line to separate morning lessons from afternoon lessons in the time grid.

Check the "Show division line between the days" box to display a thicker division line between days than between the periods in order to improve clarity.



### 5.5.4 Layout 2

The settings on the "Layout 2" tab partly affect both the screen and the print layout, partly only the print layout or the HTML output.



#### 5.5.4.1 Double periods like single periods

##### Double periods like single periods

Double periods are displayed like single periods.

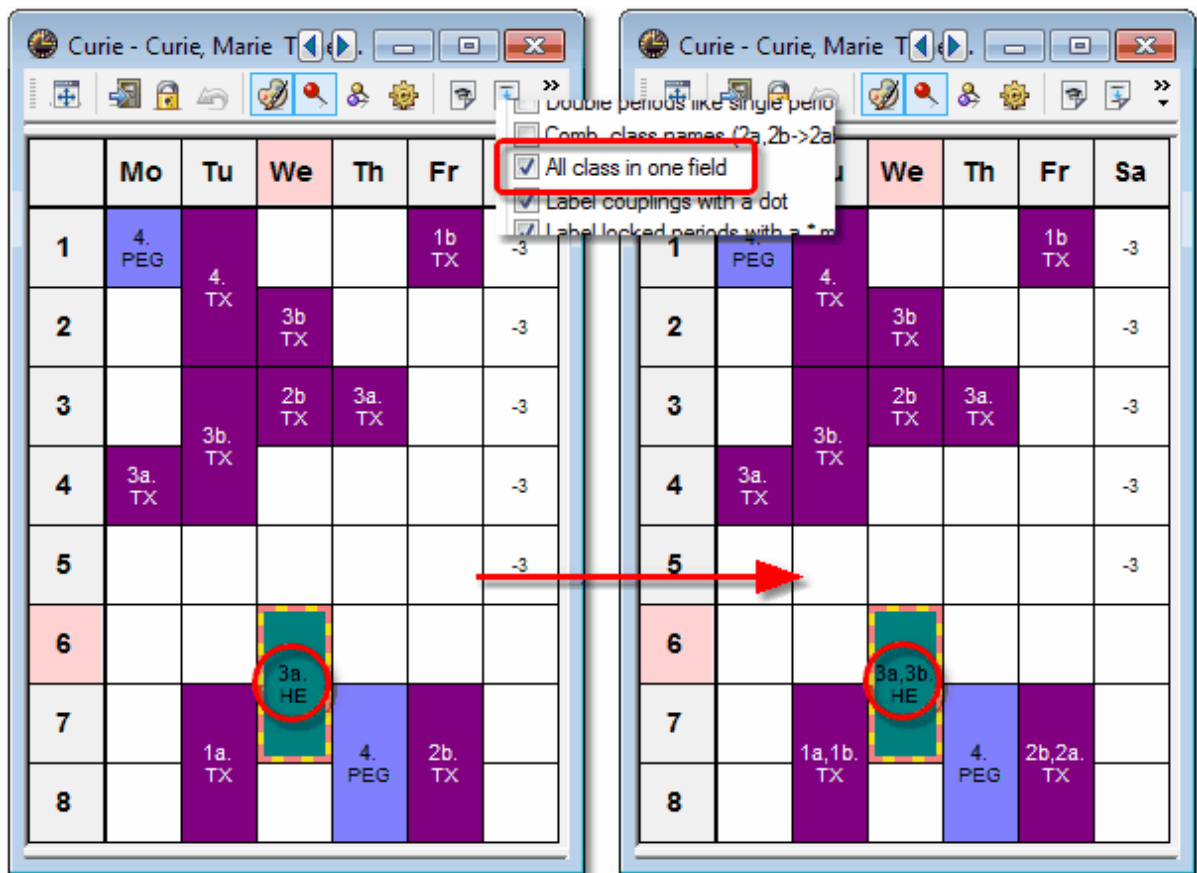
#### 5.5.4.2 Comb. class names (2a,2b -> 2ab)

##### Comb. class names (2a,2b -> 2ab))

With teacher timetables, it is often desirable to be able to see all the classes the teacher teaches. Combined class names were created as a way of showing all classes in a single cell and thereby saving space.. The names of all classes being displayed are combined.

#### 5.5.4.3 All classes in one field

If a teacher takes students from more than one class for a lesson, all classes involved will be displayed in the relevant timetable field in the period window



#### 5.5.4.4 Label couplings with a dot

##### Label couplings with a dot

Coupled lessons are marked with a dot in the period window.

#### 5.5.4.5 Label locked periods with a \* mark

##### Label locked periods with a \* mark

Manually locked periods are marked with an asterisk (\*).

Arist - Aristotle Timet

Time range

Arist

26 Periods/week

Label couplings with dot

	Mo	Tu	We	Th	Fr	Sa
1	1a	1a	3ab.	4	1a	
2	3ab.	1a	1a	3ab.	1a	
3	3ab.	2ab.	1a	1a	1a	1a
4	1ab.	1b	1b	1a	1b	
5						
6						
7				*2ab.		
8	4		*2ab.	1ab.		

Comb. class names

Double periods like single periods

Label locked periods with \* mark

#### 5.5.4.6 Separate periods in case of clash

##### Separate periods in case of clash

Use this option to display conflicting periods (see chapter "Manual scheduling") in separate cells on the screen, the printout and the HTML output. The example shows year 2. The courses (clusters) taking place in parallel are output as a clash. Up to 6 clashes can be displayed next to each other per period. For 7 or more clashes, additional fields are required in the graphics editor (see <Settings> | <Timetable Period>).



12 - Timetable (C1a)

12

231 Periods/week  
0 Unscheduled prds.

Time range  
24.8.2009 - 16.7.2010

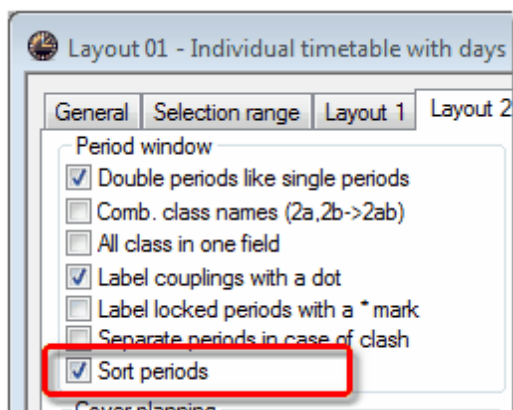
Timetable comparison  
☒ Active  
☐ Only modified timetables

	Mo				Tu				We				Th				Fr							
1	*BK L1 080 LibWi R 10a	*M G M2 090 R MU R 10b	*E G G3 090 NobA R 9a	*D G G4 090 MSS MSS1	*BK P L1 055 R P3	*M G M1 002 HeiWe MSS1	*E L L2 062 R 9e	*E L L3 050 MSS13	*P L L2 049 R P2	*P L L1 055 R P1	*M L L1 002 MSS	*E L L1 062 MSS	*P L L1 049 R P2	*P G1 G1 065 HeiWe R P1	*M G G1 019 MSS1	*F G2 G2 039 MSS1	*D G3 G3 092 MSS	*MU G G4 026 R MU2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*E L L3 045 MSS1	*SK L L3 087 MSS1	*B L3 L3 064 R B2	
2	*M G G3 074 R CO1	*M G G1 049 R CO2	*C G2 G2 061 R C1	*P G2 G2 080 R P1	*BK P L1 055 R P3	*M G M1 002 HeiWe MSS1	*E L L2 062 R 9e	*E L L3 050 MSS13	*P L L2 049 R P2	*P L L1 055 R P1	*M L L1 002 MSS	*E L L1 062 MSS	*P L L1 049 R P2	*P G1 G1 065 HeiWe R P1	*M G G1 019 MSS1	*F G2 G2 039 MSS1	*D G3 G3 092 MSS	*MU G G4 026 R MU2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*E L L3 045 MSS1	*SK L L3 087 MSS1	*B L3 L3 064 R B2	
3	*GEK G1 015 CanEl R 10a	*KGB G1 051 R 10b	*E G G3 089 R 9a	*SKEL G4 102 R P1	*P G1 G1 055 MSS1	*M G G1 019 MSS	*F G2 G2 039 R 10c	*D G4 G4 092 R 7a	*MU G G4 026 R MU1	*ER G G1 063 R 10a	*M L G1 002 MSS	*M G G1 019 MSS	*D G3 G3 092 MSS	*P L G1 049 R P2	*P G1 G1 065 HeiWe R P1	*M G G1 019 MSS1	*F G2 G2 039 MSS1	*D G3 G3 092 MSS	*MU G G4 026 R MU2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*E L L3 045 MSS1	*SK L L3 087 MSS1	*B L3 L3 064 R B2
4	*B L L1 057 R B1	*C L L1 081 R C1	*M L L1 081 R C1	*E L L1 015 R 8b	*B L L1 076 R B4	*B L L1 023 R B1	*M L L1 059 MSS	*E L L1 045 MSS	*SK L L1 087 MSS	*B L L1 064 R B2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*SK L L3 087 MSS	*P L L1 049 R P2	*P G1 G1 065 HeiWe R P1	*M G G1 019 MSS1	*F G2 G2 039 MSS1	*D G3 G3 092 MSS	*MU G G4 026 R MU2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*E L L3 045 MSS1	*SK L L3 087 MSS1	*B L3 L3 064 R B2
5	*B L L1 057 R B1	*C L L1 081 R C1	*M L L1 081 R C1	*E L L1 015 R 8b	*B L L1 076 R B4	*B L L1 023 R B1	*M L L1 059 MSS	*E L L1 045 MSS	*SK L L1 087 MSS	*B L L1 064 R B2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*SK L L3 087 MSS	*P L L1 049 R P2	*P G1 G1 065 HeiWe R P1	*M G G1 019 MSS1	*F G2 G2 039 MSS1	*D G3 G3 092 MSS	*MU G G4 026 R MU2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*E L L3 045 MSS1	*SK L L3 087 MSS1	*B L3 L3 064 R B2
6	*B L L1 057 R B1	*C L L1 081 R C1	*M L L1 081 R C1	*E L L1 015 R 8b	*B L L1 076 R B4	*B L L1 023 R B1	*M L L1 059 MSS	*E L L1 045 MSS	*SK L L1 087 MSS	*B L L1 064 R B2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*SK L L3 087 MSS	*P L L1 049 R P2	*P G1 G1 065 HeiWe R P1	*M G G1 019 MSS1	*F G2 G2 039 MSS1	*D G3 G3 092 MSS	*MU G G4 026 R MU2	*B L2 L2 023 R B1	*M L3 L3 059 MSS	*E L L3 045 MSS1	*SK L L3 087 MSS1	*B L3 L3 064 R B2
7	*BK G1 031 R ZS	*MU G2 092 R MU	*M G G1 090 R 10	*L G G1 015 MSS	*F G G2 020 MSS	*D G G3 089 MSS	*MU G5				*G B G1 062 MSS	*GKG G1 019 MSS	*MU G2 020 R MU	*M G G1 019 MSS	*F G5 G5 020 R 10	*BK 031 R Z	*MU BraLa	*BK 005 R Z						
8																								
9	*GKEG1 035 MSS15										*SP G4 040 R SP	*SP G4 045 R SP	*SP G4 003 R SP	*SP G4 044 R SP	*SP G G4 043 R SP	*EKG	*SKB	*B L	*M L	*GEK				
10																								

#### 5.5.4.7 Sorting periods

##### Sorting periods

When several lessons take place in the same period on the same week day, but in different weeks, you can sort the lessons by start date using this function.



#### 5.5.4.8 Cover planning block

##### Cover planning block

If you use the Cover planning module you can use the options listed here to influence how the changes are displayed.

#### 5.5.4.9 Use alias for details window/legend

##### Use alias for details window/legend

Displays the alias of the different elements in the timetable details window and the legend (e.g. changes your short name "MA" to the common school name "Maths"); (please refer to chapter "Alias names").

#### 5.5.4.10 DragDrop

##### DragDrop: Multiple lessons

Please refer to chapter "Scheduling in the timetable | Scheduling with clashes".

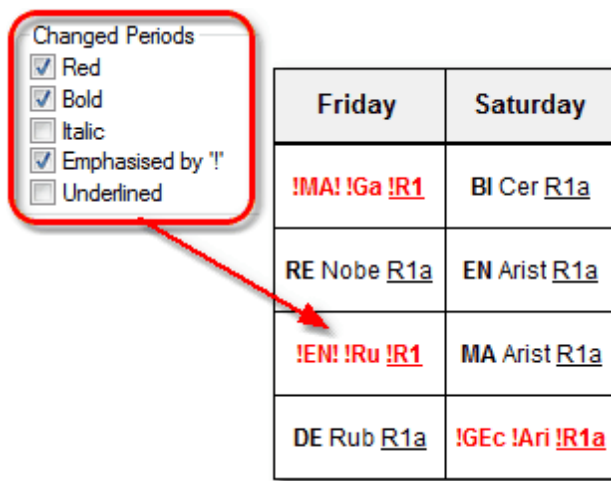
#### DragDrop: colours same as time requests

Please refer to chapter "Scheduling in the timetable | Scheduling periods".

#### 5.5.4.11 Changed periods

##### Changed periods

When comparing timetables and in the cover planning mode you can determine how changed periods should be highlighted. In the example, modifications from the normal lessons are shown in red, bold and with !.

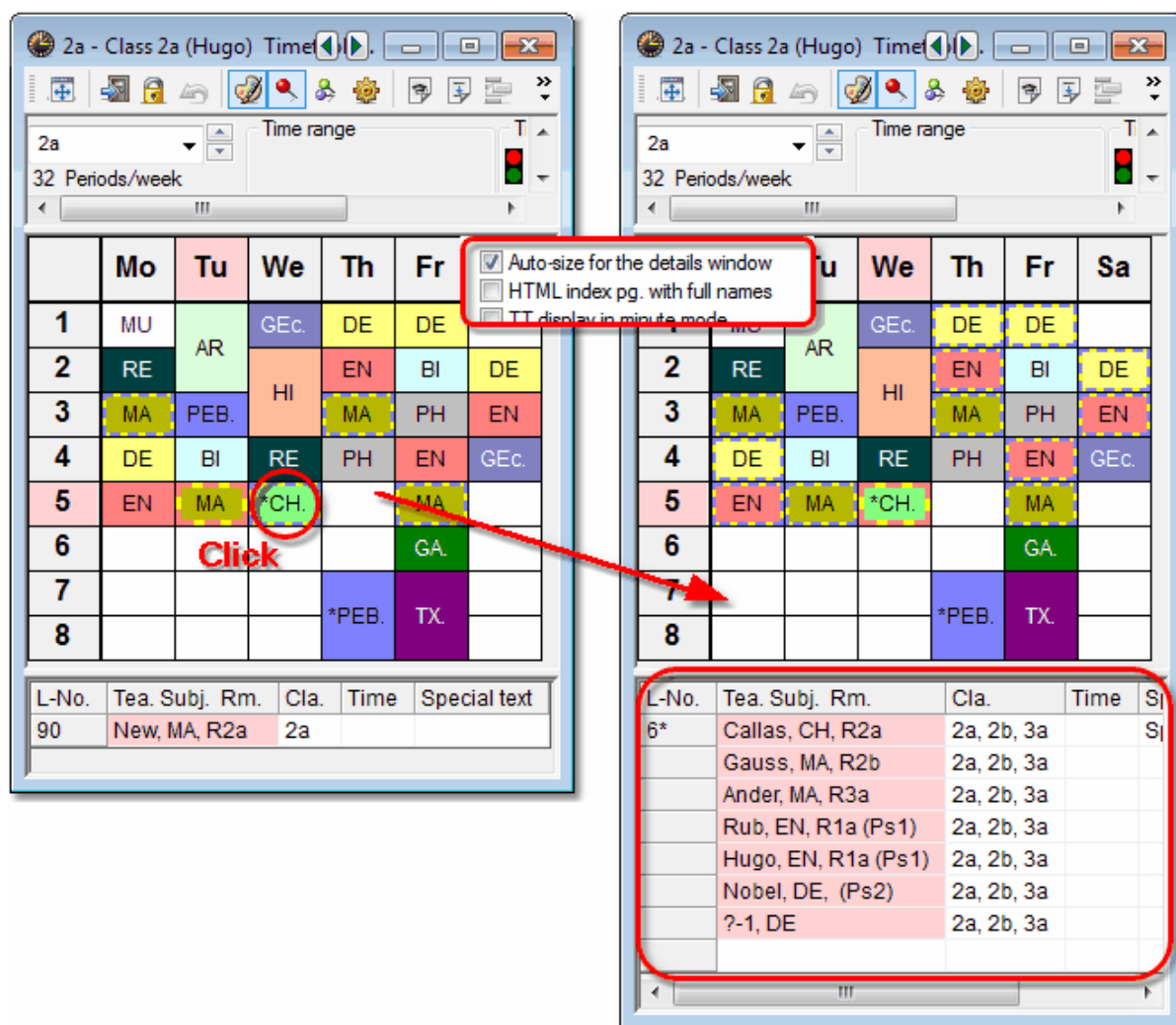


Friday	Saturday
<b>!MA! !Ga !R1</b>	BI Cer <u>R1a</u>
RE Nobe <u>R1a</u>	EN Arist <u>R1a</u>
<b>!EN! !Ru !R1</b>	MA Arist <u>R1a</u>
DE Rub <u>R1a</u>	<b>!GEc !Ari !R1a</b>

#### 5.5.4.12 Auto-size for the details window

##### Auto-size for the details window

This option automatically resizes the period details window (lower section of the timetable window) to fit the contents.



#### 5.5.4.13 HTML index page with full names

##### HTML index page with full names

Please refer to chapter "Timetables in HTML format".

#### 5.5.4.14 Show master classes separately

##### Show master classes separately

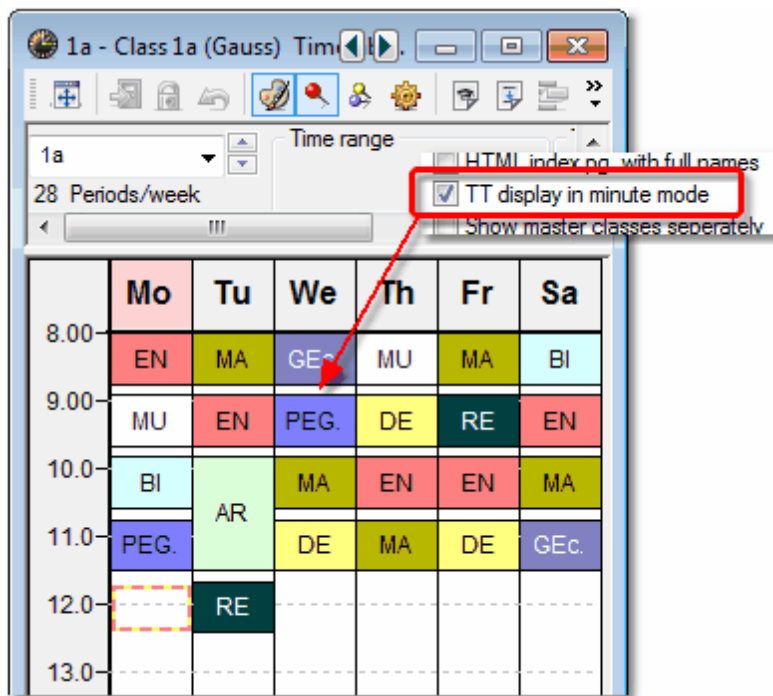
Please refer to chapter "Type-separated class components".

#### 5.5.4.15 TT display in minute mode

##### TT display in minute mode

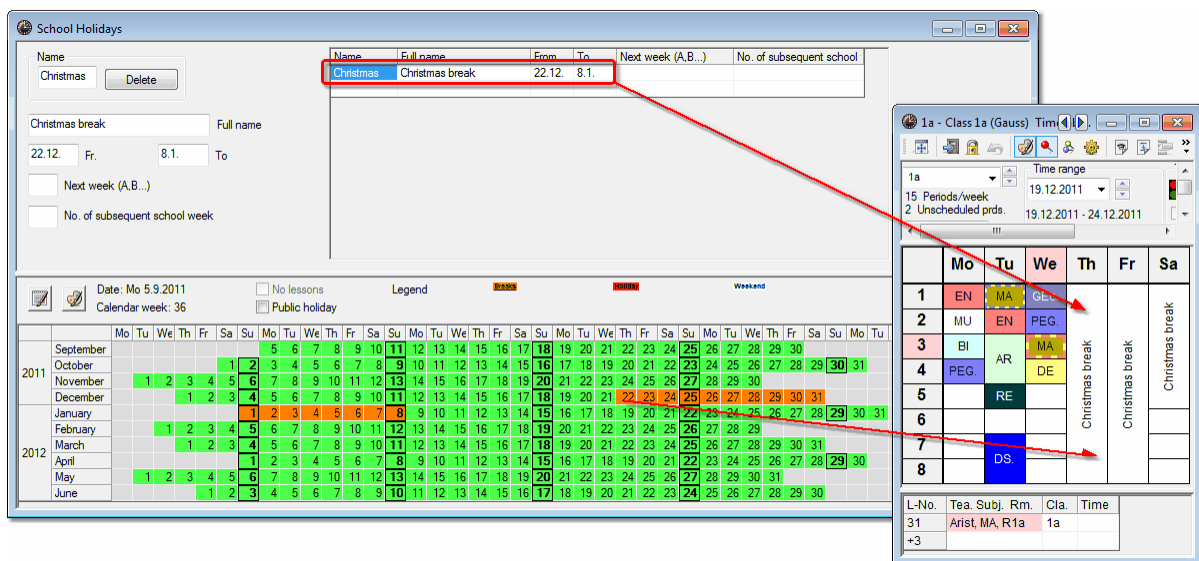
If lesson times differ on different days it can make sense to enter the individual periods of the timetable on a scale to the exact minute. Untis provides this option with its timetable display in minute mode.





### 5.5.5 School holidays


The timetables display the free days entered under "Settings | School holidays". The prerequisite for this is that the timetable display has been set to weeks (<Settings>, "Selection range | Calendar week").

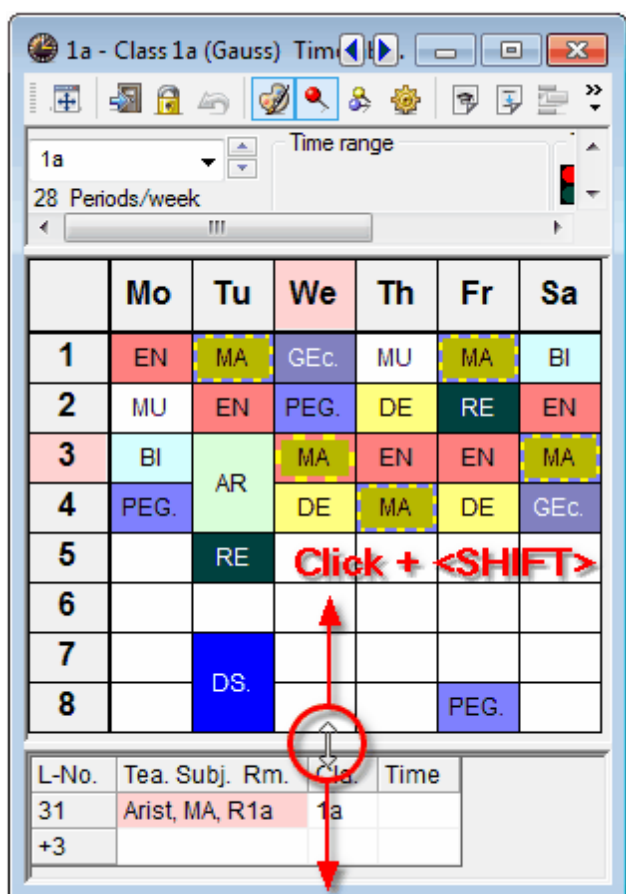


### 5.5.6 Font

The overall size of the timetable window not only depends on the details displayed in the timetable periods, but also on the selected font. The font size and type can be changed under <Settings>, "General | Font".

The relative size of the timetable windows can also be changed.

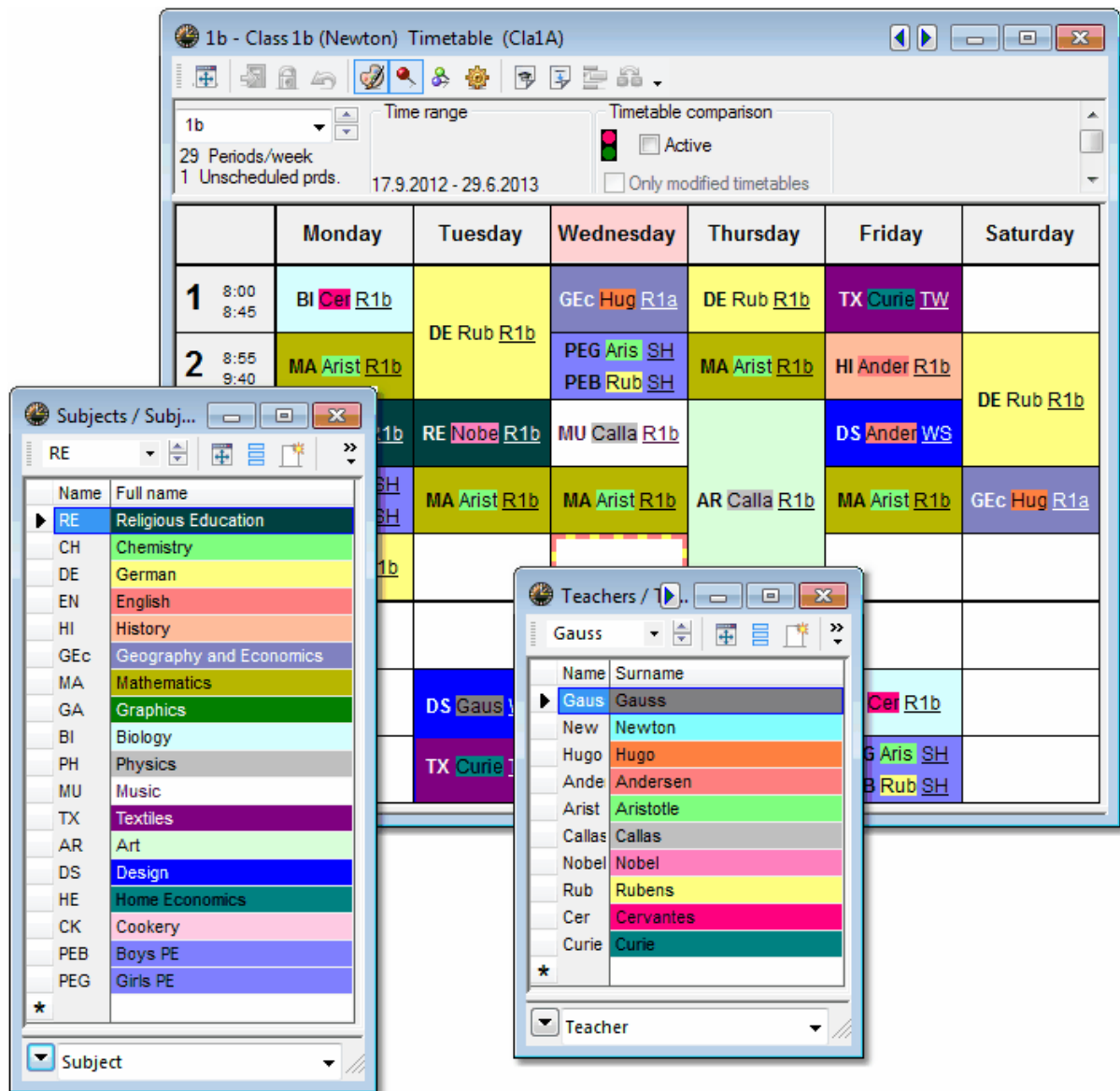
- Move the cursor to the dividing line between the timetable window and details window. The cursor changes to .
- Hold down the <SHIFT> key and drag the line up or down.
- Release the mouse button. The timetable window adjusts to the specified size.



### 5.5.7 Colour codes

The colour codes specified for elements under master data will be displayed in the timetable

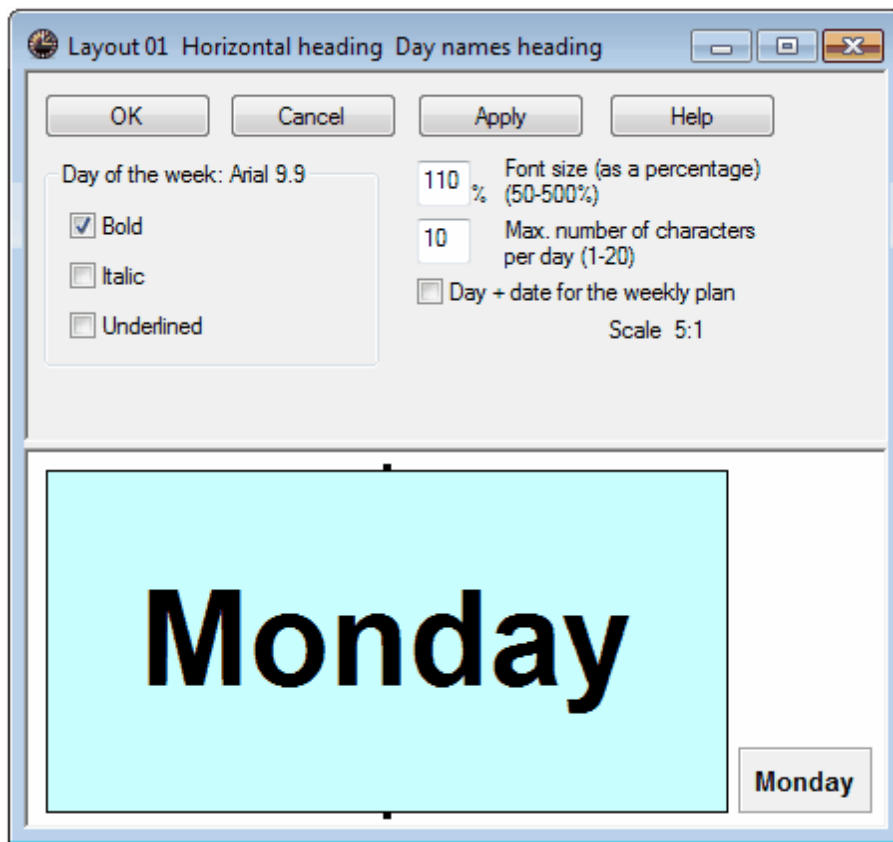




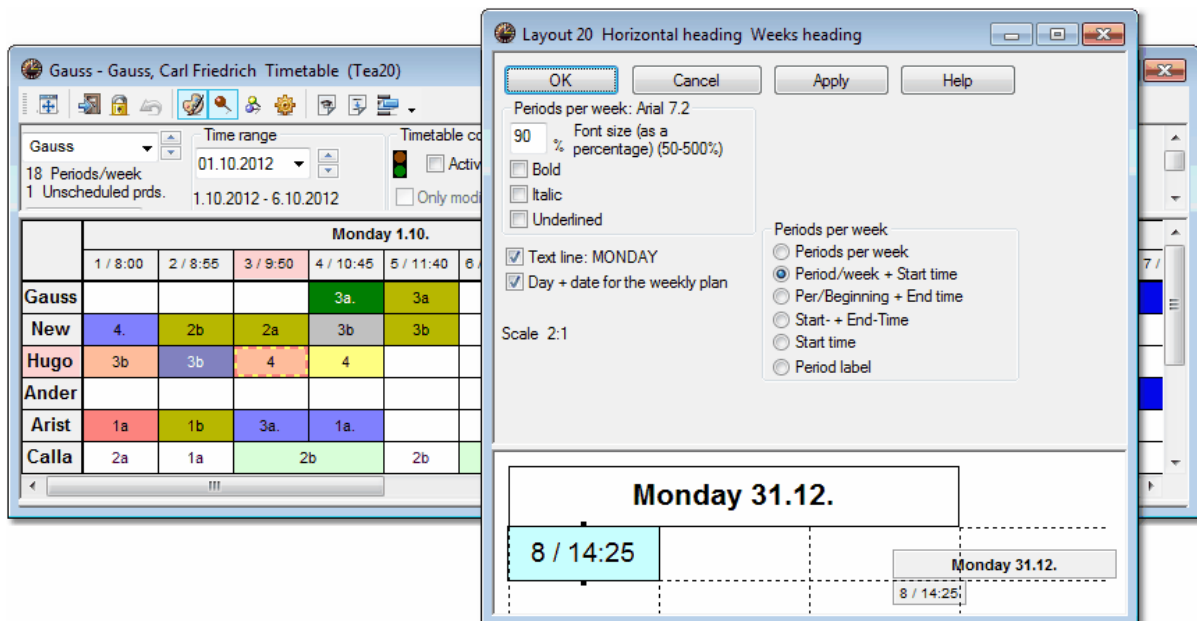
The example shows the colour coding of subjects and teachers, i.e. teacher Cer (red background) teaches a biology lesson (blue background) on Monday.

