

GRUBER & PETERS



Untis Manual Planning

grupet.at

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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.

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,
- show [swap suggestions](#) ,
- delete periods [directly in the timetable](#) ,
- [delete periods](#) and
- [allocate rooms](#) manually.

2.1 Scheduling periods

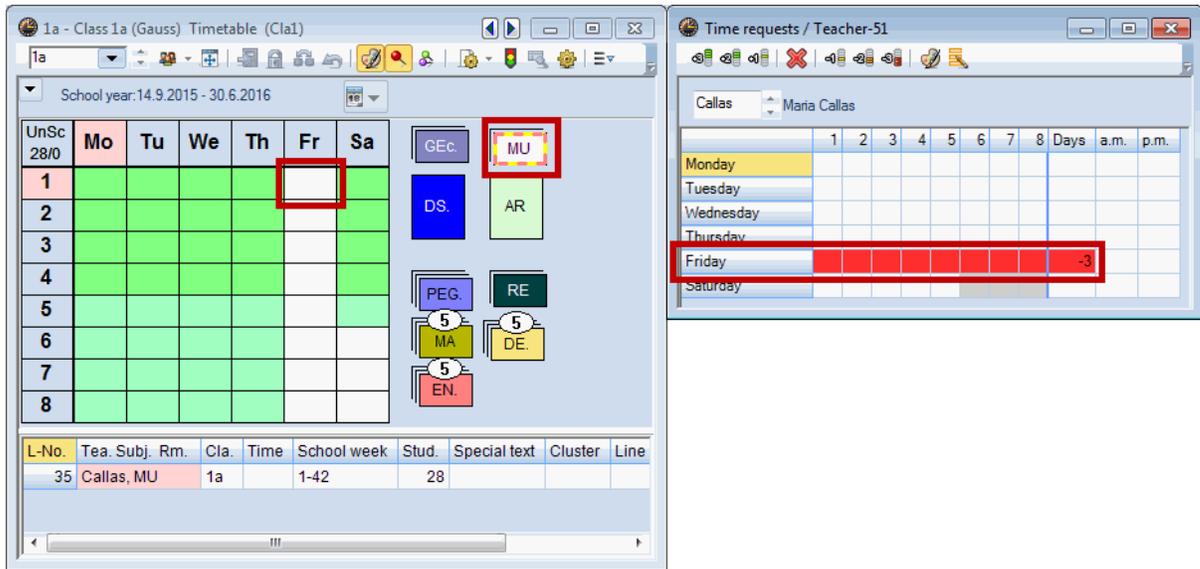
The aim of the first example is to place periods in an empty timetable and lock them to prevent the automated scheduling tool from moving them during a later optimisation run.

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 ("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			

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.

1a - Class 1a (Gauss) Timetable (Cla1)

1a

School year: 14.9.2015 - 30.6.2016

0 Periods/week
28 Unscheduled prds.

Time range
14.9.2015 - 30.6.2016

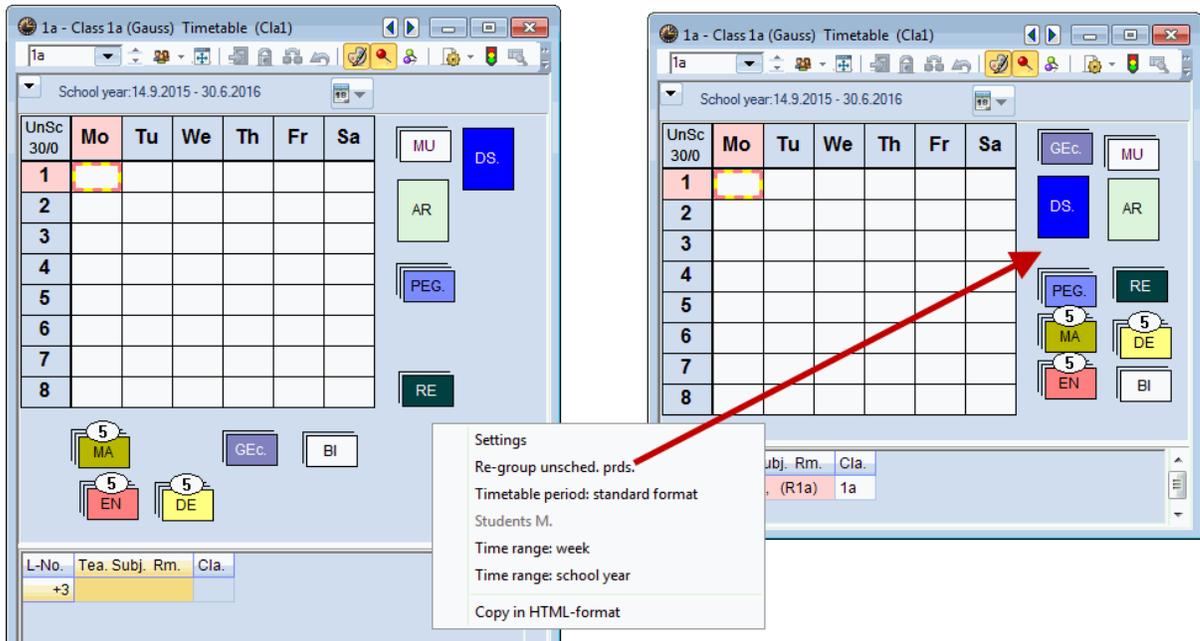
UnSc 28/0	Mo	Tu	We	Th	Fr	Sa
1						
2						
3						
4						
5						
6						
7						
8						

Stack of subjects (highlighted in red):

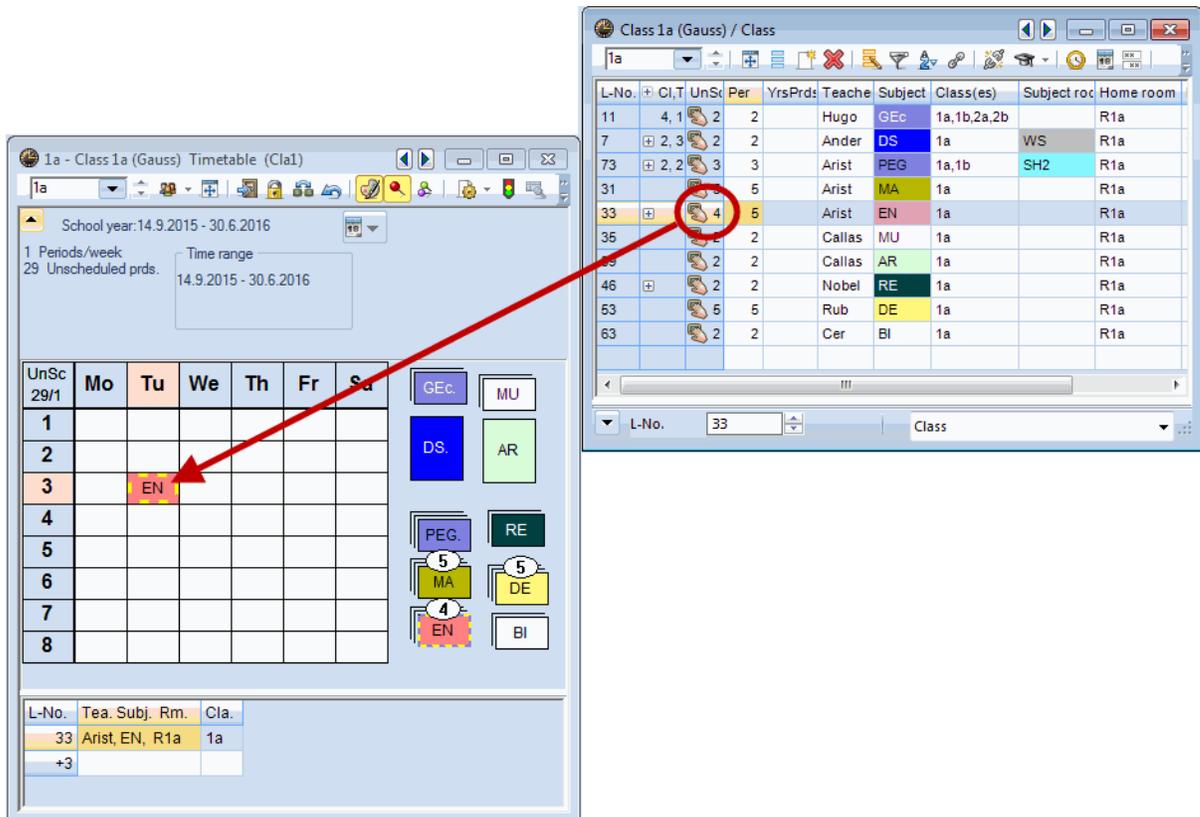
- GEC.
- MU
- DS.
- AR
- PEG.
- RE
- MA (5)
- DE. (5)
- EN. (5)

L-No.	Tea. Subj. Rm.	Cla.	Time	School week	Stud.	Special text	Cluster	Line
+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.](#))

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>).

The screenshot shows the '1a - Class 1a (Gauss) Time' window. The toolbar contains a 'Lock period' icon (a padlock) circled in red. The settings panel on the right has a checkbox 'Mark locked periods with a * (asterisk)' also circled in red. The timetable grid shows a period '7' on Tuesday (Tu) with the text '*DS.' circled in red. The period details table at the bottom left shows the following data:

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

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.

