

SIMS

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Curriculum Management Using Nova-T

Part A

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Capita SIMS, Franklin Court,
Priory Business Park, Cardington, Bedford, MK44 3JZ
Tel: 01234 838080 Fax: 01234 832082 <http://www.capita-sims.co.uk>

Where appropriate for data entry purposes, the graphics used in this document match the training data recommended for use on the course. Where the graphic is an example of what might be expected when using certain areas of the software, the training data may not be an exact match.

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Curriculum Management Using Nova-T

Part A

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Introduction

This chapter contains:

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Introduction

What is Nova-T and How Does it Relate to SQL?

Nova-T is a timetabling package that provides functionality to create a curriculum plan. The classes in the plan are then resourced and scheduled. The resulting timetable is roomed, edited and printed. To carry out this process, various types of base data should first be entered or imported into Nova-T. On rare occasions the timetabler starts a new plan and timetable completely from scratch. It is more common for a plan to be based on a previous one; typically last year's.

Once the construction of the timetable is complete it is exported into the structured query language (SQL) database so that other areas of SIMS may use the data. On export it is necessary to specify a range of dates for which this snapshot of the constructed timetable is valid. For a school starting the new academic year in September it is likely that the initial send will use the date range September – July.

Once the new school year is under way, the timetable in most schools changes on a regular basis. This maintenance includes room changes, teacher carousels and changes to scheduling. More often than not these changes are minor, but it is not uncommon for major changes to be required as a result of staffing movements that take place between terms. When any maintenance is carried out in Nova-T it is necessary to re-export the timetable to SQL using an appropriate date range. On many occasions this date range could be described as from today until the end of the year. It is possible to use a date range in the future such as from the beginning of next term until the end of the year. The timetabler is preparing SQL for changes that do not take immediate effect.

Delegates will appreciate that, although Nova-T can hold only a snapshot of what is happening during the course of an academic year, SQL holds the complete dynamic picture from September through to July. In SIMS it is possible to interrogate the timetable information on the basis of any supplied date, be it past, present or future.

When students are placed in their timetabled classes within SIMS the same principle applies. Any change to a student's curriculum is date-stamped. This makes it possible to answer questions such as, where was this student at Wednesday period four last term? Nova-T does not concern itself with the placement of students into classes. Its purpose is to provide SQL with the curriculum infrastructure and the scheduling.

Overview

This course covers using Nova-T in the production of the school timetable and explores the process from populating the module with core data (rooms, staff, subjects) to submitting the completed timetable to SIMS and all the steps between.

Course Objectives

By the end of the course you will be able to:

- enter and edit basic timetable data such as the cycle, teachers, rooms and subjects
- create, modify and cost a curriculum plan
- attach resources such as teachers, rooms and facilities to classes
- deal with the issue of part-time staff
- run feasibility checks on the structure
- schedule blocks and classes both manually and automatically
- room the timetable
- modify certain parameters known as tools
- generate a range of reports
- edit and print the evolving timetable
- transfer the timetable to SIMS.

Course Requirements

Some prior knowledge of timetable principles but prior knowledge of Nova is not required. Delegates may benefit from prior attendance on the course *The Role of the Timetabler*. This course is a single day overview of timetabling principles.

01

Starting Nova-T

This chapter contains:

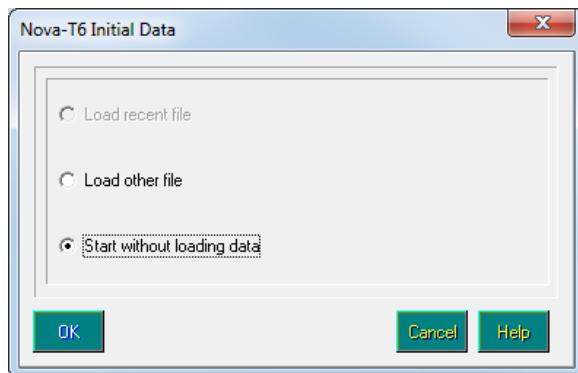
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Chapter Introduction

To connect Nova-T to the SQL (SIMS) database, select Nova-T from the Focus menu in SIMS. When it is being run off-line as a satellite installation, it may be started from a shortcut on the desktop or elsewhere.

Step by Step – Starting with a Completely Empty Nova-T

1. Open Nova-T.



2. Select the **Start without loading data** radio button.

Nova-T will start with a completely empty set of data.

3. This can be checked by selecting **Plan | Teachers and Plan | Subjects**.

Although most schools using Nova-T are unlikely to want to start with a completely empty dataset, this situation will be focused on at this point for the purposes of this training course. This is assuming that Nova-T is working alongside SIMS. It is then possible to import the teachers, subjects and rooms from the SQL (SIMS) database.

02

Base Data

This chapter contains:

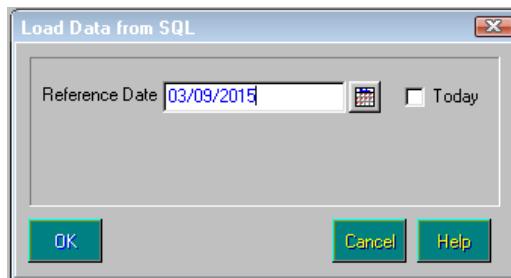
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Chapter Introduction

This chapter looks in more detail at the concept of base data. In order for a curriculum and timetable to be constructed it is necessary to maintain lists of subjects, rooms and teachers. These lists form the basis of who, what or where is valid on the timetable.

Step by Step – Importing Data from SQL (SIMS)

1. Select Data | Refresh base data from SQL.



2. Accept the default date. The opportunity to change this date is available.
3. Log onto the SQL (SIMS) database using the **User Name: blacka** and **Password: abcd**.

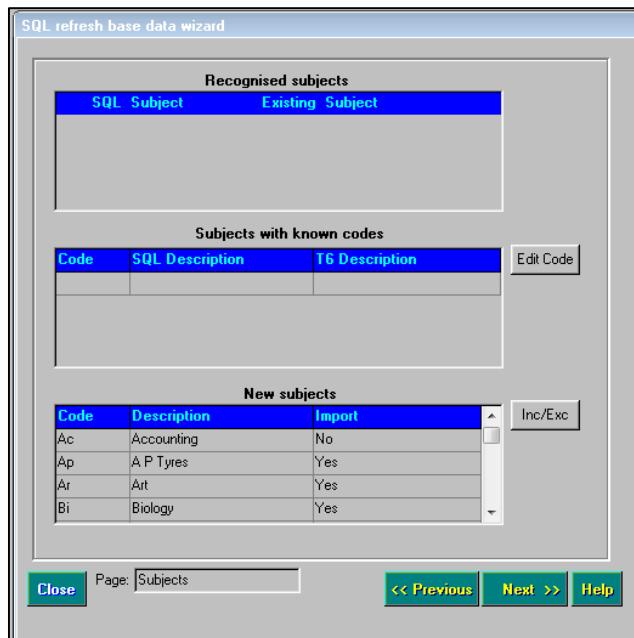
The SQL refresh base data wizard will display. Base data in this context means teachers, subjects, rooms and levels. As shown in the graphics displayed below, only data active on the reference date will be available for import. It is possible to reject any item not required on this particular timetable. The data can be refreshed at any time either by re-running the wizard or manually making any changes within Nova-T.

NOTE: This is a refresh from SQL (SIMS) into Nova-T. If this were to be run with base data already in Nova-T it could (according to circumstances) cause an edit to the data in Nova-T. This would not be wrong in the technical sense, but might be undesirable from the point of view of the staff member.

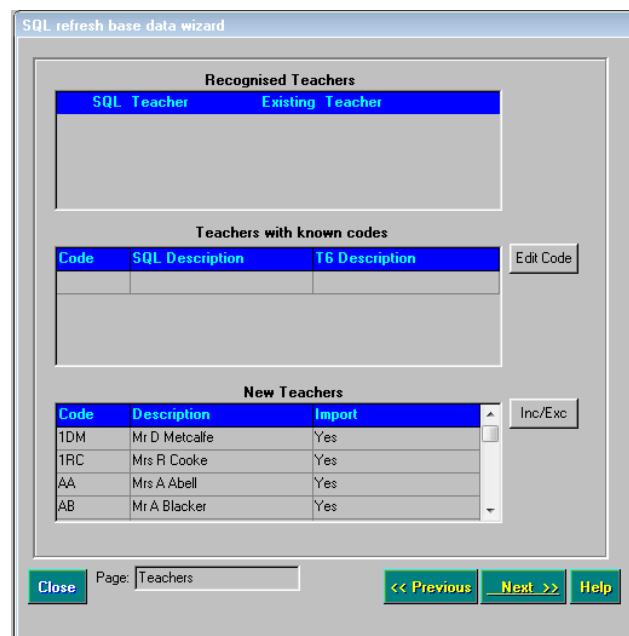


The four possible data areas for import are, by default, unchecked. By leaving unwanted areas unchecked, there is less chance of inadvertently importing (or editing) those areas.

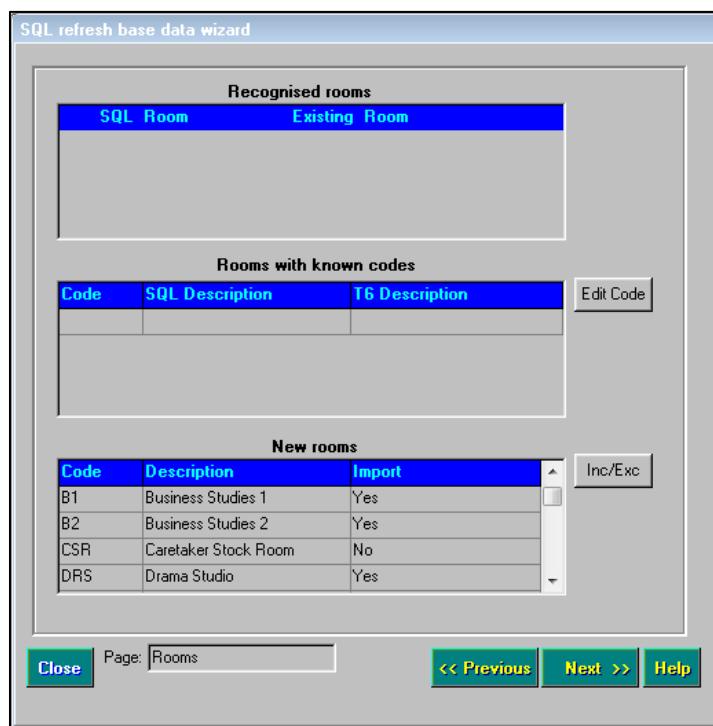
4. Check all four areas, and then click next to work through the wizard. The Subjects page is displayed opting not to import the subject **Ac**.



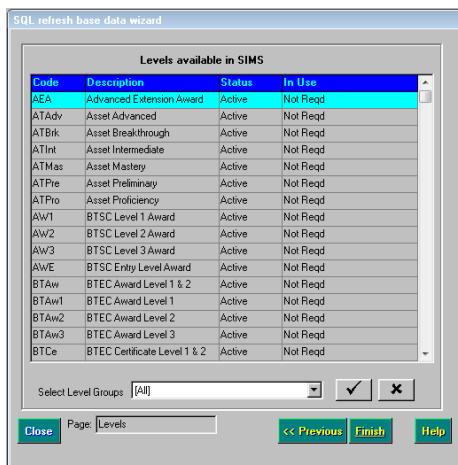
5. Click **Next** to move to the **Teachers** page. Click **Next** to move to the **Rooms** page.



6. Click **Next** to move to the Rooms page and opt not to import the room **Caretaker Stock Room**.



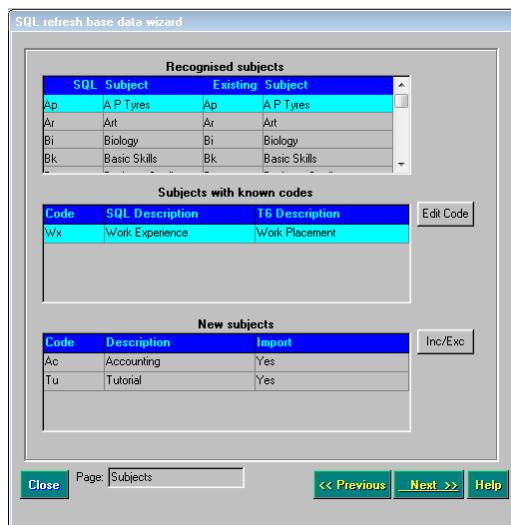
7. Click **Next** to move to the **Levels** page. Clicking an item in the **Import** column toggles between **Yes** and **No**.