### 5.5.8 Column headings

Customise column headings (e.g. days of the week) under option "Column heading" on the "General" tab under <Settings>.



The overview timetables with format 20 provide options for the display of additional information such as dates or start and end times.



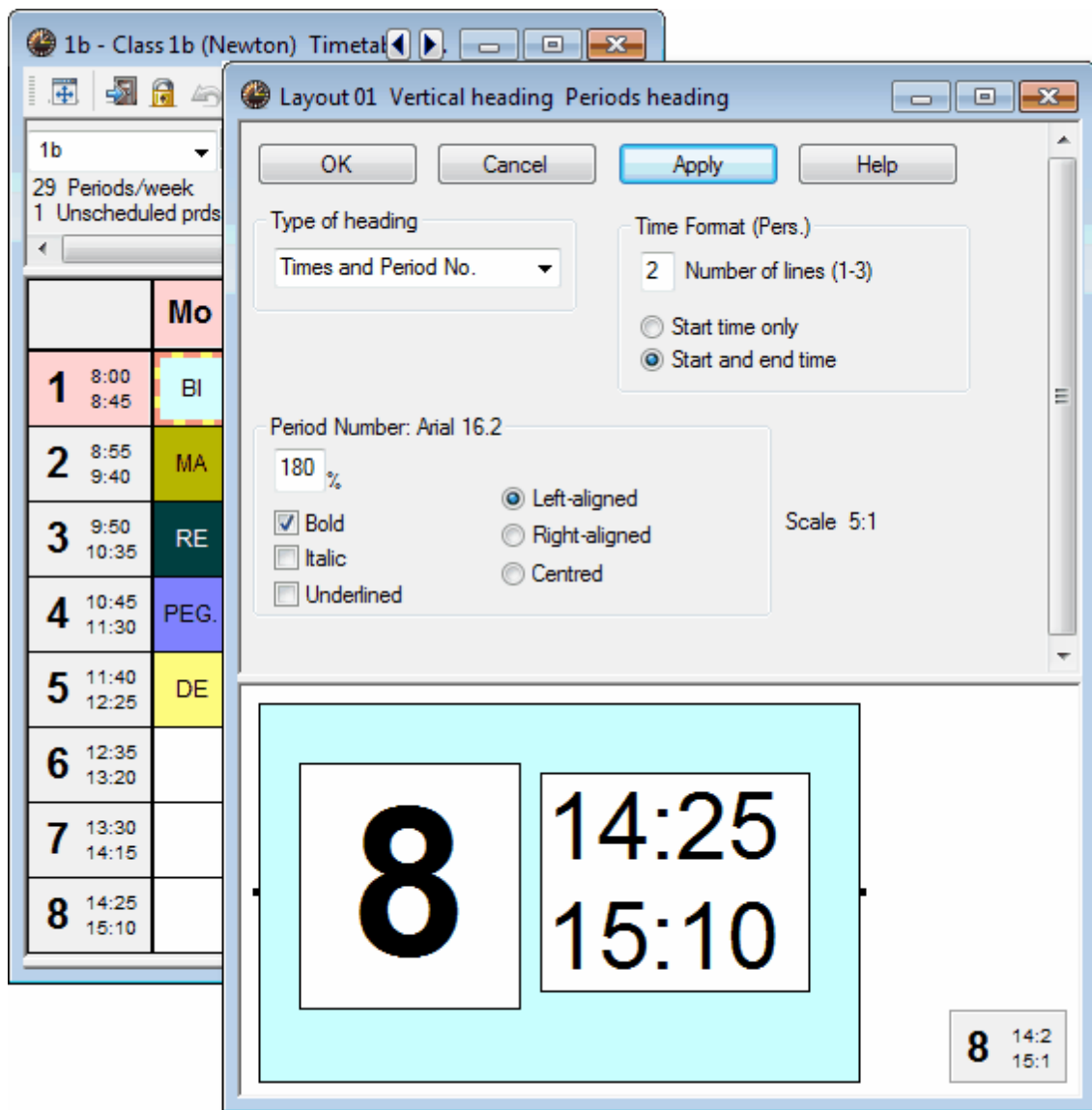
**Note:**

The name of the period specified in the grid view can be printed instead of the period number.

### 5.5.9 Row headings

The row headings (e.g. start times) can be customised under option "Row heading" on the "General" tab under <Settings>.

You can display the period number and/or the period times. In addition, you can choose between single and multiple row display and specify the font type and size. As always, you will see an example of your settings in the bottom right hand corner of the preview pane.



## 5.6 Printing

Printing timetables is effected via the <Print> or <Print Preview> buttons. Alternatively, you can use the shortcut <CTRL>+P. Clicking on either option first displays the print selection window, where you can make additional settings. Click on <OK> to open the print dialogue or the page preview.

Create customised print views if you wish the printed versions of your timetables to differ from the screen display.

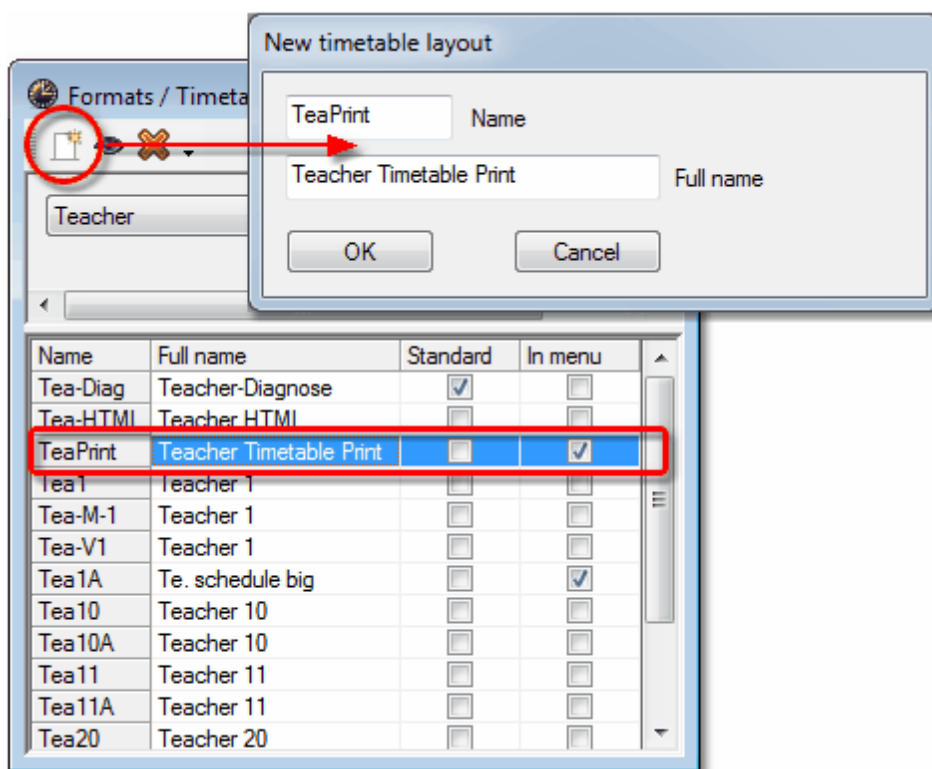


### 5.6.1 New print view

Create a new timetable view (see description under "New") based on the timetable that most resembles the print version you wish to create. Assign a new descriptive name to the new timetable format (e.g. TeacherTimetablePrint).

Customise the period display in the period window and in the row and column headings as described in the previous chapters

As a general rule, the print version will be identical to the screen display unless you customise the print versions or add additional information.



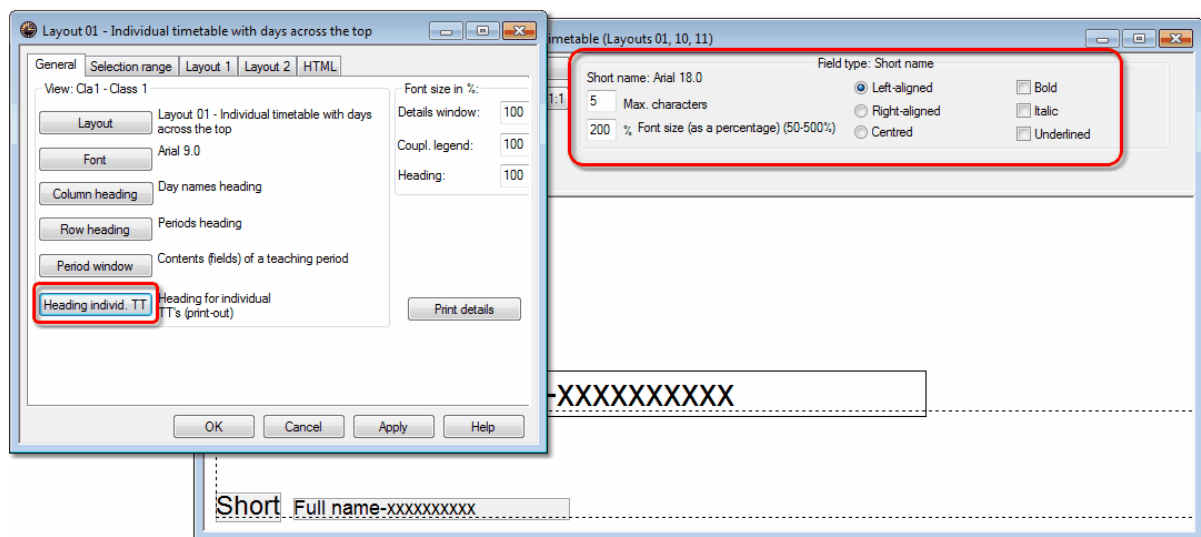
## 5.6.2 Headings

Customise headings in individual printed timetables (formats 1, 10 and 11) as follows:

Open the file demo.gpn and a class timetable ("Timetable | Classes") and the window for editing the headings of individual timetables ( under <Settings>, "General" tab, "Heading individual TT").



By default, the full and the short names of the element will be displayed. Layout and format (font size, alignment, font style etc.) of individual headings can be changed in the upper right-hand section of the window

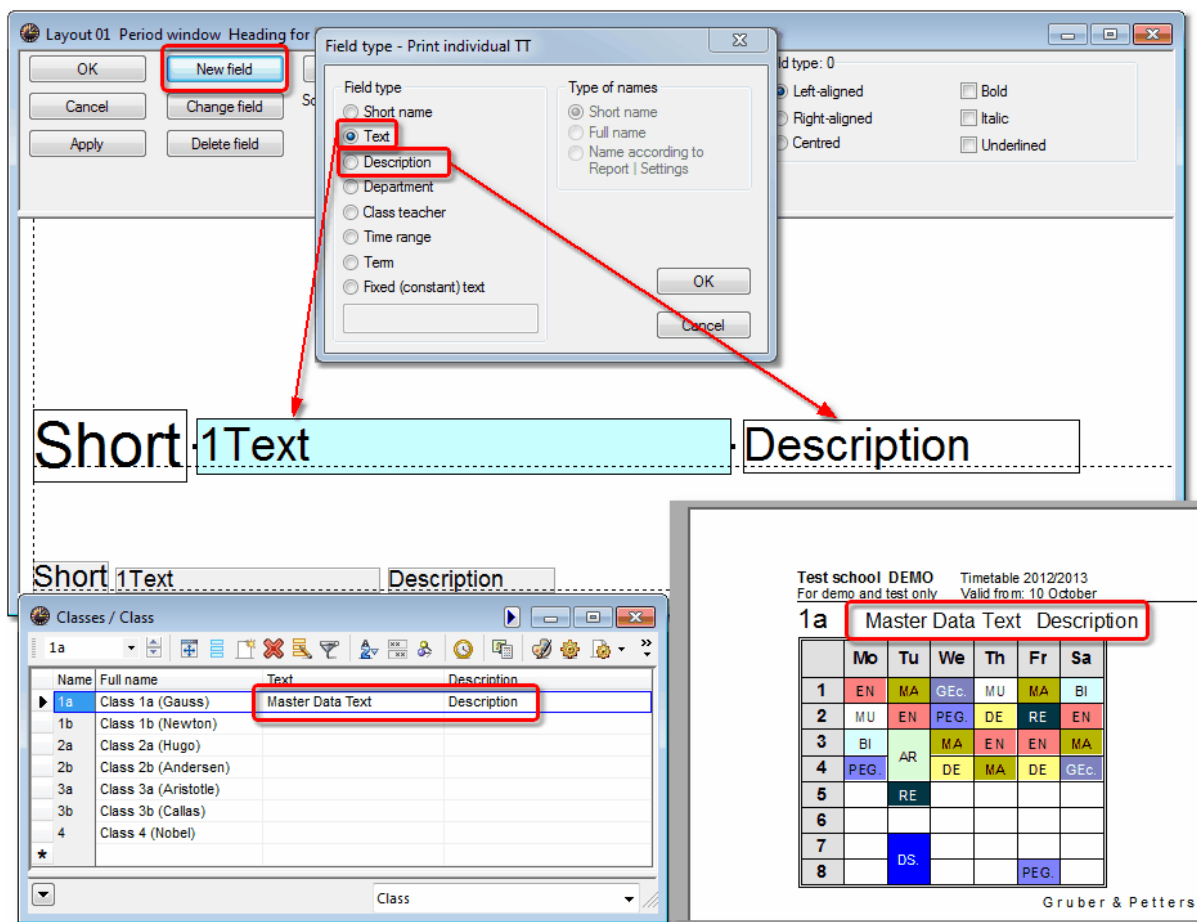


Click on <New field> to insert the following additional headings into your timetable (see example below):

### Text, Description

You can assign a text and a description of your choice to each master data element (via "Master Data | Descriptions") and instruct the software to include these details in the headings of printouts.

The example shows a heading containing the text and description entered under the master data for class 1a. The two fields are arranged side by side. The maximum number of characters has been extended to 15 and the font style set to bold



### Department

Allows you to include the name of a department in the heading of printed timetables (useful when working with department timetables).

### Class teacher

Allows you to include the name of the class teacher (entered under the master data of a class) in the heading on printed class timetables.

### Time range

Select the time range you want to display in the heading. You can choose between calendar week, term, a customised date range or the total school year - depending on the date range entered under "Selection range" under <Settings>.



**1a** 17.9. - 29.6.

	Mo	Tu	We	Th	Fr	Sa
1	EN	MA	GEc.	MU	MA	BI
2	MU	EN	PEG.	DE	RE	EN
3	BI	AR	MA	EN	EN	MA
4	PEG.		DE	MA	DE	GEc.
5		RE				
6						
7		DS.				
8					PEG.	

### Term

Allows you to include the full or short name of a term in the heading of printed timetables (when working with terms).

### Fixed (constant) text

Text entered here (e.g. elective subject timetable) is displayed on all timetables of this format.

## 5.6.3 Layout

Modify the print layout on the "Layout 1" and "Layout 2" tabs under <Settings>.



### Layout of fields

You can select the 3D layout option for Headings, Scheduled periods and Free periods under "3D layout".

### Print black & white

Select this option if the timetables on your screen are colour-coded, but you wish the timetables to be printed in black & white (for instance, because your printer does not support colour printing).

### Do not print empty rows

Empty rows will not be printed. This option allows for considerable savings in paper and space (especially for summaries and timetables in HTML format).

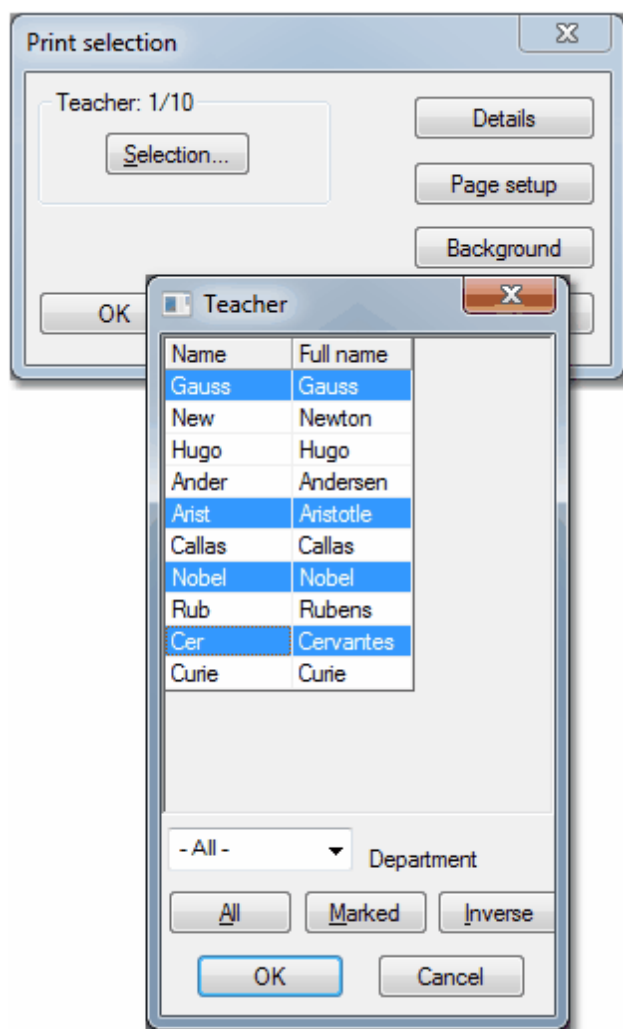
Open the "Print selection" window via <Print> or <Print Preview> to enter further print settings. The settings only apply to the layout of the selected timetable.

### 1 heading per page

You can print any number of timetables on one page and by default the heading (school name, date, file name etc.) appears above each timetable. You can deactivate this functionality by checking "1 heading per page" and so print just one heading on a page.

### 5.6.4 Selecting timetables

By default, the timetable displayed on screen will be printed. You can use the <Selection> option to specify that several timetables of the same format should be printed simultaneously.



**Using the mouse** You can select the timetables for the desired elements by holding the left mouse button and moving the cursor or with <CTRL> + left click (see figure).

#### All

This option allows you to select all the elements.

#### Marked

Allows you to select all the elements marked with the specific code "marked" under master data.

#### Inverse

Selects all the elements not previously selected (useful for print selection involving two different groups of elements, such as part-time and full-time teachers)

#### Department

Teacher timetable printing can also be restricted to the staff of a particular department.

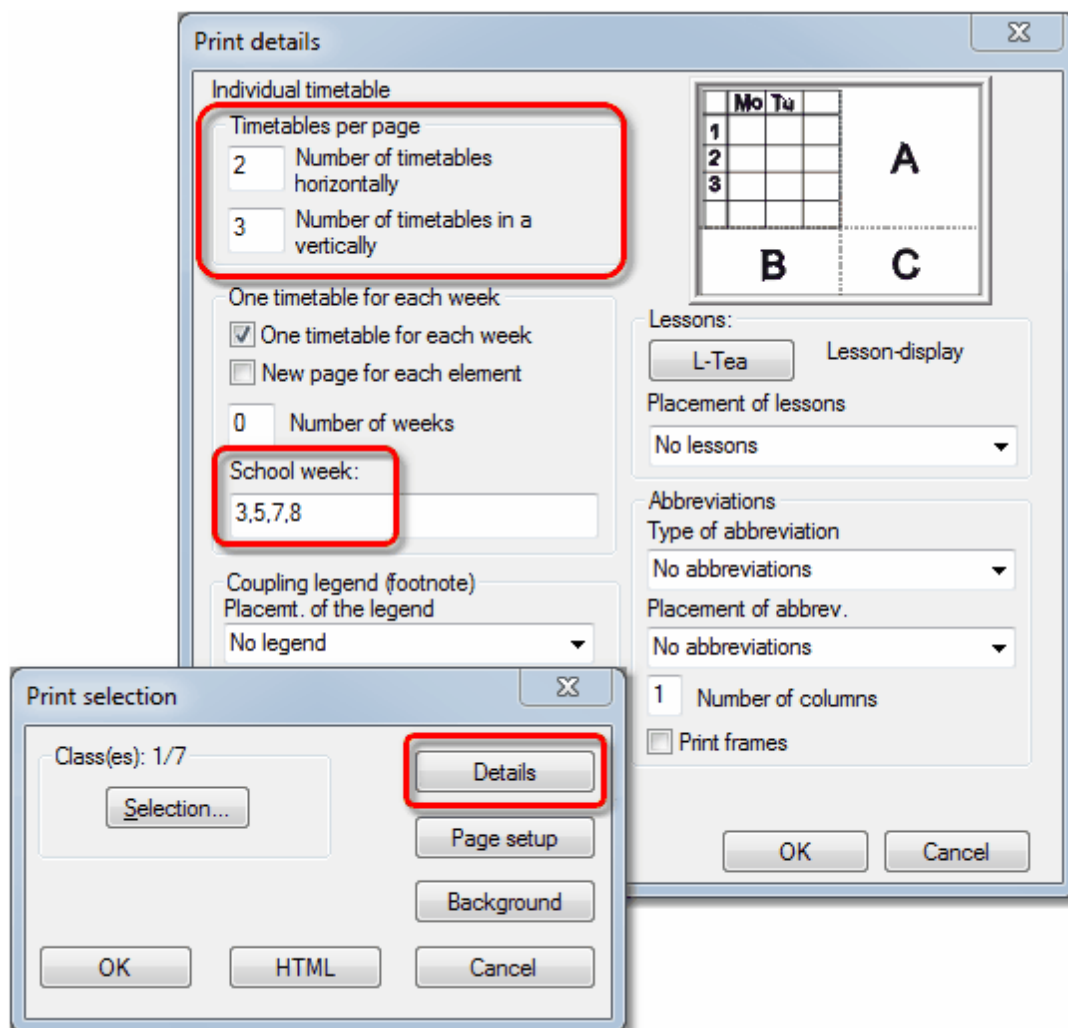
### 5.6.5 Details, individual timetables

Click on <Details> under "Print selection" to access further printout options. The settings options vary depending on the timetable format. The following descriptions apply to individual timetables with formats 1 and 10:

**Timetables per page** Specify how many timetables you wish to print on one page. The example shows a page containing 6 teacher timetables.

#### Tip

*The print details are stored separately for each timetable layout. It is therefore quite easy to store individual settings for different printing requirements. Access the print details dialogue via the <Print details> button under <Settings> on the "General" tab.*



Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

### 1a Class 1a (Gauss)

	Mo	Tu	We	Th	Fr	Sa
1	EN	MA	GEc.	MU	MA	BI
2	MU	EN	PEG.	DE	RE	EN
3	BI	AR	MA	EN	EN	MA
4	PEG.	AR	DE	MA	DE	GEc.
5		RE				
6						
7		DS.				
8				PEG.		

1.10.2012 - 7.10.2012 Gruber & Petters Soft

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

### 2b Class 2b (Andersen)

	Mo	Tu	We	Th	Fr	Sa
1	RE	MA	GEc.		RE	
2	MA		MU	DE	PH	DE
3		PEB.	TX	BI	BI	
4	AR	PH	DE	HI	MA	GEc.
5	MU	HI	*CH.	MA		
6					GA.	
7				*PEB.	TX.	
8						

1.10.2012 - 7.10.2012 Gruber & Petters Soft

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

### 1b Class 1b (Newton)

	Mo	Tu	We	Th	Fr	Sa
1	BI	DE	GEc.	DE	TX	
2	MA		PEG.	MA	HI	DE
3	RE	RE	MU		DS.	
4	PEG.	MA	MA	AR	MA	GEc.
5	DE					
6						
7		DS.			BI	
8				PEG.		

1.10.2012 - 7.10.2012 Gruber & Petters Soft

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

### 3a Class 3a (Aristotle)

	Mo	Tu	We	Th	Fr	Sa
1	HI	EN	PEG.	PH	DE	GEc.
2	EN	RE	DE	DS.	PEG.	
3	PEG.	BI	HI	GA.	MA	DE
4	GA.	DE	MA	MA	RE	PH
5	MA		*CH.	EN		
6			DS.			
7	BI			AR.		
8						

1.10.2012 - 7.10.2012 Gruber & Petters Soft

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

### 2a Class 2a (Hugo)

	Mo	Tu	We	Th	Fr	Sa
--	----	----	----	----	----	----

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

### 3b Class 3b (Callas)

	Mo	Tu	We	Th	Fr	Sa
--	----	----	----	----	----	----

Check the option "One timetable for each week" if you wish to print a separate timetable per week for each selected element. In addition, the field "School week" can also be used to specify which weeks should be printed. If this field remains empty, those weeks will be printed that were selected under <Settings> This is a particularly useful option for schools with irregular lessons. Check the option "New page for each element" if you wish timetables to start on a new page for each new class or teacher.

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

Gaus Gauss Carl Friedrich

	Mo	Tu	We	Th	Fr	Sa
1			4 GA			4 MA
2					4 GA	
3		3b GA	4 MA	3a GA	3a MA	
4	3a GA		3a MA	3a MA		
5	3a MA	4 MA	*2a MA			
6						
7		1b DS				
8						

1.10.2012 - 7.10.2012

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

Gaus Gauss Carl Friedrich

	Mo	Tu	We	Th	Fr	Sa
1			4 GA			4 MA
2					4 GA	
3		3b GA	4 MA	3a GA	3a MA	
4	3a GA		3a MA	3a MA		
5	3a MA	4 MA	*2a MA			
6						
7		1b DS				
8						

29.10.2012 - 4.11.2012

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

Gaus Gauss Carl Friedrich

	Mo	Tu	We	Th	Fr	Sa
1			4 GA			4 MA
2					4 GA	
3		3b GA	4 MA	3a GA	3a MA	
4	3a GA		3a MA	3a MA		
5	3a MA	4 MA	*2a MA			
6						
7		1b DS				
8						

15.10.2012 - 21.10.2012

Test school DEMO Timetable 2012/2013  
For demo and test only Valid from: 10 October

Gaus Gauss Carl Friedrich

	Mo	Tu	We	Th	Fr	Sa
1			4 GA			4 MA
2					4 GA	
3		3b GA	4 MA	3a GA	3a MA	
4	3a GA		3a MA	3a MA		
5	3a MA	4 MA	*2a MA			
6						
7		1b DS				
8						

5.11.2012 - 11.11.2012

**Coupling legend** A legend will be printed whenever there is insufficient space in the period window to display all the relevant details of a lesson. For lesson information (in a class timetable), such details include rooms, subjects, teachers and any time restrictions.

Use the option "Placement of the legend" to specify the location of the legend on the page or to print the legend on a separate page. You can also specify the number of columns in the legend, the use of alias names and if the legend should be printed in frames.

Print details

Individual timetable

Timetables per page

1

Number of timetables horizontally

1

Number of timetables in a vertically

One timetable for each week

☐

One timetable for each week

☐

New page for each element

4

Number of weeks

School week:

Coupling legend (footnote)

Placem. of the legend

Below timetable (B+C)

2

Number of columns

☐

Print frames

☒

Use alias for abbreviations/legend

Lessons:

L-Tab

Lesson-display

Placement of lessons

No lessons

Abbreviations

Type of abbreviation

No abbreviations

Placement of abbrev.

No abbreviations

2

Number of columns

☐

Print frames

OK

Cancel

Mo Tu

1

2

3

A

B

C

ay	Friday	Saturday
	3a R3a DE	4 MA
DS	1b R1b HI	
	1b,3 WS DS	3a R3a DE
DE	3b DE	3b R3a DE
MU	2b,2a WS DS	

	No.	Tea.	Sub.	Rm.	Cla.	Time
1)	Ander, DS, WS	4	Nobel, DE,		2a, 2b, 3a	
	Curie, TX, TW	4	?-1, DE		2a, 2b, 3a	
2)	Ander, MA, R3a	4	6)	Ander, DS, WS	3a, 3b	
	Gauss, MA	4		Curie, HE, HE1	3a, 3b	
3)	Ander, DS, WS	1a	7)	Callas, AR, R3a	3a, 3b	
	Gauss, DS, WS	1b		Ander, MU, R1a	3a, 3b	
	Curie, TX, TW	1a, 1b	8)	Curie, TX, TW	2b, 2a	
4)	Ander, MA,	4		Ander, DS, WS	2b, 2a	
	Gauss, MA	4				
5)	Callas, CH, R2a	2a, 2b, 3a				
	Gauss, MA, R2b	2a, 2b, 3a				
	Ander, MA, R3a	2a, 2b, 3a				
	Rub, EN, R1a	2a, 2b, 3a				
	Hugo, EN, R1a	2a, 2b, 3a				

The font size of the legend can be customised in the timetable settings.



If you wish to exclude a certain lesson from the printed legend, simply mark the lesson with the code "(L) Not in legend".

Font size in %:

Details window:

100

Coupl. legend:

100

Heading:

100

Font size of the legend can be customised in the timetable settings.

**Lesson** Printouts of class and teacher timetables can also include the lesson view. Select the desired lesson view with the button (<L-Tea> or <L-Cla>) in the Lessons section of the "Print details" window. The print settings specified for the lesson view will also apply to the printout.

The example shows the timetable of teacher Hugo complete with lesson distribution.

**Hugo Hugo Victor**

	Mo	Tu	We	Th	Fr	Sa
1	3b HI		1a GEc	3b HI		3a GEc

L-No.	Cl,Te.	Per	Teacher	Subject	Class(es)	Subject room
11	4, 1	2	Hugo	GEc	1a,1b,2a,2b	
6	3, 7	1	Callas	CH	2a,2b,3a	
			Gauss	MA	2a,2b,3a	
			Ander	MA	2a,2b,3a	
			Rub	EN	2a,2b,3a	
			Hugo	EN	2a,2b,3a	
			Nobel	DE	2a,2b,3a	
			?-1	DE	2a,2b,3a	
			Hugo	HI	2a	
			Hugo	GEc	3a	
			Hugo	GEc	3b	
			Hugo	HI	3b	
			Hugo	GEc	4	
			Hugo	HI	4	
			Hugo	DE	4	

**Print details**

Individual timetable

Timetables per page

1 Number of timetables horizontally

1 Number of timetables in a vertically

One timetable for each week

☐ One timetable for each week

☐ New page for each element

1 Number of weeks

School week:

Coupling legend (footnote)

Placem. of the legend

No legend

1 Number of columns

☐ Print frames

☒ Use alias for abbreviations/legend

Lessons:

L-Tea Lesson-display

Placement of lessons

Next to timetable (A)

Abbreviations

Type of abbreviation

No abbreviations

Placement of abbrev.