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				AR
L-No.	Tea. Subj.	Rm.	Cla.	
-3	1a Mo-7: -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			EN	
		DS.	Ctrl+Click	
BI		DS.	AR	

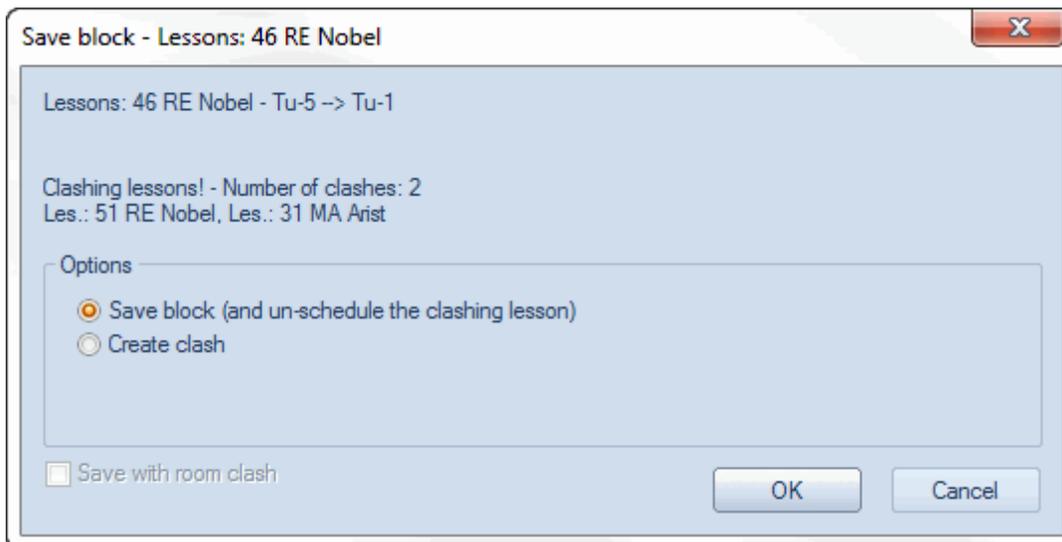
2.4 Swapping periods

If you select a period in the timetable and move it by holding down the left mouse button, already scheduled periods may show certain features:

	Mo	Tu	We	Th
1	EN Arist R1a	MA Aris R1a	GEc Hu R1	U Call R1a
2	MU Call R1a	EN Arist R1a	PEG Arist SH2 PEB Rub SH1	DE Rub R1a
3	BI Cer R1a	AR Call R1a	MA Aris R1a	EN Arist R1a
4	PEG Arist SH2 PEB Rub SH1	AR Call R1a	DE Rub R1a	MA Aris R1a
5		RE Nob R1a		
6				

a) No marking of the period

If you want to drag&drop Tu-5 of class 1a to Tuesday first period, you see that the first period is not marked, i.e. it is not suitable for a swap, because it would collide with the period. If you still drop it on Tu-1, Untis will ask you if you want to save the block and un-schedule the clashing lesson or if you want to create a clash.

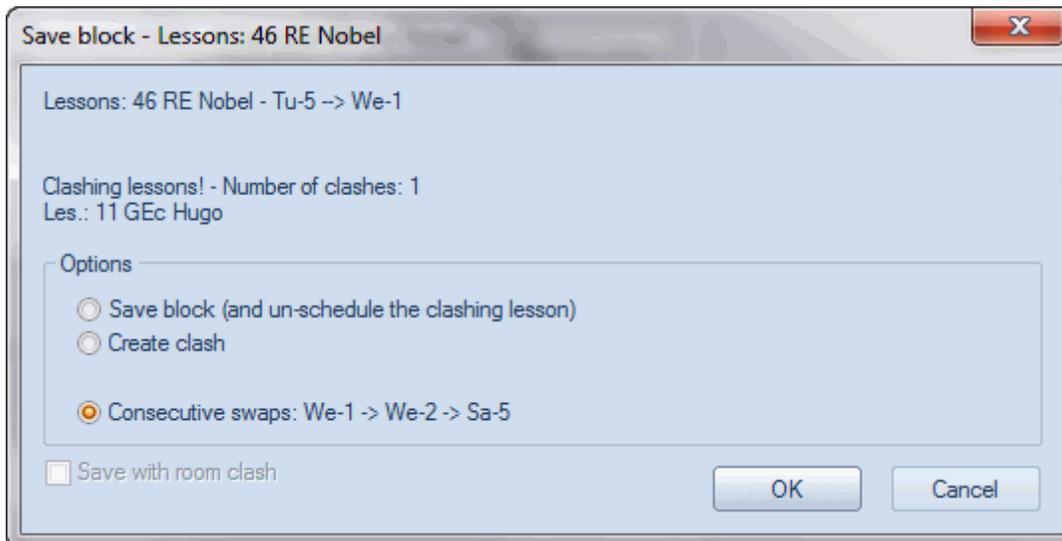


b) blue arrow

If a scheduled period has a blue arrow in the left top corner, a swap chain is possible with this period. In our example this would be e.g. Wednesday first period. In the timetable the swap chain is symbolised with red arrows.

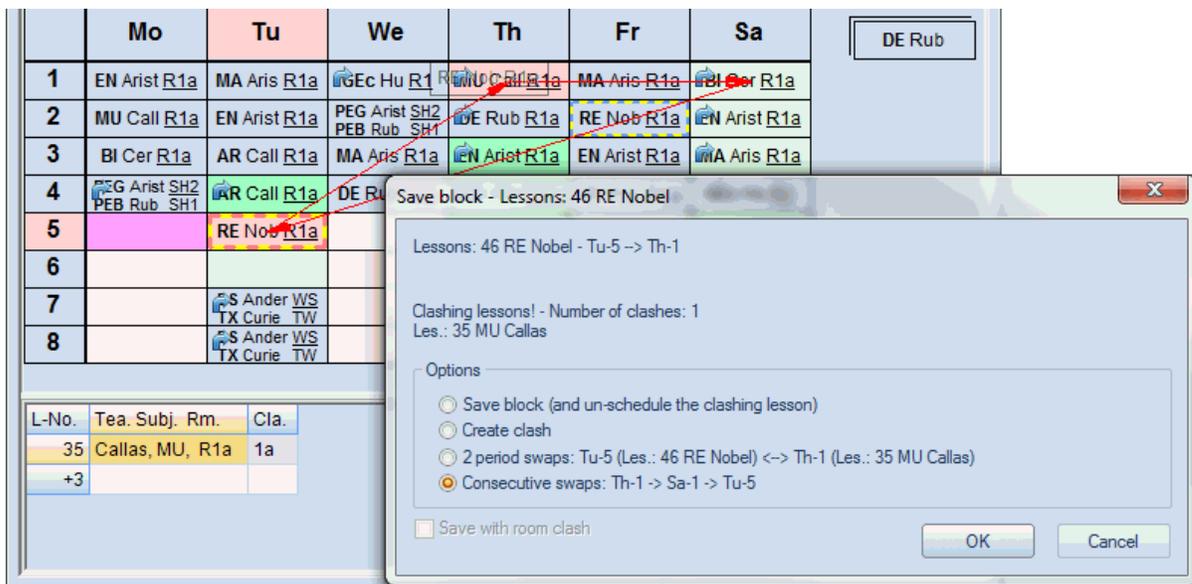
	Mo	Tu	We	Th	Fr	Sa
1	EN Arist R1a	MA Aris R1a	RE Nob R1a	MU Call R1a	MA Aris R1a	BI Cer R1a
2	MU Call R1a	EN Arist R1a	PEG Arist SH2 PEB Rub SH1	DE Rub R1a	RE Nob R1a	EN Arist R1a
3	BI Cer R1a	AR Call R1a	MA Aris R1a	EN Arist R1a	EN Arist R1a	MA Aris R1a
4	PEG Arist SH2 PEB Rub SH1	AR Call R1a	DE Rub R1a	MA Aris R1a	DE Rub R1a	GEc Hu R1
5		RE Nob R1a				
6						
7		S Ander WS TX Curie TW				
8		S Ander WS TX Curie TW			PEG Arist SH2 PEB Rub SH1	

If you drop the period and confirm, the periods will be swapped.



c) blue arrow and green background

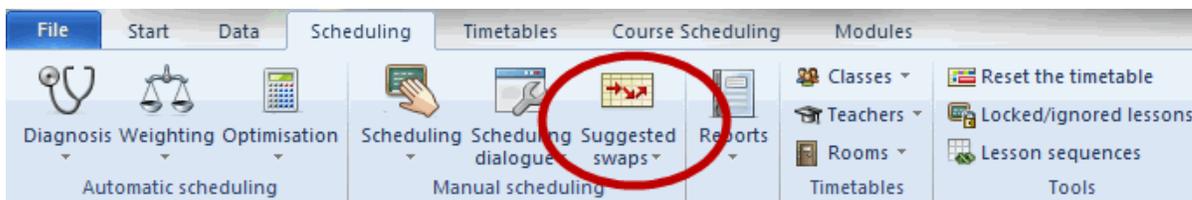
Periods with a green background are also suitable for 2 period swaps (e.g. Th-1). If you drop a period on such a position, in the appearing dialogue you can decide if you want to have the 2 period swaps (Tu-5 with Th-1) or if you want to make consecutive swaps.