At this point, the issue of levels will be ignored and returned to later in the course.

8. Click the **Finish** button, and then confirm the refresh by clicking the **OK** button.
9. Select **Plan | Subjects** and note that **Ac** is not in the list.
10. Scroll down to the last subject **Wx** and note the **Description**.
11. Select the **Wx** subject. Click the **Edit** button and overtype the description with **Work Placement**.
12. Select the **Tu** subject and remove it completely by clicking the **Delete** button. Close the screen by clicking the **OK** button.
13. Now initiate the process of refreshing by selecting **Data | Refresh base data from SQL**.

The graphic displayed below illustrates the situation concerning subjects.

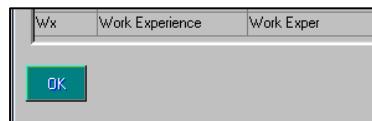


All the subjects in the Recognised subjects section have the same Code and Description in both SQL (SIMS) and Nova-T.

Wx appears in the Subjects with the known codes section. Although the code in SQL (SIMS) and Nova-T is the same, the Nova-T description no longer matches the one in SQL (SIMS). Ac appears in the new subjects section because it is not currently known to Nova-T. Tu also appears because we deleted it from the current dataset therefore Nova-T suggests it for import again.

14. Opt not to import subject **Ac or Tu** (by clicking the **Inc/Ex** button, this toggles all new subjects to include (**Import Yes**) or exclude (**Import No**), and then click the **Next** button.
15. On the **Teachers** section there are no decisions to be made, so click the **Next** button.
16. On the **Rooms** section opt not to import the **Caretaker Stock Room**, and then complete the refresh.
17. Select **Plan | Subjects** and scroll down to the bottom.

The description in Nova-T will have reverted back to that held in SQL (SIMS). This is what one should expect if the data is drawn in again from the database.



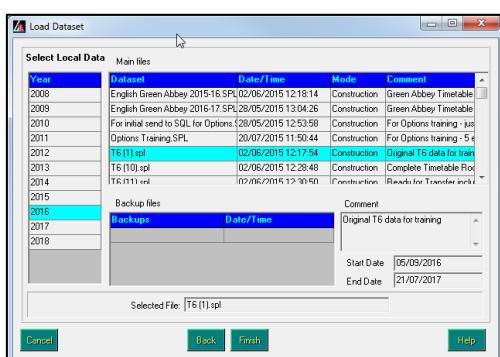
NOTE: If the timetabler has been entering data off-line, it is possible that, over a period of time, the codes may become a problem. An example of this would be; SQL (SIMS) contains the **Co** code that has been used sometime in the past to mean **Computing**, but in Nova-T the same code is used for **Construction**. Running the refresh from SQL wizard would identify this issue as **Co** would appear in the subjects with known codes section. If it is required to keep both subjects live, the **Edit Code** button should be used, in this case to change the Nova-T Construction code to something else. This is one way to resolve the confusion.

The refresh base data from SQL (SIMS) route may be used as a diagnostic tool. It is possible to see whether there are any non-matching codes without actually carrying through with the refresh process. If using this process as a diagnostic tool, ensure that you don't click Finish as this will update Nova!

The Appendix to this booklet contains an overview of dealing with subject, teacher and room codes in Nova-T and SIMS.

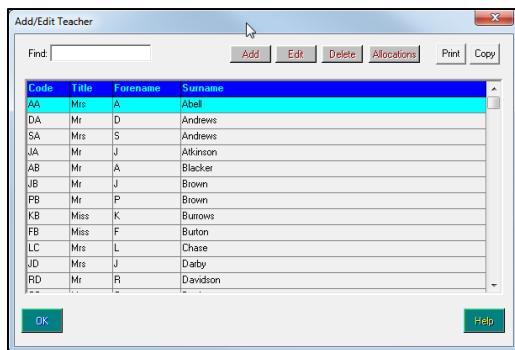
Step by Step – Teachers

1. We will now change to a dataset prepared for the course. Click the **Load** button, and then select the **Load new file** radio button. Select **Local dataset**. Select **2016** folder, and select **T6 (1)**. Click the **Finish** button to confirm.



The display can be enlarged by dragging a corner or by using the **maximise** button. This makes it easier to read the file name in the dataset column.

2. Select Plan | Teachers.



The Add/Edit teacher display enables staff to manually add, edit or delete teachers from the Nova-T list. The list is saved as part of the current dataset and therefore applies to the timetable currently being constructed.

It is possible that next year's timetable will have a slightly different list associated with it than the current one. The ordering of staff may be changed by selecting **Tools | Ordering** and the list may be printed or copied to the clipboard. The default order for staff is set to Surname.

If a teacher is in use then the record cannot be deleted, but can be edited. However, the **Allocations** button provides information about how the teacher is in use and enables all such arrangements to be removed so that the record can then be deleted.

Editing a teacher could be necessary due to a name change or to the replacement of an outgoing teacher with a new one taking on the same teaching commitment. It would not be uncommon for temporary names to creep into the list; names such as ANO Maths 2, implying a current vacancy.

Classroom assistants may be added to this list as a method of including them on the timetable. SIMS contains functionality which enables the definition of classroom staff. This type of personnel (including visitors) will then be accepted as part of the transfer of the timetable from Nova-T to SQL (SIMS).

NOTE: A Teacher Code can be a maximum of **Three Characters**.

Activity – Adding, Deleting and Editing Teachers

- Experiment with **Adding** a teacher and **Deleting** the same record.
- Try deleting one of the existing teachers already in use.
- Change someone's **Name** and **Code**.
- Experiment with the **Allocations** button.

Teacher Departments

Select **Plan | Teacher Departments** from the menu bar.

The screenshot shows a software window titled "Teacher Departments". At the top, there is a toolbar with buttons for "Find:", "Add Department", "Remove Department", "Update From Plan", "Default Hours", "Print", and "Copy". Below the toolbar is a grid table with the following data:

Code	Description	Empl	Load	Total	Main	Dept	Dept 2	Dept 3	Dept 4	Dept 5
AA	Mrs A Abell	0	19	19	Bi	4	Ps	1	Sc	14
DA	Mr D Andrews	0	15	14	Ch	5	Bi	5	Ph	4
SA	Mrs S Andrews	0	19	11	Hs	0	Ps	1	Sc	10
JA	Mr J Atkinson	0	19	19	En	19	Ge	0		
AB	Mr A Blacker	0	4	4	La	0	Gg	1	Re	3
JB	Mr J Brown	0	19	18	Gn	8	Ps	1	Re	3
PB	Mr P Brown	0	18	15	Gn	3	He	5	Te	6
KB	Miss K Burrows	0	22	22	Ar	22				
FB	Miss F Button	0	19	19	Ma	18	Ps	1		
LC	Mrs L Chase	0	19	11	Bi	0	Ps	1	Sc	10
JD	Mrs J Darby	0	16	13	Pe	11	Ge	2		
RD	Mr R Davidson	0	16	14	Pe	14				
GD	Mr G Davies	0	18	15	Cs	1	Mu	14		
SD	Mr S Dumbell	0	16	15	Fr	1	Ge	14		
JE	Miss J Edwards	0	23	23	Ec	9	De	5	Hs	5
JXE	Mrs J Estaphan	0	18	14	Fr	3	Ps	1	Sc	10

For each listed teacher it is possible to identify the number of hours employed (Empl), a global teaching commitment (Load) and any number of subjects to which it is thought they might contribute. In the preceding graphic Mrs A Abell should not be asked to teach more than nineteen periods (out of the twenty-five period cycle).

Her specialist subjects are Sc and Bi. Ps (Personal, Social & Health Education) is also identified.

It should be noted that despite the headings dept, it is individual subjects that should be entered, rather than departments. Subjects can be entered without a period total as would be the case with reserve subjects. The point of this display is to estimate at an early stage the various contributions towards the teaching that could be expected from each member of staff. It can and should be edited as the situation evolves.

If data is entered into the **Empl** column, it is used on one of the reports (see later) to indicate whether or not the teacher is above or below expected hours in the classroom. Any entry is automatically converted to hours and minutes. If 12.5 were to be entered, on moving to a different cell, the data would convert to 12:30. Alternatively, 12:5 would be converted to 12:05.

Other areas of Nova relating to the allocation of particular teachers to particular classes will use this information to warn staff if these figures are exceeded. Also, the information enables the software to apply sensible filters so as to provide information such as, 'Show me those who could teach this subject?' In addition the analysis routine converts the information in teacher departments into a curriculum costing by comparing the figures with those in the curriculum plan.

Activity – Adding & Editing Teacher Departments

- Experiment with this routine by adding and removing entries. Edit the number of periods on a subject so that the total on the row exceeds the load for that particular teacher.

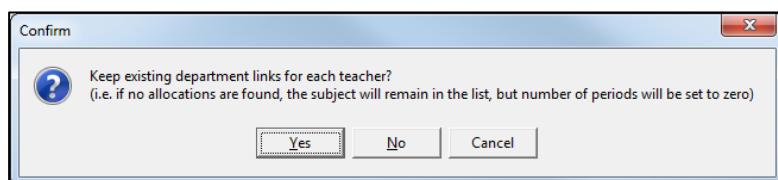
The first subject column is regarded as the main department (subject). On occasions this may not be the correct subject, as with Mrs J Darby (JD).

- For **JD** make **Pe** the main department by right-clicking either the **Pe** or the 11, selecting **Main Department**, and then clicking the **OK** button to confirm.

Subjects can also be made main by right-clicking them.

The concept of the main department is used by certain print functions later in the process. The total column aids diagnosis of whether the individual subject entries currently add up to the loading (see the entry for teacher AL).

The **Update from Plan** button provides a useful mechanism for copying into teacher departments the allocations in the current plan, therefore saving time. If this button is selected the routine seeks clarification as to what it should do with existing entries which may not feature as allocations in the current plan.

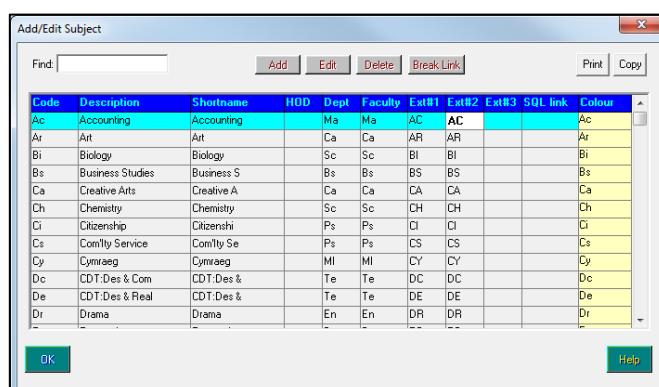


Responding with **Yes** results in unused subjects being retained, but with zero periods. Responding with **No** results in unused subjects being removed.

Step by Step – Subjects

1. Select Plan | Subjects.

Subjects may be added, deleted (so long as they are not in use in the current dataset) or edited. It is entirely possible that the list may originally have been imported from SQL (refresh base data from SQL). The subject list is saved alongside all the other data concerning the timetable, so there can be a different list for each timetable. Editing a subject causes all occurrences of the subject in the plan and timetable to be converted to the new code or name. Entering a code in the **Find Text** field is a quicker method of searching than simply scrolling down the list. The list can be sorted according to the setting in **Tools | Ordering** and may be printed or copied to the clipboard.



NOTE: A Subject Code can be a maximum of **Two Characters** set in sentence case.

Activity – Finding, Editing and Colouring Subjects

- Experiment with **Find**.
- An edit can be performed either by clicking the **Edit** button or by double-clicking the subject required. When editing, only the **Code** or **Description** column is changed. The **Shortname** is edited directly in the subject grid. The main purpose of the shortname is for printouts and because it initially defaults to simply truncating the Description to the first ten characters, it often requires editing.
- Subjects may be coloured, this is used in the Nova Timetable displays and printouts. Double-click the **Subject Code** in the end column, and then select colours for your subjects.

Activity – Creating Department Structures

Subjects may be placed in departments and faculties. It is possible to enter data in the Dept column. The Faculty column is read-only and the product of a calculation. It is the top of the tree. An example scenario is; Fr and Ge should be in the MI department. Furthermore, MI and En should be in the Co (communications) faculty. This means that Fr, Ge, MI and En should all be in the Co faculty. This is achieved by firstly ensuring that all five codes are contained in the list of subjects. Then Fr and Ge are placed in the MI Dept. MI and En are then placed in the Co dept. This (slightly unusual way of working) achieves the required tree structure with Co being the top of the tree, that is to say the faculty.