No abbreviations

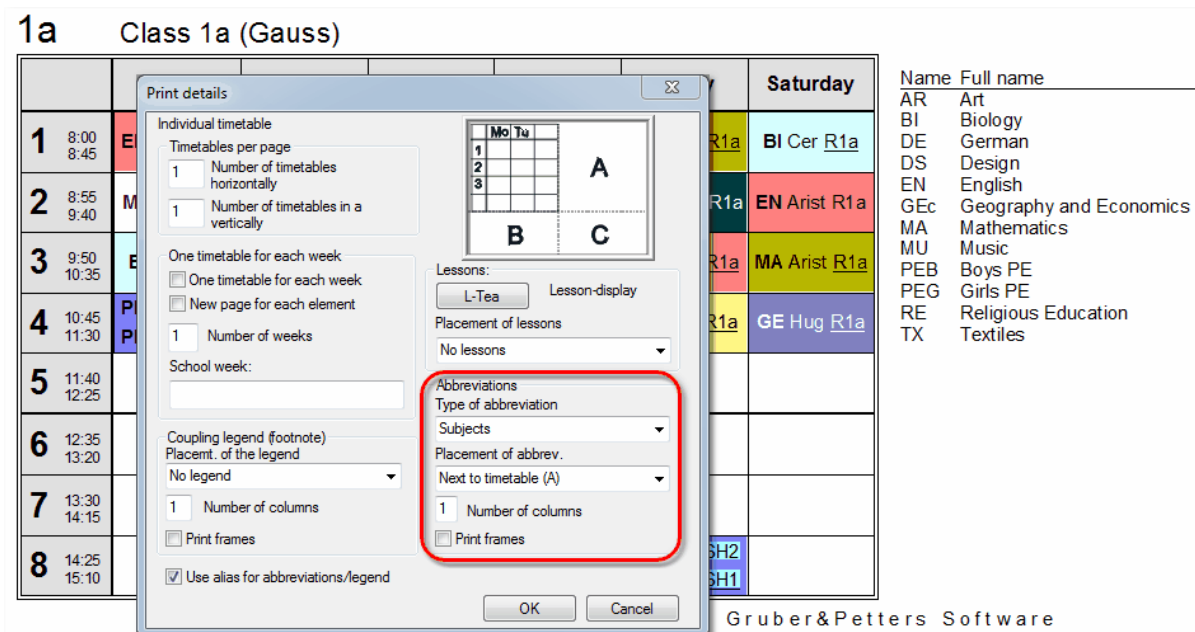
1 Number of columns

☐ Print frames

OK Cancel

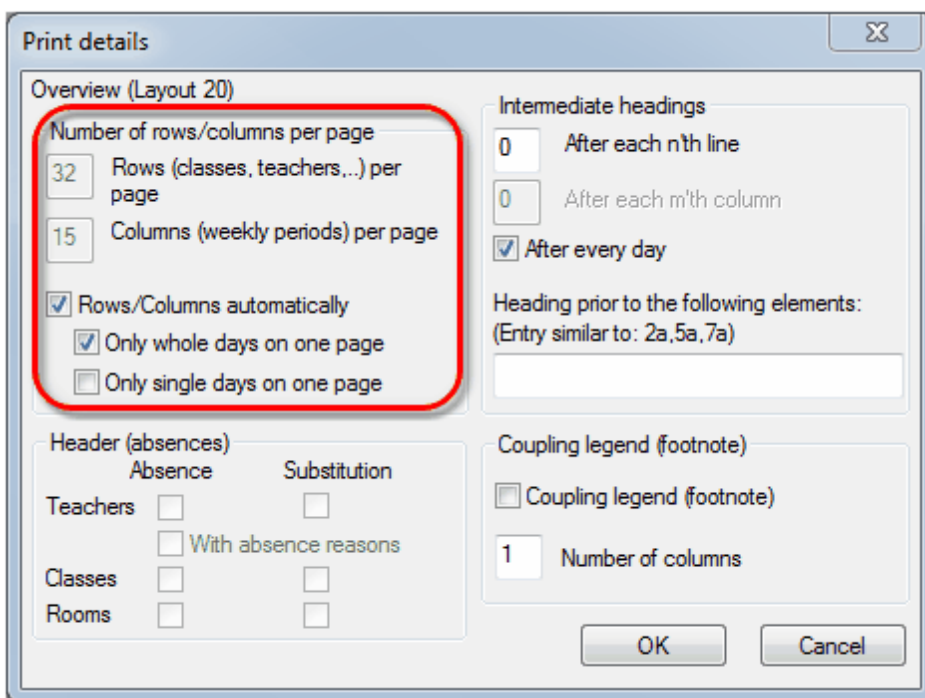
### Abbreviations

A legend can be printed for the abbreviations used for subjects and/or teachers. The following example shows a legend containing the short and the full names of subjects.



### 5.6.6 Details, overview timetables

The following print options are available for overview timetable formats 11, 20 and 30:



#### Number of rows/columns per page

This option allows you to specify the number of rows and columns to be printed on one page. The example shows an overview timetable for the room availability for classes. The number of rows and columns is to be calculated automatically.



	Monday									Tuesday									Wednesday									Thursday									Friday							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
1a	E	M	BI	P					1a	M	E	AR	R		DS			1a	G	P	M	D					1a	M	D	E	M					1a	M	R	E	D			P	
1b	BI	M	R	P	D				1b	DE	R	M			DS			1b	G	P	M	M					1b	D	M	AR						1b	TX	HI	D	M			BI	P
2a	M	R	M	D	E				2a	AR	P	BI	M					2a	G	HI	R	*C					2a	D	E	M	P		*PEB			2a	D	BI	P	E	M	G	TX	
2b	R	M	AR	M					2b	MA	P	P	HI					2b	G	M	TX	D	*C				2b	D	BI	HI	M		*PEB			2b	R	P	BI	M		G	TX	
3a	HI	E	P	G	M		BI		3a	E	R	BI	D					3a	P	D	HI	M	*C	DS			3a	P	D	G	M	E	AR			3a	D	P	M	R				
3b	HI	G	P	P	M				3b	R	BI	GA						3b	P	TX	R	D		DS			3b	HI	M	G	D		BI	AR			3b	P	P	D	D			
4	P	C	HI	D		AR	P		4	DS	M	BI	M					4	G	R	M	G					4	P	HI	C	D		PEG			4	BI	G	R	G				

**Coupling legend** As with individual timetables, the printed versions of overview timetables can also include a legend containing the details for which there is insufficient space in the timetable periods. The legend for overview timetables is always printed on a separate page.

### Intermediate headings

Overview timetables can contain a large amount of data. For purposes of clarity, the row and column headings can be repeated at regular intervals. In the example above, the short names of classes are displayed at every change of day.

Print details

Overview (Layout 20)

Number of rows/columns per page

32

Rows (classes, teachers,...) per page

15

Columns (weekly periods) per page

☒

Rows/Columns automatically

☒

Only whole days on one page

☐

Only single days on one page

Header (absences)

Absence

Substitution

Teachers

☐

☐

☐

With absence reasons

Classes

☐

☐

Rooms

☐

☐

Coupling legend (footnote)

☐

Coupling legend (footnote)

1

Number of columns

OK

Cancel

Intermediate headings

0

After each n'th line

0

After each m'th column

☒

After every day

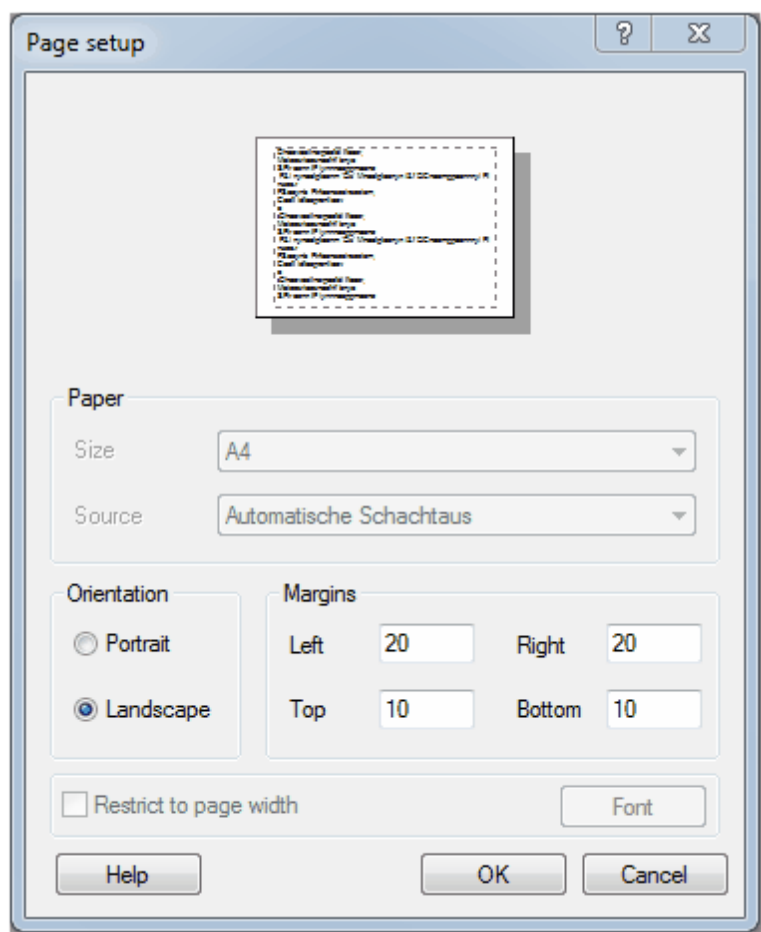
Heading prior to the following elements:

(Entry similar to: 2a,5a,7a)

If intermediate headings are not to be repeated at regular intervals but after specific elements, please use the field "Heading before this element".

## 5.6.7 Page setup

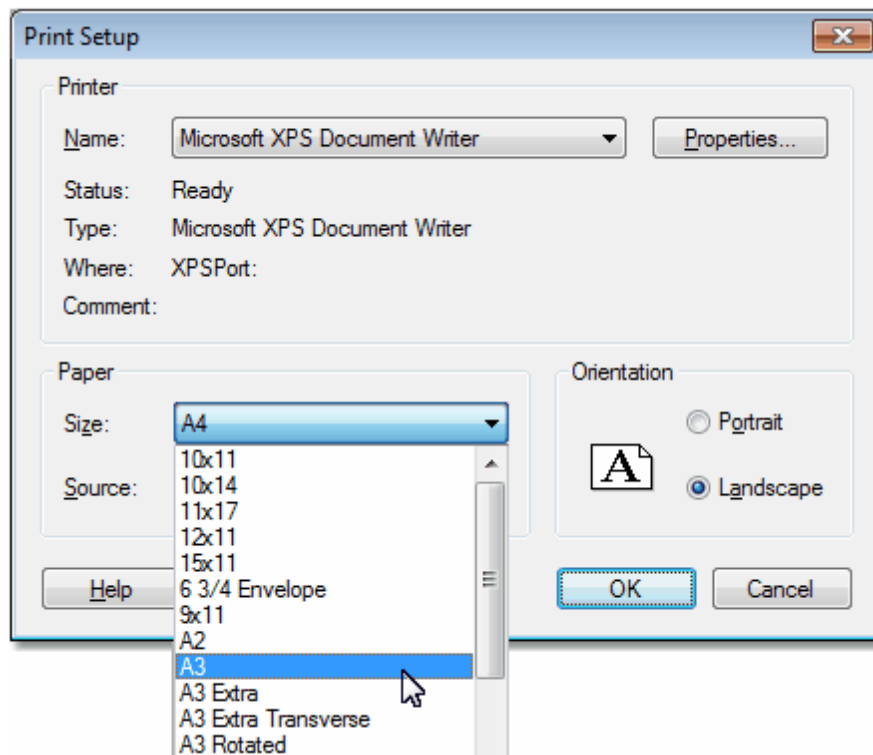
Use this option to specify the paper orientation (portrait or landscape) and the margins. Please note that different printers require different minimum margin widths to be observed.



### A3 print

It is often useful to print overview timetables on A3 size paper. If your printer supports printing on A3 paper, proceed as follows:

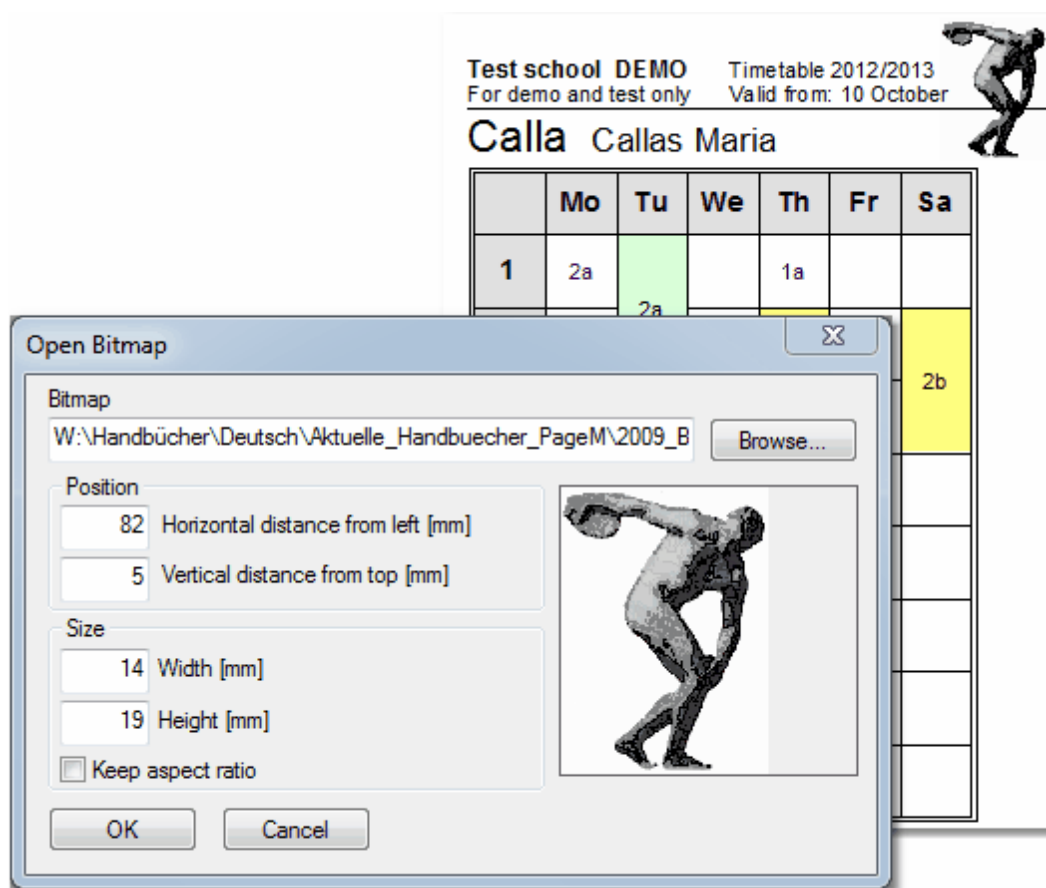
Set your printer to paper size A3 (under "File | Print Setup..."). If the A3 printer has been set as the default printer in the Windows Control Panel and if A3 paper has been set as the standard paper feed in the printer driver, the timetable will be printed automatically in A3 format.



### 5.6.8 Background

You can include images and graphs on your printed timetables. The image must be available as a bitmap file (Windows BMP format). Depending on the bitmap, you can use this function to print your school logo or a background for the timetable.

- Open the "Bitmap" dialogue by clicking on <Background> under "Print selection".
- Select the type of bitmap file you wish to include (<Browse...>). The selected image will be shown in a preview pane on the right of the dialogue box.
- Use the "Position" fields to specify where the upper left corner of the image should be located with respect to the left or upper margin of the timetable. Use the "Size" fields to specify the size of the printed image. Check the box "Keep aspect ratio" to avoid distorting the image. Untis will then calculate the dimensions of the image from the most recently entered value and the aspect ratio of the image.



### 5.6.9 Header and footer

The information displayed in the headers and footers can be specified under 'Reports | Report settings'. The licence text (school name and address) is always displayed and cannot be suppressed.

Timetable 2011/2012 Untis 2012  
Valid from May 5 22.4.2011 9:11

**Class 05a Humboldt**

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>1</b> 8:10-8:55	REV 6.3 Kostelic 1)	E 6.3 Marconi	M 6.3 Humboldt	GWG 6.3 Monet	F 6.3 Tomba
<b>2</b> 9:00-9:45	M 6.3 Humboldt	D 6.3 Raich	MU A2 Moser-Pröll	E 6.3 Marconi	
<b>3</b> 10:05-10:50			E 6.3 Marconi	BIO PH.P Monet	E 6.3 Marconi
<b>4</b> 10:55-11:35	SP SCHW 2) Lippmann	M 6.3 Humboldt	BK KU3 Solzhenitsyn	SP GSH 7) Lippmann	
<b>5</b> 11:45-12:25	D 6.3 Raich	F 6.3 Tomba		M 6.3 Humboldt	SP KSH 11) Lippmann
<b>6</b> 12:30-13:10		BLAS A2 5) Suppé	UCHOR S1 6) Stenmark	FUE 5.3 8) Klimt	D 6.3 Raich
<b>7</b> 13:20-14:00	FUS SCHW 3) Leibniz			FUS SCHW 9) Leibniz	
<b>8</b> 14:05-14:45	MU A2 Moser-Pröll	E 6.3 Marconi		D 6.3 Raich	
<b>9</b> 14:50-15:30	NAT BIO.P 4) Monet	BIO BIO.S Monet		REV 6.3 10) Kostelic	
<b>10</b> 15:35-16:15	F 6.3 Tomba	GWG 6.3 Monet			

No.	Tea.	Sub.	Rm.	Cla.	Te.
1)	KosJa, REV, 6.3	05ac			
	DopCh, RRK, 3.3	05ac			
2)	LipGa, SP, SCHWH	05af			
	LeiGo, SP, GSH	05a			
	TobJa, SP, KSH	05f			
3)	LeiGo, FUS, SCHWH	05abdef06abcd			
	WenHa, TUR, GSH	05abdef06abcd07..			
4)	MonCl, NAT, BIO.P	05a			
	SmeFr, NAT, CH.P	05a			
5)	SupFr, BLAS, A2	05abdef			
	MicBu, FUD, 4.1	05abdef			
	EggAl, FUD, 4.2	05abdef			
	SchEr, FUD, 4.3	05abdef			
	MarGu, FUM, 6.3	05abdef			
6)	SteIn, UCHOR, S1	05abdef06abcd			
	PucGi, PICCO, A1	05abdef06abcd			
7)	LipGa, SP, GSH	05af			
	LeiGo, SP, KSH	05a			
	FriCa, SP, SCHWH	05f			
8)	MicBu, FUE, 4.1	06abcd			
	FoDa, FUM, 4.2	06abcd			
	KliGu, FUE, 5.3	05abdef06abcd			
	WacAn, FUE, 3.3	05abdef			
9)	LeiGo, FUS, SCHWH	05abdef06abcd			
10)	KosJa, REV, 6.3	05ac			
	DopCh, RRK, 8.2	05ac			
11)	LipGa, SP, KSH	05af			
	LeiGo, SP, SCHWH	05a			
	TobJa, SP, GSH	05f			

6.5.2012 (18) - 29.7.2012 (30) Gruber & Petters Software

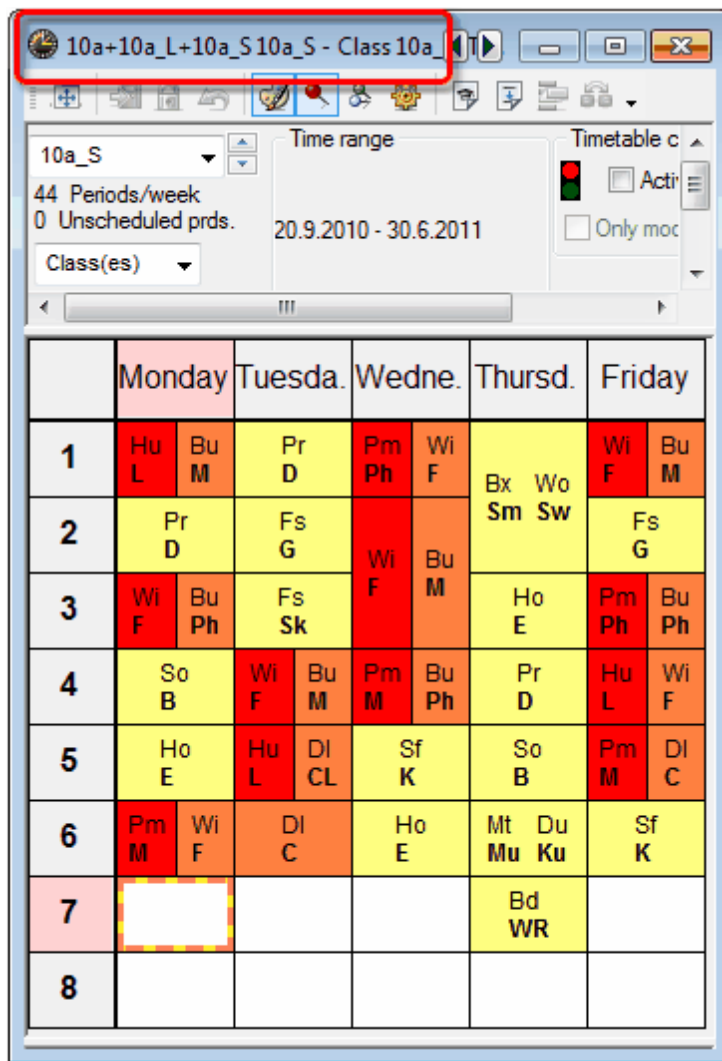
## 5.6.10 Several classes in one timetable

When a class is divided into two components, for instance a science and a languages group, but the timetables of the two components differ in only a few key respects, it can be useful to output the timetables of both class components in a single timetable.

To do this, enter the combined class name of the classes whose timetables you want to print on a single timetable in the "Master class (TT print-out)" field under "Master Data | Classes".

Name	Full name	TT title	Cl. Grp. No.	Room
▶ 10a	Class 10a	10a	1	106
10a_L	Class 10a_L	10a	2	106
10a_S	Class 10a_S	10a	2	106
05a	Class 5a			E 02
05b	Class 5b			E 05
06a	Class 6a			E 04

The example shows a class with a science (10a\_S) group and a languages group (10a\_L). The period details window shows that the students in the science group (10a\_S) are scheduled to have a Physics lesson on Monday, period 2, while the students of the Languages group (10a\_L) are scheduled to have Latin. The combined name of the class is 10a. The screen display shows the names of all class components (10a + 10a\_S + 10a\_L).



10a\_S

44 Periods/week  
0 Unscheduled prds.

Time range: 20.9.2010 - 30.6.2011

Class(es):

	Monday	Tuesda.	Wedne.	Thursd.	Friday
1	Hu L Bu M	Pr D	Pm Ph Wi F	Bx Wo Sm Sw	Wi F Bu M
2	Pr D	Fs G	Wi F Bu M		Fs G
3	Wi F Bu Ph	Fs Sk		Ho E	Pm Ph Bu Ph
4	So B	Wi F Bu M	Pm M Bu Ph	Pr D	Hu L Wi F
5	Ho E	Hu L DI CL	Sf K	So B	Pm M DI C
6	Pm M Wi F	DI C	Ho E	Mt Du Mu Ku	Sf K
7				Bd WR	
8					

The timetable printout contains all the information of the class components in a single timetable for class 10a.

10a	Class 10a									
	Monda.		Tuesd.		Wedn.		Thursd.		Friday	
1	Bu M	Hu L	Pr D		Wi F	Pm Ph	Bx Wo Sm Sw		Bu M	Wi F
2	Pr D		Fs G		Bu M	Wi F			Fs G	
3	Bu Ph	Wi F	Fs Sk				Ho E		Bu Ph	Pm Ph
4	So B		Bu M	Wi F	Bu Ph	Pm M	Pr D		Wi F	Hu L
5	Ho E		DI CL	Hu L		Sf K	So B		DI C	Pm M
6	Wi F	Pm M	DI C		Ho E		Mt Du Mu Ku		Sf K	
7							Bd WR			
8										

**Note:**

*If you wish to prevent timetables from being combined for specific timetable layouts, deactivate the option "Show master classes separately" on the Layout 2 tab under <Settings>.*

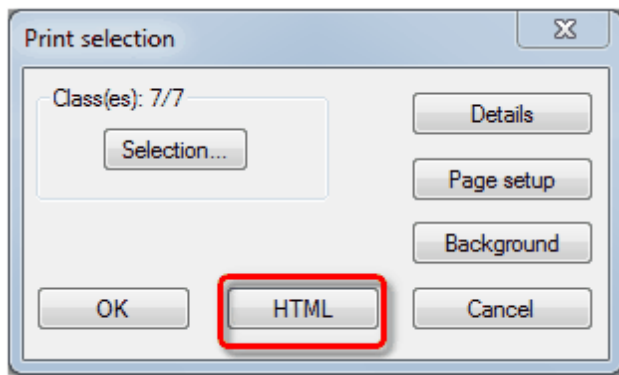
### 5.6.11 Timetables in HTML format

You can print out timetables in HTML format in order to make them available in your school's intranet or on the Internet,

Creating timetables in HTML format is similar to creating printouts of timetables. Proceed as follows:

- Activate the timetable you want to save in HTML format and open the dialogue box "Print selection" by clicking on <Print> or <Print Preview>
- Select the elements you want to print (i.e. save in HTML format) and customise settings and details (e.g. legends etc.) in the usual way.
- Click on <HTML>.





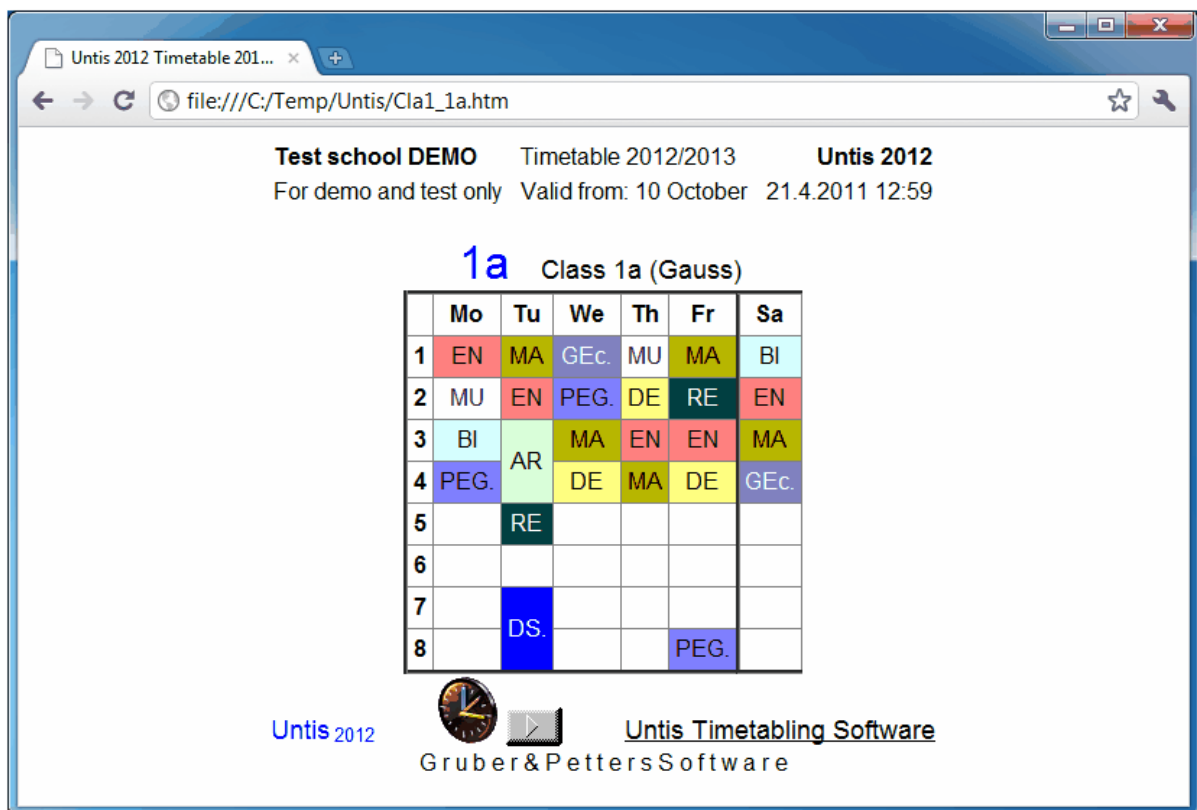
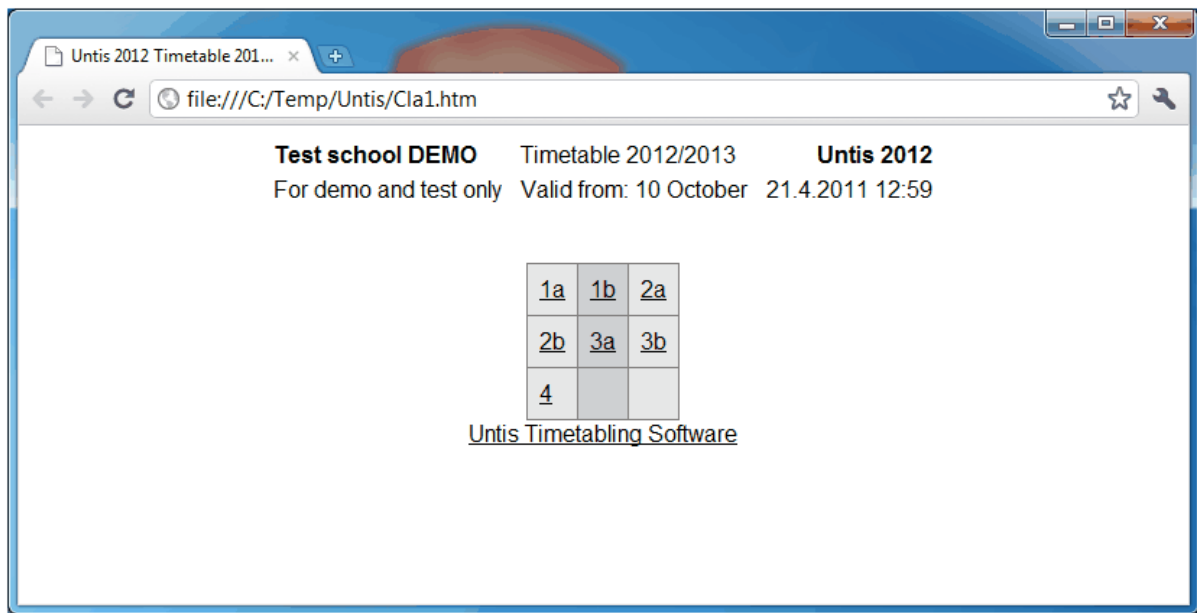
- A file dialogue box appears. Enter the name of the directory where you want to save the HTML files and confirm with <Save>.

Name	Date modified	Type
Cla1.htm	22.04.2011 09:30	Chrome HTML Do...
Cla1_1a.htm	22.04.2011 09:30	Chrome HTML Do...
Cla1_1b.htm	22.04.2011 09:30	Chrome HTML Do...
Cla1_2a.htm	22.04.2011 09:30	Chrome HTML Do...
Cla1_2b.htm	22.04.2011 09:30	Chrome HTML Do...
Cla1_3a.htm	22.04.2011 09:30	Chrome HTML Do...
Cla1_3b.htm	22.04.2011 09:30	Chrome HTML Do...
Cla1_4.htm	22.04.2011 09:30	Chrome HTML Do...
GpIndex.gif	07.09.2009 08:43	GIF image
GpNext.gif	08.06.1998 18:21	GIF image
GpPrev.gif	08.06.1998 18:31	GIF image

An index file will be created for each output, allowing access to each of the output elements. The index file name is based on the format used (e.g. CLA\_HTML). Use the file to open the index with the links to the exported elements.

**Tip**

>If the full names of the elements to be output are to be used, activate the option "HTML index page with full names" on the "Layout 2" tab under <Settings>.




Untis 2012 Timetable 201... x

file:///C:/Temp/Untis/Tea1A\_Callas.htm

**Test school DEMO** Timetable 2012/2013 **Untis 2012**  
For demo and test only Valid from: 10 October 21.4.2011 15:39

**Calla** Callas Maria

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>1</b> 8:00 8:45	2a MU R2a	2a AR R2a				
<b>2</b> 8:55 9:40	1a MU R1a		2b MU R2b			2b DE R2b
<b>3</b> 9:50 10:35	2b AR R2b	1a AR R1a	1b MU R1b	Absent		
<b>4</b> 10:45 11:30			2b DE R2b			
<b>5</b> 11:40 12:25	2b MU R2b		*2a: GH R2a *2b *3a 1)			
<b>6</b> 12:35 13:20	4 AR R2a					
<b>7</b> 13:30 14:15				3a. AR R3a 3b 2)		
<b>8</b> 14:25 15:10						




Untis 2012  Untis Timetabling Software  
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- When using the Cover planning module, the updated timetables also contain complete details on teaching cover.