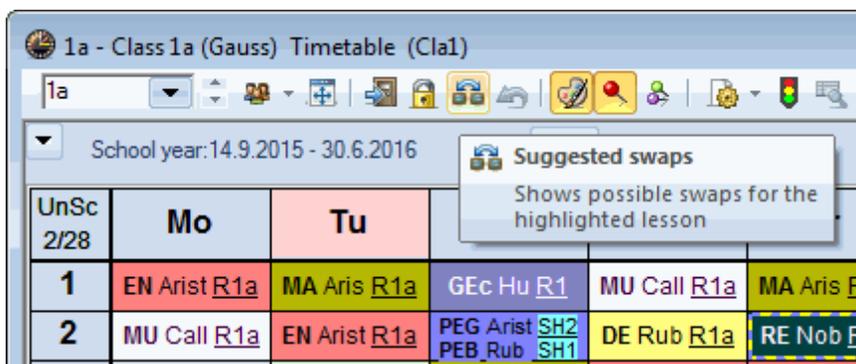
2.5 Swap suggestions

In addition to the swap suggestions shown in the timetable with the drag&drop function there is a separate function providing you with additional possibilities.

Via the 'Scheduling' tab you can open a window group for 'Suggested swaps'.



Alternatively this function can be accessed via the <Suggested swaps> button for each individual timetable of a class.



2-way, 3-way and 4-way swaps are suggested for the class. The 'Gain' column indicates whether the timetable would improve (positive values) or deteriorate (negative values) based on the data entered.

The 'Conseqnc.' column displays the worst conflict that the respective swap 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.

The 'Suggested swaps' window displays the following data:

	Conseqnc.	Leap cl.	Gain
1	Subject twice a day	1b	253
2	Subject twice a day	2a	223
3	Subject twice a day	2a	142
4	Teacher not available	2a	123
5	Subject twice a day	2b	203
6	Day time requests		-60
7	Teacher not available	3b	61
8	Subject twice a day		-288
9	Subject twice a day		-341
10	Teacher not available	2a	201
11	Subject twice a day		-466
12	Day time requests	2a	94
13	NTPs		-690
14	NTPs		-914
15	Subject twice a day		-992

The timetable grid shows the following periods:

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

With the <Refresh> button the swap suggestion is adjusted to the active period in the timetable.

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-4. 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 three windows from a scheduling application. The left window, titled 'Suggested swaps', contains two tables. The top table lists swaps with columns for 'Conseqnc.', 'Leap cl.', and 'Gain'. Row 4 is highlighted with a red box, showing 'Subject twice a day' with leap class '1a' and a gain of 238. The bottom table shows 'Double period error' for row 1 with a gain of -66 and a total of 172. The middle window shows a timetable for '1b - Class 1b (Newton)' with columns for days of the week (Mo-Sa) and rows for periods (1-8). Red arrows indicate a swap between period 4 on Monday and period 5 on Tuesday. The right window shows a timetable for '1a - Class 1a (Gauss)' with similar columns and rows, also showing a swap between period 4 on Monday and period 5 on Tuesday.

Only different teachers

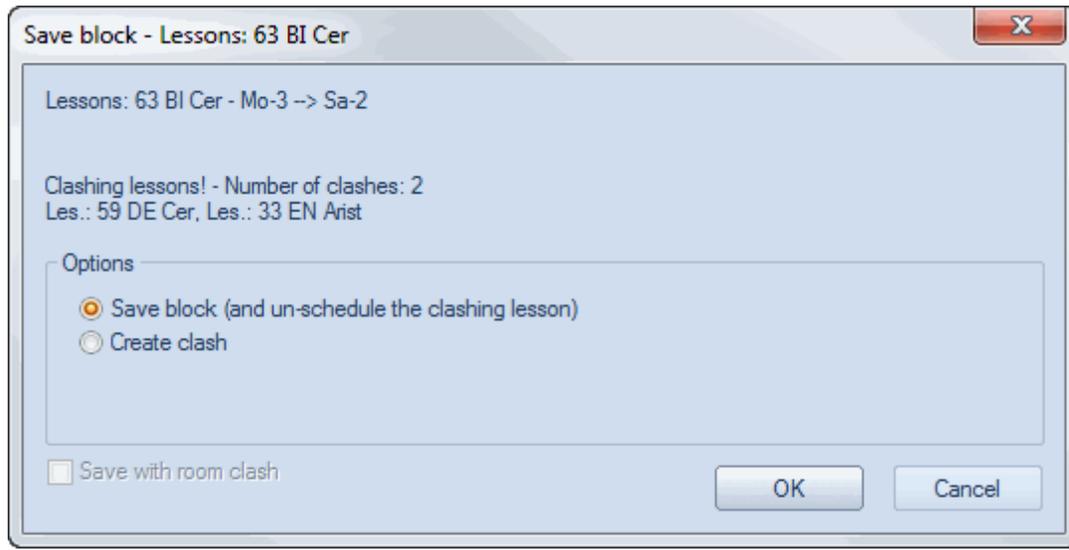
If a teacher takes a class for more than one subject, it is often undesirable for swaps to be offered between these subjects. Checking the 'Only different teachers' box results in such swaps not being displayed.

2.6 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.

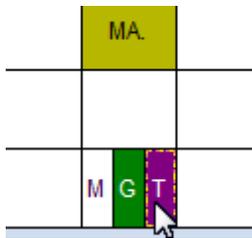
If you decide to drop the period in such a cell, a window will appear showing the following two options:

- <Cancel> - cancels the move.
- <<Save block> - the 'dragged' (i.e. active) period will be scheduled and the original period will be unscheduled.
- <Create clash> schedules the period with class and perhaps even teacher clashes. If you select 'Save with room clash' the room will be scheduled twice, as well.



The period details window displays all the elements of the lessons scheduled at this time. Display conflicts in the timetable (e.g. courses in the same cluster) by activating the option "Separate periods in case of clash" ("Layout 2" tab under <Timetable-Settings>). Please refer to chapter "Layout 2" in the section "Timetable display / Layout 2").

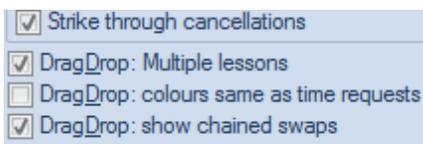
Each of these lessons can be selected and moved separately.



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 "DragDrop: Multiple lessons" on tab "Layout 2" in the <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 (or clashes), then hold the <CTRL> key and click on the respective period. You can move

all lessons in this period in a single operation.

	Mo	Tu	We	Th	Fr	Sa	Su
1	k1 ku2	M1	L1 C E2	E1 PH CH C PH L1			
2	E1	e1 m2	ru bio ch	sm1 sw1 k1 ku2			
3	ru bio ch	Bl W G1	d1 d3. d2	Bl W G1 g m k ev			
4	Bl W G1	d2 eth inf	ch2 m1	ru bio ch e w d or			
5	ch2 m1	E1 PH CH	M1 m2	M1 m2 M1 E1			
6	C E P L	L1 E2	PH1 E1	L1 E2 G1			
7	d3.		sn1 sw1	d1 d2 eth inf			
8	ek wr orc	g m k ev	Bl W G1	ch2 m1 e1 E2			
9	bio1	d1 g2 k2	bio1 e1	d3. d2 WR BIO			
10	d1 g2 k2		E1 P C	e2 bio1			

Ctrl+Click (circled around the 'E1' cell in period 1, Thursday)

Drag (arrow pointing from the circled 'E1' cell to the 'E1' cell in period 10, Wednesday)

Drop (text below the 'E1' cell in period 10, Wednesday)

Decoupling

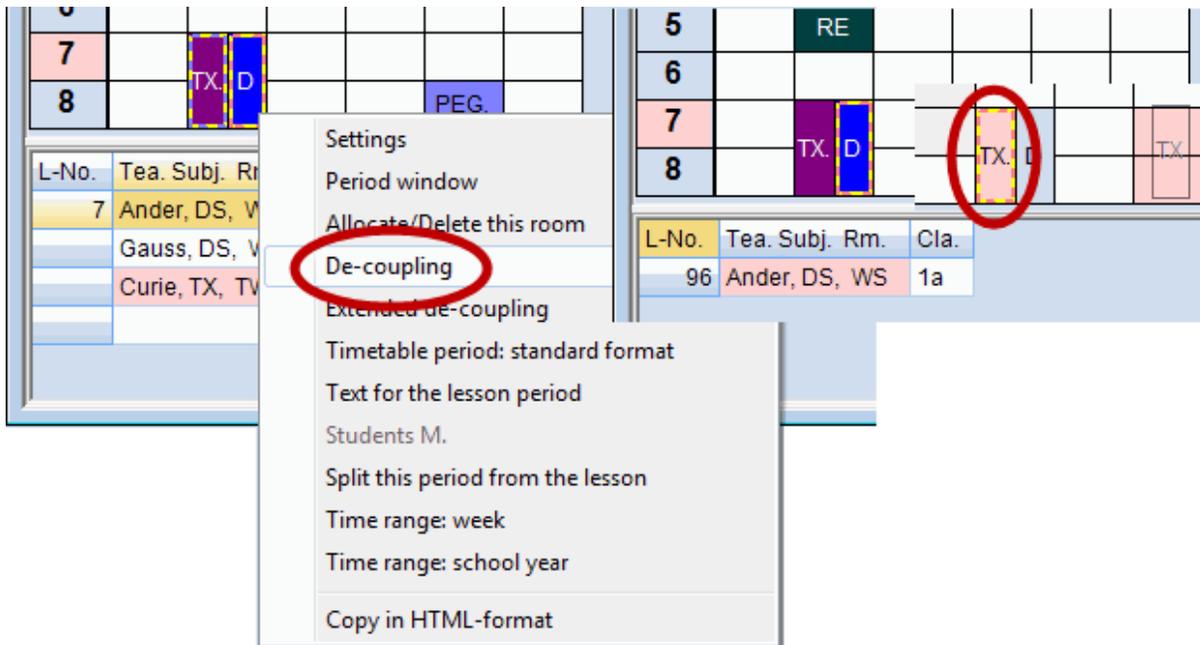
A coupled lesson can be decoupled direct in the timetable and the new lesson that is thereby created can be scheduled in another position.