- Experiment with this concept, creating the tree structure described in the preceding text or one of your own.

The columns Ext#1 to Ext#3 provide opportunities to enter up to three sets of codes as alternatives to those found on the timetable. They are used in the analysis routines within Nova-T and in Northern Ireland for statutory returns. See *Chapter 14 (Book B)* for further details.

In contrast to the subject codes used on the timetable it is possible to type the same code against more than one subject. This enables a degree of mapping to be achieved for analysis purposes. It may be that a local education department might require details of a school's curriculum plan, but using codes of their own, rather than those defined by the timetabler. For example, a school offering Pure and Applied Maths and Further Maths might want to differentiate between them on the timetable, but for certain analyses combine them into A-Level Maths. The Ext columns provide this flexibility.

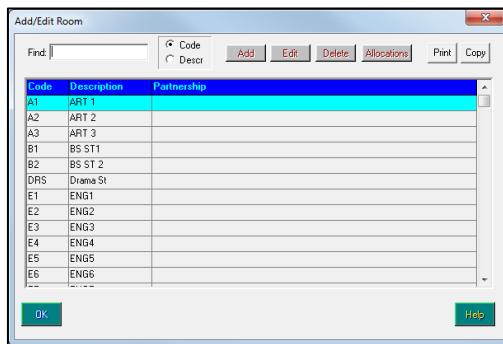
The SQL link column identifies those subjects which are recognised as having been sent to or imported from SQL (SIMS). While it is possible (using the **Break Link** button) to break the link for particular subjects, in most circumstances it is normal practice to leave this alone.

Finally, it is worth noting that adding a subject to the Nova-T list and using it on the timetable will cause the new subject to be sent to SQL (SIMS) when the timetable is next exported.

Rooms

It is possible to add, delete and edit rooms as well as subjects.

Select **Plan | Rooms** from the menu bar.



A room cannot be deleted if it has been attached to a class in the curriculum plan or on the timetable. Any attempt to do so results in the error message, '**Room is in use**'. The **Allocations** button can be used, firstly, to find out in what way the room is in use and, secondly, to remove all such arrangements so that the room can be deleted.

If a new room is added via this routine to Nova-T, this will not automatically add the room to the SIMS list of rooms. The Nova-T and SIMS room lists need to be separately maintained, using the same codes.

NOTE: A Room Code can be a maximum of **Four Characters**.

It is possible to declare any room as a Partnership room, by selecting the PX check box when Adding or Editing rooms. This should only be carried out if the school is using the additional SIMS functionality of Partnership Xchange.

Activity – Editing and Deleting Rooms

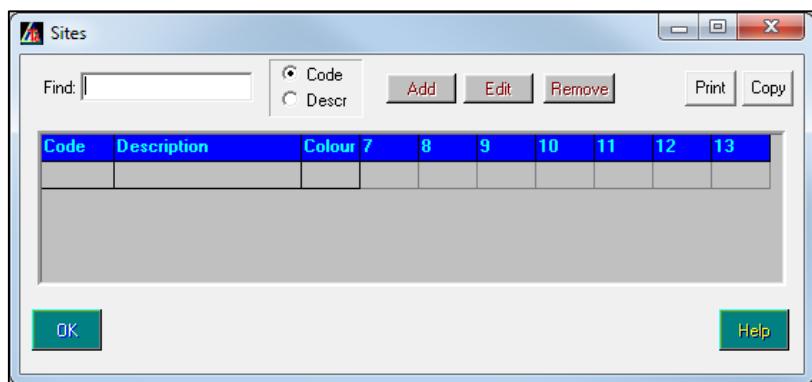
Experiment with deleting a room by clicking the **Delete** button, and then recreating it. Edit the **Description** of another room. Experiment with **Allocations**.

Step by Step – Sites

It is possible to define any number of sites (for example, upper and lower) and when classes are roomed certain rules apply. Unfortunately, the scheduling routines do not track the movement of staff (or students) between sites. Autoschedule could, for example, place a particular member of staff on the lower site at period one, upper at period two and lower at period three. This is regardless of whether or not there is a break between any of the periods. It is advised to examine carefully the solutions suggested by the software, particularly when teachers are not assigned wholly to classes on one site.

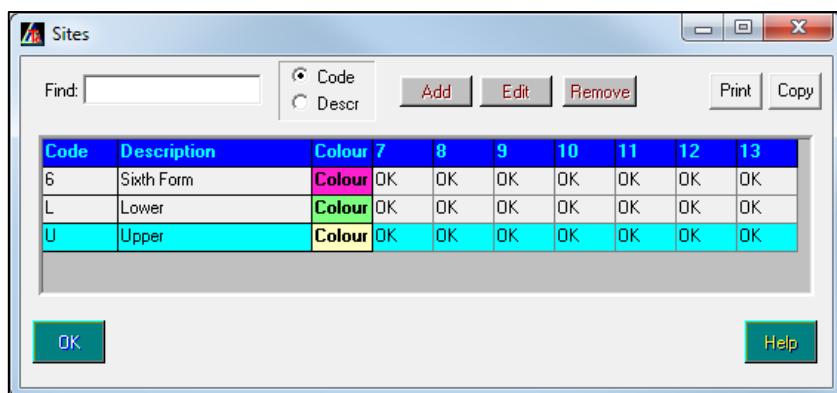
Nevertheless, it is still worthwhile defining multiple sites in Nova-T and even if the school uses only one site it should be defined.

1. Select **Plan | Sites** from the menu bar.



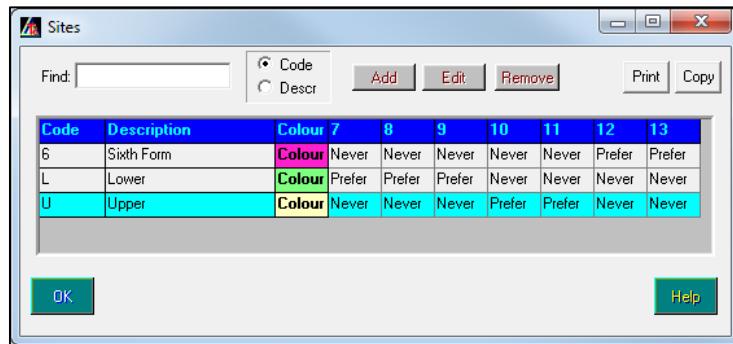
The graphic displayed above illustrates the situation before any sites have been defined. If the upper, lower and Post-16 sites are to be defined and years 7 to 9 occupy the lower site, years 10 and 11 upper and years 12 and 13 Post-16.

2. Click the **Add** button and define the **Lower** site (code **L**). Repeat for the other two sites as shown in the graphic displayed below. It is possible to colour code the sites. This is discussed in more detail later in the course.



Once the sites have been defined it is necessary to indicate any rules regarding which year group uses which site. If all year groups use all three sites, it is not required to define three sites. We will continue with the example outlined on the previous page.

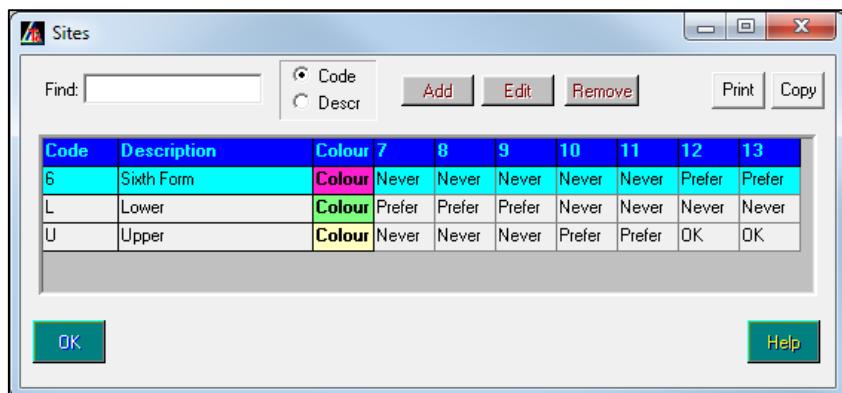
3. Select the cell containing **OK** for the **Sixth Form** site and **Year 12**, select **Prefer** from the drop-down list. Repeat for **Year 13**. For all other year groups on this site set them to **Never**. Define suitable rules for the other two sites, according to the description on the previous page.



These rules will be used only in the auto rooming routine (which is optional) and interact with other rules yet to be defined about teachers occupying rooms.

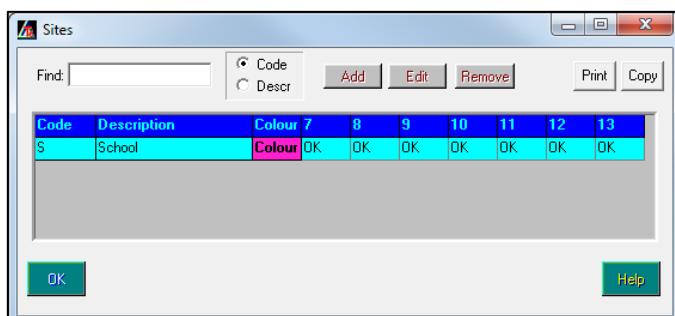
An example scenario is that the school considers this for classes for years 12 and 13. While preferably being housed on the sixth form site, it would be fine to use the upper site as well.

4. Change the rule for the **Upper** site so that **Years 12 and 13** carry the information **OK**.



Some schools that actually only occupy a single physical site have, nevertheless, defined two sites; large and small. Some rooms are defined as being on the large site while others are associated with the small site. The intention is to create a set of rules that would lead the auto rooming routine to direct the year 12 and 13 classes to the smaller rooms.

5. Delete two of the sites. Rename the remaining one to **School** and turn all the cells back to **OK**, therefore representing a school which occupies only the one site.



Step by Step – Room Sites and Subject Rooms

Once the definition of sites is completed it is then necessary to identify which rooms are on which site. Even where there is only one site (as in our current situation) it is still necessary to make the association.

1. Select Plan | Room Sites.

The list of previously defined rooms is displayed and the **Site** button may be used to assign the selected room(s) to the required site.

2. Select the first room, scroll to the end of the list, and then use **Shift** and **click** to highlight all of the rooms in the list.
3. Click the **Site** button and from the list of available sites (one in our case) select the required site, and then click the **OK** button to confirm.

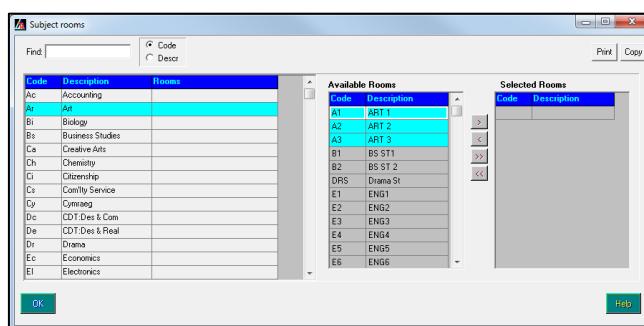
As shown in the graphic displayed below, all rooms become associated with site S (school).



4. Click the **OK** button to close down the display.

5. Select Plan | Subject Rooms.

6. Select the **Ar** subject, and then highlight the three Art rooms **A1**, **A2** and **A3**.



7. Click the chevron **>**.



The three rooms are placed alongside the previously highlighted subject.

8. Confirm the choice of rooms by clicking the **OK** button.

9. Select Plan | Room Sites.

Select site for rooms			
Find:		<input checked="" type="radio"/> Code	<input type="radio"/> Descr
Code	Description	Site	Subjects
A1	ART 1	S	Ar
A2	ART 2	S	Ar
A3	ART 3	S	Ar
B1	BS ST1	S	
B2	BS ST 2	S	

In addition to the site indication previously defined on this display, the subject Ar is placed alongside the appropriate rooms for information purposes. This data is read-only and cannot be edited on this display.

The three most recently used routines; **Sites**, **Room Sites** and **Subject Rooms** are closely related and are used by the Auto-Rooming routine. Manual rooming also makes use of this information.

Step by Step – Teacher Rooms

In many schools a more important rule than which subject should be taught in which room is which room each teacher should be placed in.