## 5.7 Import and export of views

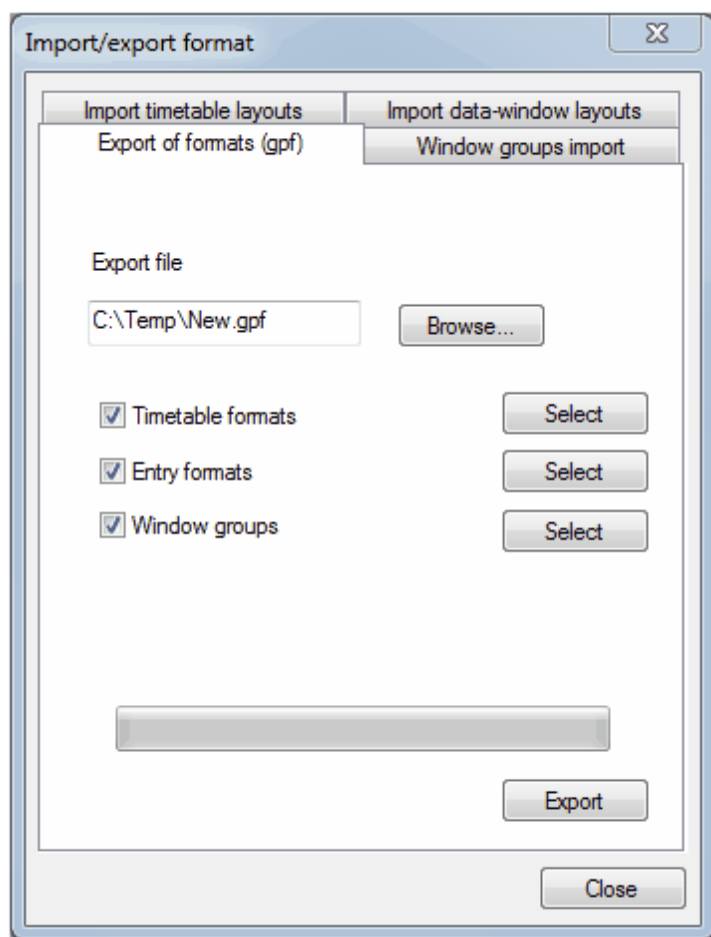
As a general rule, the views you create are saved in the current work file. In order to make these views available for use in other files, you need to import or export them

Formats / Timetables

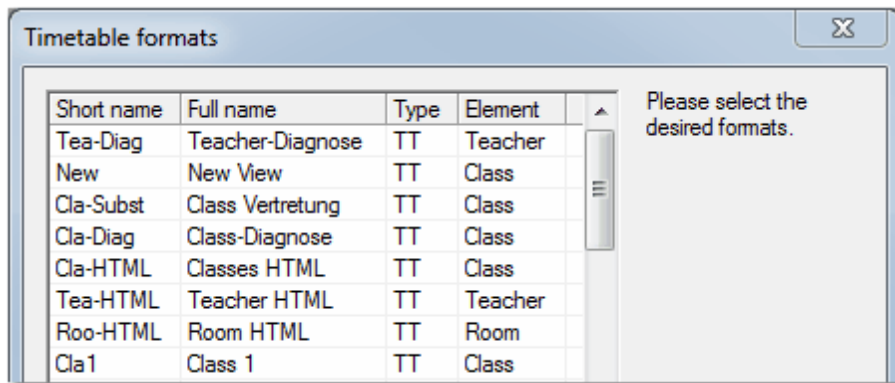
Name	Full name	Standard	In menu
New	New View	<input type="checkbox"/>	<input type="checkbox"/>
Cla-Subst	Class Vertretung	<input type="checkbox"/>	<input type="checkbox"/>
Cla-Diag	Class-Diagnose	<input type="checkbox"/>	<input type="checkbox"/>
Cla-HTML	Classes HTML	<input type="checkbox"/>	<input type="checkbox"/>
Cla1	Class 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cla-M-1	Class 1	<input type="checkbox"/>	<input type="checkbox"/>
Cla-V1	Class 1	<input type="checkbox"/>	<input type="checkbox"/>
Cla1A	Class schedule big	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cla10	Class 10	<input type="checkbox"/>	<input type="checkbox"/>
Cla10A	Class 10	<input type="checkbox"/>	<input type="checkbox"/>

- Select "File | Import / Export | Timetable/Input formats".  
Select the "Export of formats (gpf)" tab from the dialogue box.
- Enter a name in the name field of the export file (e.g. "New.gpf").



You can export the format details of timetable views and of master data views. Select a particular timetable view for export by clicking on <Select> in the row "Timetable formats".

- From the dialogue box, select the timetable view whose format you want to export and confirm by clicking on <OK>.



The format data has now been saved in the file "New.gpf". You can now make your formats available to other Untis users (minus school data) or import the formats into other files.

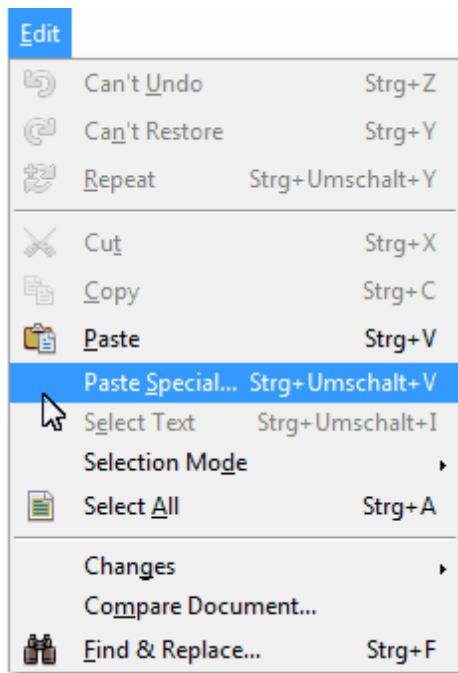
Use the same method to import formats from a .gpf or .gpn file.

## 5.8 Using the clipboard

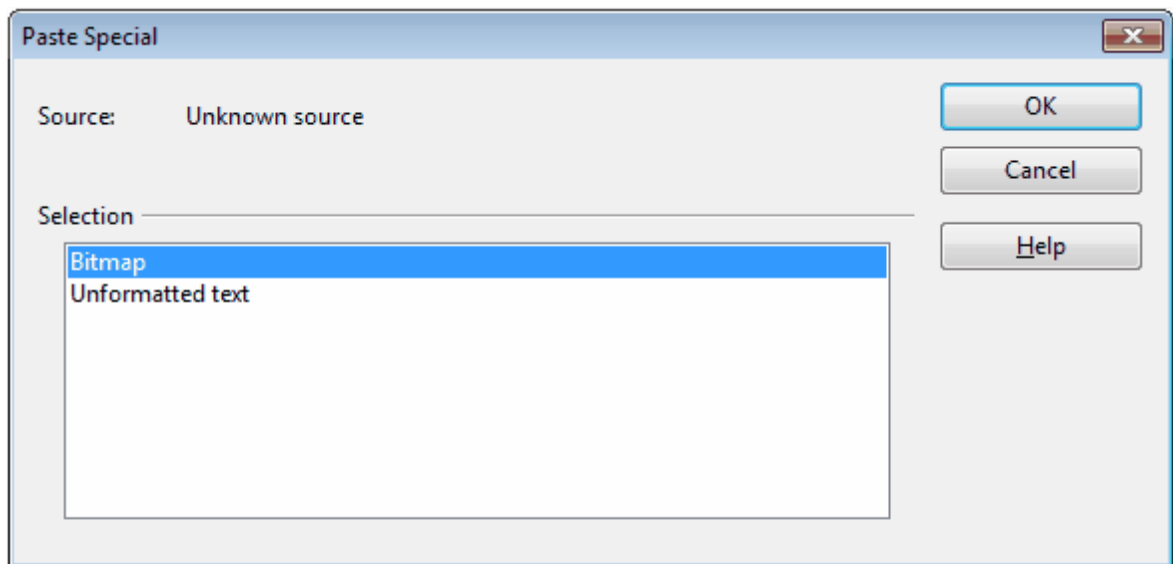
Using the clipboard, you can export timetables to other programmes such as word processing applications.

Proceed as follows:

- Click on the timetable you wish to export (the title bar must be blue)
- Copy the timetable to the clipboard (menu command "Edit | Copy" or via the shortcut <CTRL>+C).
- Switch to your word processing application. Select "Edit | Paste" to insert the contents of the clipboard in the form of an image.



- The "Edit | Paste" function can also be used to export the legend.



**1a - Class 1a (Gauss) Timetable (Cl1A)**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>1</b> 8:00 8:45	EN Arist R1a	MA Arist R1a	GEc Hug R1a	MU Calla R1a	MA Arist R1a	BI Cer R1a
<b>2</b> 8:55 9:40	MU Calla R1a	EN Arist R1a	PEG Aris SH PEB Rub SH	DE Rub R1a	RE Nobe R1a	EN Arist R1a
<b>3</b> 9:50 10:35	BI Cer R1a	AR Calla R1a	MA Arist R1a	EN Arist R1a	EN Arist R1a	MA Arist R1a
<b>4</b> 10:45 11:30	PEG Aris SH PEB Rub SH		DE Rub R1a	MA Arist R1a	DE Rub R1a	GEc Hug R1a
<b>5</b> 11:40 12:25		RE Nobe R1a				
<b>6</b> 12:35 13:20						
<b>7</b> 13:30 14:15		DS Ander WS				
<b>8</b> 14:25 15:10		TX Curie TW			PEG Aris SH PEB Rub SH	

1) Arist, PEG, SH2 1a, 1b For Girls Only  
Rub, PEB, SH1 1a, 1b

2) Ander, DS, WS 1a Voluntary Exercise  
Gauss, DS, WS 1b

3) Curie, TX, TW 1a, 1b  
Hugo, GEc, R1a 1a, 1b, 2a, 2b

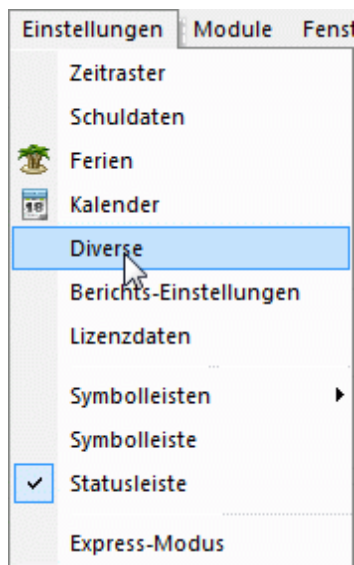
## 6 User Tips

### 6.1 User tips

This chapter describes additional options and useful settings not covered under master data and lessons. These should help you to take full advantage of Untis in working with your timetables.

### 6.2 Settings

Use the „Settings“ menu to enter various other useful settings. The most important of these will be introduced in the following section.



### 6.2.1 Time Grid

The functions of the time grid are described in detail in the brochure "Getting Started".

### 6.2.2 School data

Use the *School Data* window to enter details such as the start and end date of the school year, country, region and type of school. The details entered in this window are required for a number of different (statistical) processes and calculation methods.



The screenshot shows the 'Schuldaten' dialog box with the 'Überblick' tab selected. The dialog contains several input fields and a checkbox. The 'Schulbezeichnung' field is filled with 'Testschule DEMO' and 'Für Demo und Test'. The 'Land' dropdown is set to 'Deutschland'. The 'Region' dropdown is empty. The 'Schuljahr' section has 'Von' set to '19.09.2012' and 'Bis' set to '30.06.2013'. The 'Schulnummer' field is empty. The 'ID' spinner is set to '1'. The 'Schulart' field is empty. A checkbox labeled 'Tageszeitraster aktivieren' is unchecked. At the bottom are buttons for 'Ok', 'Abbrechen', 'Übernehmen', and 'Hilfe'.

Schulbezeichnung		Land	Region
Testschule DEMO		Deutschland	
Für Demo und Test			

Schuljahr		Schulnummer	ID	Schulart
Von	Bis		1	
19.09.2012	30.06.2013			

☐ Tageszeitraster aktivieren

Ok Abbrechen Übernehmen Hilfe

The *Overview* tab provides an overview of the number of classes, teachers, rooms and lessons at your school.

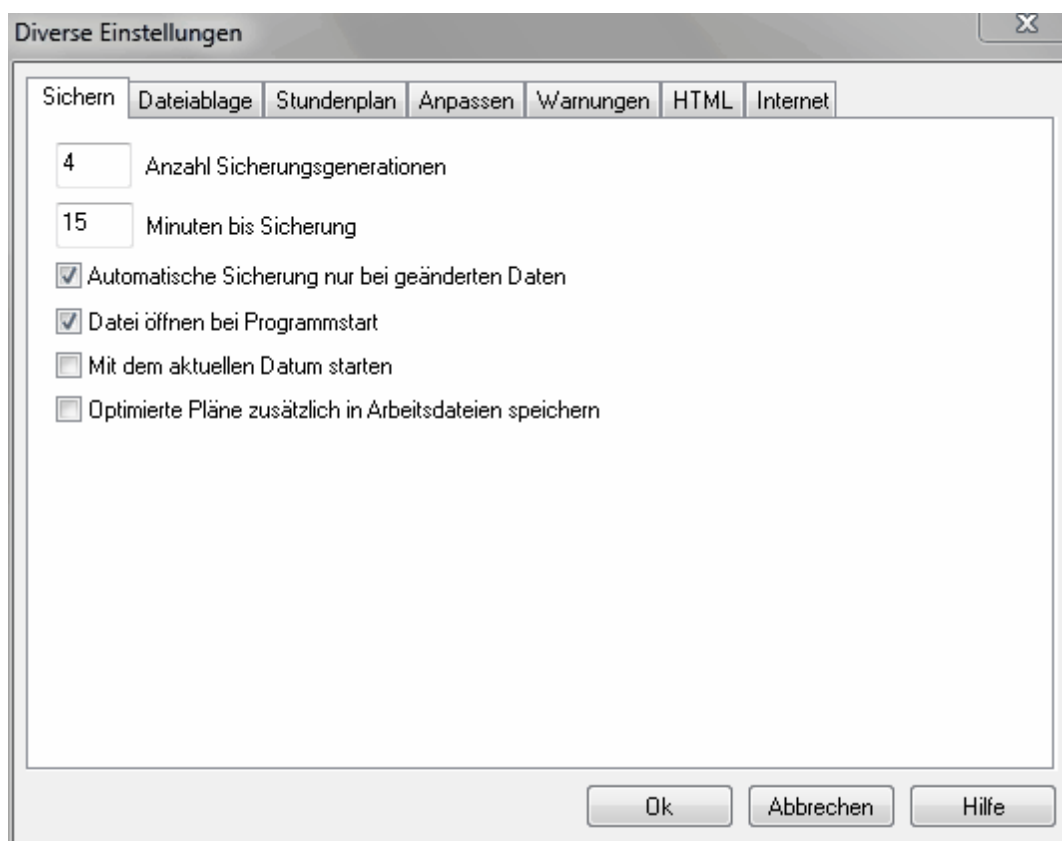
The screenshot shows the 'Schuldaten' dialog box with the 'Werte' tab selected. The tab displays a list of school statistics:

- 7 Klassen
- 10 Lehrer
- 13 Räume
- 18 Fächer
- 77 Unterricht

## 6.2.3 Miscellaneous Settings

### 6.2.3.1 The 'Auto-save' tab

This is where you can specify the interval at which Untis should automatically save data and how many backup generations should be archived. The settings in the figure mean, for example, that Untis should save the data every 30 minutes and use four generations of backup. These data are saved in files Save1.gpn, Save2.gpn, Save3.gpn and Save4.gpn. The most current data are always in file save1.gpn and the oldest – in relative terms – in file save4.gpn. In order to avoid identical save files being created we would recommend that you check the option "Save only when the data has been changed".



When you check the option "Open with the last file saved", Untis will automatically load the last file to be processed. You can prevent this happening by holding <SHIFT> pressed when launching Untis.

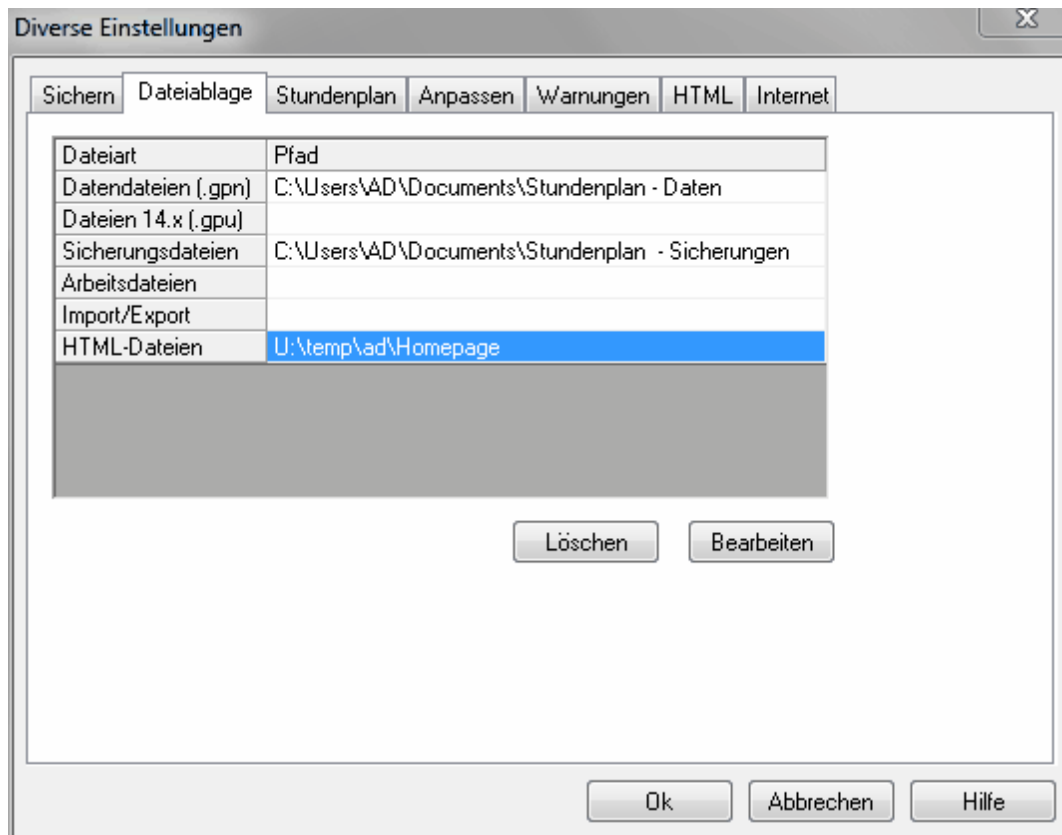
In addition, the option "Start with current date" also allows you to determine whether windows in which it is possible to select the date should be opened with the current date or with the date last saved.

You can view the results of optimisation in the optimisation dialogue immediately after the optimisation run. Check the option "Save results of the optimisation in work files" if you wish to have these timetables available after you exit Untis. This causes the result to be saved in

so-called work files.

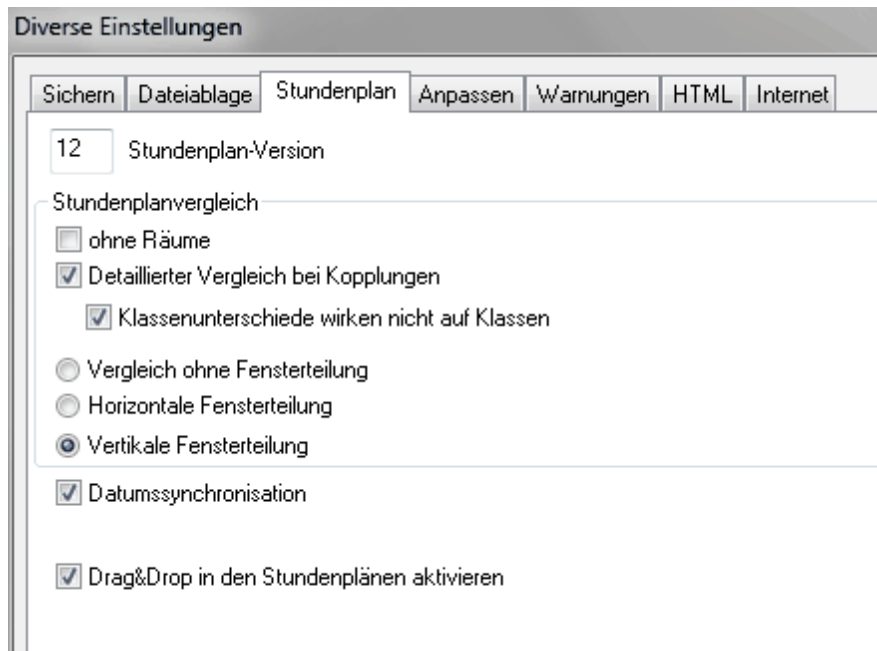
### 6.2.3.2 The 'Directories' tab

This tab allows you to specify various standard paths. We would recommend that you create your own directories for your backup and work files (i.e. the files containing the different timetables of your school saved during optimisation) and enter the paths on this tab.



### 6.2.3.3 The 'Timetable' tab

The settings on this tab are relevant for a number of different timetable functions.



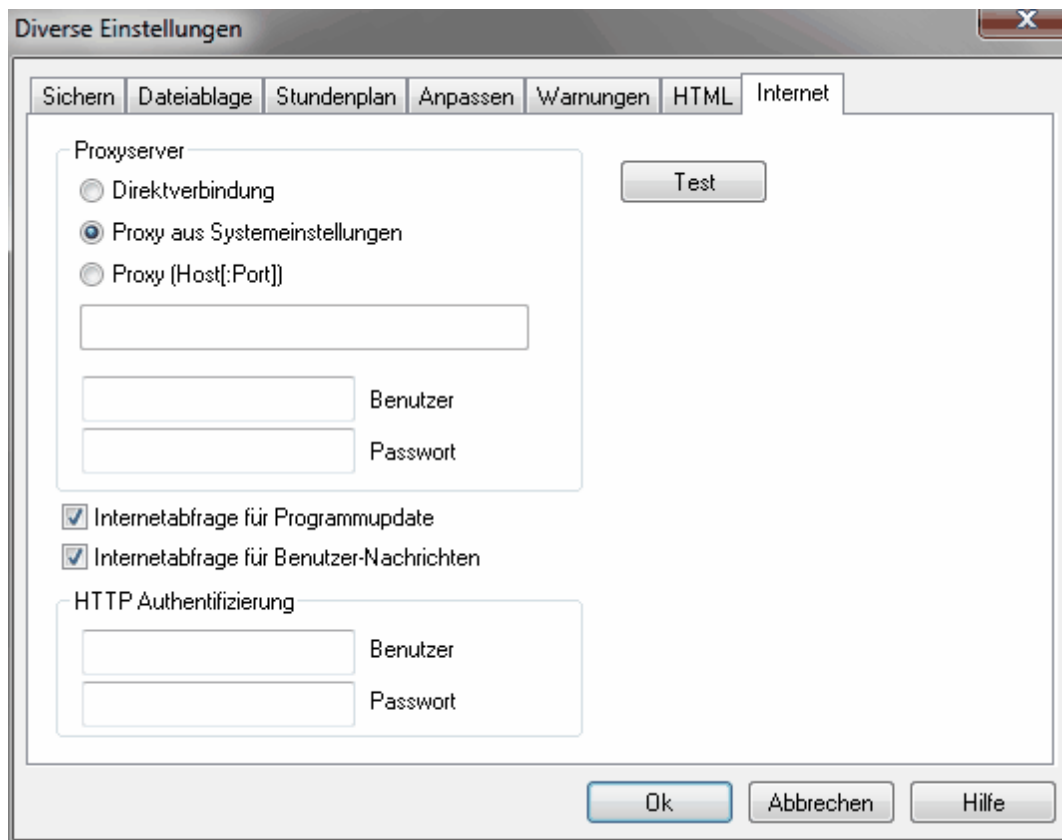
For instance, the timetable version number you can assign to each timetable version will be included on all printouts (see the chapter [Timetable construction](#) ).

The different options for [timetable comparisons](#) are described in the chapter of the same name.

The *Synchronise dates* option allows you to specify if a date change implemented on one particular timetable should also apply to *all* other timetables open on the screen. This function is particularly useful for use with the *Multi-Week Timetable* and the *Multiple Term Timetable* modules

The option "When switching terms, set the TT to the beginning of the term" is only active for use with the Multiple Term Timetable module. The last option "Activate Drag&Drop in the timetables" allows you to activate or deactivate the manual timetabling function.

#### 6.2.3.4 The 'Internet' tab



Untis allows you to receive information about version updates. In addition to activating the option "Automatically check the internet for program updates", you must also specify how your computer accesses the Internet - direct or via a proxy server. Please contact your system administrator if you are uncertain about these settings.

You can use the <Test> button to test whether the settings you have made are correct and whether Untis can reach the Gruber&Petters web server.



The option "Connect to the internet for user messages" is used to specify whether you wish to receive messages from your local Gruber&Petters partner and from Gruber&Petters direct.

HTTP authentication is generally not required.

#### **6.2.4 Licence Data**

Entering licence data is described in detail in the brochure "Getting Started".

### **6.3 Time Requests**

Time requests are an important element of the Untis timetabling software. Time requests can be entered for master data elements and for lessons. The button for this function can be found on the tool bar of the master data or lesson window.

Time requests are graded from "-3" (completely blocked) to "+3" (core time) which corresponds to a very strong desire to for work.

There are two different categories of time requests – *specific time requests* and *unspecified time requests*. Specific time requests refer to specific days and periods. Unspecified time requests, by contrast, are requests where only the duration and the type of request (e.g. 1 day of "-3") are specified and where the selection of the day or period is up to the software program.

#### **6.3.1 Specified time requests**

- Start Untis and load the file demo.gpn
- Open the master data view for teachers ("Master Data | Teachers") and click on <Time Requests>
- Switch to teacher *New* (Newton).

Zeitwünsche / Lehrer-51

New Isaac Newton

Unbestimmte zusätzliche Tageswünsche

Wunschgewicht	Tage	Vorm.	Nachm.	Halbt.
-3	0	0	0	0
-2	0	0	0	0
-1	0	0	0	0

Unbestimmte Sperrungen

0 Anzahl Tage      Stunde von-bis

	1	2	3	4	5	6	7	8	Tage	Vorm.	Nachm.
Montag							-2	-2			
Dienstag							-2	-2			
Mittwoch									-3		
Donnerstag											+3
Freitag											
Samstag											

The window on your screen should now resemble the figure on the left. The following time requests are active:

Monday and Tuesday, periods 7 and 8: "-2". If possible, Newton should *not* have lessons scheduled in these periods.

Wednesday, all day: "-3". This means that Wednesday is definitely blocked, i.e. teacher Newton is not available to teach on Wednesdays.

Thursday (pm): "+3"; Newton wants to teach periods 6 – 8, if possible.

Please note that time requests for entire days and half-days can be entered on the right-hand side of the time grid (bottom part of window).

*Assigning the time request "+1" to days Thu - Sat, periods 1-3.*

- Click on "+1"
- Highlight the range Thu - Sat, periods 1-3.

Zeitwünsche / Lehrer-51

New Isaac Newton

Unbestimmte zusätzliche Tageswünsche

Wunschgewicht	Tage	Vorm.	Nachm	Halbt.
-3	0	0	0	0
-2	0	0	0	0
-1	0	0	0	0

Unbestimmte Sperrungen

0 Anzahl Tage      Stunde von-bis

	1	2	3	4	5	6	7	8	Tage	Vorm.	Nachm
Montag							-2	-2			
Dienstag							-2	-2			
Mittwoch									-3		
Donnerstag											+3
Freitag	+1	+1	+1								
Samstag	+1	+1	+1								

You have entered the time request "+1" for Thu - Sat, periods 1-3 for teacher *New*.

Please note that the button for time request "+1" remains active until you deactivate the function by clicking on it. This means that you can enter further "+1" time requests at this time by clicking on the relevant periods in the time grid.



Delete time requests for certain periods or blocks of periods by highlighting the cells and clicking on <Delete>.



### 6.3.2 Unspecified time requests

- Switch to teacher *Rub* (Rubens) using the previous time request example.

*Assumption* : teacher Rub is a part-time teacher and therefore entitled to a free day per week. If possible, the teacher would also like two *additional* free afternoons.

Enter the following data under unspecified time requests:



- Enter "1" in the row "-3" under „Days“. This instructs the optimisation tool to schedule one free day for teacher Rub.
- Enter "2" in the row "-2" under "p.m.". The optimisation tool will attempt to schedule two additional free afternoons for teacher Rub.

Zeitwünsche / Lehrer-51

Rub Paul Rubens

Unbestimmte zusätzliche Tageswünsche

Wunschgewicht	Tage	Vorm.	Nachm.	Halbt.
-3	1	0	0	0
-2	0	0	2	0
-1	0	0	0	0

Unbestimmte Sperrungen

0 Anzahl Tage      Stunde von-bis

Enter time requests for half-days in the column "Halves". The optimisation tool will decide whether to schedule the half-day in the morning or the afternoon.

**Note:**

*Use unspecified time requests whenever possible to allow the optimisation tool as much flexibility as possible.*

**Warning**

*Specific and unspecified time requests are cumulative. If Tuesday is blocked with a time specified time request and an unspecified time request is entered with a priority of "-3" to keep a full day free, two complete days will be without periods – Tuesday plus an additional day.*

In addition to the above, you can enter *unspecified blocked periods* for each element. The example shows a time request for teacher Gauss. He would like three free periods (specifically periods 2 - 4) on three days of the week.

**Tip**

*Time requests can be entered directly in the scheduling dialogue (see chapter [Scheduling dialogue](#) ) for more details.*

Zeitwünsche / Lehrer-51

Gauss Carl Friedrich Gauss

Unbestimmte zusätzliche Tageswünsche

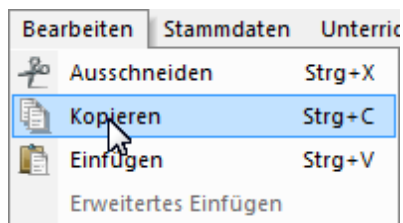
Wunschgewicht	Tage	Vorm.	Nachm.	Halbt.
.3	0	0	0	0
.2	0	0	3	0
.1	0	0	0	0

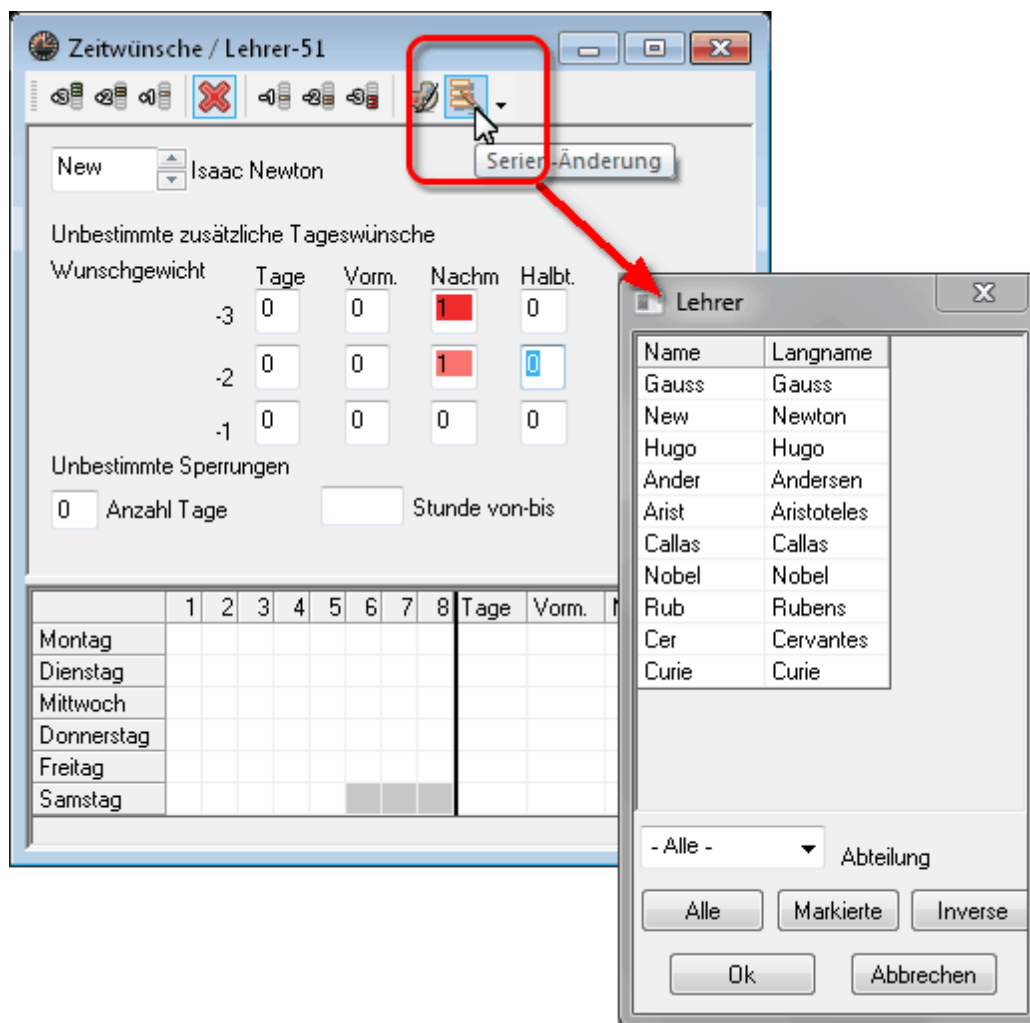
Unbestimmte Sperrungen

3 Anzahl Tage 2-4 Stunde von-bis

### 6.3.3 Copying time requests

You can *copy* the time requests of an element to the clipboard and *paste* them in different elements. It is also possible copy all the time requests of an element to any other in the time request window using the <Serial Change> option





### 6.3.4 Deleting time requests

You can also use the <Serial Change> option to delete all time requests. Remove all time requests from one element and then copy and paste these settings to all other elements where you wish to delete time requests.

### 6.3.5 Core time

If you would like Untis to schedule morning lessons first, enter a time request of "+3" for some of the morning periods (usually the first 4) under classes. Use the <Change> function described above.