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.

2.7 Decoupling in the timetable

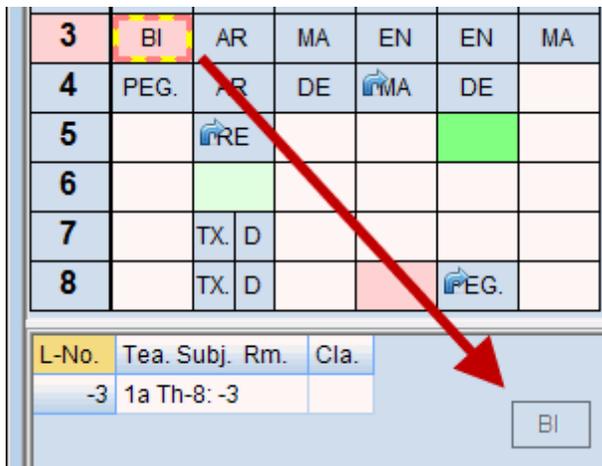
A coupled lesson can be decoupled directly in the timetable and the new lesson that is thereby created can be scheduled in another position.

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2.8 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.



Alternatively you can unschedule an active period by pressing the button.

2.9 Allocating rooms

You can also manage room allocation directly in the timetable window. Use the <Allocate/delete this room> button or press <CTRL>+R 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".

Allocate/Delete this room

Allocate the room to
 single period

Lessons: 67: Tu-3

Required capac.: 28

Available rooms

Also show occupied rooms

Buttons: Delete room, Allocate m., Close

Planned	Actual	Tea.
R3a		Cer

R1a
 Class Room 1a
 Room capacity: 36

Rm.	Cap.	Alt. Rm	Alt. HRm
R1a	36	✓	
R1b	30	✓	
R2a	32	✓	
R2b		✓	
R3a		✓	
HE1	36		
PL			
Ps1			
Ps2			
SH1			
SH2			
TW			
WS			

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.

		Monday							
		1	2	3	4	5	6	7	8
Sports					Rub.				
Sports	New.		Rub.		Rub.				
Physic					New				Arist
Works					Curie.				
Textile					Curie.				
Home									

2.10 Assessing the active period

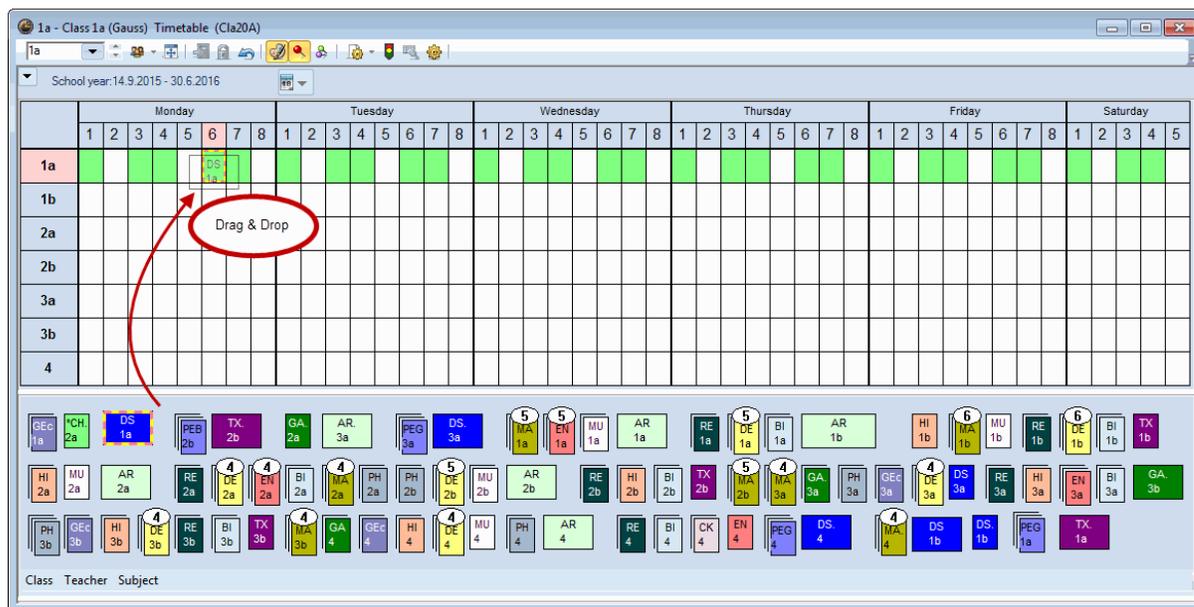
If you want to move a period, for example from Mo-1 to T-3 you can easily do this via drag&drop. However, how do you find out, if it is possible to fill a non-teaching period with an already scheduled lesson?

Click on the position you want to fill in the timetable and hold the left mouse button down for at least two seconds, then move the mouse. Scheduled periods which can be moved to this position will be shown in green.

UnSc	2/28			Fr	Sa
1	EN		MU	MA	BI
2		EN	DE	RE	EN
3	BI		MA	EN	MA
4	PEG.	AR	DE	MA	GEc.
5		RE			MU
6					
7					
8		DS.		PEG.	

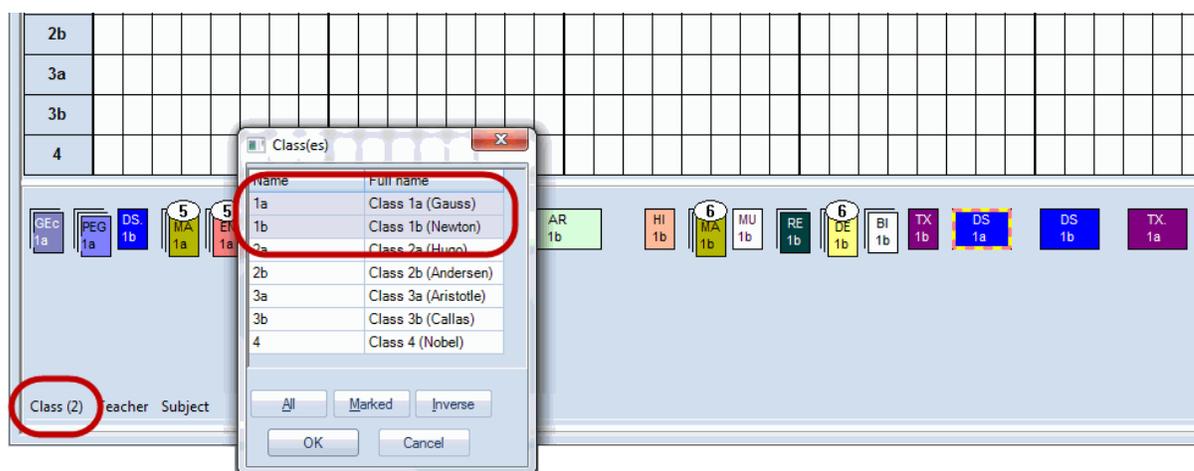
2.11 Planning in the overview timetables

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.



The unscheduled periods are displayed as little cards below the timetable and can be scheduled via drag&drop.

You can reduce the display to single classes, teachers or subjects in order to have a better overview. You can filter, for example all unscheduled sports lessons or single class levels.



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 timetable for class 1A will open displaying additional information relevant for scheduling.

The screenshot shows the 'Les.:53 - 1a Scheduling timetable' window. The 'Lessons' sidebar on the left shows lesson 53 selected, with dates 19.9.2015 - 30.6.2016 and subject DE. The 'Unscheduled' tab displays the following table:

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

The main timetable grid shows lesson periods 1-8 across days Mo-Sa. Lesson 53 (Rub, DE) is scheduled in periods 2 and 4 on Friday. Other lessons include EN, MA, GEc, MU, RE, BI, AR, PEG, DE, and DS.

The bottom table shows details for lesson 33:

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 see the timetable of class 1a.

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.

The screenshot shows a window titled "Les.:53 - 1a Scheduling timetable". It features a "Lessons" list on the left with lesson 53 selected, showing dates from 19.9.2015 to 30.6.2016 and subject "DE". The main area contains a table of unscheduled lessons:

Les.	Uns	Time	Cl.	Tea.	Sub.
53	2		1a	Rub	DE
30	1		1b	Arist	MA
34	1		2b	Callas	DE
21	1		4	Hugo	DE

Below this is a weekly timetable grid with days Mo to Sa and periods 1 to 8. The cell for Thursday, period 1, containing "MU", is circled in red. A red box highlights a details window for lesson 53 (Rub, DE, R1a, 1a) and lesson +3. Red text labels "active education" and "prevented education Thursday-1" are overlaid on the image.

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 "Classes | Master data").

You can schedule the active lesson in a period if a field is free.

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

Time range	Number	Time request
Afternoons	3	Blocked, keep free without exception (-3)

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" .

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.



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>

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').

3.5 Deleting periods

Deleting periods Delete scheduled periods by selecting the period and clicking on <Delete Period>  or by pressing the key. The lesson will appear in the "Unscheduled" window again. (Alternatively, delete the active lesson with a double click.)