1. Select **Plan | Teacher Rooms** and note that the order of the list reflects the setting in **Tools | Ordering**.

Teacher Rooms						
Find:		Rooms		Print Copy		
Code	Description	S				
AA	Mrs A Abell	S1	Sc	Bi	Ps	
DA	Mr D Andrews		Bi	Ch	Hi	Ph
SA	Mrs S Andrews	S9	Sc	Ps		
JA	Mr J Atkinson	E5	En			
AB	Mr A Blacker		Re	Gg		
JB	Mr J Brown		Re	Bs	Ps	Te
PB	Mr P Brown	He	T5	Te	T5	
KB	Miss K Burrows		Ar			
FB	Miss F Burton	Ma	Ps			
LC	Mrs L Chase	Sc	Ps			
JD	Mrs J Darby	Fe		Gs		
RD	Mr R Davidson	Fe				

2. Enter room information as shown in the preceding graphic for teachers **AA**, **SA**, **JA** and **JB**. Either type directly into the cells, or click the **Rooms** button to obtain a pick list.

NOVA-T interprets this information as follows:

- This information should be used only for the optional routine of auto rooming.
- Mrs Abell should be placed by auto rooming in S1 on all occasions when she is teaching. If she teaches swimming then the software will room the class in S1 because she is the teacher. Staff would most likely wish to edit this situation manually. If any other class or teacher already occupies S1 at a time when Mrs Abell is teaching then, when the auto routine is called, they will be moved out either to an alternative room (if other rooming rules apply) or to no room.
- Similarly, Mrs Andrews' classes will always be roomed in S9 and Mr Atkinson's in E5.
- The rule for Mr P Brown is more subtle. Auto rooming will place his classes in T5 if the subject is either Gn or Te. For other subjects taught by Mr Brown, no rule exists on this display. Where he ends up will depend on other rooming factors.
- No rules apply for any of the other teachers in the list.

The data being entered here is a priority use of a room by a teacher. It is not possible to define teachers as sharing rooms. Indeed, it is not possible to enter the same room anywhere on more than one row. It could not, for example, cope with the concept of a job share. In most schools there will be teachers who occupy the same room when teaching. For those teachers it is beneficial to enter the data in the order that the obvious rooming decisions may be carried out automatically and quickly. This leaves staff members to fill in the gaps in terms of manually rooming the rest of the timetable.

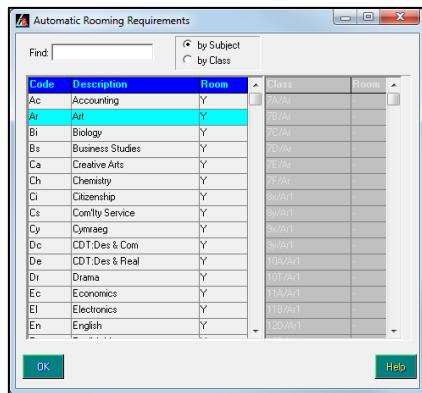
This information is not used when scheduling, only when rooming (which is a process normally carried out once the scheduling is more or less complete).

One other rule exists for the purposes of auto rooming; Automatic Rooming Requirements.

Step by Step – Automatic Rooming Requirements

This enables staff to define either subjects or particular classes in a subject as being included or excluded in the auto rooming process.

1. Select Plan | Automatic Rooming Requirements.



The routine defaults to displaying an alphabetical list of subjects on the left, with **Y** entered for all subjects. All subjects should be included in the auto rooming process.

An example scenario is that community service (Cs) should not be roomed because it exists off-site.

2. Select the cell carrying **Y** for **Cs** then select **N** from the drop-down list.



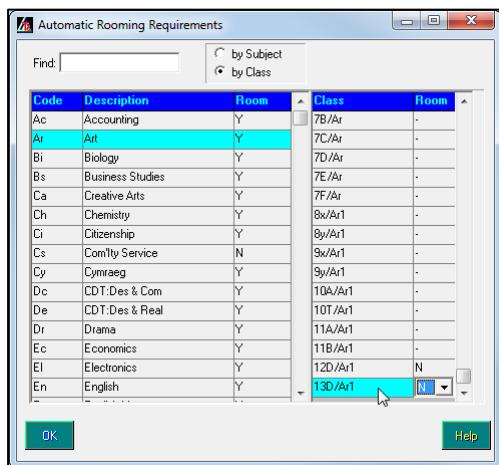
Once this is set to **N** the auto rooming process will exclude any class of this subject from the process, regardless of whatever other rules may exist.

On occasions there needs to be a more subtle approach. For example, Ar is normally roomed according to the rules, but the sixth form art classes take place at the college. For this illustration, assume that college is not one of the defined rooms in the school. Year 12 and year 13 art should not therefore be roomed.

3. Select **Ar** as the subject and change the selection from **by Subject** to **by Class**.

The hyphen against each class indicates that there is no specific rule in place regarding that particular class and the general subject rule should apply.

4. Scroll down to the bottom of the list of Art classes, select the **Room** cell for **12D/Ar1** and define **N**. Repeat for **13D/Ar1**.



The current setting in relation to Art is as follows:

For all Art classes (except the two in the sixth form) use auto rooming, follow the defined rooming rules regarding the teachers of the Art classes, and rooms assigned to the subject Art. Under no circumstances place the sixth form Art classes in any room.

*NOTE: There is one other item of base data on the plan menu; **Facilities**. This item is focused on later in the course.*

03

The Cycle Process

This chapter contains:

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Step by Step: Defining Breaks	22
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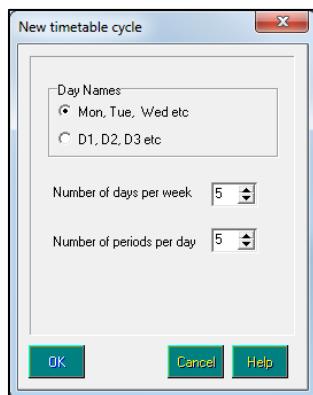
Chapter Introduction

The first process button (working from the left) is cycle; staff are taken to this process upon opening Nova-T. When working on previously saved data, the cycle will already have been defined. The routine described in the following step by step enables new cycles to be defined and existing ones to be modified.

Step by Step – Defining a Timetable Cycle

It is required to define a single week cycle of twenty five periods comprising five days and five periods per day.

- The maximum possible number of days is seven and for periods the number is unlimited.
 - Two-week cycles are catered for, but at this stage the cycle is defined for a single week.
1. Select **Cycle | New timetable cycle**.
 2. Change the **Number of days** to **5** using the arrow keys.
 3. Change the **Number of periods** to **5** using the arrow keys.
 4. Click the **OK** button to confirm.



The orientation of days and periods is toggled by clicking the **yin/yang** symbol in the top left-hand corner. Certain other displays (timetables) within Nova-T use this orientation.

Step by Step: Defining Breaks

Three kinds of break can be defined; **Soft Break**, **Medium Break** and **Hard Break**. These have no intrinsic meaning, but are hierarchical in the way they are treated.

It is possible using other areas of Nova-T to set up simple rules, for example, the double period of Technology in year 8 is enabled across a soft break, but not a medium or hard break.

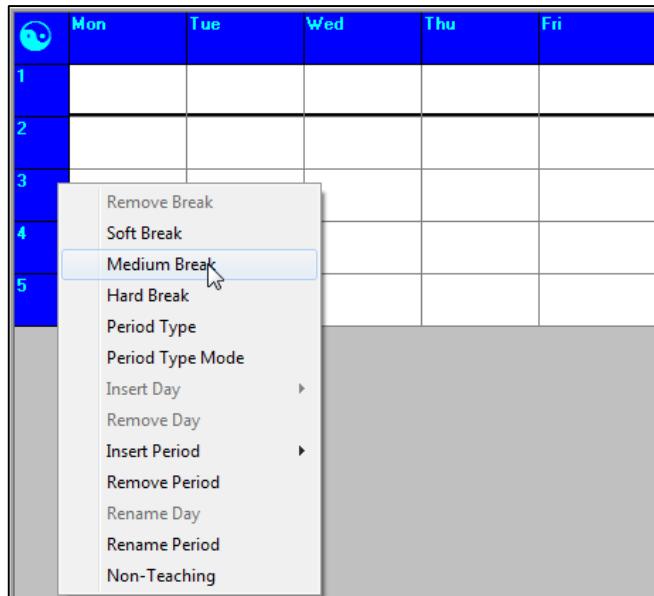
Given the fact that a soft break has been defined after period one and a medium break after period three, the practical effect of this is to enable the Tech double period to span morning break, but not lunch.

This rule will be applied by the software both to manual and automatic scheduling.

It is possible by right-clicking the blue header of either a period or a day to add, remove and rename an item.

This twenty-five period cycle requires a break after period one, lunch after period three and no afternoon break.

1. Right-click the **blue** header for **Period 1** and select **Soft Break** from the menu displayed. Repeat for **Period 3** but select **Medium Break**.



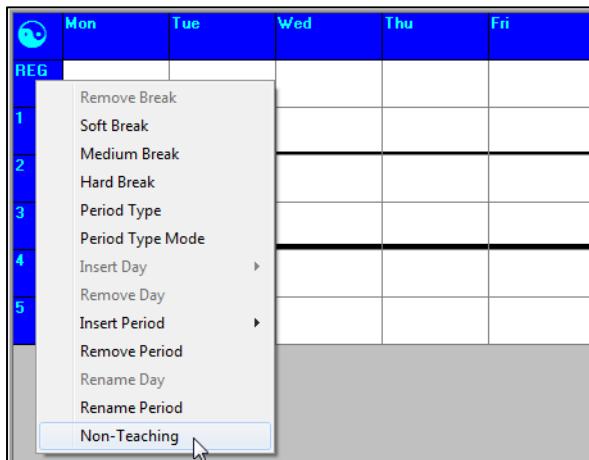
2. Experiment with the cycle size, **adding**, **renaming** and **deleting** both **periods** and **days**. Return it to its present state of **Mon** to **Fri** and periods **1** to **5**.
3. Also experiment with breaks eventually leaving a **Soft Break** after **Period 1** and a **Medium Break** after **Period 3**.

	Mon	Tue	Wed	Thu	Fri
1					
2					
3					
4					
5					

Step by Step – Non Teaching Periods

For most people using Nova-T, it is the intention to export the curriculum and timetable to the SQL (SIMS) database so that other SIMS modules may access the information. SQL (SIMS) recognises two kinds of periods; teaching and non-teaching. Classes may exist only at teaching periods and NCC may exist at either (see *Chapter 7* for details on NCC).

The graphic displayed below shows the registration period about to be flagged as a non-teaching period. By default, in Nova-T all periods are teaching unless otherwise defined.



1. Add a reg period to the cycle, right-click the **blue** header for this period and from the menu select **Non-Teaching**.
2. Right-click the created **Reg** period, and then click **Remove** period.

The blue header turns to black therefore indicating the non-teaching status. Flagging a period in this way does not prevent classes from being scheduled by Nova-T at this period, but it will not be possible to export the curriculum and timetable to SQL if such classes do exist.

Cover uses the concept of registration periods for supplying substitution for form tutors during registration time. This is the only purpose of defining the registration period in the first instance. The advice is that registration periods (along with other non-teaching periods) should be defined in Nova-T before the first export of the curriculum and timetable to SQL. This advice is given on the basis of the way SQL handles changes to the timetable cycle.

Step by Step – Converting a One-week into a Two-week Cycle

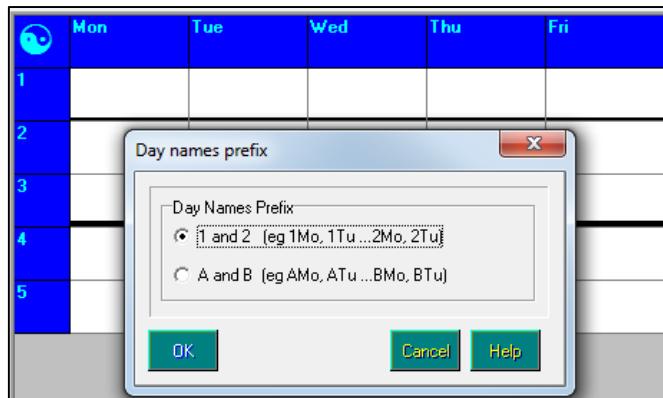
Many schools operate a two-week cycle which, in the case of our example, would be a fifty period fortnight.

1. Select **Cycle | Create Week Two**.

If the data has not yet been saved, then a prompt indicates that a backup (auto backup) cannot be made until the data has been saved under a new name. SIMS always attempts to perform an auto backup before creating week two.

2. If necessary, save the data under a new name.

3. Return to creating week two and opt for the default naming of week one and two.



4. Confirm by clicking the **OK** button and, if necessary, change the orientation in order to view the two week cycle without scrolling.

	1	2	3	4	5
1Mon					
1Tue					
1Wed					
1Thu					
1Fri					
2Mon					
2Tue					
2Wed					
2Thu					
2Fri					

Approaches to Producing a Two Week Timetable

There are different approaches to producing a two week timetable.