Zeitwünsche / Klasse-61

1a Klasse 1a (Gauss)

Unbestimmte zusätzliche Tageswünsche

Wunschgewicht	Tage	Vorm.	Nachm.	Halbt.
-3	0	0	3	0
-2	0	0	0	0
-1	0	0	0	0

Unbestimmte Sperrungen

0 Anzahl Tage      Stunde von-bis

	1	2	3	4	5	6	7	8	Tage	Vorm.	Nachm.
Montag	+3	+3	+3	+3							
Dienstag	+3	+3	+3	+3							
Mittwoch	+3	+3	+3	+3							
Donnerstag	+3	+3	+3	+3							
Freitag	+3	+3	+3	+3							
Samstag	+3	+3	+3	+3							

The time request "+3" defines the so-called *core time*. The optimisation tool *must* schedule periods in the defined core time range, if at all possible. The Untis optimisation algorithm regards a core time violation as a serious offence. Please ensure that the number of core time periods entered for an element is smaller than (or equal to) the number of periods defined for the element.

Stundenplan-Diagnose

24.09.2012 - 30.9.2012 B

Eingabedaten    Stundenplan

Diagnose	Gw.	Anz
Unterricht	Alle	>= 1
Klasse		1
Kernzeit-Verletzung		3
Lehrer		34
Raum		22
Fach		27
Student		

Art der Diagnose

In diesen Fällen wurde gegen einen Zeitwunsch +3 verstoßen.

Gewichtung: 3

Anzahl: 1

S: Kla. Std.

1a Mo-1

Betroffene Fenster anzeigen

1a - Klasse 1a (Gauss)    Zeitbereich

30 Wochenstunden

0 Nicht veranlagte Std.

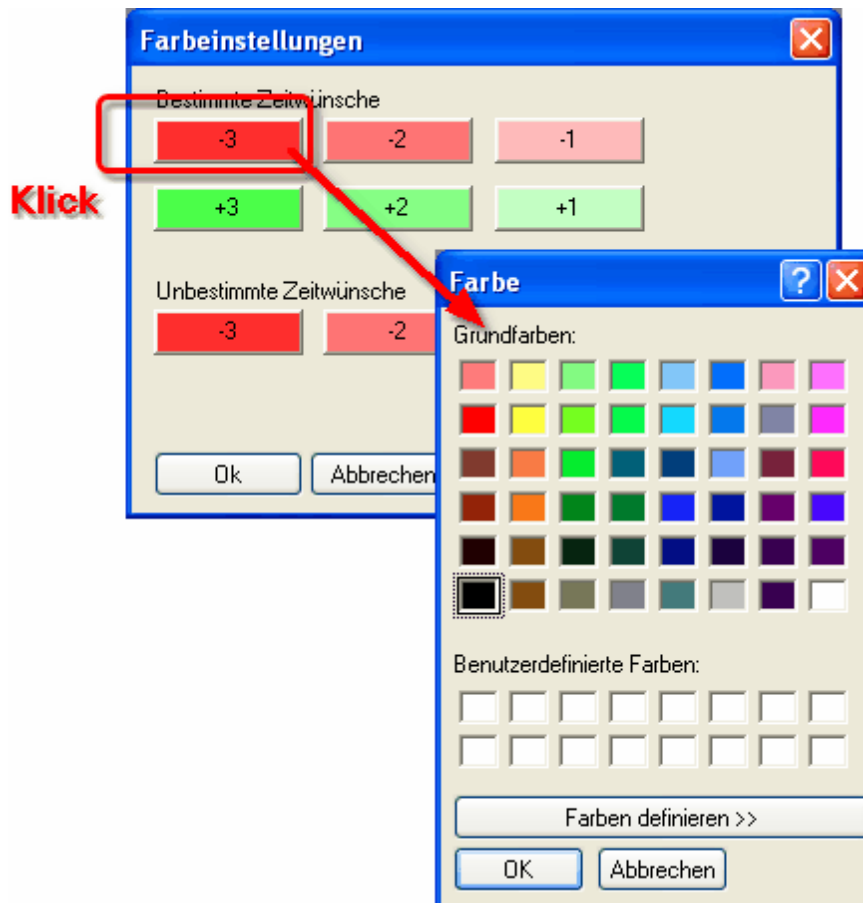
17.9.2012 - 20.9.2012

	Mo	Di	Mi	Do	Fr	Sa
1		E	Mat	Gw.	Mat	Ke
2	Mat	Mus	Sport	D	Bio	
3	Mus	D	D	Mat	E	Mat
4	Rel	Sport	E	E	D	E
5	Gw.			Rel	Sport	Bio
6	D					
7		Wk.				
8						

U-Nr	Lehr., Fa., Rm.	Kla.	Zeit	Schulwoche
+3				

### 6.3.6 Colour codes

Use this function to customise the colour codes used to highlight the different time requests on the timetable or in the scheduling dialogue individually.



## 6.4 Lunch breaks

You can specify the exact times of a lunch break between morning and afternoon lessons for classes and teachers using the *time grid*

You have the following lunch break options:

- Specify a uniform lunch break for the entire school (e.g. 12:00 - 13:00)

In the time grid, enter 12:00 as the time when the last morning lesson should end and 13:00 as the time the first afternoon lesson should start. The software will treat the time between 12:00 and 13:00 as a lunch break (not as a period).

- Specify element-specific lunch break blocks (time request "- 3").
- Include the lunch break in timetable creation.

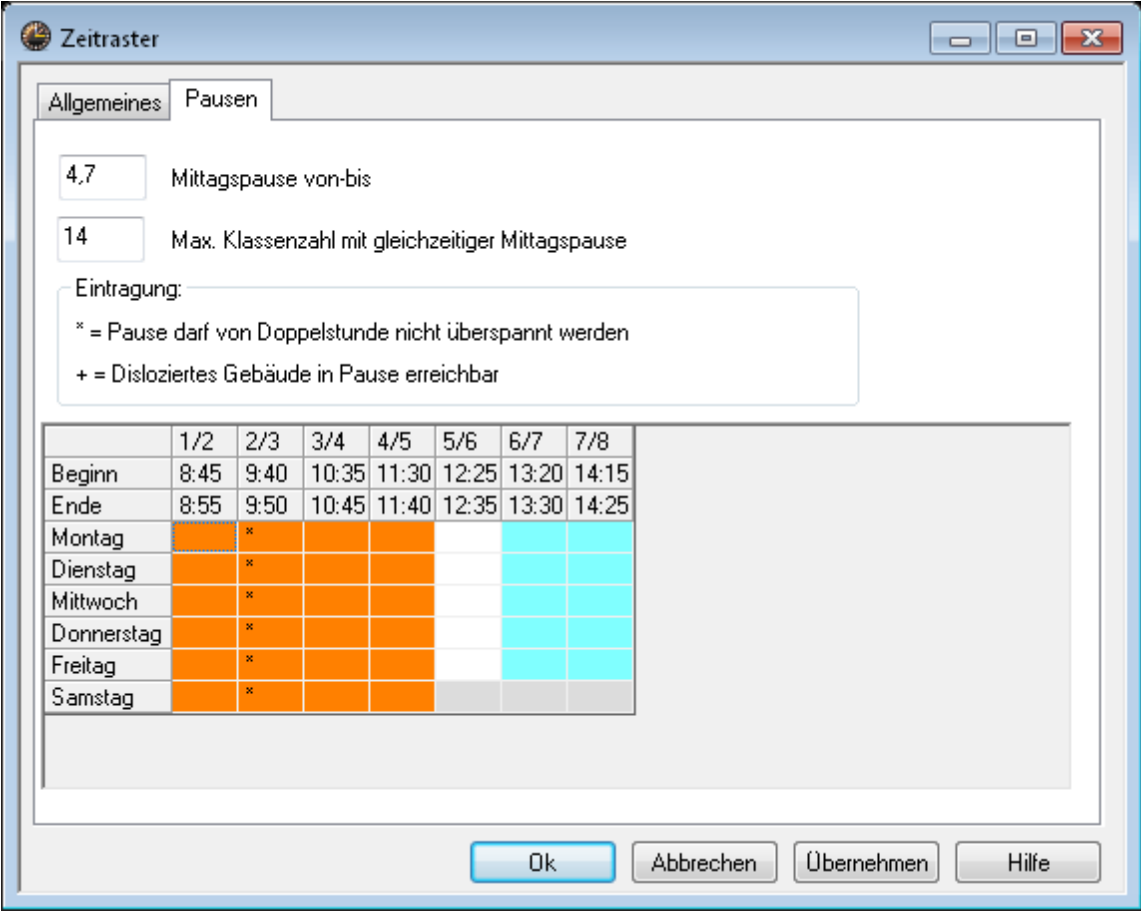
This last lunch break scheduling option allows for a better use of subject rooms. The option enables you to specify different lunch break durations for individual teachers and classes. Enter "1,2" in the box *Lunch break Min,Max* to instruct the software to schedule either 1 or 2 lunch break periods for the selected element

Based on the weighting, the lunch break will be scheduled during the last morning periods and/or the first afternoon periods.

On a timetable with 5 morning periods and 4 afternoon periods, a two-period lunch break will be scheduled either for

- periods 4 and 5,
- periods 5 and 6, or
- periods 6 and 7.

Vary the time during which a lunch break can be scheduled by specifying the first and the last period when a lunch break may be scheduled (on the „Breaks“ tab in the *time grid* ). The boundary between morning and afternoon lessons must lie within the specified time interval (see figure below).



**Zeitraster**

Allgemeines Pausen

4,7 Mittagspause von-bis

14 Max. Klassenzahl mit gleichzeitiger Mittagspause

Eintragung:

\* = Pause darf von Doppelstunde nicht überspannt werden

+ = Disloziertes Gebäude in Pause erreichbar

	1/2	2/3	3/4	4/5	5/6	6/7	7/8
Beginn	8:45	9:40	10:35	11:30	12:25	13:20	14:15
Ende	8:55	9:50	10:45	11:40	12:35	13:30	14:25
Montag		*					
Dienstag		*					
Mittwoch		*					
Donnerstag		*					
Freitag		*					
Samstag		*					

Ok Abbrechen Übernehmen Hilfe

If your school cafeteria has a limited capacity, use the same tab to enter the maximum number of classes that can have a lunch break at the same time (figure above).

Violations against specified lunch break times are displayed in the [diagnosis window](#).

## 6.5 Couplings

The composition of *couplings* has a major effect on the quality of a timetable. Unfavourable couplings can prevent the construction of a high-quality timetable. The following criteria are important for the creation of couplings.

### 6.5.1 Teacher teams

Teacher teams are required, for instance, in PE lessons where students of a class are divided into a male and a female group. Each group requires its own teacher, and both teachers must always be scheduled at the same time. Both teachers must always be scheduled together for the lesson concerned.

As a general rule, it is desirable to keep the number of teacher teams as small as possible and to ensure that each teacher is only part of a teacher team if absolutely necessary (see the example at the end of this chapter).

To help you organise your teacher teams, Untis provides a "Teacher team" list where you can view all teacher teams at a glance.

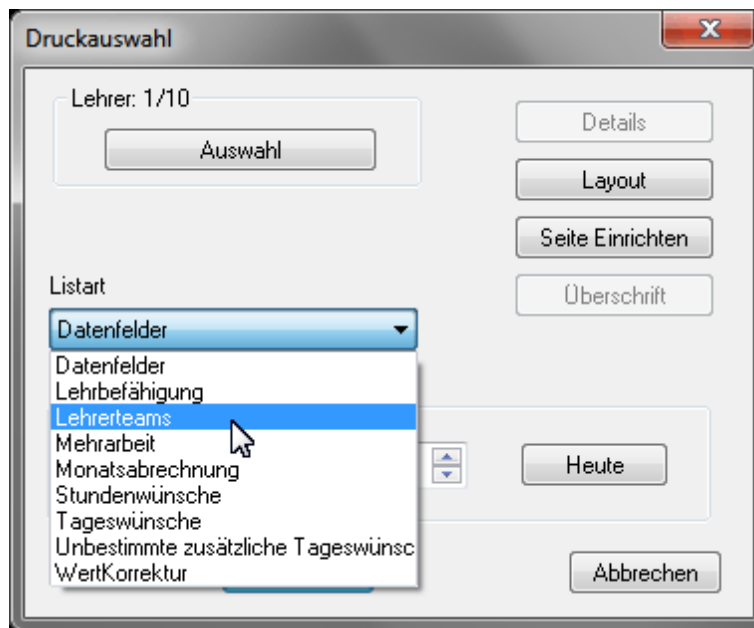
Access the list via one of the two following options:

1. Click on <Print> or <Print Preview> in the "CCC Analysis" window
2. Select the relevant print list from the "Print selection" dialogue under "Master Data | Teachers" (only available with the "Lesson Planning" module)

Method 1 provides direct access to the list of all teacher teams.

Using method 2, you first need to open the "Print selection" dialogue by clicking on <Print> or <Print Preview> in an active master data window for teachers. You can then change other settings in this window.

Click on the selection window "Type of list" to obtain a list of all print lists available in connection with teacher master data. Select the list "Teacher teams" (the <Selection> button normally used to select individual teachers is irrelevant for the "Type of list" function and is therefore greyed out).



The following figure shows an example of such a list.



**Untis 2012** Stundenplan 2012/2013 Testschule DEMO  
Gilt ab: 10. Oktober Für Demo und Test

**1 Lehrerteam**

Name	Mo	1	2	3	4	5	6	7	8	9	Di	1	2	3	4	5	6	7	8	9	Mi	1	2	3	4	5	6	7	8	9	Do	1	2	3	4	5	6	7	8	9	Fr	1	2	3	4	5
Rub																																														
Arist																																														

2: 3 / SportK, SportM,  
6: 3 / SportM, SportK,  
78: 3 / SportM, SportK,

**2 Lehrerteam**

Name	Mo	1	2	3	4	5	6	7	8	9	Di	1	2	3	4	5	6	7	8	9	Mi	1	2	3	4	5	6	7	8	9	Do	1	2	3	4	5	6	7	8	9	Fr	1	2	3	4	5
Curie																																														
Ander																																														

3: 2 / Tw, Wk,  
7: 2 / Wk, Hw,

**3 Lehrerteam**

Name	Mo	1	2	3	4	5	6	7	8	9	Di	1	2	3	4	5	6	7	8	9	Mi	1	2	3	4	5	6	7	8	9	Do	1	2	3	4	5	6	7	8	9	Fr	1	2	3	4	5
Callas																																														
Ander																																														

5: 2 / Ke, Mus,

The printout shows:

- 1** The total number of different teams. The general rule is: the fewer, the better.
- 2** The lessons (including details) in which a team is involved. The general rule is: the more, the better.
- 3** The time requests entered for the individual teachers in the team. If a number of different time requests need to be taken into consideration, the timetable quality will deteriorate as a result since a teacher team can only be scheduled when all the teachers of the team are available.

In the example above, the PE teachers *Rub* ("Rubens") and *Arist* ("Aristotle") form teacher team no. 1.

Let us assume that you have another teacher team (e.g. team no. 4 comprising teachers Rubens and Hugo) scheduled to teach Design. Each time, team 4 is scheduled, team 1 would be blocked since teacher Rubens belongs to both of them.

In this case you need to decide if teacher team 4 is necessary at all (since there already is a teacher team for Design, i.e. team 2). You could also find out if Ruben's team colleague Arist is qualified to teach Design, as well. If so, the Design lesson could also be taught by team 1. In any case, one teacher

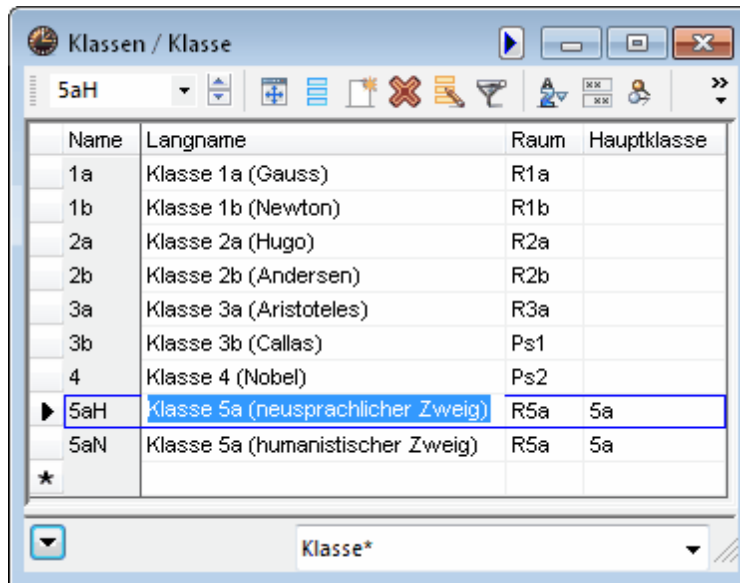


## 6.6 Type-separated class components

For organisational reasons, one class sometimes consists of two type-separated class components.

For example, class 5a could consist of a Modern Languages and a Classics component. While the former component has an Italian lesson scheduled, the latter component could have a Greek lesson. Proceed as follows in this case:

- Define two classes - 5aC for the Classics component and 5aM for the Modern Languages component.



Name	Langname	Raum	Hauptklasse
1a	Klasse 1a (Gauss)	R1a	
1b	Klasse 1b (Newton)	R1b	
2a	Klasse 2a (Hugo)	R2a	
2b	Klasse 2b (Andersen)	R2b	
3a	Klasse 3a (Aristoteles)	R3a	
3b	Klasse 3b (Callas)	Ps1	
4	Klasse 4 (Nobel)	Ps2	
► 5aH	Klasse 5a (neusprachlicher Zweig)	R5a	5a
5aN	Klasse 5a (humanistischer Zweig)	R5a	5a

- Enter the name 5a in the "Master class" field under master data of both classes
- Couple the two class components for all lessons attended by the students of both groups.



U-Nr	Kl,Le	Nvpl	Std.	Wst	Jst	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum
100				5		Dante	Italienisch	5aN	Ps1	R5a
97	2, 1			5		Gauss	Mathematik	5aH, 5aN		R5a
98	2, 1			5		Goethe	Deutsch	5aH, 5aN		R5a
99	2, 1			2		Callas	Musik	5aH, 5aN		R5a

Unterricht / Klasse

5aH

U-Nr	KI,Le	Nvpl Std.	Wst	Jst	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum
96			5		Plato	Altgriechisch	5aH		R5a
97	2, 1		5		Gauss	Mathematik	5aH,5aN		R5a
98	2, 1		5		Goethe	Deutsch	5aH,5aN		R5a
99	2, 1		2		Callas	Musik	5aH,5aN		R5a

U-Nr: 96 Klasse:

- The timetable of both class components can then be combined in a single view. In the example below, the combined class name 5aCM is used for all lessons attended by students of both class components (see chapter "Timetable construction").

**Note:**

You can deactivate this behaviour for individual timetable formats by checking the box "Display main classes separately" on the "Layout 2" tab under <Timetable settings>.

**Untis 2012** Stundenplan 2005/2006 Testschule D E M O  
Gilt ab: 10. Oktober Für Demo und Test

**5a Gesamtstundenplan für beide Gruppen**

	Monta.	Dienst.	Mittw.	Donn.	Freitag
<b>1</b>	GR P I T D R5a KÜ	Mat. Gaus R5a 1)	D. Goet R5a 2)	D. Goet R5a 2)	Mus. Calla R5a 3)
<b>2</b>	Mat. Gaus R5a 1)	D. Goet R5a 2)	Mat. Gaus R5a 1)	Mus. Calla R5a 3)	GR P I T D R5a R2b
<b>3</b>	D. Goet R5a 2)	GR P I T D R5a R2a	GR P I T D R5a KÜ	Mat. Gaus R5a 1)	D. Goet R5a 2)
<b>4</b>				GR P I T D R5a KÜ	Mat. Gaus R5a 1)
<b>5</b>					
<b>6</b>					
<b>7</b>					
<b>8</b>					

## 6.7 Class groups

By default, the Untis standard software package optimises school timetables for schools based on class structure, i.e. where each student is assigned to one particular class and the lessons scheduled for the student are determined completely by his or her class.

By default setting, the Untis standard software package optimises school timetables for schools based on class structure, i.e. where each student is assigned to one particular class and the lessons scheduled for the student are determined completely by his or her class. This type of school system allows students to choose his or her own courses, which means it is no longer the class that is the focal point of the timetabling efforts, but the student. This scheduling situation is addressed by the Untis *Course Scheduling* module.

Some school systems, such as some German Realschulen, Austrian teacher training colleges and British secondary schools, use a combination of the two extremes described above. In these schools, some lessons are attended by the entire class ( *core lessons*, *main subjects* ) while others represent so-called differentiation subjects ( *intensive lessons*, *minor subjects*, *options* ) that are attended by a fixed group of students from different classes. Each student's lessons are therefore determined by the student's choice of main and minor subjects. The following section describes how to deal with this timetabling situation using class groups.

The following example demonstrates the general principles of class groups.

Class C1 consists of 20 students subdivided into two groups of 10 students each. One group consists of students with an interest in modern languages, the other of the students with an interest in science. *All* 20 students attend *the* same lessons for English, PE, History and Geography. However, while one group attends German, French and Italian lessons, the other group has Physics, Chemistry and Maths, instead.

This means that German can be scheduled at the same time as Chemistry or Maths since Modern Languages students do not attend Science classes. On the other hand, German, Chemistry and Maths must not be scheduled at the same time as English or PE since these are core subjects attended by *all* the students of the class.

You can use Untis to solve this problem as follows:

### 6.7.1 Defining core lessons and options

Under "Master Data | Classes", define a core class *C1* and two differentiation groups *C1\_M* (Modern Languages) and *C1\_S* (Sciences).



U-Nr	KI,Le	Nvpl Std.	Wst	Jst	Lehrer	Fach	Klasse(n)
8			5	L2		Physik	K1_N
9			5	L2		Mathematik	K1_N
10			5	L2		Chemie	K1_N

U-Nr: 8 Klasse\*

Under "Master Data | Classes", enter the information that the class groups C1\_M and C1\_S consist of students from core class C1 using the *Class group code* (CG code): "1" meaning that the class is a core class, numbers greater than 1 (2 - 9) refer to the different class groups.

Name	Langname	KI.Gruppe
K1	Kernklasse	1
K1_S	Differenzierungsgruppe Sprachen	2
K1_N	Differenzierungsgruppe Naturwissenschaften	2

Klasse

Please note that the same class group code must be entered for both class groups C1\_M and C1\_S. Use higher code numbers only when the students in your school can choose more than one elective course group.

Entering the correct codes instructs the Untis to schedule lessons for class groups C1\_M and C1\_S only when class C1 (i.e. the core class) is not scheduled to have lessons. The same also applies to class C1\_S.

## 6.7.2 Illustrating the principle

The examples on the left and below and the following explanations demonstrate the situation in a German Realschule (in North Rhine-Westphalia):

Klassen / KI

05A

Name	Langname	KI.Gruppe
08A	Klasse 8A	1
08B	Klasse 8B	1
08C	Klasse 8C	1
08D	Klasse 8D	1
08fs	Kurs 8fs	2
08nb	Kurs 8nb	2
08sw	Kurs 8sw	2
08tc	Kurs 8tc	2
08ti	Kurs 8ti	2
09A	Klasse 9A	1
09B	Klasse 9B	1
09C	Klasse 9C	1
09fs	Kurs 9fs	2
09nb	Kurs 9nb	2
09sw	Kurs 9sw	2
09tc	Kurs 9tc	2
09ti	Kurs 9ti	2
10A	Klasse 10A	1
10B	Klasse 10B	1
10C	Klasse 10C	1
10D	Klasse 10D	1
10E	Klasse 10E	1
10fs	Kurs 10fs	2
10nb	Kurs 10nb	2
10sw	Kurs 10sw	2
10tc	Kurs 10tc	2
10ti	Kurs 10ti	2
*		

Klasse\*



U-Nr	KI,Le	Nvpl Std.	Wst	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.
		0	24.00						
68			4	L47	DEUTSCH	09A		R09A	
99			4	L07	ENGLISCH	09A		R09A	
194			4	L01	MATHEMATIK	09A		R09A	
146			2	L34	GESCHICHTE	09A		R09A	
252			2	L07	POLITIK	09A		R09A	
163	3, 4		2	L35	KATH. RELIGION	09A		R09A	
280	2, 2		2	L41	SPORT	09A,09B	H_R1	R09A	1-1
				L17	SPORT	09A,09B	H_R2		
303	8, 4 (i)		2	L01	Hauswirtschaft	09A,09B,09C,10A,10B,10C,10D,10E	R_HWV		1-1
				L14	Informatik	09A,09B,09C,10A,10B,10C,10D,10E	R_IF		
				L47	Kunst	09A,09B,09C,10A,10B,10C,10D,10E	R_KU		
				L49	Technisches Zeichnen	09A,09B,09C,10A,10B,10C,10D,10E	R_TC		
304	8, 5 (i)		2	L47	Schülerzeitung	09A,09B,09C,10A,10B,10C,10D,10E	R_IF		1-1
				L20	Tanz	09A,09B,09C,10A,10B,10C,10D,10E	H_R2	R09A	
				L37	Tennis	09A,09B,09C,10A,10B,10C,10D,10E	H_TB		
				L27	Theater	09A,09B,09C,10A,10B,10C,10D,10E	AULA		
				L17	Volleyball	09A,09B,09C,10A,10B,10C,10D,10E	H_R1		

Take a look at year 9. Each student of this year is assigned to one of the core classes 09A, 09B or 09C and attends undifferentiated core class lessons. Each class is therefore marked with the class group code "1".

The classes 09fs – 09ti highlighted in light green (full name "Course" in the above figure) are the differentiation groups (fs: French, ti: IT). Each student of core classes 09A - 09C can choose one of the elective subject groups 09fs – 09ti. Each class group is marked with the class group code "2".

Please note when using class groups that the order in which classes are listed under "Master Data | Classes" is **not arbitrary**. Core and differentiation classes of any one year must be listed in sequence, i.e. one below the other. A class group coded with a class group code **smaller** than that of the class listed immediately above denotes the beginning of a new, totally separate class sequence with completely different details (see the example above, e.g. between 08ti and 09A, or between 09ti and 10A).

Lessons of classes coded with a class group code are marked as such in the scheduling dialogue.

Untis:252 Planungsdialog

Unterricht

252

15.9.2003 - 21.7.2004

PK

Multi-Drag

Nicht verplant

Information

Historie

Tauschketten

Stunden: 1

☐ Alle nicht verpl. Std.

	Montag								Dienstag								Mittwoch								Donnerstag							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Unt. 252																																
Kla. 09A	M	E	SP	SP	GE	-1	-3	-2	-2	-2	-2	KR	M	=1=	D	=1=	M	E	D		-1	-3	-3	GE	E	D	M	-2	-2	KR		
Le. L07	.10A	09A	.07C	06B	08s	08s			06B	06B	08D	06B	06E				10E	09A				.10A	.07C		08s	09A			06B	06B		
Rm. R09A	09A	09A			09A				09fs	09fs	09fs	09A	09A		09A	09A	09A	09A	09A					09A	09A	09A	09A	09fs	09fs	.09A		

U-Nr	Lehr., Fa., Rm.	Kla.	Zeit	Schulwoche	Studt.	Sondertext	Band	ZeilenText-2
-1								

The symbol '=1=' on Tuesday, period 6, in the row of class 09A means that a class with the same class group code '1' is scheduled at the same time. (For this reason, a lesson should be scheduled for class 09A in this period, if possible.)

Tuesday, period 1, contains the symbol '-2-'. This means that a lesson has already been scheduled for a class with the class group code '2' and that it is **not possible** to schedule a lesson for class 09A at this time without creating a **clash**.

Please also note that the additional class row for 09ti, which has a different class group code from that of class 09A, shows the complementary entries to class 09A: Mon-1 to Mon-6 are coded '-1-' for 09ti (scheduling not possible due to code '1'). Tue-1 to Tue-3, scheduled for 09ti, are coded '-2-' for 09A (scheduling not possible due to code '2').

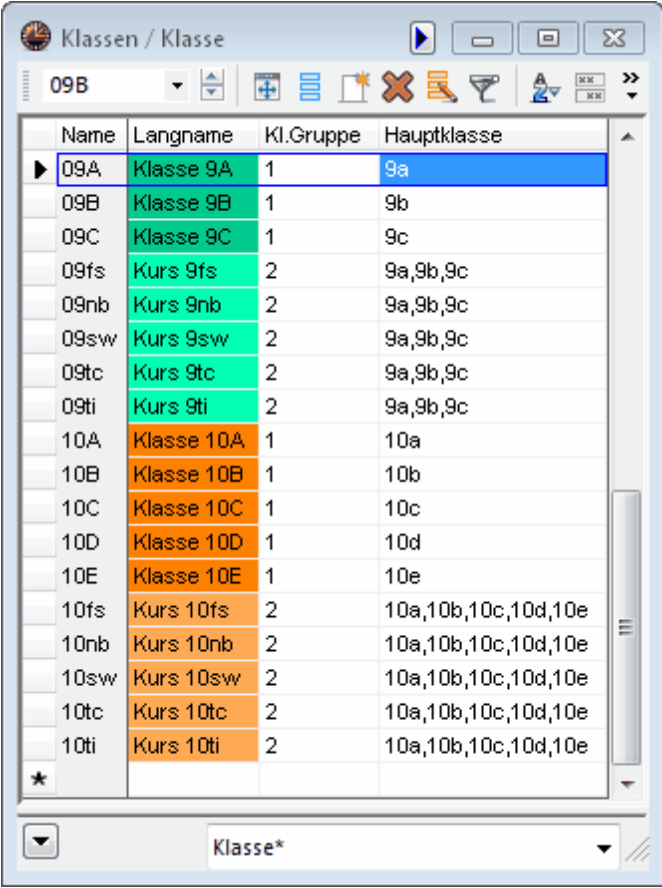
09fs - Kurs 9fs Stundenplan (Kla20-Diff)

### 6.7.3 Display and printing

The timetables of core and differentiation classes can be displayed neatly and clearly using Untis overview timetable format 20.

Print the core and differentiation lessons of a class on a single timetable by accessing the master data field *Master class*.

Please note that Untis allows you to assign several different master classes to a class. The following example demonstrates the advantages of that option.



Name	Langname	Kl.Gruppe	Hauptklasse
09A	Klasse 9A	1	9a
09B	Klasse 9B	1	9b
09C	Klasse 9C	1	9c
09fs	Kurs 9fs	2	9a,9b,9c
09nb	Kurs 9nb	2	9a,9b,9c
09sw	Kurs 9sw	2	9a,9b,9c
09tc	Kurs 9tc	2	9a,9b,9c
09ti	Kurs 9ti	2	9a,9b,9c
10A	Klasse 10A	1	10a
10B	Klasse 10B	1	10b
10C	Klasse 10C	1	10c
10D	Klasse 10D	1	10d
10E	Klasse 10E	1	10e
10fs	Kurs 10fs	2	10a,10b,10c,10d,10e
10nb	Kurs 10nb	2	10a,10b,10c,10d,10e
10sw	Kurs 10sw	2	10a,10b,10c,10d,10e
10tc	Kurs 10tc	2	10a,10b,10c,10d,10e
10ti	Kurs 10ti	2	10a,10b,10c,10d,10e

The differentiation lessons of class groups 09fs, 09nb, 09sw, 09tc and 09ti are elective lessons for all students of core classes 09A, 09B and 09C. The three master class designations allow you to print complete timetables of all core classes including differentiation groups quickly and easily.