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":

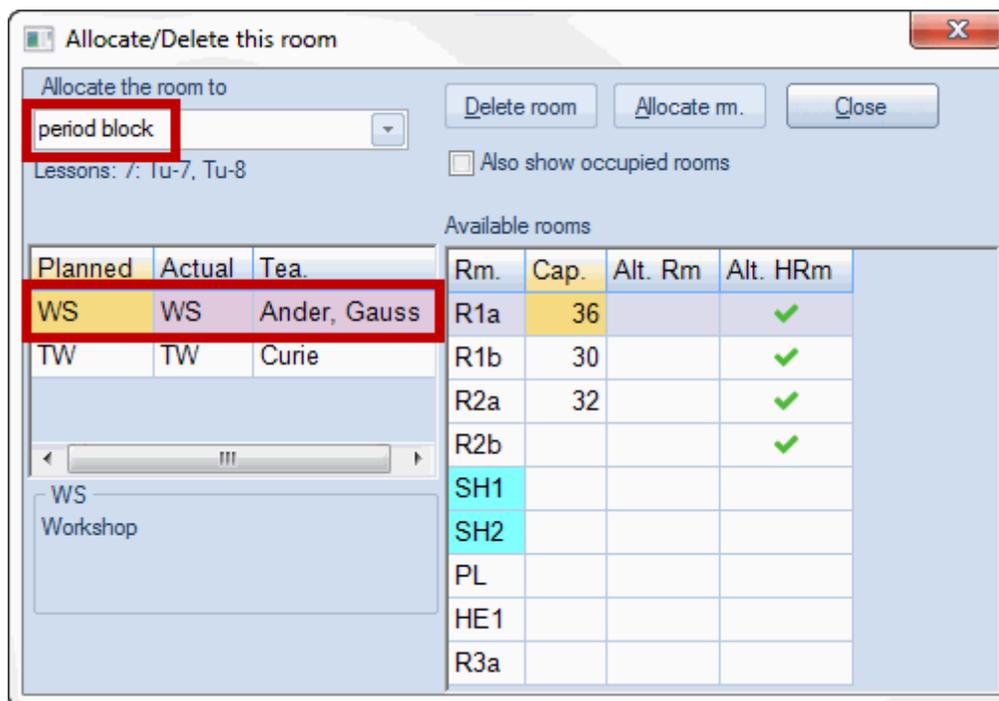
- a) a single period
- b) the period block
- c) all periods of the lesson

Planned the desired room entered for the lesson

Actual the room actually planned

Tea 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.



The pane on right lists the rooms available. The columns indicate:

Rm.: The (short) name of the room

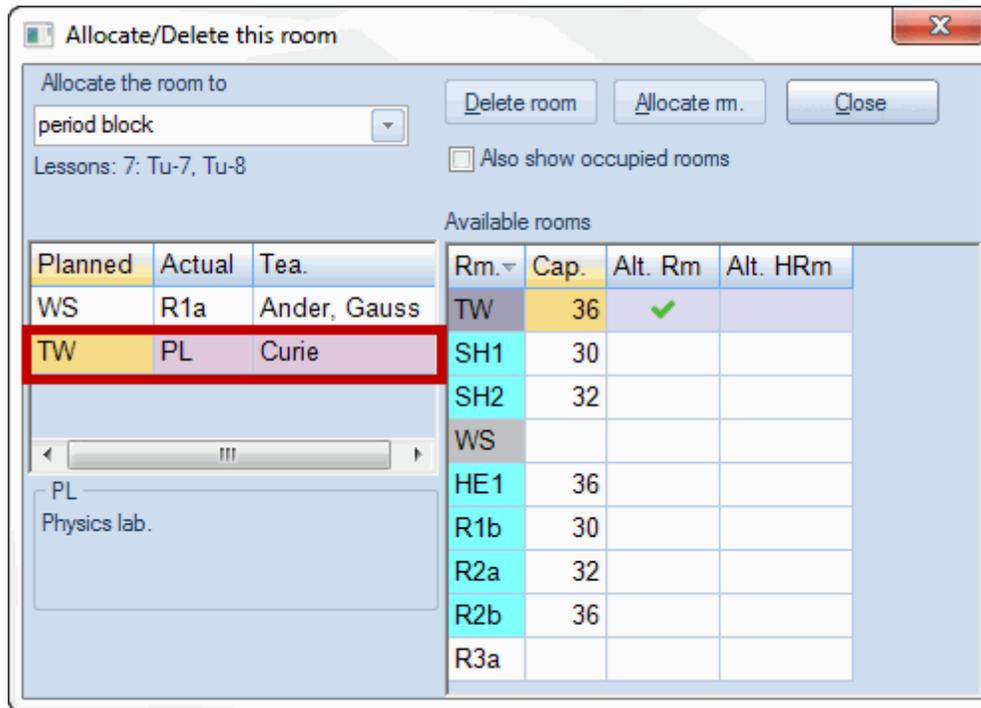
Cap.: The capacity of the room (if defined in the master data)

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.



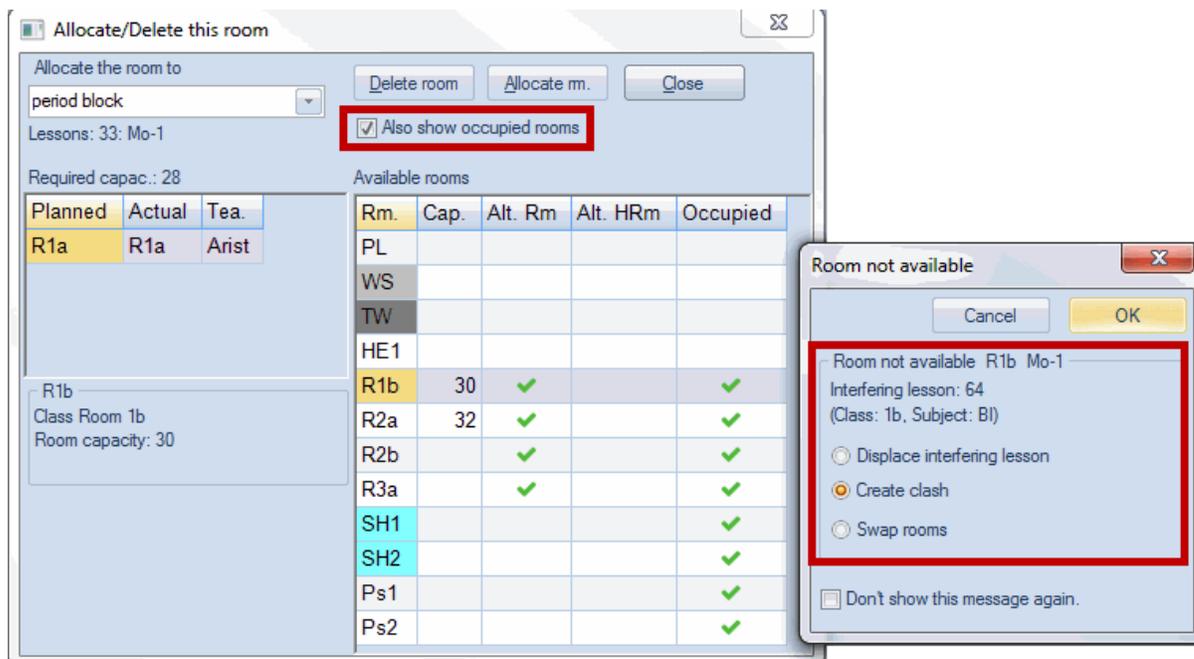
The scheduling timetable details window will now display the newly allocated rooms for periods 7 and 8. The original rooms entered for the lesson appear in parentheses.

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

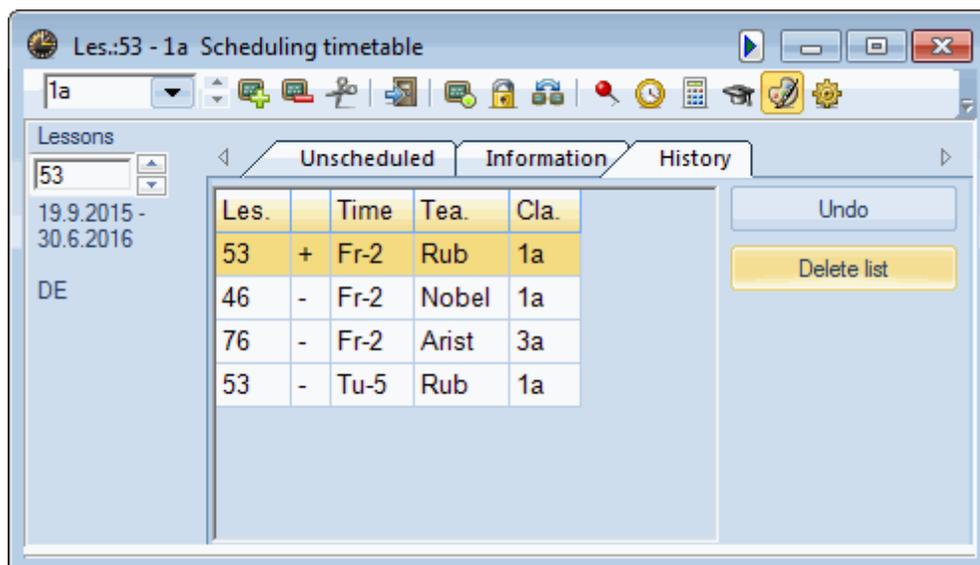
If you select the option "Also show occupied rooms" in the room allocation dialogue, you will also see those rooms which are occupied in the current period. If you wish to assign one of these rooms you can

- create a room conflict,
- force a lesson currently scheduled in the room from the room or
- perform a room swap.



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 and the entering of the new planning steps starts again.