10 Days from Start

Defining the complete cycle right from the start is one method. If a school wishes the two weeks to be as similar as possible, then it is virtually impossible to use autoschedule because it is not sensitive to the concept of a mirror timetable. While the routine would attempt to spread out the lessons across the ten days, it would make no attempt to put them on the same day and period of each week. Manually scheduling a ten day cycle to produce a mirror timetable is tedious because most of the work has to be repeated for week two and, when blocks are moved, it can be easy to forget to move the partner.

Duplicate Week 1 into 2

A second approach is to define a one week twenty-five period cycle and schedule it. It will contain only an approximate plan and the scheduling will not reflect the exact intentions of the timetabler. At some stage during the scheduling process, week two is created. This doubles the number of periods originally defined for each block and results in two identical weeks from the point of view of the scheduling. It is then necessary to tweak both the plan and the scheduling to accommodate the exact requirements of the two-week cycle.

This approach works well when the intention is that the two weeks should be virtually identical, with only a very small number of differences. The greater the variation between the weeks, the less attractive this approach becomes.

Interleave

A third approach is to use a special function called **Interleave**. This concept originates from Nova-T4 (now discontinued) and has developed a following in schools wishing to produce mirror timetables. The first stage is to create a fifty period cycle of five days with ten periods per day. The curriculum plan can accurately be entered because the cycle is the correct size (even though the shape is wrong). Once the plan has been defined the length of most of the sessions is changed. If the ultimate intention is to produce five single periods of Maths across the fortnight, then five periods are defined, but the session lengths are set as DDS (two doubles and a single). These are then scheduled into the single week fifty period cycle.

If, for example, one of the doubles is scheduled at periods mo1 and mo2, selecting **Cycle | Interleave**, splits up the single week into two weeks. Odd periods become week one and even periods become week two. In our example this results in a single period of Maths on the first period of each week. Given that most of the original scheduling will be double periods (or greater), this creates mirror scheduling. Only where adjacent periods carry different subjects will the two weeks be different.

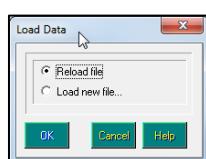
This is exactly what is required, a cycle of two weeks that are as similar as possible.

- Select the **2015** folder, and then select **T6 (1)**. Click the **Finish** button to confirm.

Step by Step – Period Types

In this scenario, the school operates a split lunch in which staff and students have two occasions on each day where lunch could be taken.

- Click the **Load** button, and then select to **Reload File** and click **OK** (this will return the data back to that contained in the previously loaded **T6 (1)** file).



- Right-click the **blue** header for **Period 3** and select **Period Type**. From the possibilities select **Lunch**, and then click the **OK** button to confirm. Repeat for **Period 4**.

	Mon	Tue	Wed	Thu	Fri
1					
2					
3	Lunch	Lunch	Lunch	Lunch	Lunch
4	Lunch	Lunch	Lunch	Lunch	Lunch
5					

Defined here is a four period day for students and staff with lunch available twice a day. The software is capable (if required) of negotiating which period is the most appropriate for each student band and member of staff. If there was no intention to use this concept, then the cycle should be increased to six periods a day to cater for the twenty-five period cycle.

Some schools do operate a split lunch but have never declared it to the software. This is also an acceptable way to work, but it may cause problems when covering for absent colleagues, for example, it is not possible to identify on the computer which half of lunch should be covered and which teacher is free in that half.

- Remove the **Lunch** period type by right-clicking the **Period** header, select **Period Type**, **Lunch** and the **Remove** radio button. Click the **OK** button to confirm.

Period types have other uses (some of which will emerge later in the course). At this point in the course one other will be considered. In this example, the whole school goes home after period four on Friday. It is, in effect, a twenty-four period cycle.

- Right-click the **white** cell representing **Fri5** and select **Period Type**. Select the **User 1** period type.

User one does not have any particular meaning to the software except identifying one of the twelve available types.

- Right-click the period a second time, select period type **Mode, Set Exclusive** and confirm by clicking the **OK** button.

	Mon	Tue	Wed	Thu	Fri
1					
2					
3					
4					
5					1

This period type (user 1) has been set at fri5 as **exclusive**, rather than as **not exclusive**. This means that only those blocks in the curriculum plan marked as being associated with period type user 1 may be scheduled at fri 5. If no blocks are marked, then nothing can be scheduled last period on a Friday. It is true to say that the period does exist, but it cannot be used as all scheduling routines will abide by this rule.

Nova-T also contains the concept of year blanking codes. Another approach to producing a twenty-four period cycle is to place such a code for each year group at the same period.

To complete the picture on period types, what would it mean to flag the period type at fri5 as not exclusive? Any block on the curriculum plan marked as associated with user 1 should be scheduled at fri5 but all other blocks could also be scheduled there.

Consider a situation in which the periods of Tue am and Thu am are marked. Also consider that a block representing a half-day college course needs to be scheduled either on Tuesday or Thursday mornings, because the college have given the school a choice.

The software will force the college course block into either Tuesday or Thursday morning, while also finding some other block for the other day. This kind of negotiation is exactly what schools require of the software. The same principle can be applied to part-time teachers' time off. It can be made negotiable within certain limits.

6. Remove the requirement on **Fri5** by right-clicking the **Period**, select **Period Type** and deselect the check box.

NOTE: Periods may be flagged with more than one user type.

*For more information please see Chapter 2 of the handbook for further details. This is available via the **Documentation** button on the **SIMS Home Page**.*

Miscellaneous Information on the Cycle Display

At the top left-hand side of the display is the average **Period Length (mins)**. Change this to **55** minutes.



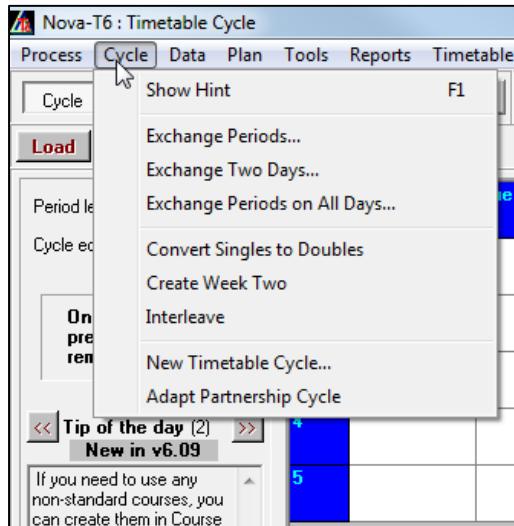
This average is used in calculations regarding the curriculum plan and, as such, an average is sufficient. On a two week cycle, the cycle equivalence should be edited to two and on a six day cycle one, two. This enables the analysis to provide information like, how many periods per week of Science in year 9. With nine periods across a fortnight and six groups, it would report twenty-seven periods a week and 24.75 hours per week (with fifty five minutes set as the average). The hours are converted to a decimal, not hours and minutes.

It is possible to enter the actual times of each period via **Tools | Define Period Times**. This information is used for certain reports and for sending information to SIMS, but not for planning purposes.

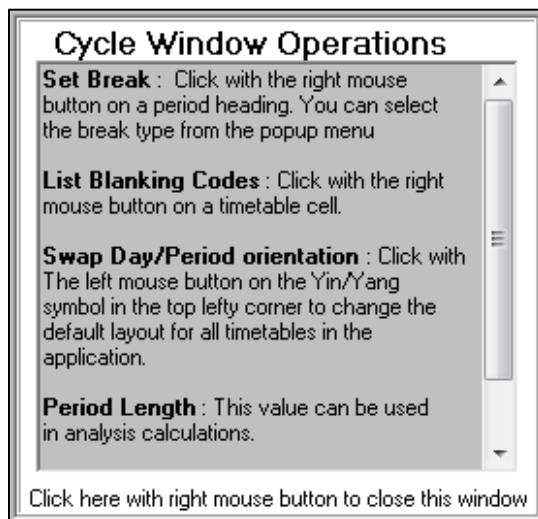
For more information please see Chapter 8 for further details on analysis.

Step by Step – Items on the Cycle Menu

1. Select **Cycle** from the menu bar.



2. Press the **F1** function key.

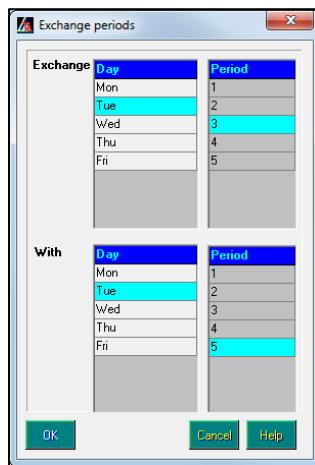


The screen that is displayed may be moved (by dragging it using the white border) and left on screen as it does not affect the operation of the software. It is intended to provide hints about the operations currently possible on screen. It is context sensitive.

3. Close this screen by right-clicking the white border.

Apart from the top item of **Show Hint**, all these items have a substantial impact on the timetable. At this stage of the course nothing has been scheduled, but it is beneficial to look briefly at the possibilities on this sub-menu.

4. Select Cycle | Exchange periods.



The graphic displayed above illustrates an exchange between tue 3 and tue 5. Everything scheduled for all years is moved.

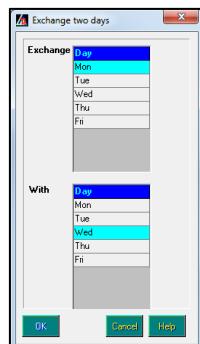
NOTE: Anything preventing the exchange (like a part-time teacher with periods blanked) is removed from the schedule to facilitate the exchange.

A warning is displayed before any action actually being carried out, there is no undo capability.

As there is nothing scheduled in the dataset currently in use, it is not required to carry out this operation.

5. Click the **Cancel** button to cancel the routine.

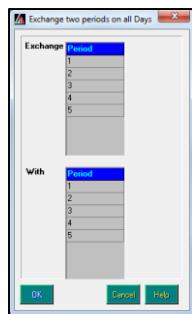
6. Select Cycle | Exchange Two Days.



The routine looks similar to the previous one and the same rules apply to any exchange, for example. Every lesson on Monday would be moved to Wednesday and every lesson on Wednesday would be moved to Monday.

7. Click the **Cancel** button to cancel the routine.

8. Select Cycle | Exchange Periods on All Days.



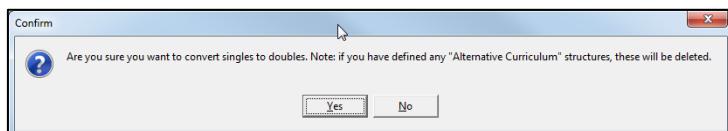
When this routine is used Nova-T automatically saves the current data before displaying the routine, as shown in the preceding graphic.

This routine could for example be used to move every period 1 lesson everyday to period 4 everyday it would then put every period 4 lesson to period 1.

Once two periods have been selected and confirmed, a final warning is displayed so that the staff member can click the **Cancel** button if required.

9. Click the **Cancel** button to cancel the routine.

The next item on the cycle menu, convert singles to doubles, carries out a change to the cycle size, the curriculum plan and any scheduling. The cycle size is doubled, which in the case of this course, it increases from twenty-five to fifty periods. The number of periods assigned to each block in the curriculum plan is doubled and all single periods are redefined as doubles. The software saves the current data and displays a warning before carrying out the request.



10. If this routine is selected, then return the data back to its previous state by clicking the **Load** button and selecting the **Reload File** radio button. This will recover the data held in the spl file **T6 (1)**.

The item, create week two, was used in a previous step by step. It doubles the cycle size, the curriculum plan and creates a mirror timetable in which week two is identical to week one. Current data is automatically saved and a warning displayed.

11. You do not need to select this routine again, however, if you try it, select **Reload File**.

12. Select the next to the last item **New Timetable Cycle**.

This is the same routine as that used to define a cycle in the first place. It creates a new cycle size. The curriculum plan is not altered by changing the cycle size but any scheduling will be removed from the timetable. This is, therefore, not a good method of adding non-teaching periods once the timetable is complete.

13. Click the **Cancel** button to cancel this routine.

The last menu item, **Adapt Partnership** cycle, concerns Nova-T functionality that is only relevant where Partnership Xchange is in use. This is an optional module used to transfer student data between schools, colleges and work place providers in a collaborative situation. For schools not involved with Partnership Xchange this item, together with items on other menus and relating to partnership, may be completely ignored.