**Klasse 9A**

	Mo	Di	Mi	Do	Fr
1	09A M L01 R09A	09fs F L44 R09A 09n BI L13 R_BI 09s SW L08 R09B 09tc TC L49 R_TC 09ti PH L14 R_PH	09A M L01 R09A	09A GE L34 R09A	09fs BI L19 R_BI 09n BI L13 R_BI 09s SW L08 R09B 09tc PH L49 R_PH 09ti IF L14 R_IF
2	09A E L07 R09A	09fs F L44 R09A 09n BI L13 R_BI 09s SW L08 R09B 09tc TC L49 R_TC 09ti IF L14 R_IF	09A E L07 R09A	09A E L07 R09A	09fs F L44 R09A 09n PH L06 R_PH 09s CH L22 R_C 09tc TC L49 R_TC 09ti BI L18 R_BI
3	09A SP L41 H_R1 09A SP L17 H_R2	09fs PH L06 R09A 09n CH L38 R_C 09s BI L01 R_BI 09tc CH L40 R09E 09ti CH L02 R08B	09A D L47 R09A	09A D L47 R09A	09A D L47 R09A
4		09A KR L35 R09A 09A ER L25 R09E		09A M L01 R09A	09A PK L07 R09A
5	09A GE L34 R09A	09A M L01 R09A		09fs F L44 R09A 09n BI L13 R_BI 09s SW L08 R09B 09tc BI L01 R_BI 09ti IF L14 R_IF	09A E L07 R09A
6		09A PK L07 R09A		09fs CH L11 R09A 09n CH L38 09s PH L06 R_PH 09tc TC L49 R_TC 09ti IF L14 R_IF	

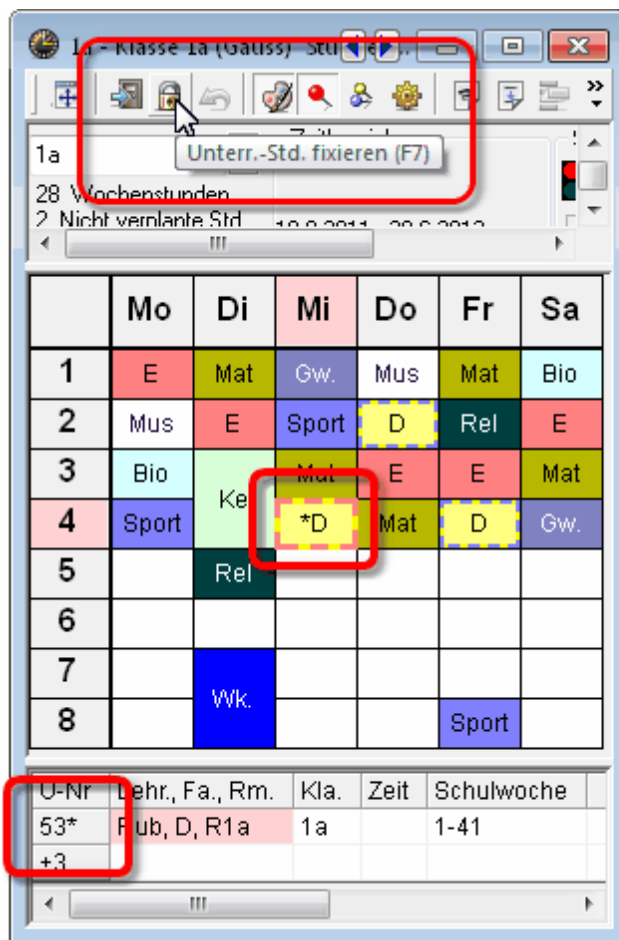
## 6.8 Locking

Before timetable optimisation can run it is often necessary to *lock* certain periods, lessons or even entire master data elements such as teachers, classes or rooms in order to prevent Untis from making changes at the places in question.

### 6.8.1 Locking periods

When one or more periods have been manually set for a lesson they can be individually locked in the timetable by clicking on <Lock period>. This ensures that these periods will not be moved during optimisation. Locked periods are marked with an asterisk (\*) in the timetable period window and in the period details window (see figure).

Deactivate the marking in the timetable period window by unchecking the option "Label locked periods with a \* mark" on the "Layout 2" tab under <Timetable Settings>.



### 6.8.2 Locking lessons

If all elements of a lesson are to be locked, activate "Lock (X)" for the lesson in question. A locked lesson will also be marked with an asterisk (\*) in the timetable. Please note that you cannot remove this lock by clicking on the <Lock period> button.

The screenshot shows two windows from a scheduling software. The top window, titled '1a - Klasse 1a (Gauss) Stu...', displays a weekly schedule grid for class 1a. The grid has columns for days (Mo, Di, Mi, Do, Fr, Sa) and rows for periods (1-8). The bottom window, titled 'Unterricht / Klasse', shows a list of lessons with columns: U-Nr, KI, Le, Nvpr, Wst, Fix (X), Lehrer, Fach, Klasse(n), Fachraum, Stammraum, Dopp.Std., and Block. A red box highlights the 'Mus' lesson (U-Nr 35) in the list, and another red box highlights the '\*Mus' entry in the Friday, period 2 slot of the schedule grid. A red arrow points from the lesson in the list to the corresponding slot in the grid.

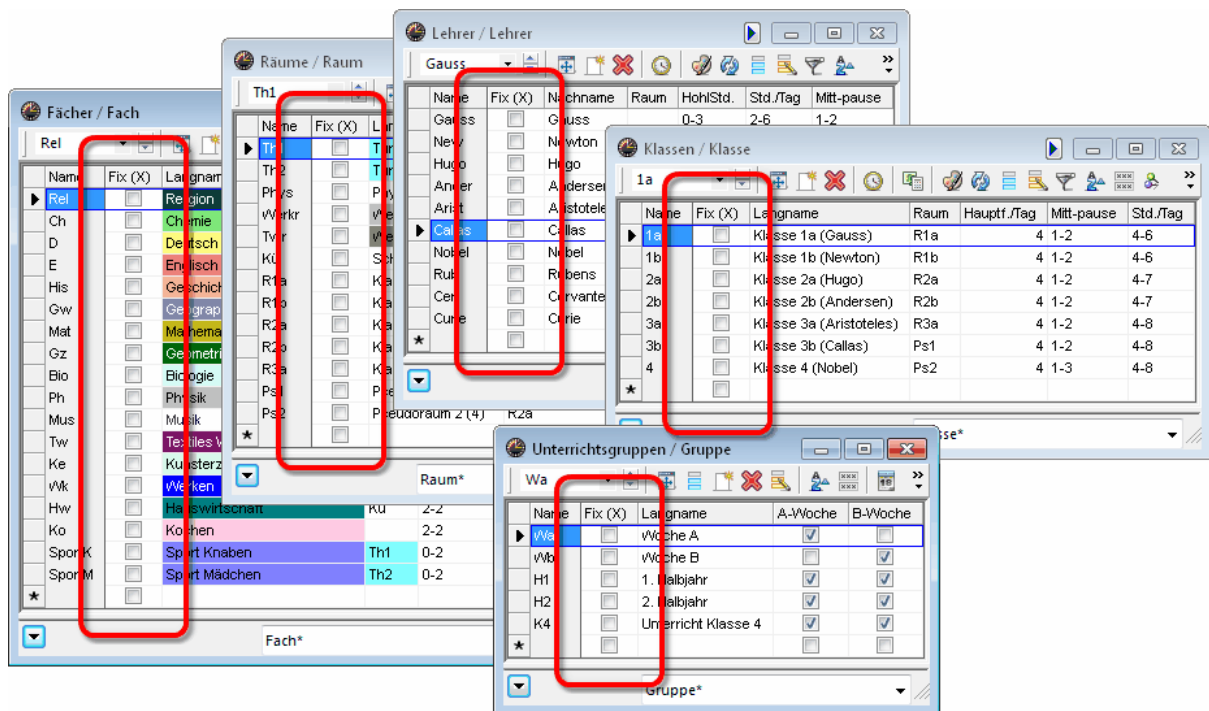
U-Nr	KI	Le	Nvpr	Wst	Fix (X)	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.	Block
11		4, 1		2		Hugo	Gw	1a,1b,2a,2b		R1a		
7		2, 3		2		Ander	Wk	1a	Werk	R1a	1-1	
73		2, 2		3		Arist	SportM	1a,1b	Th2	R1a		
31				5		Arist	Mat	1a		R1a		
33				5		Arist	E	1a		R1a		
35				2	<input checked="" type="checkbox"/>	Callas	Mus	1a		R1a		
39				2		Callas	Ke	1a		R1a	1-1	
46				2		Nobel	Rel	1a		R1a		
53			2	5		Rub	D	1a		R1a		
63				2		Cer	Bio	1a		R1a		

**Caution:**

If you lock a lesson for which all periods have not yet been scheduled, the missing periods will be set at the beginning of optimisation but they cannot then be moved (switched) subsequently by the algorithm. This results in significantly worse optimisation. For this reason, please only use this mark for lessons that have been fully scheduled.

### 6.8.3 Locking master data

You can also lock certain master data elements if, for example, the limited number of periods of a part-time teacher are to be entered and locked manually. In this case, use the "Lock (X)" field that is available in all master data views. Again, it is not possible to remove the lock from periods locked in this way using the <Lock period> button.



## 6.8.4 Locked lessons window

As explained in the preceding chapters, locks can be entered in different ways in Untis. You can obtain a summary of all lessons locked in the school data by opening the "Lessons | Locked Lessons" window. The list of rows contains all the lessons which are currently locked from being moved, which Untis (timetable optimisation) is not allowed to move. The columns indicate the level or the master data element causing the lock. You can use the <Delete> button to remove individual locks.

Fixierter Unterricht											
17% des Unterrichts ist fixiert											
U-Nr	Lehrer	Fach	Klasse(n)	Unterricht fix.	Gruppe fix.	Klasse fix.	Lehrer fix.	Raum fix.	StammRaum fix.	Fach fix.	Stunde fix.
37	Callas	Ch	2a,2b,3a	<input checked="" type="checkbox"/>			Nobel				<input type="checkbox"/>
2	Ander	Wk	1a,1b	<input checked="" type="checkbox"/>							<input type="checkbox"/>
3	Arist	SportM	1a,1b	<input type="checkbox"/>						SportK	<input type="checkbox"/>
50	Rub	SportK	2b,2a	<input type="checkbox"/>						SportK	<input checked="" type="checkbox"/>
59	Ander	Wk	3a,3b	<input type="checkbox"/>				Kü			<input type="checkbox"/>
62	Arist	SportM	3a,3b	<input type="checkbox"/>						SportK	<input type="checkbox"/>
40	Nobel	Rel	2a	<input type="checkbox"/>			Nobel				<input checked="" type="checkbox"/>
93	Hugo	Kla	2a	<input type="checkbox"/>							<input type="checkbox"/>
49	Nobel	Rel	2b	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
64	Nobel	Rel	3a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
97	Nobel	Spa	3a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
74	Nobel	Rel	3b	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
86	Nobel	Rel	4	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
90	Curie	SportM	4	<input type="checkbox"/>						SportK	<input type="checkbox"/>
12	Nobel	Rel	1a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
29	Nobel	Rel	1b	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
21	Nobel	Rel	1b	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
11	Nobel	Rel	1a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>

## 6.9 Room logic

The following chapter is devoted to the treatment of rooms. Special attention will be placed on the difference between (subject) rooms and home rooms and how and why Untis assigns a particular room to a lesson during optimisation.

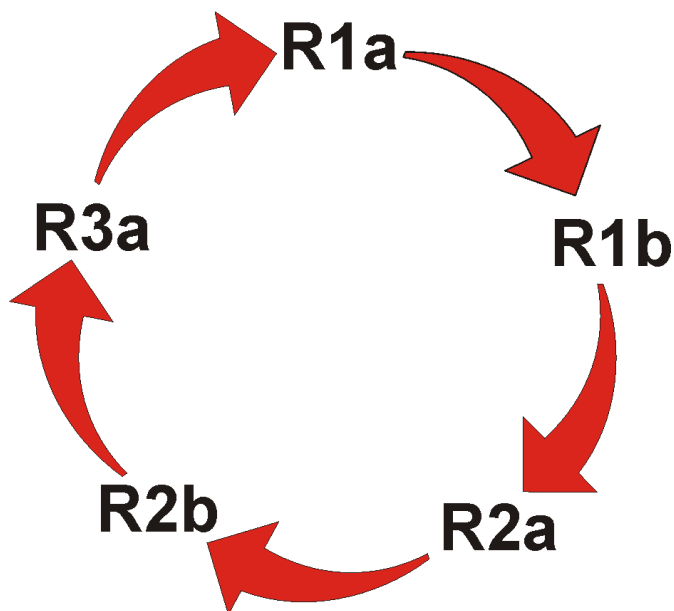
### 6.9.1 Alternative rooms

Since rooms are usually a scarce resource when it comes to timetable construction, Untis provides the additional option of assigning an alternative room.

#### 6.9.1.1 Alternative room ring

Since each alternative room can have its own alternative room, you can create entire alternative room rings by entering the original home room as the alternative room of the last alternative room in the chain. The example below shows such an alternative room ring.

Name	Langname	Ausweichraum
R1a	Klassenraum 1a	R1b
R1b	Klassenraum 1b	R2a
R2a	Klassenraum 2a	R2b
R2b	Klassenraum 2b	R3a
R3a	Klassenraum 3a	R1a



Untis can allocate either one of the five rooms, depending on which would improve the optimisation



results most. Both the optimisation and the room optimisation tools take into consideration the order in which the rooms are entered – an important criteria in the following two scenarios.

You can either recreate "geographic" aspects of your school by ensuring that the alternative room order reflects the relative locations of the rooms in the school. This would save teachers and students from wasting precious time when moving from room to room. In an alternative room ring, neighbouring rooms should therefore be listed in sequence.

Another option is to use alternative room rings and chains to place the function of the rooms in context. When a room capacity has been defined for individual rooms under master data, you can list alternative rooms with approximately the same capacity in sequence (in an alternative room ring). Another aspect that could influence the order of rooms in alternative room rings is the equipment provided in the individual rooms.

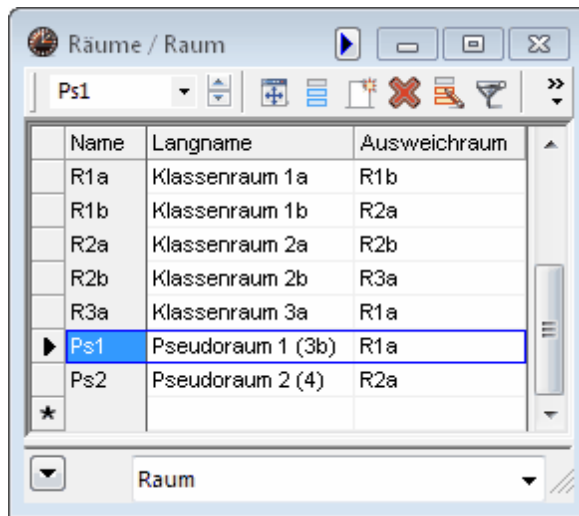
### Classes without a designated room

If your school has classes *without designated rooms* you can use *pseudo rooms* by assigning a fictitious room to a class. You can do this by simply assigning a fictitious room, a pseudo room, to the class in question and blocking this room for every period of the week (using time request "-3").



	1	2	3	4	5	6	7	8
Montag	-3	-3	-3	-3	-3	-3	-3	-3
Dienstag	-3	-3	-3	-3	-3	-3	-3	-3
Mittwoch	-3	-3	-3	-3	-3	-3	-3	-3
Donnerstag	-3	-3	-3	-3	-3	-3	-3	-3
Freitag	-3	-3	-3	-3	-3	-3	-3	-3
Samstag	-3	-3	-3	-3	-3			

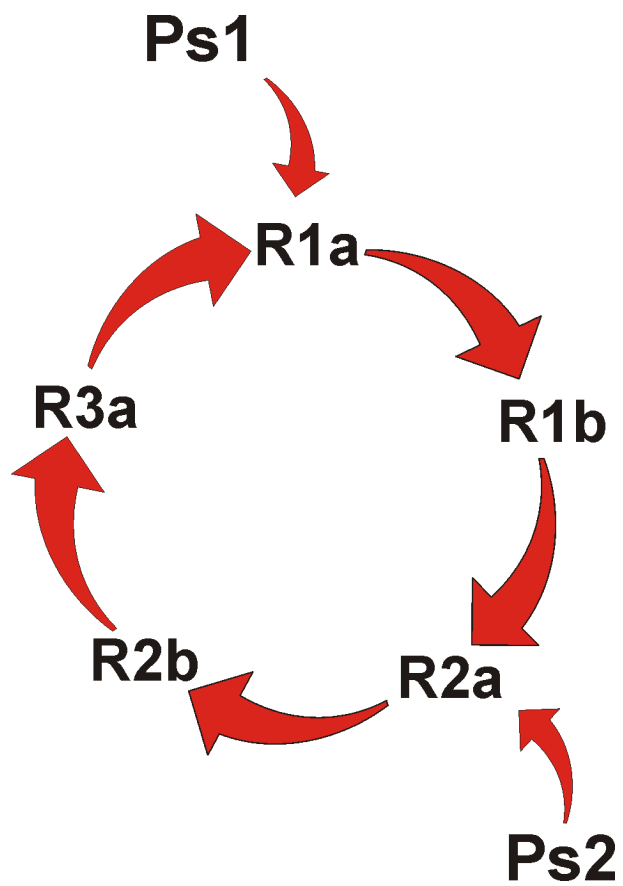
Enter a room from the classroom ring as an alternative room for your pseudo room. Untis will now select a suitable classroom for the class (see example).



The screenshot shows a software window titled "Räume / Raum" with a table of rooms and their connections. The table has three columns: "Name", "Langname", and "Ausweichraum". The rows are as follows:

Name	Langname	Ausweichraum
R1a	Klassenraum 1a	R1b
R1b	Klassenraum 1b	R2a
R2a	Klassenraum 2a	R2b
R2b	Klassenraum 2b	R3a
R3a	Klassenraum 3a	R1a
Ps1	Pseudoraum 1 (3b)	R1a
Ps2	Pseudoraum 2 (4)	R2a

At the bottom of the window, there is a dropdown menu labeled "Raum" with a downward arrow.



Including pseudo rooms in an alternative room ring.

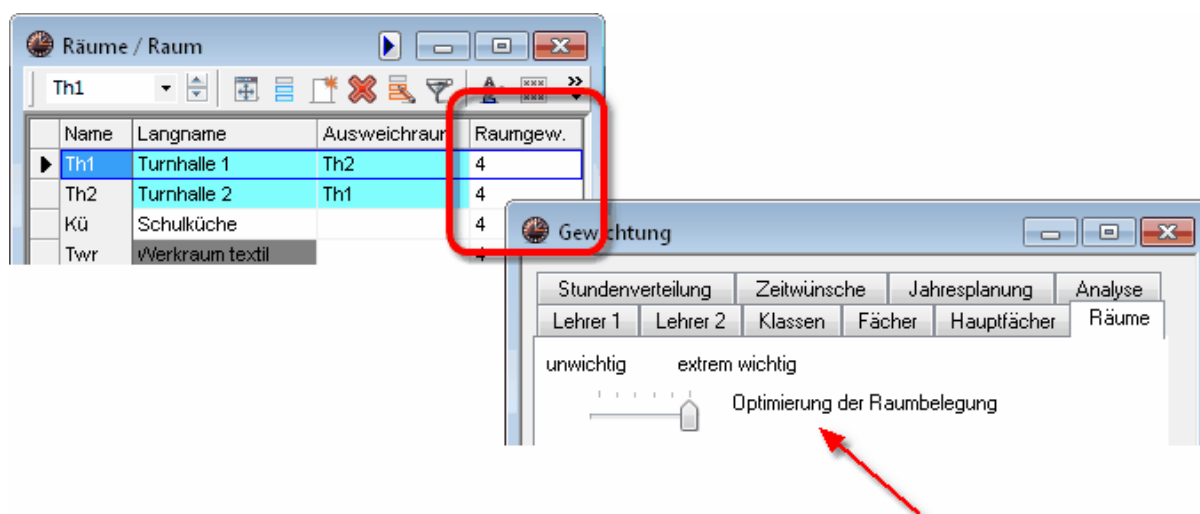
## 6.9.2 Room allocation

Untis provides three different methods of allocating rooms:

1. *Manual room* allocation in the scheduling dialogue, on the scheduling timetable or on the timetable (see chapter " [Manual timetabling](#) ")
2. *Automated room* allocation during optimisation
3. *Optimised room* allocation during room optimisation

The automated room allocation function during optimisation attempts to optimise timetables not just from the class or teacher perspective, but also from the room perspective.

Untis may even schedule a lesson for a period where a suitable room is unavailable. The lesson is then displayed in the diagnosis window under "Subject room missing". To suppress this behaviour, set the room weighting of the specialist subject room to "4" (under master data) and the slider for "Optimisation of room allocation" in the weighting dialogue ("Scheduling | Weighting") on the "Rooms" tab to position 4 or 5 ("very important" or "extremely important"). Periods for which the optimisation tool is unable to find a suitable room will then remain unscheduled.



The room situation can be re-optimised without altering the class or teacher timetables (see section after next). This is useful when manual changes have been made to the scheduling of rooms and these changes are to be taken into account in other areas.

## 6.9.3 Room capacity

When room sizes and/or class sizes at your school differ widely, set the optimisation and the room optimisation tools to consider the capacity of individual rooms in order to prevent situations where a small class occupies a room suitable for twice the number of students or a large class is crammed into a small room designed for a much smaller number of students.

To ensure that the room capacity function works correctly, enter the following details (see also chapters "Master Data" and "Lesson"):

Under "Master Data | Rooms"

- Capacity

Under "Master Data | Classes"

- Students (male, female)

For couplings under "Lessons"

- Students (male, female)

#### 6.9.3.1 Alternative room chain

If you would like the room optimisation tool to consider the room capacity of alternative rooms, the alternative room ring must remain open, i.e. you need to create an alternative room chain, instead. The example below illustrates this.

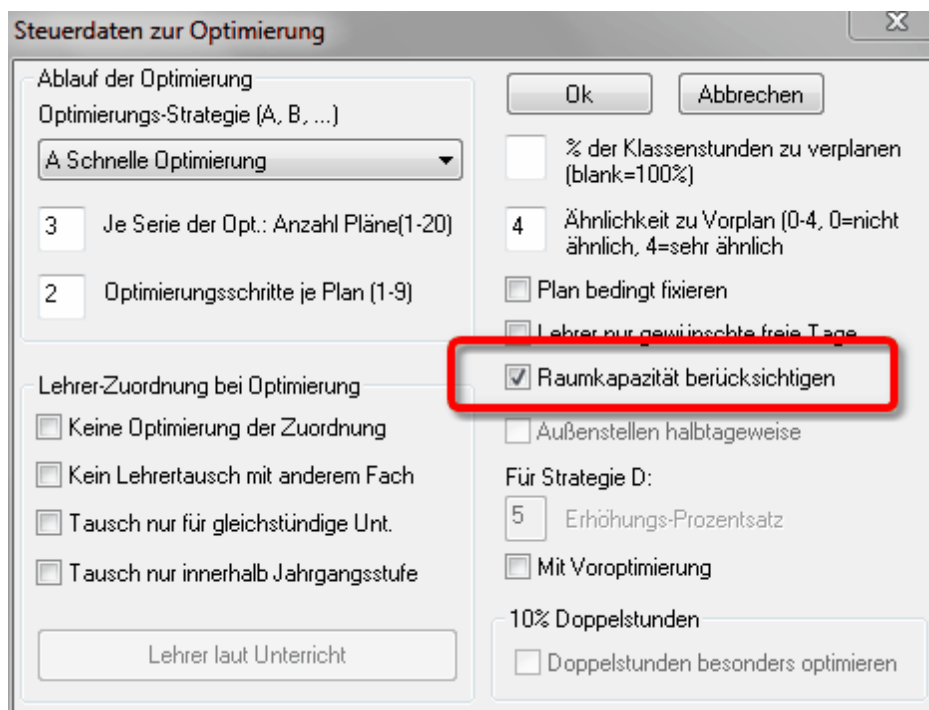


The example shows that room R3a has a capacity for 22 persons. When this room is unavailable, the next suitable room for this lesson is the slightly larger room R2a. The next room in the chain is the even larger room R2b etc. The alternative room for R1a is R1b, and the chain ends here because R3a with its lower capacity is unsuitable as an alternative room for R1b.

#### Room capacity and optimisation

If you wish the room capacity to be taken into consideration, check the relevant box in the optimisation or room optimisation dialogue before starting an optimisation or room optimisation run.

Specify the level of importance of the room capacity function by adjusting the weighting option "Take room capacity into consideration" in the weighting dialogue ("Scheduling | Weighting") on the "Rooms" tab.



#### 6.9.4 Room optimisation

The room optimisation tool attempts to optimize the already optimised timetable by finding the most suitable room available for each lesson. The software obeys the following rules:

- Lesson periods will **not** be moved.
- Double periods (or period blocks) take place in the same room wherever possible.
- When the software is unable to schedule all of the periods of a subject in the designated subject room, Untis tries to ensure that all classes have the name number of lessons scheduled in the subject room (e.g. if the school has 34 classes and only one Physics lab, Untis tries to ensure that each class has at least one period in the specialist subject room).
- When the optimisation tool is unable to schedule a lesson in a designated alternative room, the room optimisation function ensures that the lesson takes place in the designated home room, instead.
- The software attempts to allocate the same room to a class (or teacher) for the duration of an entire half-day. This is of particular importance for classes without a designated room. These should be allocated with the aid of pseudo rooms.
- Preference is given to alternative rooms listed close to the designated room in the alternative room chain.
- The rooms specified in "Lessons" window take precedence over alternative rooms. This is of particular importance for classes without a designated room. A class without a designated room must never displace another class from its designated home room and can only be scheduled for a home room that is readily available.
- When a lesson is marked "r" All periods in the same room" (on the "Codes" tab under "Lessons | Teachers" or "Lessons | Classes"), the room optimisation tool attempts to schedule all the periods of the lesson in the same room while at the same time taking the room capacity into account. Rooms that are not designated home rooms are allocated first, and preferentially to double periods

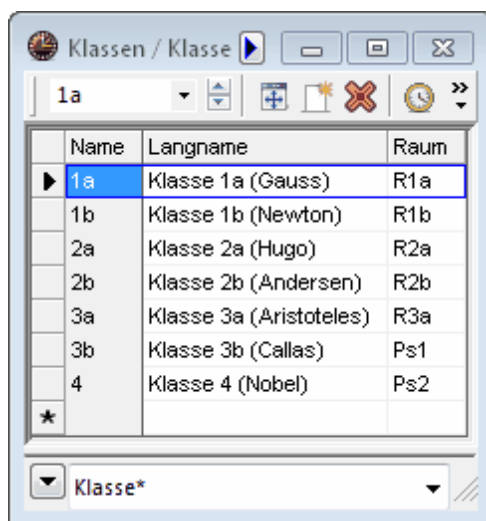
and period blocks.

The following example demonstrates the function of the room optimisation tool:

#### 6.9.4.1 Example: step 1

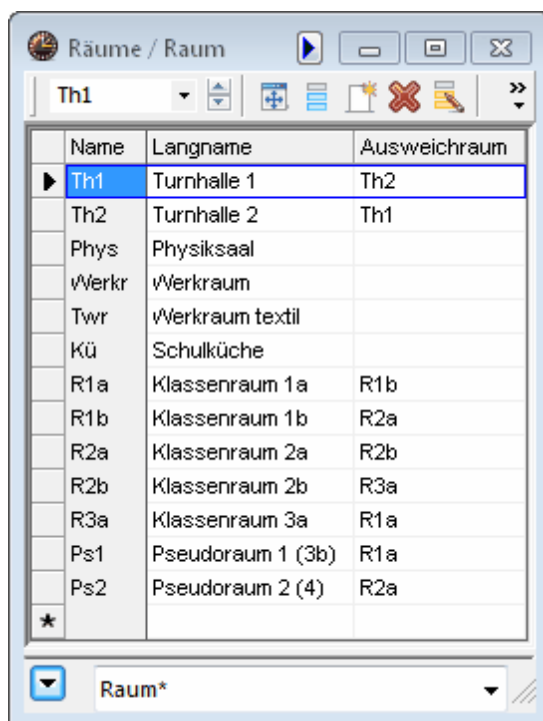
Please open the file "demo1.gpn".

Seven classes are listed under "Master Data | Classes". The column "Room" in the grid view shows that a pseudo room has been assigned to the last two classes ("3b" and "4"). This means that these two classes do not have a designated room of their own. You can view the alternative rooms under "Master Data | Rooms". They form the same alternative room ring that was displayed in the previous example. The alternative rooms allocated to the two pseudo rooms are the rooms for 1 and AA ("R1a" and "R2a").



The screenshot shows a software window titled "Klassen / Klasse". It contains a table with three columns: "Name", "Langname", and "Raum". The table lists seven classes, with the last two ("3b" and "4") assigned to pseudo rooms "Ps1" and "Ps2". A dropdown menu at the bottom is set to "Klasse\*".

Name	Langname	Raum
1a	Klasse 1a (Gauss)	R1a
1b	Klasse 1b (Newton)	R1b
2a	Klasse 2a (Hugo)	R2a
2b	Klasse 2b (Andersen)	R2b
3a	Klasse 3a (Aristoteles)	R3a
3b	Klasse 3b (Callas)	Ps1
4	Klasse 4 (Nobel)	Ps2
*		



#### 6.9.4.2 Example: step 2

When you have opened the file a class timetable should already be open. Open another timetable window via "Timetable | Rooms".

A number of columns in the class timetable may be marked "Before school starts". Select the next week in the date selection box of the timetable window to display the timetable for the days you wish to view.

#### 6.9.4.3 Example: step 3

On the class timetable, click several times on <Other element in period> until the room details are displayed. Repeat the same process for the room timetable until each period displays the class scheduled to have lessons in the room.

1a - Klasse 1a (Gauss) Stu

1a  
30 Wochenstunden  
0 Nicht verplante Std.  
Klasse(n)

Zeitraum  
19.09.2011  
19.9.2011 - 24.9.2011  
Mo 19.9. A Woche: 1/38

	Mo	Di	Mi	Do	Fr	Sa
1	R1b	R2a	R1b	X	R1b	R1a
2	R1b	R1b	R2a	R1a	R1b	R1a
3	R1b	R1a	R1b	R2a	R1b	R2a
4	Th2.	R1b	R1b	R2a	R1b	R1a.
5	R1b	Th2.			Th2.	
6				R1a.		
7						
8		Werkr.				

U-Nr	Lehr., Fa., Rm.	Kla.	Zeit	Schulw
9	Callas, Ke, R1b (R1a)	1a	AWa	1,3,5,7
+3				



**R1a - Klassenraum 1a**

30 Wochenstunden  
Raum-Kapazität: 36  
Raum: R1a

Zeitbereich  
19.09.2011  
19.9.2011 - 24.9.2011  
Mo 19.9. A Woche: 1/38

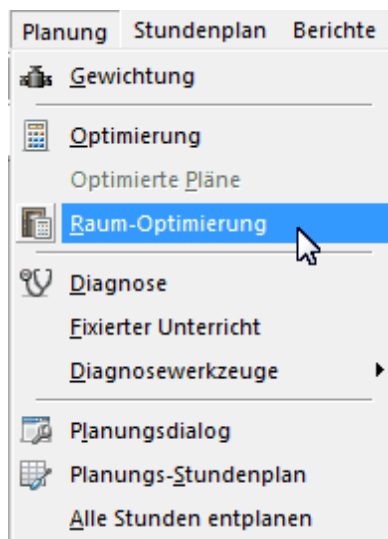
	Mo	Di	Mi	Do	Fr	Sa
1	1b	3a	2b	3a	1b	1a
2	3a	1b	1b	1a		1a
3	1b	1a	1b	2b	1b.	4
4	3a	3b.	1b	2a	1b	1a.
5			2a.			
6		3a		1a.		
7		2b		3a.		
8						

U-Nr	Lehr., Fa., Rm.	Kla.	Zeit	Sci
22	Rub, D, R1a (R1b)	1b	19.9.-9.2.	1-1
			H1	

Inspect the timetable of a class and of its home room. The examples above show class 1a and its home room R1a. As you can see, the class is not always scheduled to have lessons in its home room because the room is occasionally occupied by other classes

#### 6.9.4.4 Example: step 4

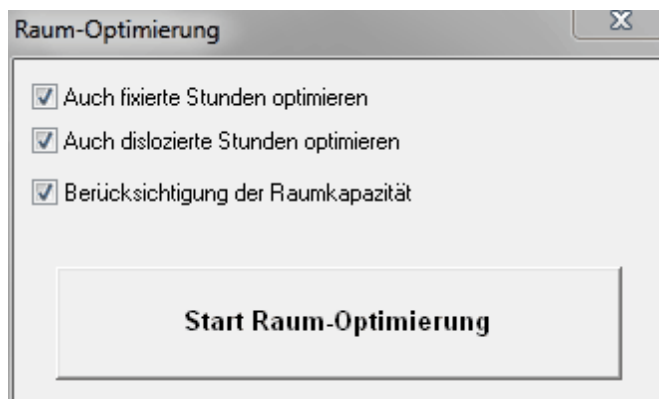
Select menu item "Scheduling | Room Optimisation".



The room optimisation dialogue appears, where you can specify if you wish to optimise locked and/or off-site rooms and if the room capacity should be taken into consideration.

#### 6.9.4.5 Example: step 5

Click on <Start Room Optimisation>. Click on the button again when the room optimisation run finishes.



As you can see, the room optimisation tool has allocated the home room (R1a) for most of the lessons of class 1a and the designated subject room (PE and Design) for some of the lessons.