All the functions described in chapter "Scheduling timetable" can also be called from the scheduling dialogue.

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 next to each other and the single elements (teachers, classes, rooms) in rows below each other.

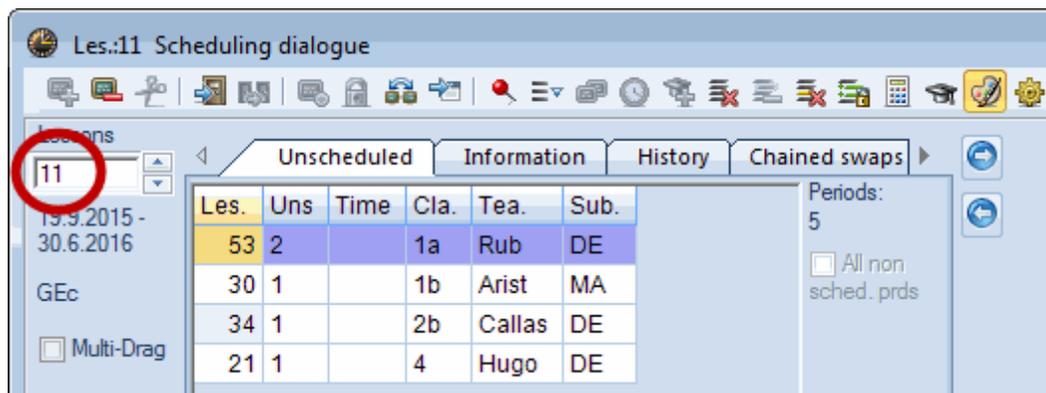
4.1 General

The following example provides an overview of the type of information displayed in the scheduling dialogue

- Open the file demo.gpn and then "Scheduling | Scheduling Dialogue".

4.1.1 The selection field

The selection field of the lesson shows from the view of which lesson information is displayed. In this case it is lesson 11.



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 refer to 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

4.1.3 Lesson search

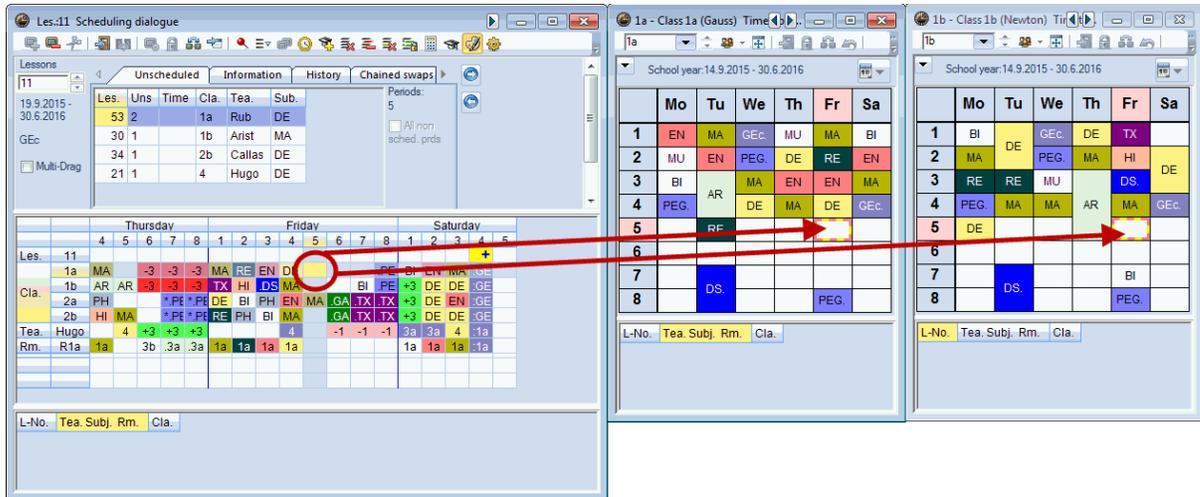
Instead of entering a lesson number, you can use the selection field to search for a particular lesson by entering a combination of details (classes, teachers and/or subjects involved), separated by a comma.

- 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

4.1.4 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.



4.1.5 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										
		1	2	3	4	5	6	7	8	1	2	3
Les.	79											
Cla.	3a	HI	EN	PEG	GA	MA		RI		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									4	4	
	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 directly in the scheduling dialogue by clicking on the <Delete period> button or by pressing the key or modified in the time request window.

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.

4.1.7 '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.

4.2 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.



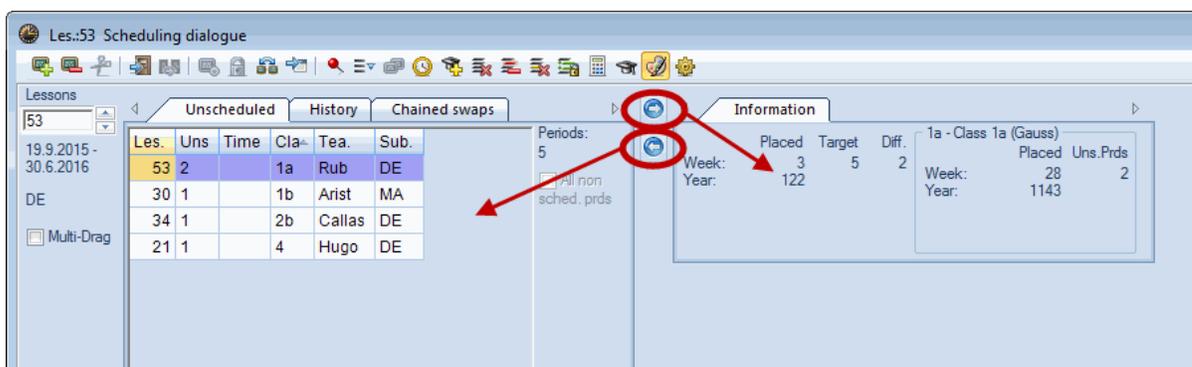
Window in the background

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.



4.3 Scheduling functions

In the scheduling dialogue several functions are available for you:

- [Scheduling periods](#)
- [Deleting periods](#)
- [Scheduling periods with clashes](#)
- [Moving periods with drag & drop](#)
- [Undo](#)
- [Allocating rooms](#)
- [Displaying alternative rooms](#)
- [Activate new lesson](#)
- [Locking periods](#)
- [Optimisation](#)
- [Assessing the active time slot](#)
- [Replacing teachers](#)

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 <Ins>
- Via the context menu (right mouse button)
- Using drag & drop in the grid view from the list of unscheduled periods or from the lesson view

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 key
- Via the context menu (right mouse button)
- Using drag & drop in the period details window

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.

**4.3.3 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".

4.3.4 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.

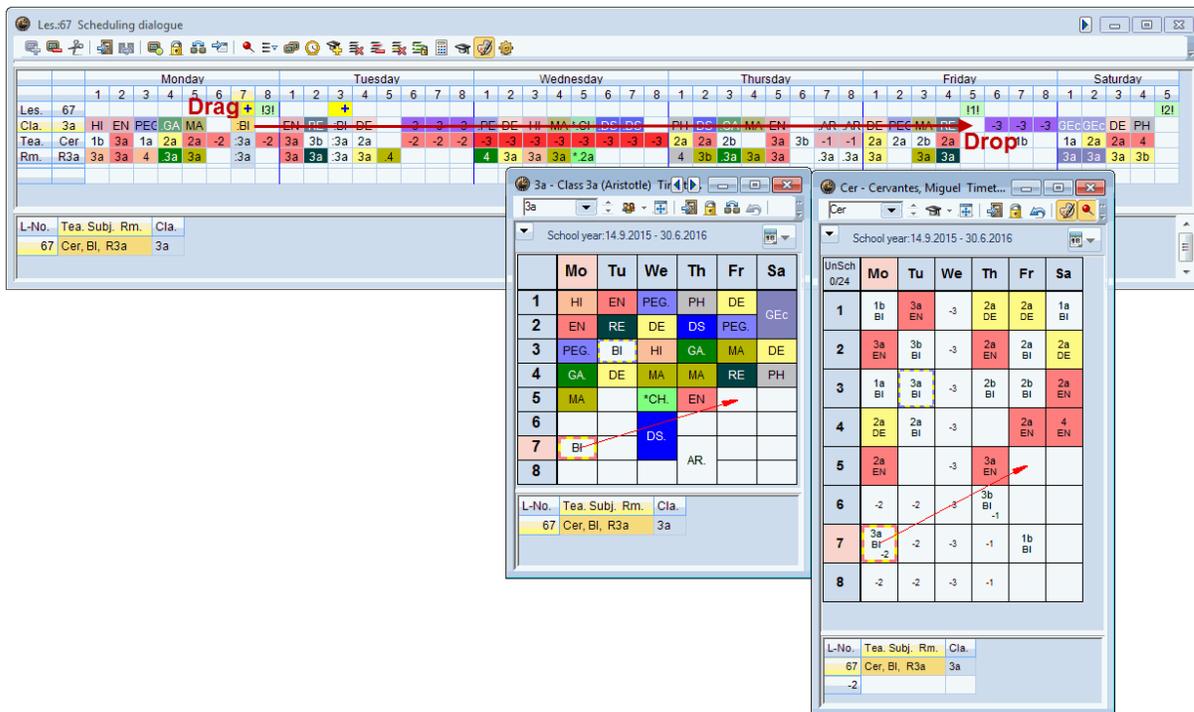
All periods where the lesson can be scheduled are highlighted green in the lesson row.

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.