04

The Curriculum Model

This chapter contains:

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Chapter Introduction

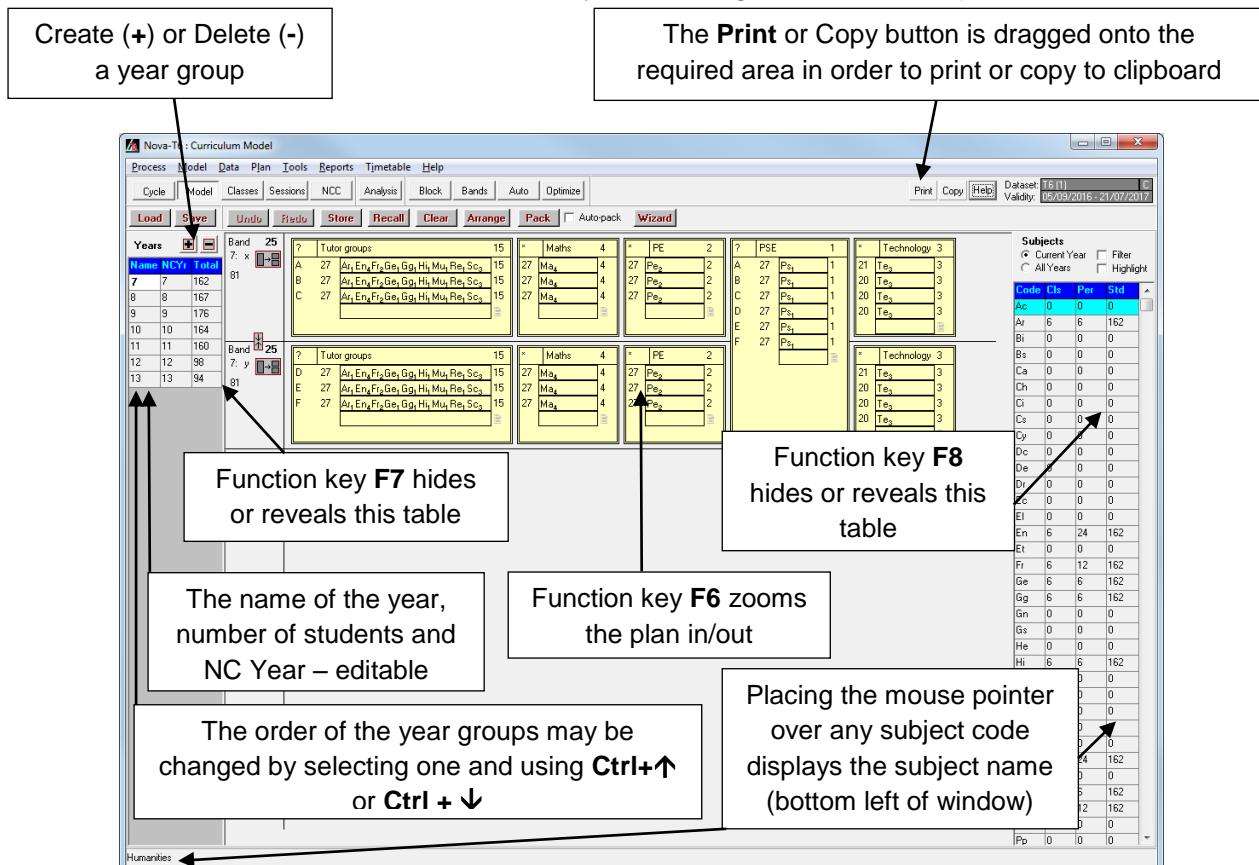
The curriculum model is fundamental to the process of constructing the timetable. If the class is not in the model, then it cannot be scheduled on the timetable.

Step by Step – An Overview of the Model Process

- Before continuing click the **Load** button and opt for **Reload File**.

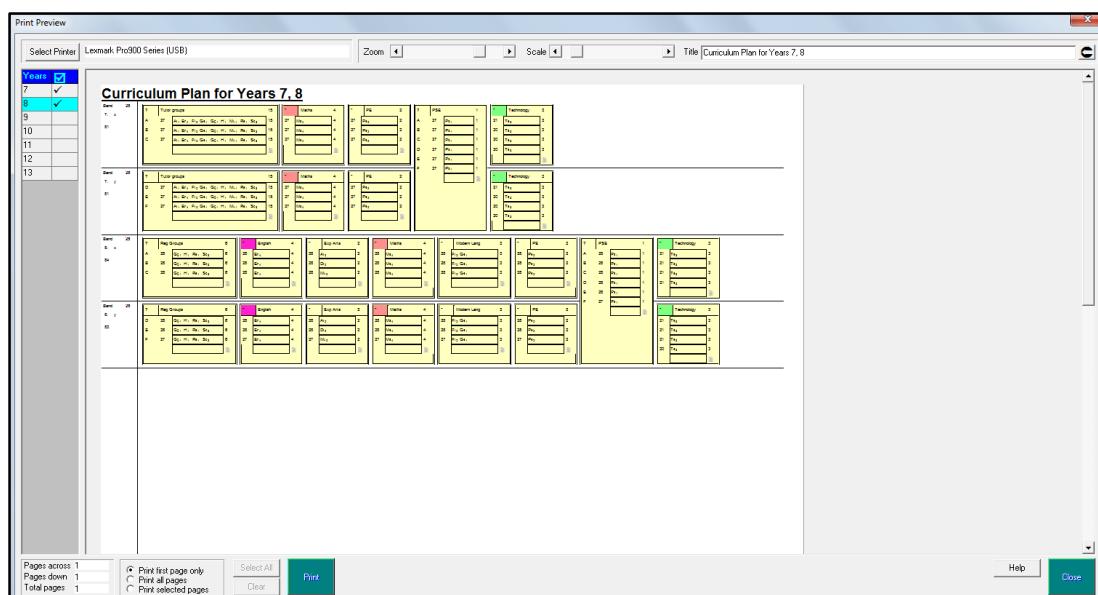
The graphic displayed illustrates some of the functionality available in the model process.

The model is a visual interface for the entry and editing of a curriculum plan.



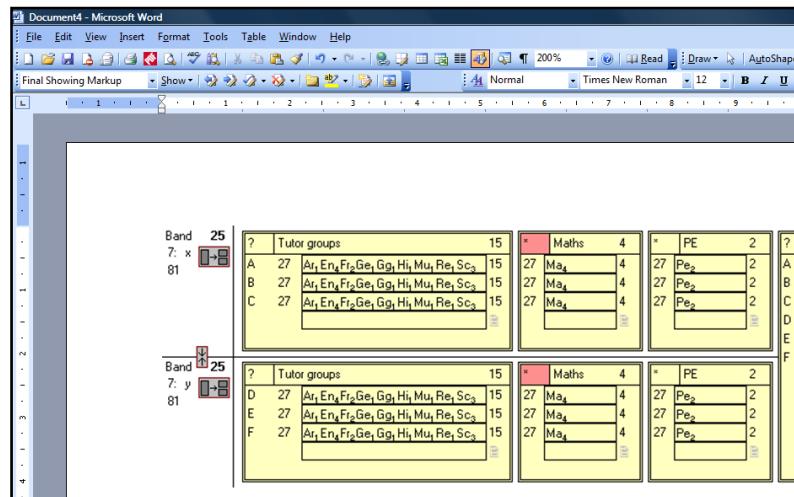
Each yellow box is a block in the curriculum plan.

- Experiment with the function keys **F6**, **F7** and **F8**, as described in the preceding graphic.
- Drag the **Print** button onto the diagram.

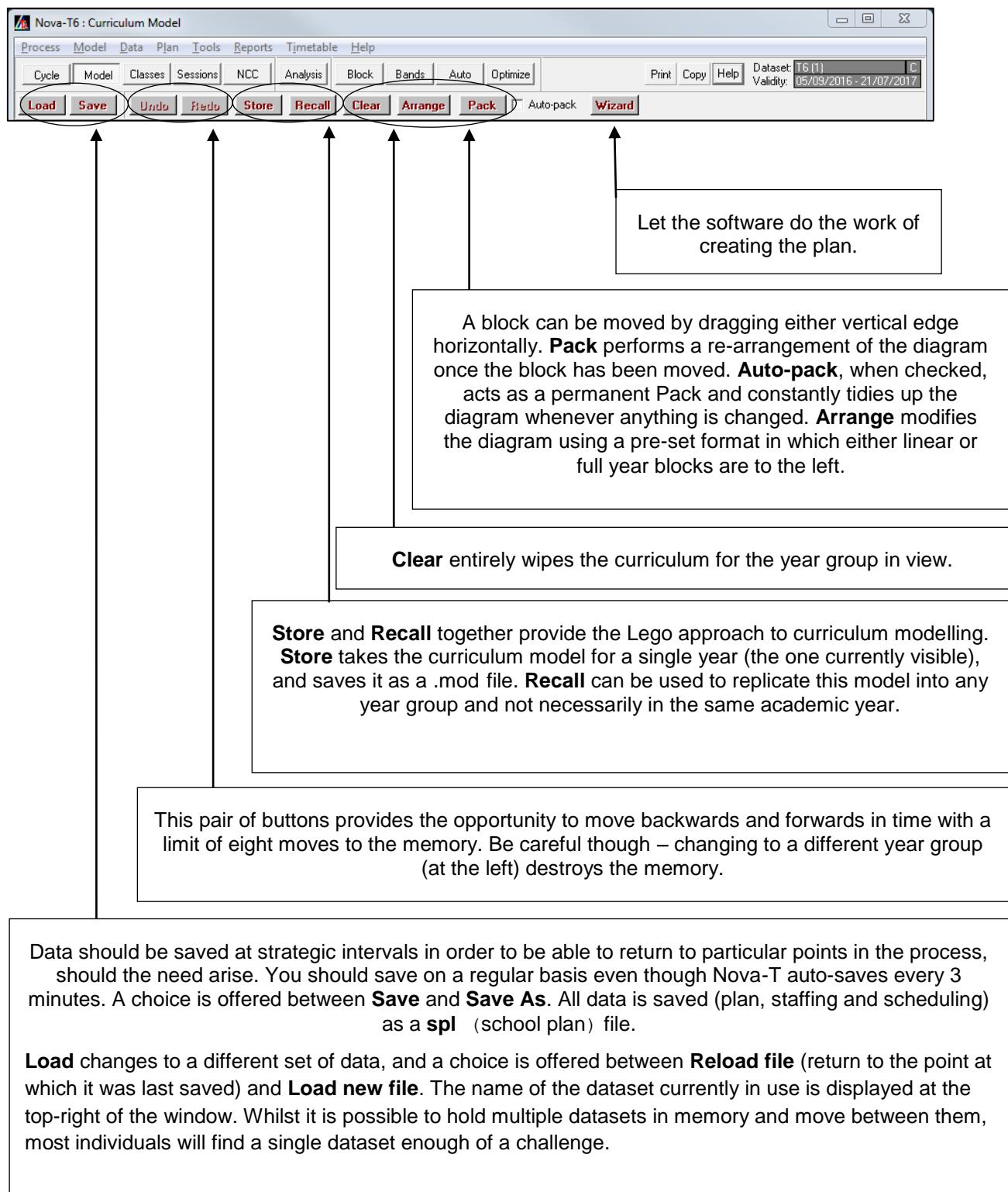


The Print preview screen enables staff to configure the scale, orientation and title of the printout and to change the choice of printer. It is also possible to select more than one year group. In the preceding graphic years 7 and 8 have been selected.

4. Click the **Close** button to close the **Print Preview** screen.
5. Drag the **Copy** button over the diagram and confirm the resulting prompt.
6. If Microsoft Word is available, run it and paste the diagram into an empty Word document.



Step by Step: Model process: Main Buttons Explained



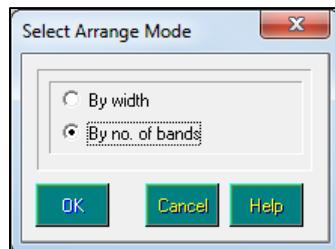
7. Click the **Save** button and select **Save As**. Browse, if necessary, to the **2015** folder. Supply a suitable filename (such as your own name), and then click the **OK** button to confirm. This new name is now carried in the Dataset section at the top-right of the screen.