1a - Klasse 1a (Gauss) Stu

1a  
30 Wochenstunden  
0 Nicht verplante Std.  
Klasse(n)

Zeitbereich  
19.09.2011  
19.9.2011 - 24.9.2011  
Mo 19.9. A Woche: 1/38

	Mo	Di	Mi	Do	Fr	Sa
1	R1a	R1a	R1a	R1a	R1a	R1a
2	R1a	R1a	R1a	R1a	R1a	R1a
3	R1a	R1a	R1a	R1a	R1a	R1a
4	Th2.	R1a	R1a	R1a	R1a	R1a.
5	R1a	Th2.			Th2.	
6				R1a.		
7						
8		Werkr.				

U-Nr	Lehr., Fa., Rm.	Kla.	Zeit	Schulwoche
9	Callas, Ke, R1a	1a	AWa	1,3,5,7,9,11,1
+3				

	Mo	Di	Mi	Do	Fr	Sa
1	1a	1a	1a	1a	1a	1a
2	1a	1a	1a	1a	1a	1a
3	1a	1a	1a	1a	1a	1a
4	4	1a	1a	1a	1a	1a
5	1a		2a			
6				1a		
7						
8			4	3a		

U-Nr	Lehr., Fa., Rm.	Kla.	Zeit	Schulwoche
9	Callas, Ke, R1a	1a	AWa	1,3,5,7,9,11,1

Please note the situation for classes without a designated room. Before room optimisation, class 3b was scheduled to have lessons in room R1a on Tuesday, periods 4 and 5. Class 4 was scheduled for room R1a on Saturday, period 4. The room optimisation tool moved both classes to another room since the placement violated the rule that a class must not be displaced from its home room.

After the room optimisation run, the situation is very different. Class 1a is back in its home room on Tuesday, period 4 and 5, and on Saturday, period 4. Instead, class 3b occupies room R1a on Monday, period 4, when class 1a is scheduled to have a PE lesson in the sports hall. Class 4 is scheduled in R1a on Saturday, period 5, because again, the room is not required by class 1a.

Any periods not yet allocated to a suitable room (as is often the case for classes without a designated room) can be assigned manually using the scheduling dialogue.

### 6.9.5 The role of subject rooms and home rooms

The entries for the specialist subject rooms are pivotal for room scheduling.

Let us assume in the following example that rooms have been entered in the subject room and home room fields.

Room optimisation would now attempt to schedule all periods for physics lesson number 95 in the specialist subject room physics laboratory.

Unterricht / Klasse

2a

U-Nr	Kl,Le	Nvpl	Wst	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.	Block
11	4, 1		2	Hugo	Gw	1a,1b,2a,2b		R1a		
6	3, 7		1	Callas	Ch	2a,2b,3a		R2a		
75	2, 2		3	Rub	SportK	2b,2a	Th1	R2b		
81	2, 2		2	Curie	Tw	2b,2a	Twr	R2b	1-1	
94	2, 1		1	New	Gz	2a,2b		R2a		
18			2	Hugo	His	2a		R2a		
38			1	Callas	Mus	2a		R2a		
41			2	Callas	Ke	2a		R2a	1-1	
48			2	Nobel	Rel	2a		R2a		
59			4	Cer	D	2a		R2a		
60			4	Cer	E	2a		R2a		
65			2	Cer	Bio	2a		R2a		
90			4	New	Mat	2a		R2a		
95			2	New	Ph	2a	Phys	R2a		

U-Nr 95 Klasse\*

**Note:**

If this condition cannot be met, optimisation will attempt, as in the example, to share the physics laboratory equitably among all classes with a claim on it.

Let us assume that the physics laboratory is not free for one of the two periods in which optimisation attempts to schedule physics lessons. In this case, room optimisation would schedule these periods in the home room - R2a in our example.

The timetable periods detail window will then indicate that room R2a has been allocated instead of the desired *Phys* (in parentheses).

As a general rule, if the desired subject room is not free, room optimisation will ensure that the period in question is held in the home room

Please note that you could specify a (different) room to relocate lessons *for each individual lesson* if the desired subject room is not available.

2a - Klasse 2a (Hugo) Stundenplan (Kla-HTML)

2a  
32 Wochenstunden  
0 Nicht verplante Std. 19.9.2011 - 30.6.2012

Stundenplanvergleich  
☐ aktiv  
☐ Nur geänderte Pläne

	Montag	Dienstag	Mittwoch	Donnerstag	Freitag	Samstag
1	Mus Callas R2a	Ke Callas R2a	Gw Hugo R1a	D Cer R2a	D Cer R2a	
2	Rel Nobel R2a		His Hugo R2a	E Cer R2a	Bio Cer R2a	D Cer R2a
3	Mat New R2a	SportK Rub SportM Arist		Mat New R2a	Ph New Phys	E Cer R2a
4	D Cer R2a	Bio Cer R2a	Rel Nobel R2a	Ph New R2a	E Cer R2a	Gw Hugo R1a
5	E Cer R2a	Mat New R2a	Ch Callas R2a Mat Gauss R2b Mat Ander R3a		Mat New R2a	
6					Gz New R2a	
7				SportK Rub SportM Arist	Tw Curie Wk Ander	
8					Tw Wkr	

U-Nr	Lehr., Fa., Rm.	Kla.	Zeit	Schulwoche	Studi	Sondertext	Band	ZeilenText-2
95	New, Ph, R2a (Phys)	2a		1-41	26			
+3								

**Tip:**

If 3 periods of a 5-period lesson have to be held in a subject room (i.e. not in the home room), enter a 3 in the field "Periods in room".

You must do the following if it is absolutely necessary for lessons to be held in a specific (subject) room:

1. Set the room weighting for the room in question to 4, and
2. Weight the parameter "Optimisation of room allocation" on the "Rooms" tab under "Scheduling | Weighting" with 4 or 5.

Alternatively, you can delete the entry in the home room field for the lesson in question.

Unterricht / Klasse

2a

U-Nr	KI,Le	Nvpl	Wst	Ist	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.	Bloc
11	4, 1		2		Hugo	Gw	1a,1b,2a,2b		R1a		
6	3, 7		1		Callas	Ch	2a,2b,3a		R2a		
75	2, 2		3		Rub	SportK	2b,2a	Th1	R2b		
81	2, 2		2		Curie	Tw	2b,2a	Twr	R2b	1-1	
94	2, 1		1		New	Gz	2a,2b		R2a		
18			2		Hugo	His	2a		R2a		
38			1		Callas	Mus	2a		R2a		
41			2		Callas	Ke	2a		R2a	1-1	
48			2		Nobel	Rel	2a		R2a		
59			4		Cer	D	2a		R2a		
60			4		Cer	E	2a	Sp-Lab			
65			2		Cer	Bio	2a		R2a		
90			4		New	Mat	2a		R2a		
95			2		New	Ph	2a	Phys	R2a		

U-Nr 60 Klasse\*

If you have only made an entry in either the *subject room* or in the *home room* fields (as in the above example for lessons 59 and 60), processing will as a rule be identical:

room optimisation first tries to allocate the desired room (or one of its alternative rooms) to the all periods of the lesson in question.

**Stundenplan-Diagnose**

24.09.2012 - 30.9.2012

Eingabedaten | Stundenplan

+	Diagnose	Gw.	Anz
	Alle	>= 1	
+	Unterricht		6
+	Klasse		14
+	Lehrer		20
-	Raum		34
	Fachraum fehlt	3	7
	Stunde ohne Raum	3	27
+	Fach		37
-	Student		

**Art der Diagnose**  
In diesen Stunden wurde nicht der im Unterricht eingetragene Fachraum zugewiesen.

**Gewichtung: 3**  
**Anzahl: 7** [Betroffene Fenster anzeigen](#)

S	U-Nr	Rm.	Std.	R-Gw
75	Th1	Do-7	4	
75	Th1	Do-8	4	
60	Sp-Lab	Mo-5	2	
60	Sp-Lab	Do-2	2	
60	Sp-Lab	Fr-4	2	
60	Sp-Lab	Sa-3	2	
32	Phys	Do-1	3	

If this does not succeed, what happens then depends on the weighting settings on the "Rooms" tab under "Scheduling | Weighting": the lesson periods remain unscheduled or no room is allocated.

Periods without a room will always be displayed in the diagnosis.

### 6.9.6 Off-site rooms

Off-site rooms are specialist subject rooms and classrooms located at such a distance from the main school building that a whole period needs to be set aside to allow teachers and students to reach the *off-site* rooms. The automated *optimisation* function takes the length of the walking time into account when optimising the timetable.

A PE teacher is scheduled to teach periods 1 and 5 in the main building and period 3 at the (off-site) sports track. The timetabling tool will ensure that periods 2 and 4 remain unscheduled for the teacher to allow him or her sufficient time to reach the sports track.

#### Breaks of different lengths

Many schools use timetables where some breaks are longer than others and where it is therefore possible to reach an off-site location during one of the longer breaks. Breaks of sufficient length to reach an off-site location can be marked "+" in the *time grid* under "Breaks".



**Zeitraster**

Mittagspause von-bis  
 Max. Klassenzahl mit gleichzeitiger Mittagspause  
 Eintragung:   
 \* = Pause darf von Doppelstunde nicht überspannt werden  
 + = Disloziertes Gebäude in Pause erreichbar

	1/2	2/3	3/4	4/5	5/6	6/7	7/8
Beginn	8:45	9:40	10:35	11:30	12:25	13:20	14:15
Ende	8:55	9:50	10:45	11:40	12:35	13:30	14:25
Montag		+					
Dienstag		+					
Mittwoch		+					
Donnerstag		+					
Freitag		+					
Samstag		+					

The figure above shows that the break between periods 2 and 3 is sufficiently long enough to reach the off-site location. The PE teacher in the example above would therefore be able to teach period 2 in the main building and still manage to reach the sports track in time for period 3.

### Half-day external site

With the "Half-day external site" option it is possible to specify that teachers and students may not switch buildings for half a day, thus minimising the number of times they need to switch buildings.

**Steuerdaten zur Optimierung**

Ablauf der Optimierung  
 Optimierungs-Strategie (A, B, ...)  
 A Schnelle Optimierung

3 Je Serie der Opt.: Anzahl Pläne(1-20)  
 2 Optimierungsschritte je Plan (1-9)

Lehrer-Zuordnung bei Optimierung

☐ Keine Optimierung der Zuordnung  
☐ Kein Lehrertausch mit anderem Fach  
☐ Tausch nur für gleichstündige Unt.  
☐ Tausch nur innerhalb Jahrgangsstufe

Lehrer laut Unterricht

Ok Abbrechen



☐ % der Klassenstunden zu verplanen (blank=100%)  
 4 Ähnlichkeit zu Vorplan (0-4, 0=nicht ähnlich, 4=sehr ähnlich)  
☐ Plan bedingt fixieren  
☐ Lehrer nur gewünschte freie Tage  
☐ Raumkapazität berücksichtigen  
☒ Außenstellen halbtagsweise

Für Strategie D:  
 5 Erhöhungs-Prozentsatz  
☐ Mit Voroptimierung  
 10% Doppelstunden  
☐ Doppelstunden besonders optimieren

#### 6.9.6.1 Start time graduation

Instead of wasting an entire period to reach an off-site location, the start time of certain lessons can be adjusted slightly to suit the situation.

Using this method, the PE teacher from the previous example can be scheduled to teach periods 1, 2 and 5 in the main building and period 3 at the off-site sports track. The software schedules a 4. free period for period 4 to allow the teacher sufficient time to return to the main building after period 3.




Beginnzeiten - Hauptgebäude		Beginnzeiten - Außenstelle
		
1. Stunde: 8:00	Wegzeit: 15 Minuten	1. Stunde: 8:15
2. Stunde: 9:00		2. Stunde: 9:15
3. Stunde: 10:00		3. Stunde: 10:15
usw.		usw.

### 6.9.6.2 Off-site codes

Off-site rooms are marked with an *off-site code* entered under master data.

#### Off-site rooms with graduated lesson starts

Enter the same (numerical) off-site code for all the rooms at an off-site location where you operate a system of *start time graduation*. Permitted values are between 1 and 9.

	Hauptgebäude	Weg zeit	Außenstelle 1	Weg zeit	Außenstelle 2
		15 Minuten		10 Minuten	
Disloz.- kennz.	keines		1		2
Beginnzeit	1. Std		08:15		08:25
	2. Std		09:15		09:25
	3. Std		10:15		10:25
	4. Std		11:15		11:25

Your school has two off-site locations. The first is a 15 minute walk away from the main building, the second a 10-minute walk away from the first off-site location. Enter a value for each off-site room as described above to enable Untis to schedule the teacher as follows:

Period 1 – main building, Period 2 – off-site location 1, Period 3 – off-site location 2.

Untis allocates one free period for the return from one of the off-site buildings to the main building or from off-site location 2 to off-site location 1.

Untis takes into account:

- The walking times for teachers and students to off-site subject rooms and classrooms
- The walking times for teachers and students from off-site subject rooms and classrooms back to the main building

It is advisable to reduce the number of times teachers and students are obliged to move between main and off-site buildings to an absolute minimum. The following example shows how to do this:

For teachers who teach both in the main building and at off-site locations, enter the number "1" under *Subject sequence - Teachers* for lessons that take place in the main building, and the number "2" for lessons that take place in the off-site building.

Unterricht / Lehrer

Rub

U-Nr	Kl,Le	Nvpl	Std.	Wst	Ist	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	FF-Le.	Dopp.Std.	Block
6	+ 3, 7			1		Rub	E	2a,2b,3a		Ps1	1		
73	+ 2, 2			3		Rub	SportK	1a,1b	Th1	R1b	2		
75	+ 2, 2			3		Rub	SportK	2b,2a	Th1	R2b	2		
76	+ 2, 2			3		Rub	SportK	3a,3b	Th1	Ps1	2		
53		2		5		Rub	D	1a		R1a	1		
54				6		Rub	D	1b		R1b	1	0-1	
55				2		Rub	His	2b		R2b	1		
56				2		Rub	His	3a		R3a	1		
57				2		Rub	Bio	4		Ps2	1		
58				2		Rub	Ko	4		Ps2	1		

U-Nr 73 Lehrer\*

Untis will then attempt to schedule as many periods as possible in the same building for the teacher.

#### Off-site rooms without graduated lesson starts

If you are unable to graduate lesson starts as described in the previous section, you need to schedule one free period each for the walk to and from the off-site location for teachers and students.

To achieve this use the off-site codes A – E for the relevant off-site rooms at your external locations.

To ensure the correct treatment of off-site rooms during optimisation, enter the following details:

Under "Master Data | Rooms"

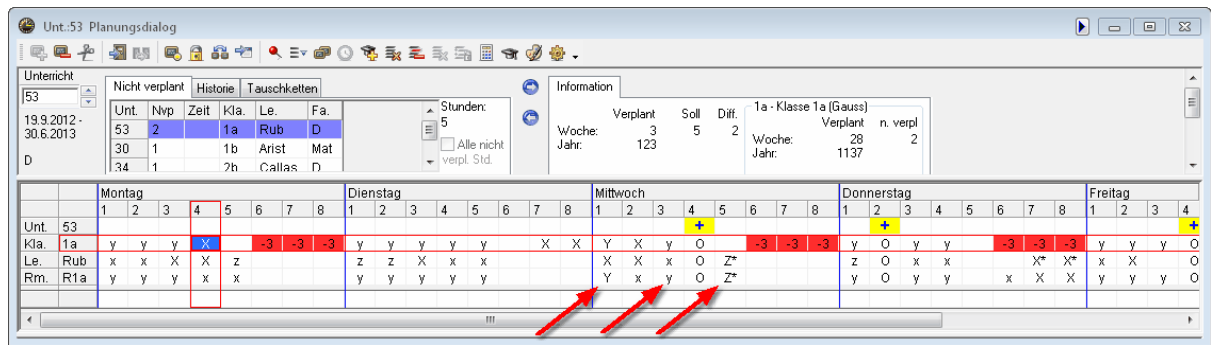
- Off-site code
- Room weighting

Under "Scheduling | Weighting | Rooms"

- Optimisation of room allocation
- Optimisation of the off-site rooms

Periods scheduled for rooms with off-site code '1' are marked y and Y in the scheduling dialogue.

Periods scheduled for rooms with other off-site codes are marked z and Z (upper case letters denote couplings).

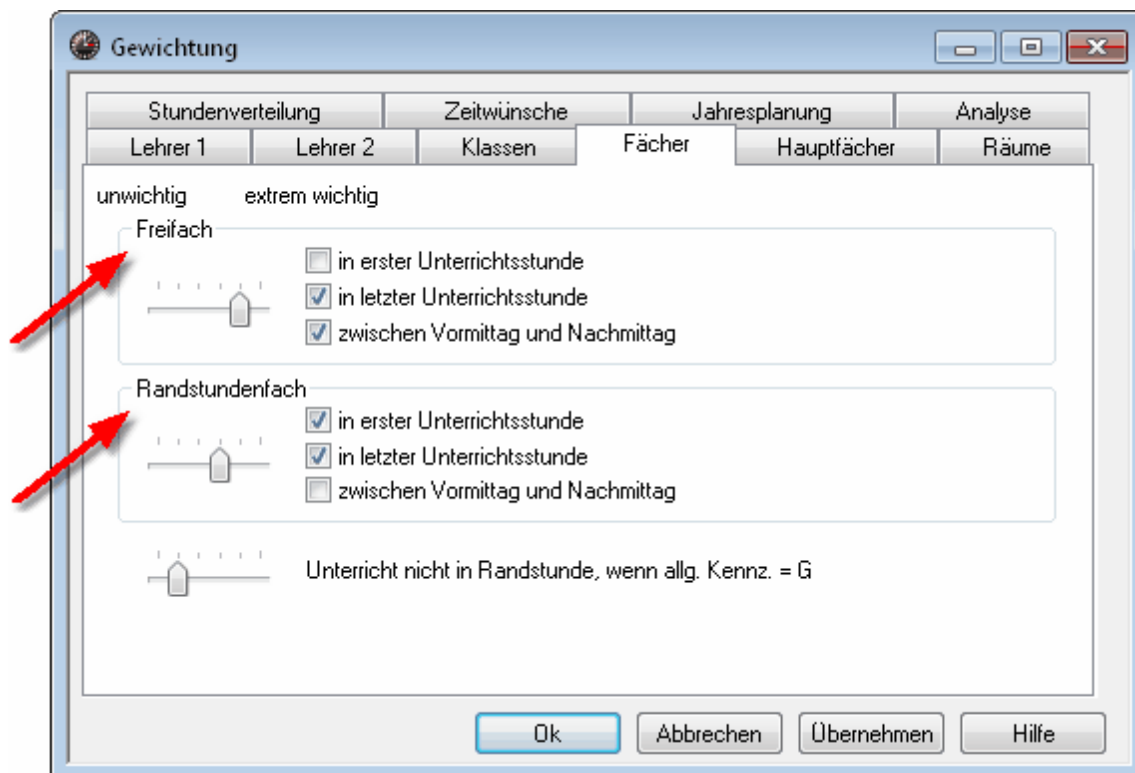


## 6.10 Optional subjects and fringe periods

Not every subject is attended by every student of a class. When this is the case, it may be desirable to schedule such subjects at the beginning or the end of a half-day (in the so-called *fringe periods*) to enable students who do not take part in the subject either to come to school later, to leave school early or to have a longer lunch break.

To enable the software to schedule subjects in fringe periods, mark the subject with the code *Optional subject* or *Fringe period* (under "Master Data | Subjects"). In principle, the two codes influence optimisation in the same way but real differences can be made by setting different weighting factors.

The following weighting settings instruct the software to schedule optional subjects preferentially in the *last* periods of a half-day, i.e. either in the last period of the morning or afternoon, while fringe period subjects should be scheduled either in the first or the last periods of the *day*.



Code G has the opposite effect. Subjects marked " (G) *Not a fringe period* " are scheduled *outside* fringe periods.

## 6.11 Main subjects

Subjects that are considered particularly strenuous or important for students can be marked with the *main subject* code. This allows the optimisation tool to observe the following restrictions:

- Maximum number of main subjects that may be scheduled for a class per day
- Maximum number of main subjects that may be scheduled in sequence for a class
- Maximum number of main subjects that may be scheduled to take place after a defined boundary period.

To ensure the correct treatment of main subjects during optimisation, enter the following details:

Under "Weighting | Main subjects"

- Respect max. number of main subjects per day for classes
- Respect max. number of consecutive main subjects for classes
- Boundary period
- Main subjects max. once after boundary period
- Main subject at least once up to boundary period

Please see a detailed description of the boundary period function under " [Optimisation - Weighting parameters](#) ".

Under "Master Data | Subjects"

- Code (M) Main subject

Under "Master Data | Classes"

- Max. main subjects per day
- Max. consecutive main subjects per day

## 6.12 Subject sequences

Subject sequence codes can be entered for subjects and lessons. Subject sequence codes entered for subjects apply to the entire school; codes entered for lessons only apply to the classes (teachers) involved in the lesson.

### Note:

Subject sequences are 'soft' conditions for the algorithm, i.e. they may be ignored in extreme cases. A weighting slide control can be used to control the importance attached to these fields. Use fixed subject sequences if the subject sequence must be respected (see chapter " [Subject sequences](#) ")

### 6.12.1 Positive subject sequence

#### Classes

It may be desirable for pedagogical or organisational reasons to schedule certain subjects in sequence.

Name	Langname	FF-Kla.
Rel	Religion	
Ch	Chemie	
D	Deutsch	5
E	Englisch	
His	Geschichte	
Gw	Geographie und Wirtschaftsk	
Mat	Mathematik	5
► Gz	Geometrisch Zeichnen	
Bio	Biologie	
Ph	Physik	
Mus	Musik	
Tw	Textiles Werken	
Ke	Kunsterziehung	
Wk	Werken	
Hw	Hauswirtschaft	
Ko	Kochen	
SportK	Sport Knaben	
SportM	Sport Mädchen	

At the bottom of the window, there is a dropdown menu labeled 'Fach'.

For example, to allow time for a two-period written exam, you want to schedule the subjects German (DE) and Math (MA) in sequence. It is irrelevant in this case if the sequence is DE-MA or MA-DE.

Version 1

*Applies to the entire school*

Enter the same numerical subject sequence code (under "Master Data | Subjects") for both subjects, e. g. "5" (see example below).

Unterricht / Klasse

1a

U-Nr	Kl,Le	Nvpl	Wst	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.	Block	FF-Kla.
11	4, 1		2	Hugo	Gw	1a,1b,2a,2b		R1a			
7	2, 3		2	Ander	VWk	1a	VVerkr	R1a	1-1		
73	2, 2		3	Arist	SportM	1a,1b	Th2	R1a			
31			5	Arist	Mat	1a		R1a			5
33			5	Arist	E	1a		R1a			
35			2	Callas	Mus	1a		R1a			
39			2	Callas	Ke	1a		R1a	1-1		
46			2	Nobel	Rel	1a		R1a			
53		2	5	Rub	D	1a		R1a			5
63			2	Cer	Bio	1a		R1a			

U-Nr 31 Klasse\*

#### Version 2

*Applies to a particular class (e.g. class "4")*

Enter a numerical subject sequence code (under "Lessons | Classes") in the relevant lesson rows for class 4, e.g. "5".

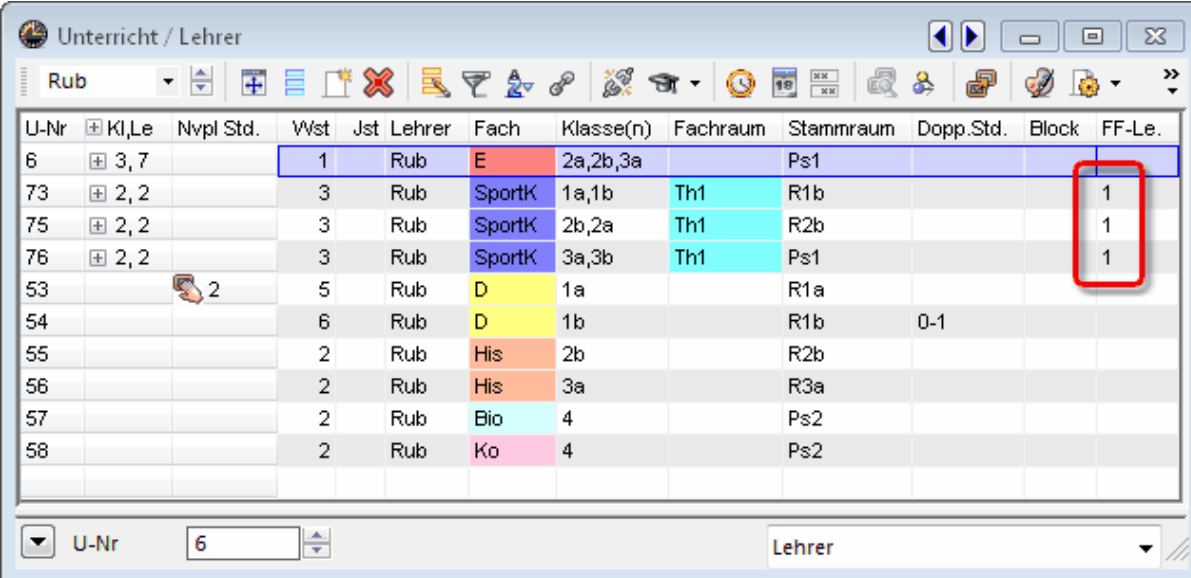
#### Teachers

You can also enter subject sequence requests for teachers. This is a useful function for subjects that require elaborate experiments to be set up. For example, a teacher who teaches Physics to three different classes of the same year may request to have these lessons scheduled in sequence to allow him to show the same experiment several times in a row.

Another example involves teachers who teach PE plus another subject. The PE lessons should, if possible, be scheduled in sequence so that the teacher is not obliged to change into PE clothes several times a day.

In both cases, enter the same numerical subject sequence code for the lessons you want to schedule in sequence (under *Subject sequence - Teachers* ).





The screenshot shows the 'Unterricht / Lehrer' window with a table of lesson sequences. The table has columns: U-Nr, KI,Le, Nvpl.Std., Wst, Jst, Lehrer, Fach, Klasse(n), Fachraum, Stammraum, Dopp.Std., Block, and FF-Le. The rows are numbered 6, 73, 75, 76, 53, 54, 55, 56, 57, and 58. The 'FF-Le.' column for rows 6, 73, 75, and 76 is highlighted with a red box and contains the value '1'.

U-Nr	KI,Le	Nvpl.Std.	Wst	Jst	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.	Block	FF-Le.
6	3, 7		1		Rub	E	2a,2b,3a		Ps1			1
73	2, 2		3		Rub	SportK	1a,1b	Th1	R1b			1
75	2, 2		3		Rub	SportK	2b,2a	Th1	R2b			1
76	2, 2		3		Rub	SportK	3a,3b	Th1	Ps1			1
53		2	5		Rub	D	1a		R1a			
54			6		Rub	D	1b		R1b	0-1		
55			2		Rub	His	2b		R2b			
56			2		Rub	His	3a		R3a			
57			2		Rub	Bio	4		Ps2			
58			2		Rub	Ko	4		Ps2			

### 6.12.2 Negative subject sequence

On the other hand, it may be desirable to prevent specific subject sequences. If this is the case, simply enter an alphabetic subject sequence code (letter from A to F). The optimisation tool will take into account that lessons with the same alphabetic subject sequence code should not be scheduled in sequence.

For pedagogical reasons, the Modern Languages subjects English (E) and French (F) should not be scheduled in sequence for class 3a. Enter the letter "A" in the column "Subject sequence – Classes" (see example).

U-Nr	Kl,Le	Nvpl	Wst	Jst	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.	Block	FF-Kla.
6	3, 7		1		Callas	Ch	2a,2b,3a		R2a			
43	2, 2		2		Callas	Ke	3a,3b		R3a	1-1		
76	2, 2		3		Arist	SportM	3a,3b	Th2	R3a			
79	2, 2		2		Ander	Wk	3a,3b	vWerkr	R3a	1-1		
1			4		Gauss	Mat	3a		R3a			
3	1, 2		2		Gauss	Gz	3a		R3a	0-1		
9			2		New	Ph	3a	Phys	R3a			
15			2		Hugo	Gw	3a		R3a			
22			4		Ander	D	3a		R3a			
29			1		Ander	Wk	3a	vWerkr	R3a			
50			2		Nobel	Rel	3a		R3a			
56			2		Rub	His	3a		R3a			
62			3		Cer	E	3a		R3a			A
96		3	3		JH	F	3a		R3a			A
67			2		Cer	Bio	3a		R3a			

The following details are required to ensure the correct treatment of subject sequences during optimisation:

Under "Scheduling | Weighting | Teachers"

- Respect subject sequence - Teachers and/or

under "Scheduling | Weighting | Classes"

- Respect class sequence - Classes

Under "Master Data | Subjects"

- Subject sequence (classes or teachers)

or

under "Lesson"

- Subject sequence (classes or teachers)

## 6.13 Class Clash Code (CCC)

Teachers, classes and rooms may never be double booked by the Untis optimisation algorithm. However, exceptions may make sense when it is certain that lessons of the class in question are attended by different students.

The students of class 1a attend *either* Choir *or* Orchestra, but none of the students attend both. Enter the same *numerical* CCC for both lessons (permitted values 1 - 9), e.g. "5" to instruct the Untis optimisation algorithm that the lessons Choir and Orchestra may be scheduled at the same time, but that this is not compulsory (see example on the following page).

2a - Klasse 2a (Hugo) Stundenplan (Kla1A)

	Montag	Dienstag	Mittwoch	Donnerstag	Freitag	Samstag
<b>1</b> 8:00 8:45	<b>D</b> <u>Cervantes</u>	<b>Tw.</b> <u>Curie</u>	<b>Ph</b> <u>Newton</u>	<b>E</b> <u>Cervantes</u>	<b>Mat</b> <u>Newton</u>	<b>Rel</b> <u>Nobel</u>
<b>2</b> 8:55 9:40	<b>Rel</b> <u>Nobel</u>		<b>Bio</b> <u>Cervantes</u>	<b>His</b> <u>Hugo</u>	<b>Gz.</b> <u>Newton</u>	<b>D</b> <u>Cervantes</u>
<b>3</b> 9:50 10:35	<b>Mat</b> <u>Newton</u>	<b>SportK.</b> <u>Rubens</u>	<b>His</b> <u>Hugo</u>	<b>D</b> <u>Cervantes</u>	<b>D</b> <u>Cervantes</u>	<b>E</b> <u>Cervantes</u>
<b>4</b> 10:45 11:30	<b>E</b> <u>Cervantes</u>	<b>Mat</b> <u>Newton</u>	<b>Mus</b> <u>Callas</u>	<b>Mat</b> <u>Newton</u>	<b>E</b> <u>Cervantes</u>	<b>Gw.</b> <u>Hugo</u>
<b>5</b> 11:40 12:25			<b>Ch.</b> <u>Callas</u>			<b>Bio</b> <u>Cervantes</u>
<b>6</b> 12:35 13:20	<b>Klavier</b> <u>Hugo</u>	<b>Ke</b> <u>Callas</u>		<b>Gw.</b> <u>Hugo</u>	<b>Chor.</b> <u>Gauss</u>	<b>Orch.</b> <u>Newton</u>
<b>7</b> 13:30 14:15	<b>Cello</b> <u>Callas</u>		<b>Klavier</b> <u>Anderse</u>	<b>Geige</b> <u>Aristotel</u>	<b>'SportK.</b> <u>Rubens</u>	
<b>8</b> 14:25 15:10					<b>Ph</b> <u>Newton</u>	

U-Nr	KI	Le	Nvpl	Std.	Wst	Ist	Lehrer	Fach	Klasse(n)	Fachraum	Stammraum	Dopp.Std.	Bloc	CCC
1	4	1			2		Hugo	Gw	1a,1b,2a,2b		R1a			K
37	3	7			1		Callas	Ch	2a,2b,3a		R2a			
34	2	1			1		New	Gz	2a,2b		R2a			
50	2	2			3		Rub	SportK	2b,2a	Th1	R2b			
53	2	2			2		Curie	Tw	2b,2a	Twr	R2b	1-1		
91	2	1			2		Gauss	Chor	2a,2b		R2a	1-1		1
92	2	1			2		New	Orch	2a,2b		R2a	1-1		1
33					4		New	Mat	2a		R2a			
35					2		New	Ph	2a	Phys	R2a			
36					2		Hugo	His	2a		R2a			
38					1		Callas	Mus	2a		R2a			
39					2		Callas	Ke	2a		R2a	1-1		
40					2		Nobel	Rel	2a		R2a			
41					4		Cer	D	2a		R2a			
42					4		Cer	E	2a		R2a			
43					2		Cer	Bio	2a		R2a			
93					2		Hugo	Klavier	2a		R2a	1-1		2
94					2		Ander	Klavier	2a		R2a	1-1		2
95					2		Arist	Geige	2a		R2a	1-1		2
96					2		Callas	Cello	2a		R2a	1-1		2

Let us assume that there are three subject groups. Each student chooses one of the groups and attends all the lessons offered within this group. Conflicts between the individual groups are therefore permissible. Assign *the same* CCC letter to all lessons that must not be in conflict with other lessons. Assign a different CCC letter to all lessons where conflicts are permissible.