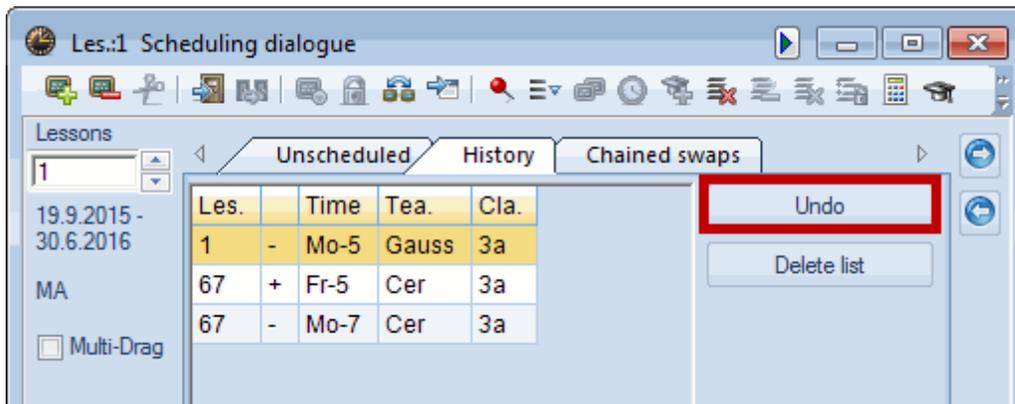
Drop the period in a suitable slot (e.g. Fri-5) by releasing the left mouse-button.

Periods marked with the  icon are available for swapping.



4.3.5 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 will delete all the planning steps shown in the list.



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.



4.3.7 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.



The diagram shows three overlapping instances of the scheduling dialogue table. Each table has columns: Cla., 1a, :EN, MU, BI, PEC. The first table shows 'Rm. R1a' with a red arrow pointing to a button labeled 'Click'. The second table shows 'Rm. R1b' with a red arrow pointing to a button labeled 'Click'. The third table shows 'Rm. R2a'. This illustrates how clicking the button cycles through alternative rooms for the selected lesson.

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.

The screenshot shows the scheduling dialogue table with the following data:

Cla.	1a	:EN	MU	BI	PEC
Tea.	Arist	:1a	1b	.3a	.1a
Rm.	R1	(36)	:1a	1a	1a 4

Below the table, there is a checkbox labeled "Rooms with capacity" which is checked.

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.

4.3.9 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 padlock 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 the right mouse-button.

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.

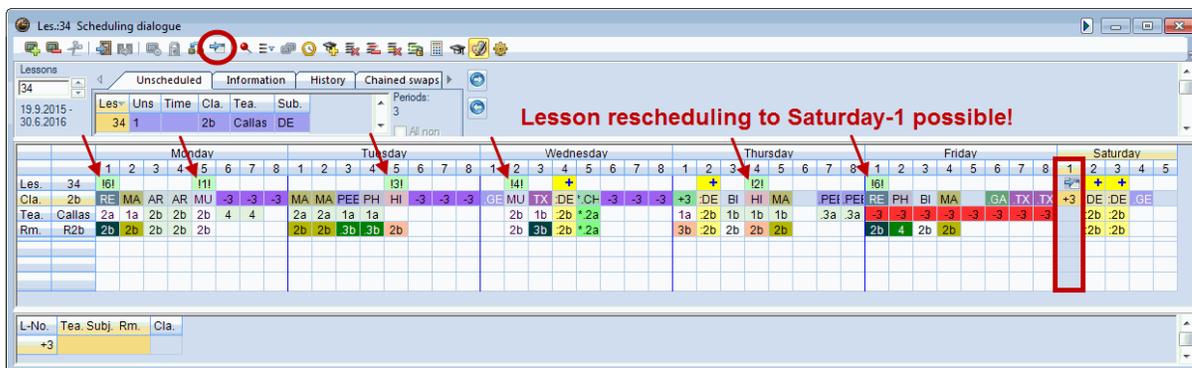
A timetable is calculated using strategy A.

4.3.11 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.



4.3.12 Replacing teachers

Use this function in the scheduling dialogue to replace one teacher with another.

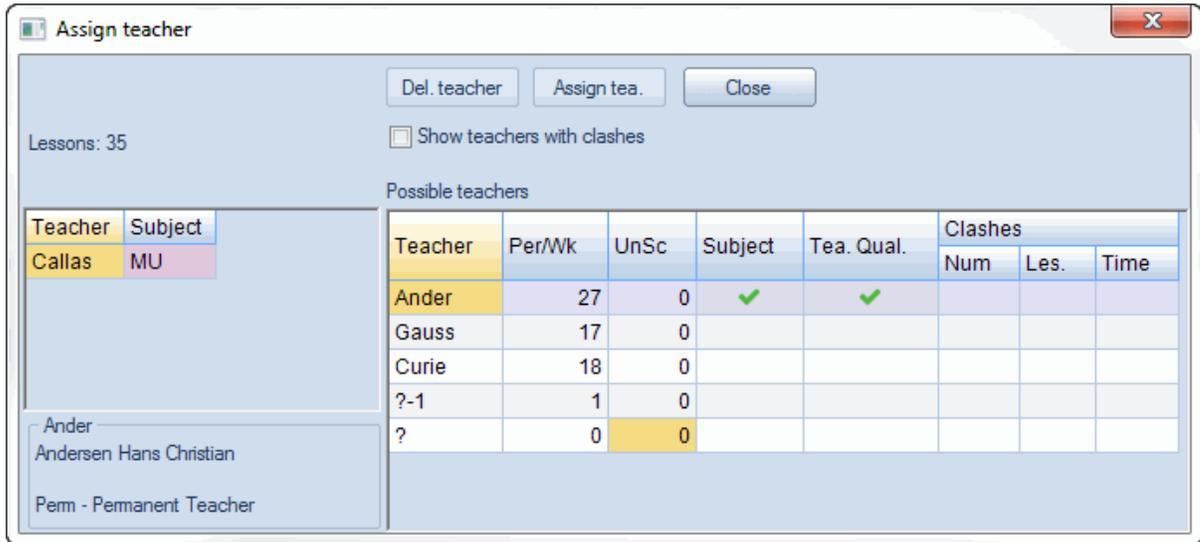
Activate a lesson and click on . A dialogue will open where you can change the teacher for the lesson.

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:

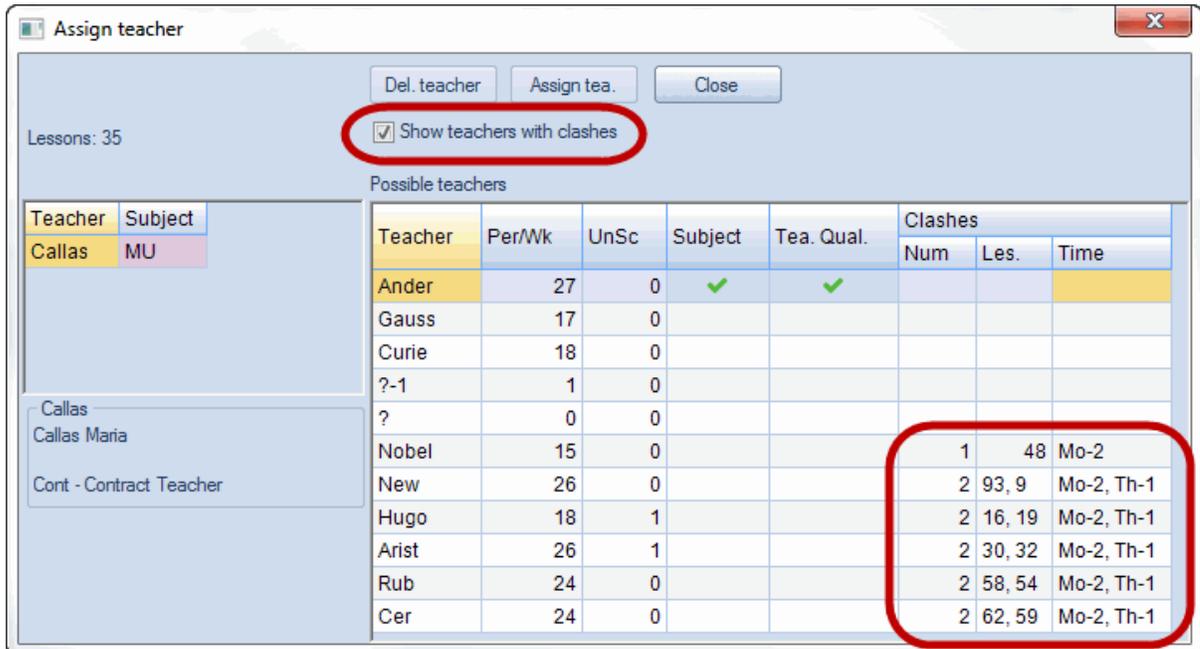
- Per/Wk: Number of periods per week taught by the teacher
- UnSc: Number of unscheduled periods
- Subject: Teacher already teaches this subject.

- 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.



If you check the box 'Show teachers with clashes' all those teachers will be shown for whom changes in the timetable needed to be done in order to be able to assign them to this lesson. In this respect it is important to know how many clashes needed to be solved and when the clashes are.



4.4 Display functions

The functions described below can be used to change the scheduling dialogue display.

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.



4.4.2 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.



4.4.3 Display a 2nd lesson

This function displays not only the active lesson, but also the lesson on which the cursor is placed. The function 'Display a 2nd lesson' also allows you to display additional information on the cursor-selected lesson.



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.



>

4.4.5 Show lesson colours

The colours defined for master data elements and individual lessons can be activated and deactivated using the <Show lesson colours> button.