*NOTE: The purpose of **Save as**, as opposed to **Save**, is to create a new backup without overwriting the old one. This is a very common strategy when constructing a timetable because it gives a choice of where to go back to, should the developing situation worsen. It also means that timetablers are more inclined to experiment if they know the current situation can easily be retrieved.*

8. Ensure that the **Year 7 Curriculum Plan** is displayed. Right-click the block title area of any yellow block and select **Delete** from the menu displayed. Repeat this with three or four others in the same year group. Click the **Undo** button to reinstate the blocks.
9. Click the **Clear** button and note the immediate effect, click the **Undo** button.
10. Click the **Clear** button again but this time change year group to see if any other year has been cleared. Return to **Year 7** and try to undo the edit by clicking the **Undo** button.
11. The only way to recover the situation is to click the **Load** button followed by **Reload File**.
12. Hover over the side (left or right edge) of a block until the cursor changes to a double-handle, then click and drag the block sideways past another block. Click the **Pack** button and note that the diagram is tidied up, keeping the blocks in the selected order. Click the **Undo** button to return the block to its original position.

If the auto-pack check box is selected then any attempt to move a block is followed automatically with a tidying of the curriculum diagram.

13. Select the **Auto-pack** check box and undo any changes by clicking the **Undo** button.
14. Click the **Arrange** button.



Nova-T is capable of rearranging the blocks in one of two ways. By width will result in the wide blocks (such as the tutor group blocks) moving to the left. By no. of bands will move the multiple band blocks (such as the PSE block) to the left. Full year blocks, therefore, move to the left.

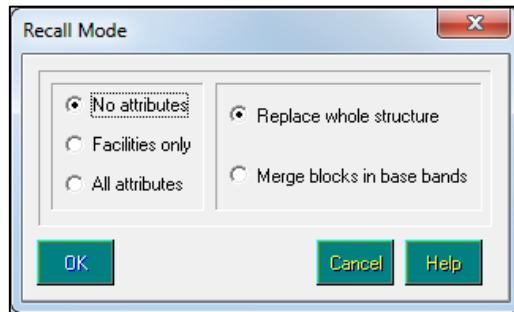
15. Experiment with each of these possibilities.
16. Create another year group by clicking the **+** button (underneath the **Save** button). Edit the name from **XX** to **T** (**T** for training). Type **175** in the **Number of Students** in this **Year Group** field. Do not give this year group a national curriculum year. Change to **Year T** and note the complete absence of a curriculum plan and return to **Year 7**.

If the curriculum plan was intended to be placed in the fictitious year, T bears a remarkable resemblance to that of year 7. Could it be copied across somehow?

17. Click the **Store** button, ensure that the **Save In** folder is **2016** and supply any name for this file. Confirm the process by clicking the **OK** button.

Nova-T has created a transfer file (that can be used only by Nova-T) which contains the plan for year 7. The file has the extension .mod (model).

18. Change to **Year T** and click the **Recall** button. Browse to the correct file and confirm by clicking the **OK** button.



The setting on the left-hand side of this box relates to resources that might already be attached to the year 7 blocks, resources such as teachers, rooms and facilities. Further clarification should not be attempted at this point. The setting on the right-hand side determines whether the mod file should overwrite anything already in year T or attempt to merge existing data with incoming data. For those using SIMS Options it is worth noting that the transfer mechanism for sending the blocking structure from Options to Nova-T is a mod file.

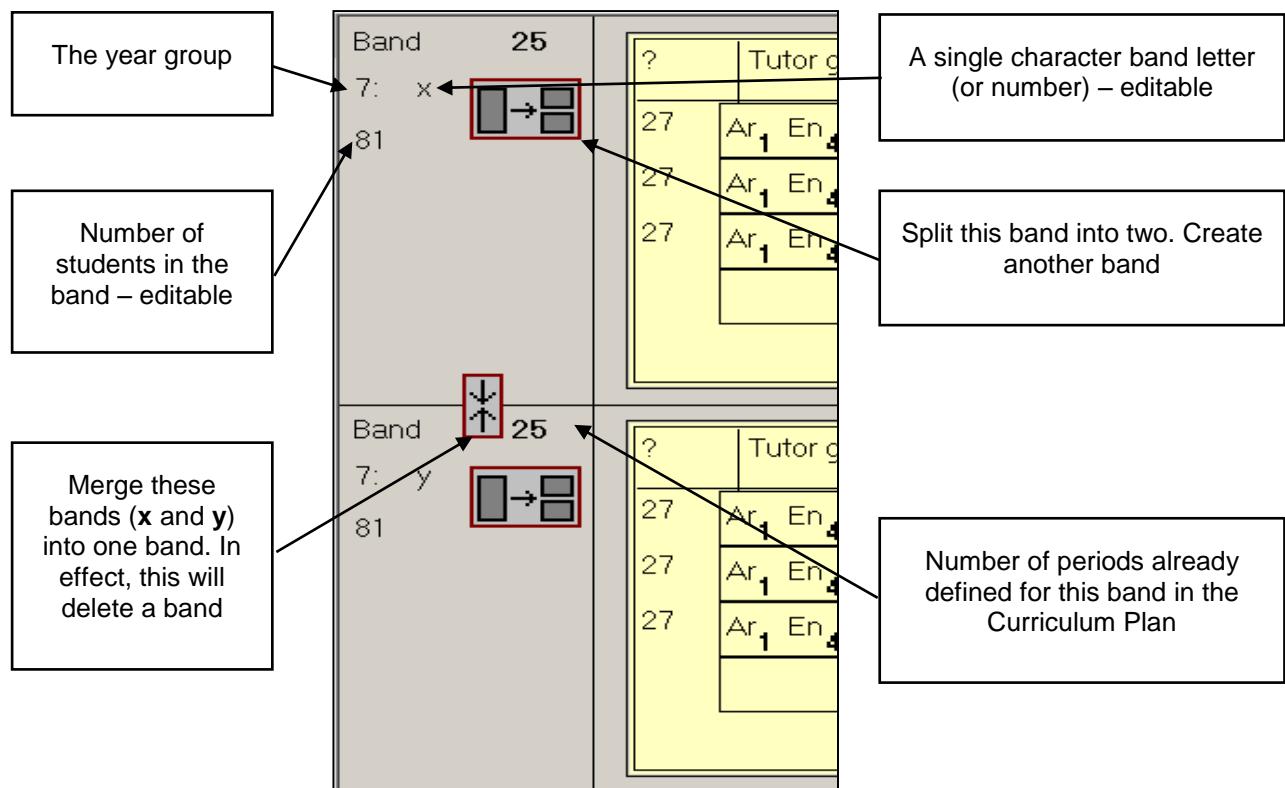
19. Leave the settings as default, and then click the **OK** button to confirm.

The data is copied into year T and could be modified if required.

20. Remove the curriculum plan from **Year T** by clicking the **Clear** button and return to **Year 7**.

Step by Step – Bands in More Detail

1. Study the following graphic. It describes in more detail the mechanisms for defining bands.



2. If necessary change to **Year T**. Edit the name of the only band from **a** to **x** and click the **New Band** button twice to create the three bands **x**, **y** and **z**.

There is no limit to the number of bands that can be created in Nova-T.

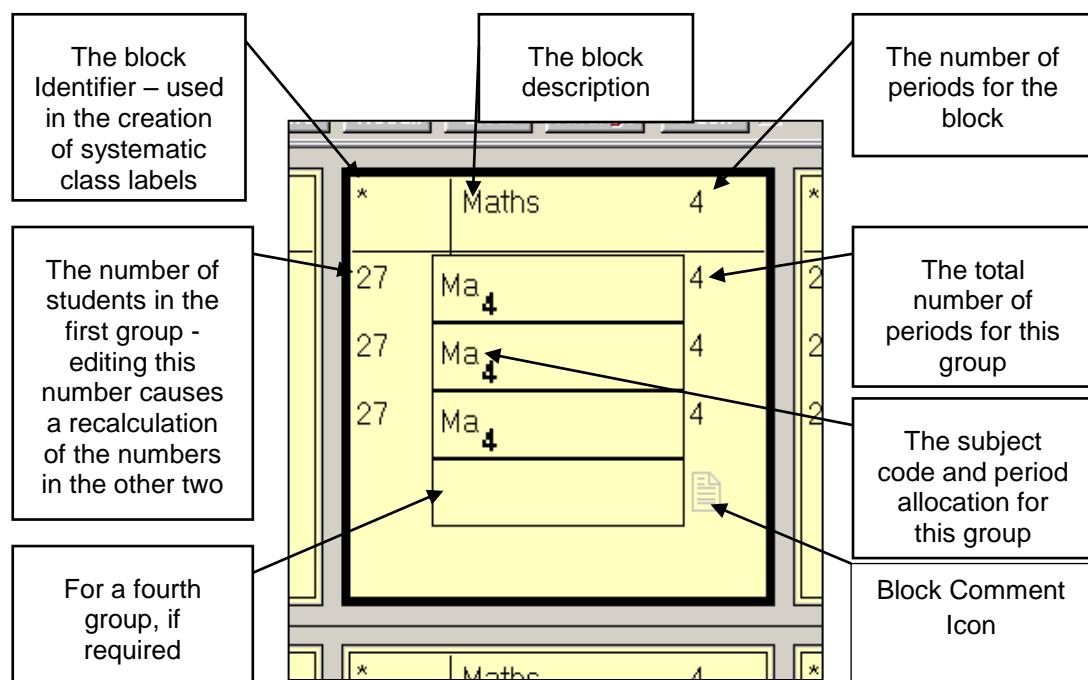
Band 0	T: x	
	59	
Band 0	T: y	
	58	
Band 0	T: z	
	58	

3. Edit the number of students intended to be in band **z** to **50** and note the effect of the numbers in the other two bands.

It can be seen that Nova-T is calculating band sizes based on the total in the year (175) and the number entered for band z (50). The remaining students are equally divided between bands x and y. This is one aspect of modelling a curriculum that Nova-T provides.

Band 0	T: x	
	63	
Band 0	T: y	
	62	
Band 0	T: z	
	50	

4. Change the number of students in **Year 7** to **180** and note the effect. Return the total back to **175** (this is not something that the **Undo** button can do). Delete the number **50** from band **z** and press **Enter**. The calculated number will replace the edited one.
5. Study the following graphic. It provides details of the information shown in each block. Compare it with the information on the screen for a **Maths** block for **Year 7** (band **x** or **y**).

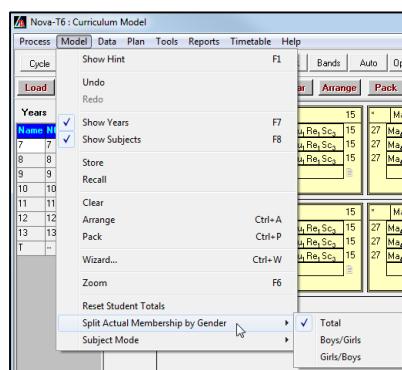


The student numbers (27 in the preceding graphic) are nominal in that they are not being read from actual numbers in SIMS. Their purpose at the planning stage is to provide an indication of average class size. It is possible to import the actual numbers from SIMS so that the exact class sizes are displayed. It is also possible to split the numbers by gender.

The import routine in Nova-T is located in the menu route **Data | Retrieve Membership Totals**. Imported numbers are displayed in green. This 'real' data can be used for analysis purposes.

The numbers of students of each class may be displayed as totals, girls first or boys first. The route to selecting the required choice is **Model | Split Actual Membership by Gender**.

The menu item immediately above Split Actual Membership by Gender provides a mechanism for returning to the nominal student numbers.



6. Click the **Block Comment** icon on one of the **Maths** blocks in **Year 7** and type some text, for example, **remember to place DA on the bottom set.**
 7. Confirm by clicking the **OK** button. Point to the now active block comment, the message appears at the bottom-left of the screen.

It is possible to print all post-it notes by selecting **Reports | Block Comments** and opting to print the report (which can also be copied to the clipboard).

Step by Step: Minimum Periods

The number at the top right-hand side of each block is the number of periods attached to the block itself, rather than to the individual groups within the block.

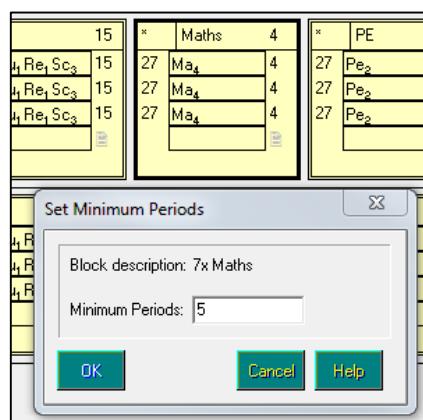
In the vast majority of blocks it is sensible that this figure should default to being the same as the number of periods for the groups within the block. This might seem obvious; a Maths block containing groups requiring four periods should also require four periods.