	Subjects	CC
Group 1	French and Italian	A
Group 2	Chemistry and Physics	B
Group 3	Literature and Drama	C

Please note that entering a CCC *permits*, but does not *enforce* the creation of a conflict between lessons. Consequently, the diagnosis tool will not display an **NTP** (non-teach period) for classes when the lessons marked with the class conflict symbols A, B and C are **not scheduled at the same time**.

## 6.14 Timetable comparison

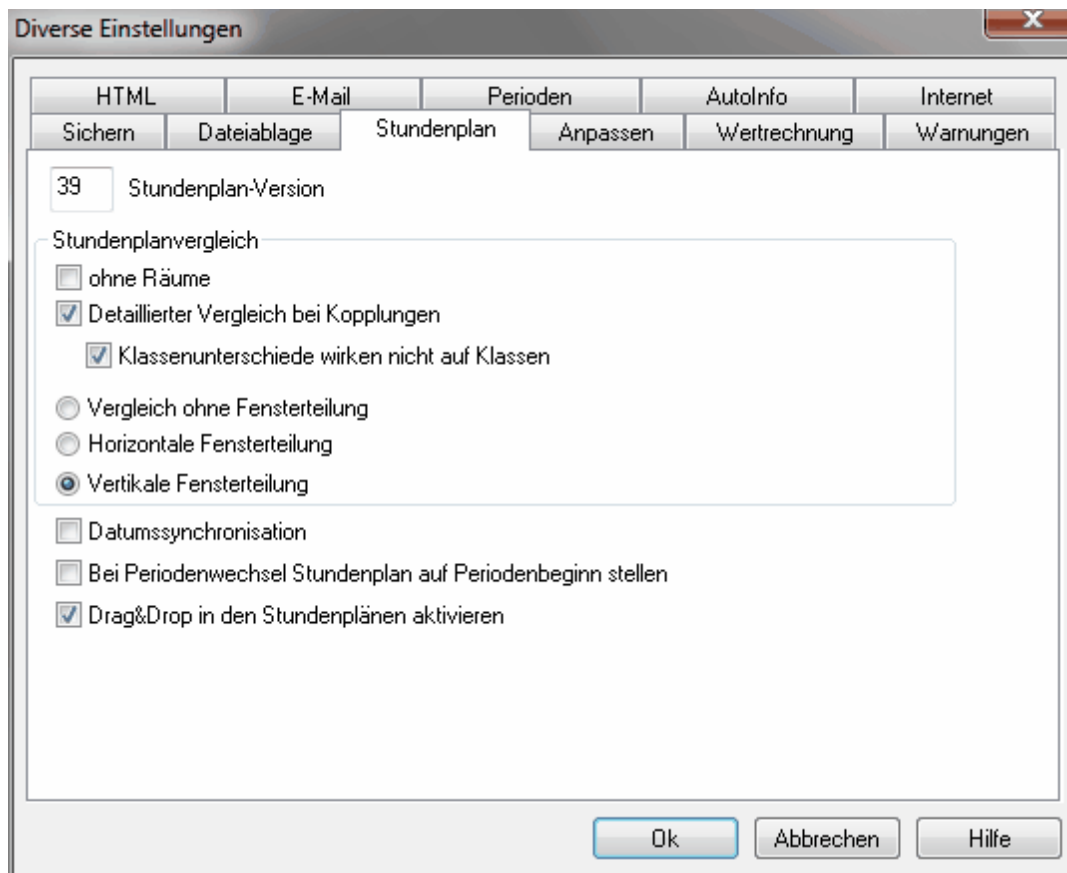
It is often useful and necessary to compare timetables with each other, for instance when you implement manual changes or when you want to compare different versions of your timetable after the completion of several optimisation runs. For this purpose, Untis provides the function "Timetable comparison" described in this chapter.

First, the chapter will introduce a number of settings options relevant for timetable comparisons.

- Comprehensive overviews, i.e. two timetables with format 20 or 30, provide an overview of the timetables of the entire school.

### 6.14.1 'Timetable' tab

Under "Settings | Miscellaneous", open the settings dialogue and select the "Timetable" tab. Here you will find an input block with different settings for comparing timetables.



The following settings options are available:

#### **Without rooms**

Check this box if you want the software to ignore individual rooms during the timetable comparison.

#### **Detailed comparison for couplings**

Activate this option if you only want to see the timetable differences for the elements of the selected coupling row, but not for all the elements of the selected lesson.

#### **Classes: ignore changes in couplings**

This option is only available when the previous option is active. If the timetable changes involve classes only, the changes are only displayed on the class timetables of the classes affected by the changes.

During a timetable comparison, a second instance of Untis is started. The next three settings concern the arrangement of the two windows.

#### **Comparison without window arrangement**

Select this option if you want to arrange the two windows manually.

**Tile horizontally**

Select this option if you want Untis to arrange the original timetable at the top and the modified version at the bottom.

**Tile vertically**

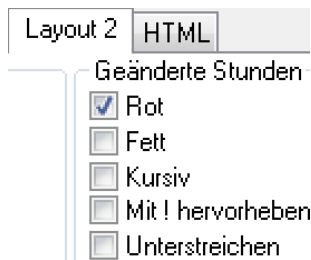
Select this option if you want Untis to arrange the original timetable on the left and the modified version on the right.

The selected window arrangement is not fixed and you can manually change the arrangement at any time. As soon as you close the second window, the original Untis timetable reverts to its former state (e.g. full screen).

If you have two monitors connected to your computer or later), you can display the two versions on two separate screens.

### 6.14.2 'Layout 2' tab

Another settings option allows you to specify how the differences between the two versions should be displayed. Open a timetable (e.g. "Timetable | Classes"), click on <Timetable Settings> and open the "Layout 2" tab to view and select different display options.



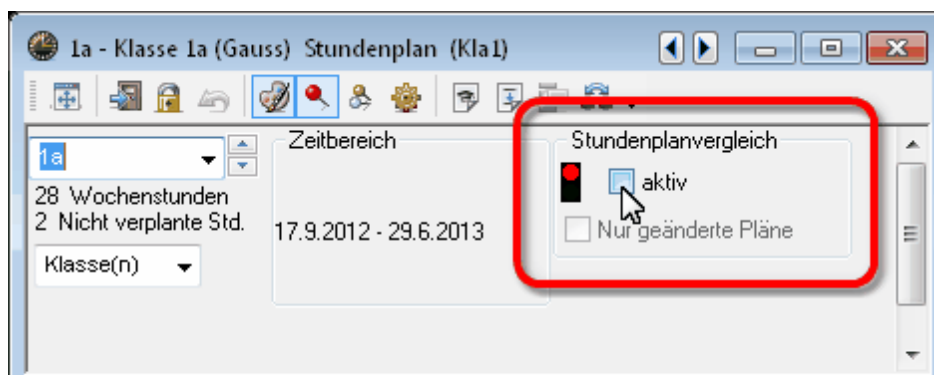
**Note:**

The <Timetable Settings> button can only be activated when no timetable comparison is active.

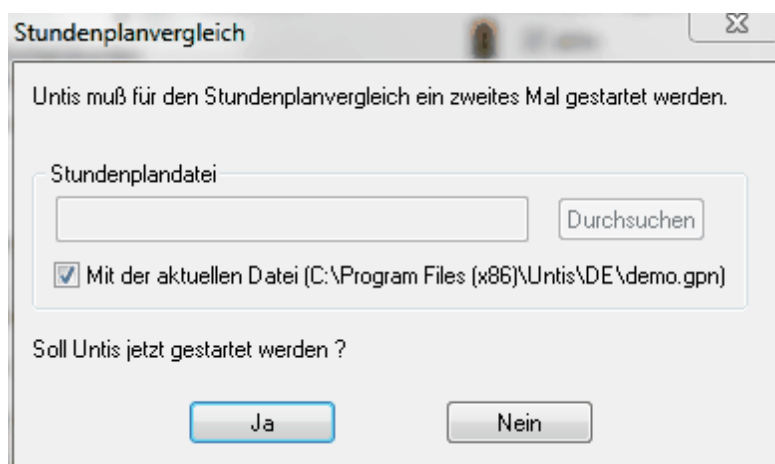
### 6.14.3 Starting timetable comparison

Start a timetable comparison as follows:

Open a timetable (e.g. "Timetable | Classes") and, if necessary, enlarge the upper part of the window – the details window – until the combo box "Timetable comparison" becomes visible. Activate the function by ticking the box with your mouse.



The timetable comparison dialogue window will appear and instruct you to start Untis a second time. Specify if you wish to open the current file a second time or if you want to open a different file.



The following list summarises the different items you can compare:

- Different files, i.e. timetables saved under different names
- Different school weeks (of the same file). Open the same file in both Untis versions and select two different weeks from the timetable display
- Different terms of the same file (for use with the Multiple Term Timetable module)
- Changes to the current work file since the file was last saved

**Note:**

The second timetable must have the same format and the same number of columns and rows as the first (an important factor when comparing timetables from different files).

Select the desired option and click on <Yes> to start Untis a second time. The two versions will be arranged as specified. You may have to move the navigation bar to the bottom or the right window edges to be able to view the entire timetable. The second version also displays a timetable.

#### 6.14.4 The process of timetable comparison

The two Untis timetable versions communicate with each other and exchange information. During this process, the traffic light situated next to the timetable comparison combo box is green.



When the timetable comparison function is active, the two timetables are synchronised. This means that you can scroll from class to class in one of the two timetables, and the other timetable automatically scrolls to the same class. Move the cursor from period to period and the second timetable will always display the same period.

The example on the following page shows an active timetable comparison. The RE lesson is highlighted because it is scheduled for different periods (left, Tue-5; right, Thu-5).



Untis MultiUser 2012 - demo - Testschule DEMO - Stundenplan 2012/2013

Datei Bearbeiten Stammdaten Unterricht Planung Stundenplan Berichte

Einstellungen Module Fenster ?

1a - Klasse 1a (Gauss) Stundenplan (K1a1A)

1a  
28 Wochenstunden  
2 Nicht verplante Std.  
17.9.2012 - 29.6.2013

Stundenplanvergleich  
☒ aktiv  
☐ Nur geänderte Pläne

	Montag	Dienstag	Mittwoch	Donnerst.	Freitag	Samstag
<b>1</b> 8:00 8:45	E Arist	Mat Arist	Gw. Hugo	Mus Callas	Mat Arist	Bio Cer
<b>2</b> 8:55 9:40	Mus Callas	E Arist	Spor Arist Spor Rub	D Rub	Rel Nobel	Mat Arist
<b>3</b> 9:50 10:35	Bio Cer	Ke Callas	Mat Arist	E Arist	E Arist	
<b>4</b> 10:45 11:30	Spor Arist Spor Rub		D Rub		D Rub	Gw. Hugo
<b>5</b> 11:40 12:25		---				D Rub
<b>6</b> 12:35 13:20						
<b>7</b> 13:30 14:15		Wk. Ande Tw JH				
<b>8</b> 14:25 15:10					Spor Arist Spor Rub	

Mit F1 erhalten Sie Hilfe. 0 / -

Untis MultiUser 2012 - demo - Testschule DEMO - Stundenplan 2012/2013

Datei Bearbeiten Stammdaten Unterricht Planung Stundenplan Berichte Einstellungen

Module Fenster ?

1a - Klasse 1a (Gauss) Stundenplan (Kla1A)

1a  
28 Wochenstunden  
2 Nicht verplante Std.

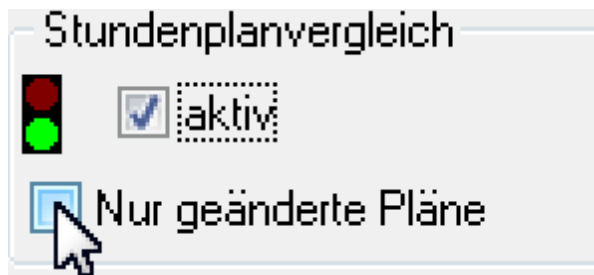
Zeitbereich 17.9.2012 - 29.6.2013

Stundenplanvergleich  
☒ aktiv  
☐ Nur geänderte Pläne

	Montag	Dienstag	Mittwoch	Donnerst.	Freitag	Samstag
1 8:00 8:45	E Arist	Mat Arist	Gw. Hugo	Mus Callas	Mat Arist	Bio Cer
2 8:55 9:40	Mus Callas	E Arist	Spor Arist Spor Rub	D Rub	Rel Nobel	E Arist
3 9:50 10:35	Bio Cer	Ke Callas	Mat Arist	E Arist	E Arist	Mat Arist
4 10:45 11:30	Spor Arist Spor Rub		D Rub	Mat Arist	D Rub	Gw. Hugo
5 11:40 12:25		Rel Nobel				---
6 12:35 13:20						
7 13:30 14:15		Wk. Ande Tw Curie				
8 14:25 15:10					Spor Arist Spor Rub	

Mit F1 erhalten Sie Hilfe. 0 / -

All three periods of German are also highlighted, the reason for which is shown in the period details window in the bottom part of the window. In contrast to the timetable on the left, the timetable on the right shows that a room has been allocated to the lesson. The room difference would not be displayed if the setting "Without rooms" had been activated.



Below the combo box „Timetable comparison“, you will see another combo box entitled "Only modified timetables". This function can only be activated when a timetable comparison is active. Checking this box automatically activates the function in both timetables. Untis proceeds to compare all the timetables of the selected element and displays a message box showing the number of timetables in both versions that contain differences. Close the message box by clicking on <OK>. When this function is active, you can only scroll through timetables that contain changes. Timetables with identical contents are no longer displayed.

The function "Timetable comparison" allows you to compare the following timetable formats:

- Single timetables, i.e. two timetables of format 01 or 10, are usually displayed side by side.

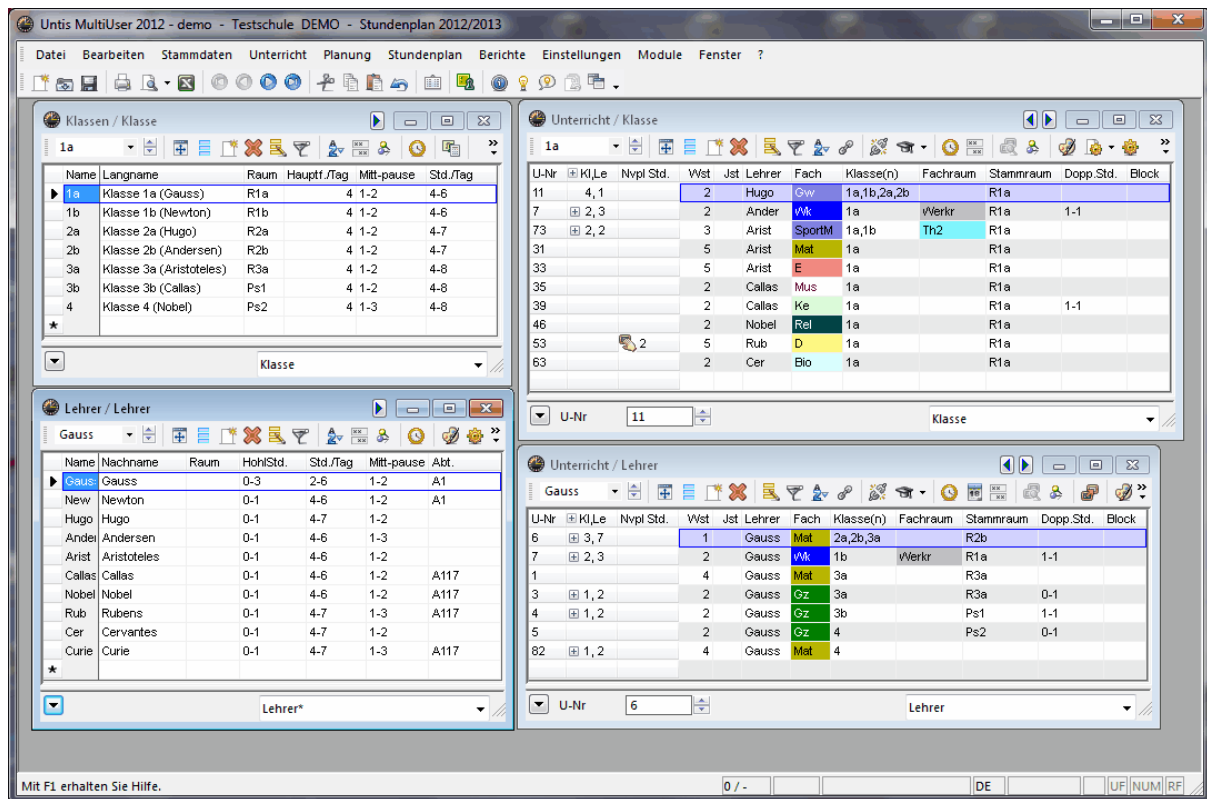
## 6.15 Window groups

Different timetabling tasks often require the instant availability of very different types of data. When assigning teachers to lessons, for example, you may find that an open scheduling dialogue is more a hindrance than a help. Equally, the presence of a weighting window on screen would unnecessarily clutter up the screen when all you are trying to do is some manual fine-tuning of the timetable.

Untis solves this problem with the *Window Groups* function that allows you to set up the screen for a specific timetabling task and save the window position so you can call it up again at a later point in time.

The following example will demonstrate how to create a windows group.

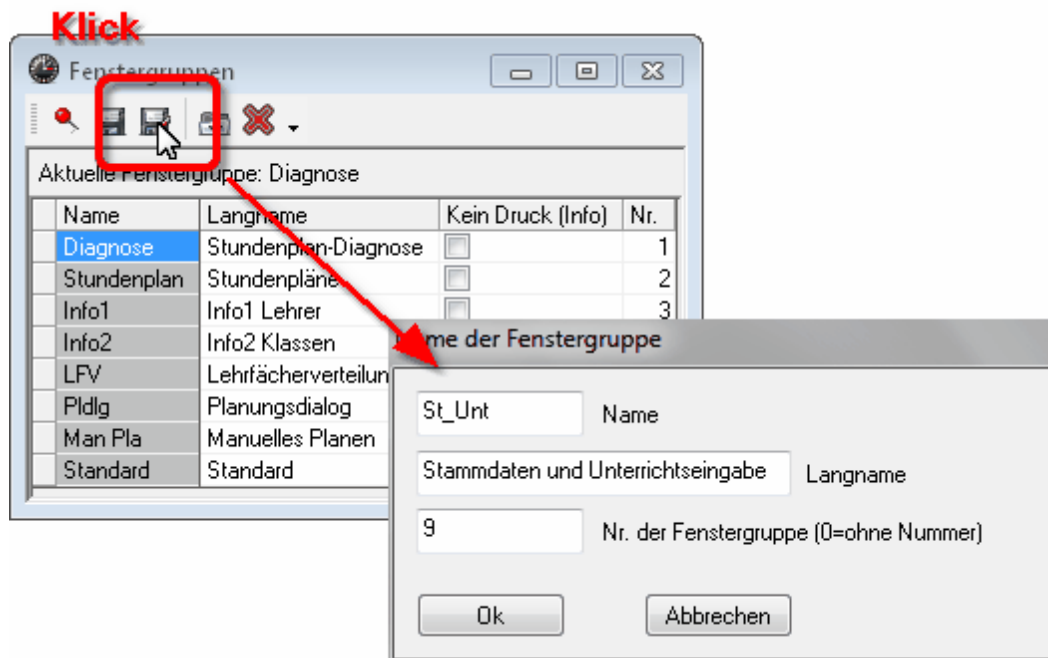
1. Open the demo.gpn file and arrange the windows as shown in the figure



- Click on the <Windows Group> button in the main tool bar. Alternatively you can open the window via the function "Windows | Window Groups".



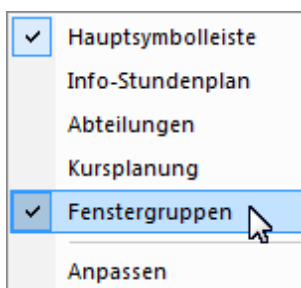
- Click on the button <Save window group as> and assign meaningful short and long names.  
Enter 9 in the field "Window group number" and confirm with <OK>.



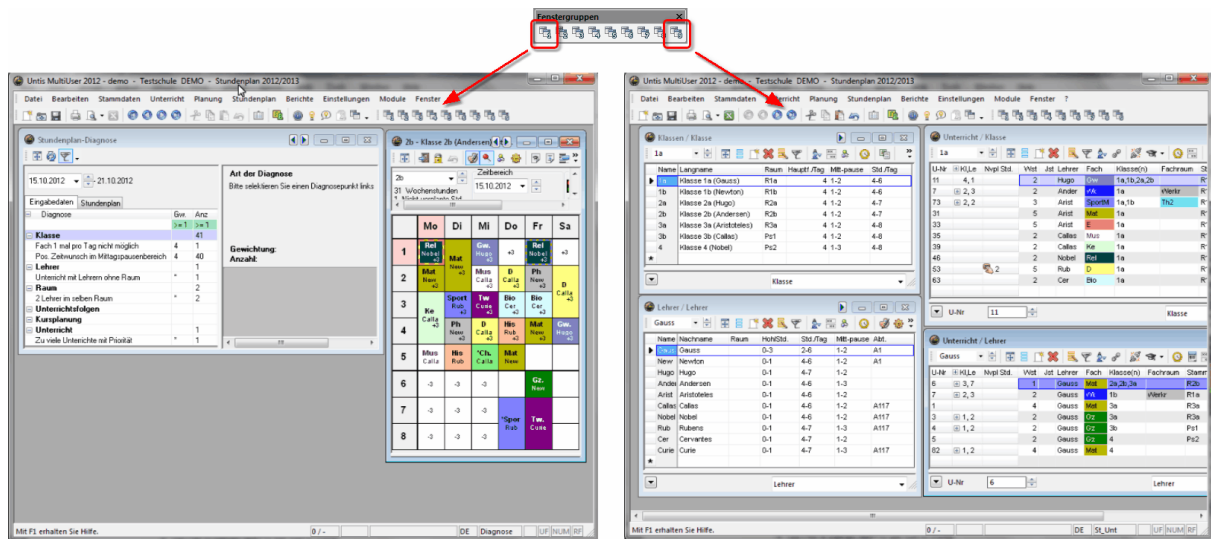
Please note that a button has been added to the "Window Groups" tool bar.



If your screen does not display the tool bar, please left-click on the main tool bar and check the box "Window Groups".



Now click on other button in the tool bar. Each button has been assigned a different window arrangement.

**Tip:**

You can transfer the window groups from one file to another at any time. To do this, open the file into which you wish to import the settings and select "File | Import/Export | Timetable/Input Format". On the "Import window groups" tab you can now navigate to the .gpn file from which you wish to import the window groups and start the import process.

## 6.16 Export to Microsoft Excel

Untis allows you to export reports – and, with some additional steps, timetables – to MS Excel.

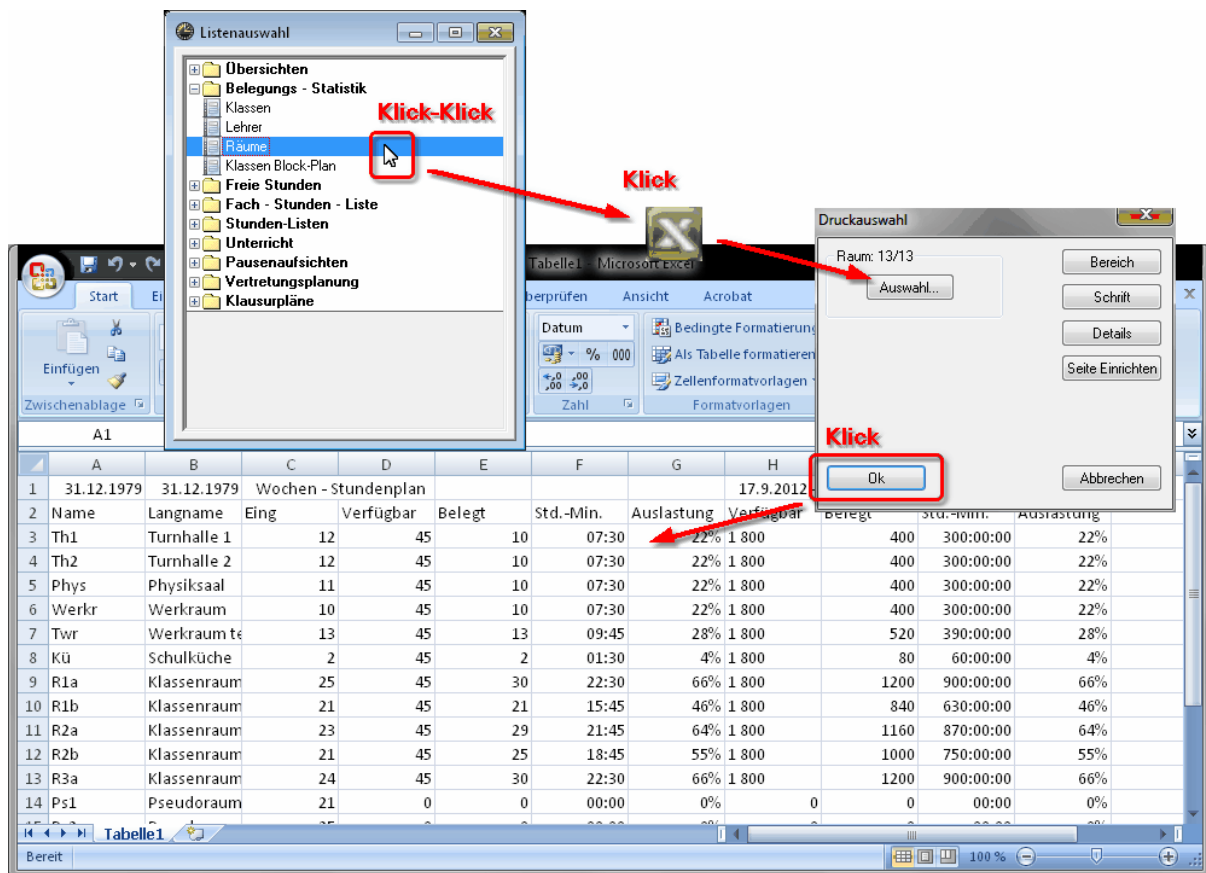
### 6.16.1 Exporting reports

Proceed as follows if you wish to export reports:

- Select the report you wish to export under "Reports | Select ..."
- Click on the <Excel export> button in the main tool bar and select the desired settings for export



- When you confirm with <OK>, MS Excel will be launched and the report you selected will be exported.



## 6.16.2 Exporting to Microsoft Excel

Untis allows you to export all timetables and reports to MS Excel.

### Exporting timetables

Proceed as follows:

- Right-click on the timetable and select "Copy in HTML format"

This copies the HTML commands required to display the timetable into the clipboard

```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML//EN">
```

```
<html>
```

```
<head>
```

```
<meta http-equiv='Content-Type' content='text/html; charset=iso-8859-1'><meta http-equiv='expires' content='0'><meta name='keywords' content='Stundenplan, timetable'>
```

```
<meta name='GENERATOR' content='Untis 2012'>
```

```
<title>Untis 2012 Timetable 2012/2013 TestSchool DEMO 2</title>
```

```
<style type='text/css'>
```

```
a {color:#000000;}
```

```
</style>
```

```
</head>
```

```
<body class='tt'>
```

```
<CENTER><font size='3' face='Arial' color='#000000'>
```

```
<TABLE border='0' cellpadding='1' ><TR><TD rowspan='2' width='5'><TD> TestSchool DEMO </
```

```
TD><TD rowspan='2' width='5'></TD><TD>Timetable 2012/2013</TD><TD rowspan='2' width='5'></TD><TD align='right'> Untis 2012 </TD><TD rowspan='2' width='5'> </TD></TR><TR><TD>For demo and test</TD><TD>Valid from: 10 October</TD> <TD align='right'>8.4.2011 9:27 </TD></TR></TABLE><BR></font>
```

```
<font size='6' face='Arial' color='#0000FF'>
```

```
1a
```

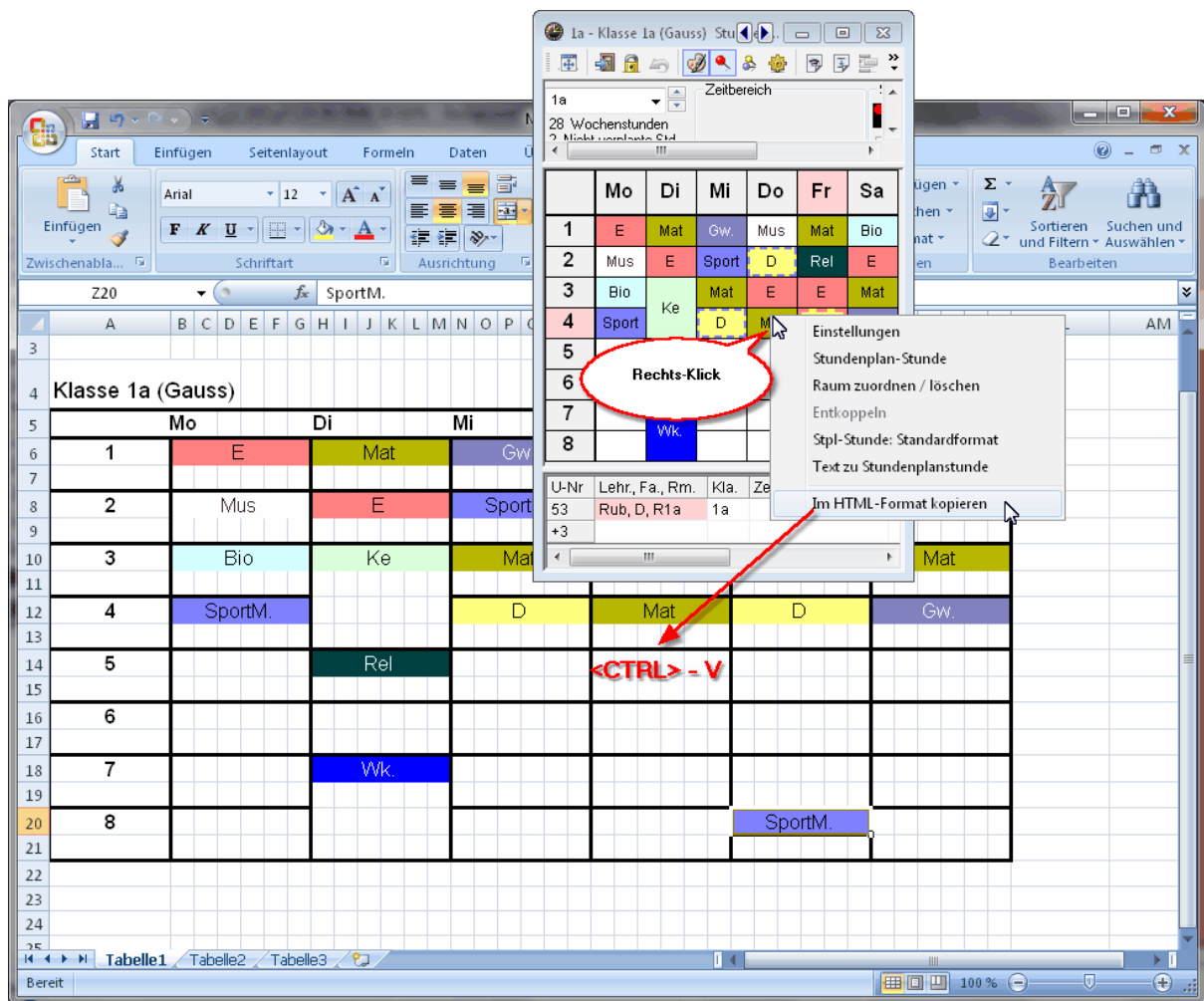
```
&nbsp;   </font> <font size='4' face='Arial'>
```

```
Class 1a (Gauss)
```

```
</font>
```

```
(etc.)
```

- Switch to MS Excel and select menu item "Edit | Paste" (or CTRL+V).



Please note that different versions of Excel interpret HTML code in different ways. The timetables generally require subsequent manual reformatting in Excel in order to improve their visual appearance.



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