4.4.6 Settings

This function provides various settings affecting the layout of the scheduling dialogue.



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.	Arist	1a	1b	.3a
Rm.	R1a	1a	1a	1a
		SH1		

Tea.	Arist	1a	1b	.3a
Rm.	R1a	1a	1a	1a
Rm.	SH1	.4		.3a

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>.



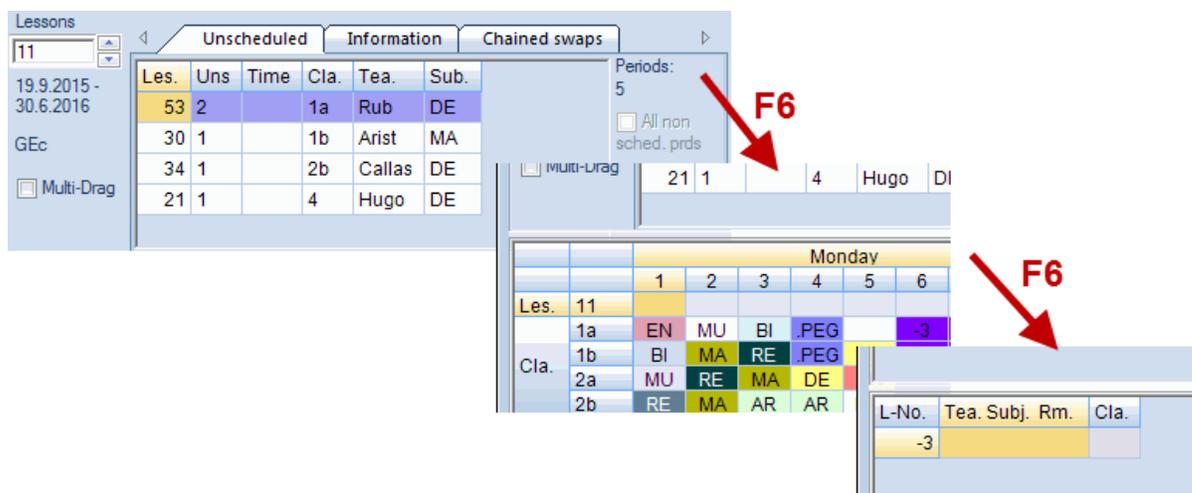
Tea.	Arist	:1a	1b	.3a
Rm.	R1a	:1a	1a	1a
Rm.	+S11	.4		.3a

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.



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

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

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.

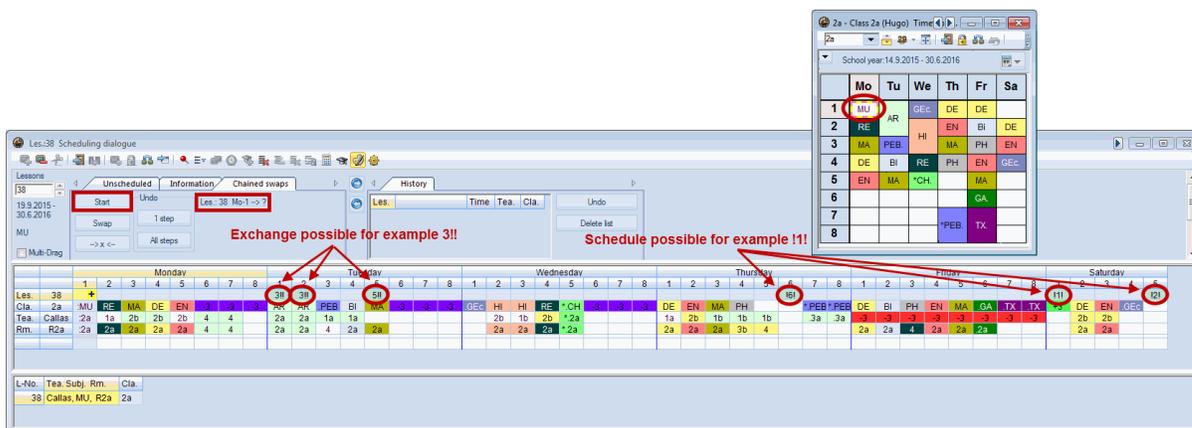
5.2 Chained swaps

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.

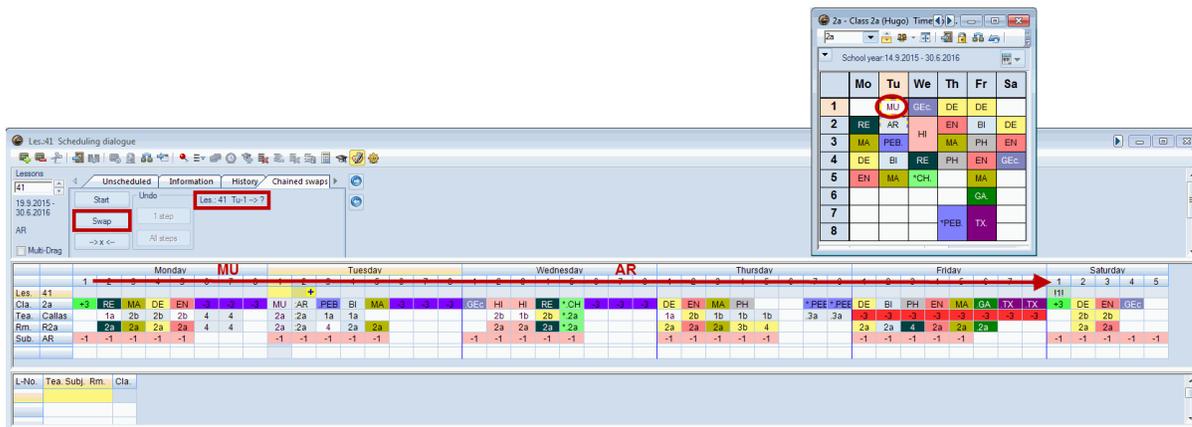


The lesson row now displays a series of number symbols in some of the cells in the time grid. The lower the value, the better the Untis evaluates the position. Two exclamation marks after the number (e.g. 2!!) indicate that a swap to this position would displace a lesson already scheduled for this slot. 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 **!!** 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.

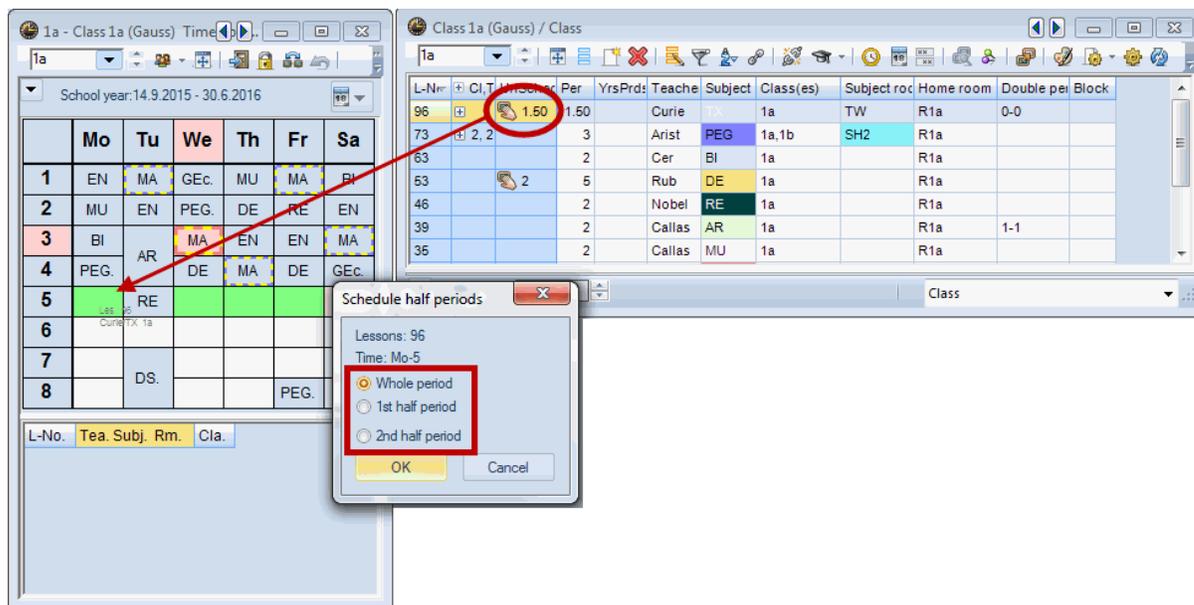
Please note that function "Chained swaps" only supports swaps that do not result in a significant decrease in timetable quality (based on the weighting settings you have entered). This means that only the swap partners identified in the lesson row can be used for swapping.

	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						

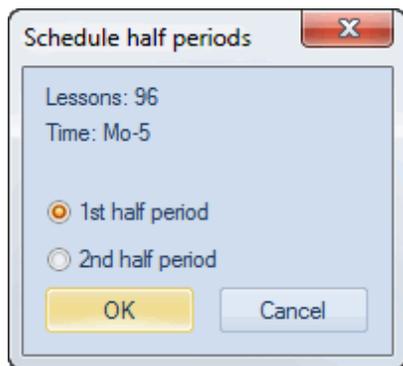
6 Scheduling half periods

If you do not always schedule full lessons, you will have to decide in which part of the period the half lesson should be placed.

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.



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.

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<Save block> - the 'dragged' (i.e. active) period will be scheduled and the original period will be unscheduled.<Create clash> schedules the period with class and perhaps even teacher clashes. If you select 'Save with room clash' 14

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