There are circumstances in which this would not be the case. It is relatively common in the sixth form for some blocks to be fragmented when scheduling. For example, each group within the block requires four periods. The block might have to be scheduled for six periods if the timetabler decides to leave off certain groups at some of the periods. It is not uncommon for parts of one sixth form block to be superimposed onto parts of another when scheduling.

This is somewhat of a last resort trick to aid the completion of the timetable lower down the school and the timetabler does not usually set out with the intention of fragmenting blocks in this way. If it became necessary, could it be achieved in Nova-T?

Nova-T would never create a fragmented block automatically. It is considered as breaking the rules and it is required to carry out this task manually. More information will be given later regarding breaking the rules.

1. Right-click the **Title** area of any block and select **Minimum Periods** from the menu displayed.



2. Type over the zero a number that is greater than the current number attached to the selected block, and then click the **OK** button to confirm.

Whatever number is typed here will be accepted by Nova-T (so long as it is equal to or greater than the group requirement). The period numbers in the selected block will turn red because of the discrepancy between the block and group period numbers. It is impossible to fragment a block in Nova-T without first carrying out this task.

Examining the Subject Table on the Model Process

Study the following graphic, and while viewing the **Year 7 Curriculum Plan**, compare it with the subject table at the right-hand side of the own screen. Ensure that the **Filter** check box is selected, as shown in the graphic displayed below.

Subjects					
	PSE	Code	Clas	Per	Std
A	27	F	Ar	6	6
B	27	F	En	6	24
C	27	F	Fr	6	12
D	27	F	Ge	6	6
E	27	F	Gg	6	6
F	27	F	Hi	6	6
			Ma	6	24
			Mu	6	6
			Pe	6	12
			Ps	6	6
			Re	6	6
			Sc	6	18
			Te	8	24

Current Year: Displays data relevant to the curriculum diagram currently in view.

All Years: Displays data which is the total of the Curriculum Diagrams for all year groups.

Filter: When checked, subjects with zero totals are removed from the table.

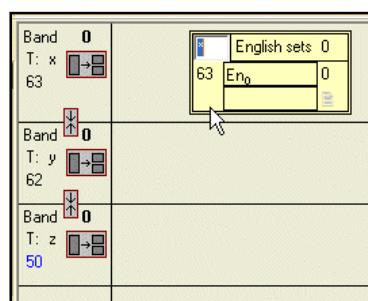
Activity: Subjects Table

Experiment with the check boxes and radio buttons as described in the preceding graphic, leaving them set as follows: **Current Year** selected and the **Filter** and **Highlight** check boxes deselected.

Step by Step – Creating English Blocks for Year T (single subject block)

For year T, it is required to create a four-period English block containing three groups and it should only serve band x.

1. Ensure that **Year T** is displayed. Click and drag the subject **En** from the table at the right-hand side and drop it into the main plan area for band x.

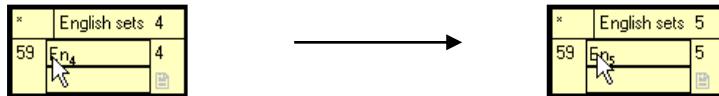


2. Accept the *asterisk as the **Identifier**, and then press **enter**.
3. Accept **English sets** as the name of the block, and then press **Enter**.
4. Overtype the **zero** periods with **4** and press **Enter**.

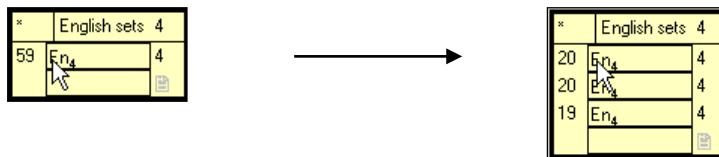
Changing the Number of Periods

Study the following graphics displayed below. Note the short cuts to adjusting the number of periods of a group and to creating further groups.

- Pointing to the group and using **shift** and **left/right-click** increments the number of periods up/down.



- Pointing to the group and using **alt** and **left/right-click** adds additional or deletes existing groups.



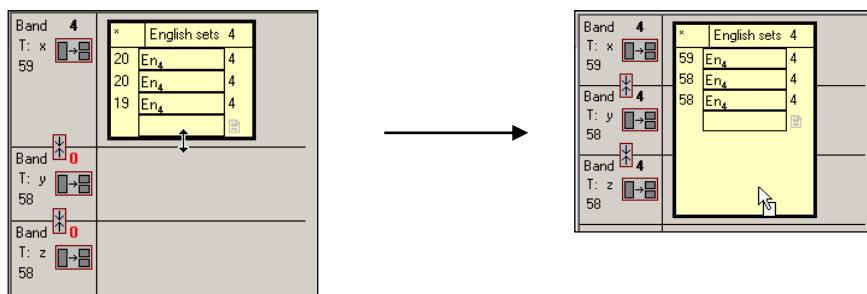
- Experiment with these techniques and eventually leave the block with three groups having four periods of **English**.

Note that as the number of groups increases, the class sizes (indicated down the left side of the block) decrease.

- Working on the assumption that the third **En** group should have no more than fifteen students, select the number for this group and overtype with **15**.

The overtyped number is displayed in **blue** and the other class sizes adjust.

- Hover over the upper or lower edge of the new block (until the cursor becomes a **double arrow**) and click and drag it down to one of the other bands. Return it either by dragging again or selecting **Undo**.
- Study the following instructions that describe how to stretch the block across more than one band, then make your own block full year, containing six groups and not three as illustrated.

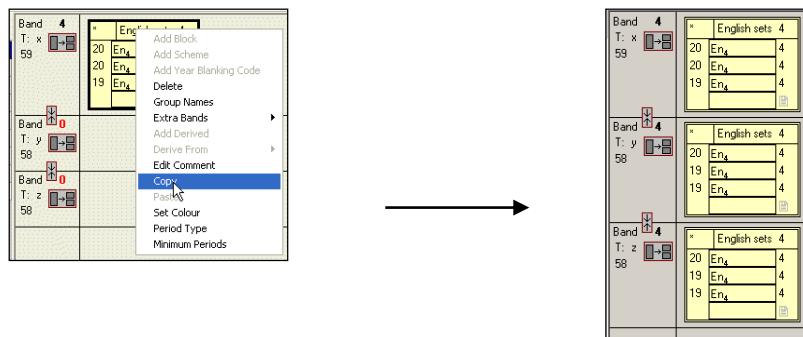


Holding carefully over the upper or lower edge of the block, while holding down **Ctrl**, enables the block to be stretched across more than one band. When pointing to an existing group, **alt** and **click** adds further groups.

- Return the block back to its original size and location (three groups in a band **x** block).

It is not uncommon for bands **y** and **z** to also contain English blocks that are identical to the original. It is not required to copy a block.

10. Study the following instructions and create two more blocks by copying.



- Right-clicking the **Title** area of the block brings up a menu. Select **Copy**, then right-click the **desktop** area for band **y** and select **Paste**. Repeat for band **z**.
- Point to the **En4** that represents the top group in the band **x** block. At the bottom right of the screen, the class name **Tx/En1** is displayed.

This may seem a strange name but for year T, band x, subject En and first group, this is exactly the sort of name that will help communication.

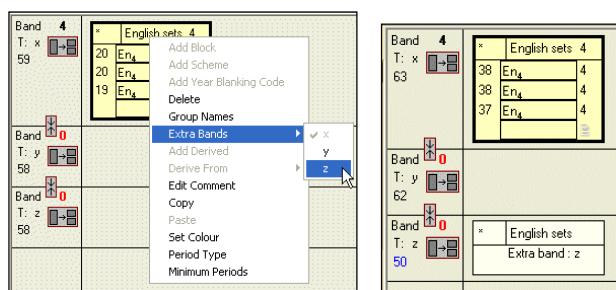
- Check some of the class names in the other **English** blocks in **Year T**.

NOTE: Nova-T automatically produces systematic class labels according to an algorithm that includes the identifier. While it is possible to overtype these systematic labels with user defined ones, this is a very time consuming business. Timetablers should be aware of how to get Nova-T to produce sensible labels, most of which do not need to be overtly typed. The Appendix in this booklet contains a detailed explanation of this process.

- Delete the blocks for bands **y** and **z** by right-clicking the **Title** area and selecting **Delete** from the menu displayed.

There are rare occasions when it is required to define a block which serves non-contiguous bands such as **x** and **z** (that is to say not adjacent). This is not recommended if other blocks serve bands **xy** or **yz**, because it reduces flexibility when scheduling. It is not possible to define a block which serves **xz** by click and drag, but it is possible by using the menu.

- Right-click the **Title** area of the **English** block in **Year T** and hover over **Extra Bands** selecting **z** from the sub-menu.



The visual representation of the arrangement may look strange, but on close examination it can be seen that the original block is now dividing one hundred and thirteen students into three groups whereas previously it was sixty three students. In a school environment this block would need more groups added.

- Undo the arrangement with the extra band either by repeating the process used to create the extra band or by using **Undo**.

Step by Step – Linked Classes

There is in Nova-T the concept of linked classes. For example, in the preceding graphic of a block containing three English classes, one of the groups is to be split into two for just one of the four periods. The intention is that some of the students will carry on with a fourth period of En (English Language), but the others will study English Literature (Et in our data). This could not be achieved by simply creating a fourth group in the block because (on export) this would not adequately describe the intended structure to SIMS. This, in turn, would mean problems in placing students into their correct groupings, particularly for English Literature. The answer is to create a linked class. Assume that the top set is the group to be split.

1. Reduce the number of periods on the top set from **4** to **3** and drag another **En** from the table to sit next to the existing group. Edit this second one to **1** period.

2. Hold down **Ctrl** and drag **Et** from the subject table and drop it exactly over the **En1**.

The software places Et immediately below the En1. The two are linked and may be staffed independently.

This arrangement will be interpreted correctly by SIMS. The first group of students are together for three periods, but divided for the fourth. The academic management tick grid will enable the school to identify which students go into which structure at the fourth period.

The ten in front of the divided structures is simply to convey that twenty students are being divided. It is possible to edit these numbers so as convey more accurately the intention.

3. Click the **Undo** button to remove the linked class.

NOTE: Other examples of linked classes: Pe and Pe Theory Lessons or language classes where the top set takes an additional language in year 2 of a course.

Step by Step – Creating Linear Blocks

		Tutor groups	15
A	27	Ar ₁ En ₄ Fr ₂ Ge ₁ Gg ₁ Hi ₁ Mu ₁ Re ₁ Sc ₃	15
B	27	Ar ₁ En ₄ Fr ₂ Ge ₁ Gg ₁ Hi ₁ Mu ₁ Re ₁ Sc ₃	15
C	27	Ar ₁ En ₄ Fr ₂ Ge ₁ Gg ₁ Hi ₁ Mu ₁ Re ₁ Sc ₃	15

Linear blocks are structures in which students study a variety of subjects in the same groupings. One common example of this is the tutor group block in which students are taught in the groups used for registration. There are other similar structures.

1. Change to **Year 7** and note the two 15 period linear blocks entitled **Tutor Groups**.

The meaning of each of these blocks is as follows: for fifteen periods students study nine subjects in registration groupings. The block contains three groups.

2. If the group names are not already visible, right-click the **Title** area and select **Group Names**. Note the name of each group (**A**, **B** and **C**). Check the names of the groups in the other linear block.
3. Point to the top group (**A**) and subject Ar and note the name of the class (bottom-right of the screen).

The class names in this structure are different than those in the English block and not just because of the subject. The group A Art class is called 7A/Ar, that is to say year 7, group A and subject Ar. There is no set number following the subject code as there is with the English block. This is quite deliberate, as it would not make sense to put a set number after the name of a registration group or similar structure. Note that the identifier in the top left corner of the block appears to be **?**.

4. Select the **?** (as if to edit). There is no identifier. Press **Enter** to finish editing and the **?** returns.

The **?** is Nova-T's way of alerting you to the fact that no Identifier has been entered and in the case of a linear block, one should not be entered.

5. Return to **Year T** and create a linear block by dragging **Fr** alongside the **English** block, removing the asterisk. Edit the name of the block to **Teaching Groups** and type **3** as the number of periods for **French**. Drag other subjects into the block; **Dr1**, **Mu1**, **Ps1**, **Re1** and **Ar2**.

Years		Band 13	English sets 4	Teaching Groups 9
Name	NCYr	T: x	20 En ₄ 4	59 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9
7	7	59	20 En ₄ 4	
8	8		19 En ₄ 4	
9	9			
10	10			
11	11			
12	12			
13	13			
T	--	58		

Nova-T orders the subjects within the block in alphabetical order. This cannot be changed.

6. Create two more groups by pointing anywhere in the existing group and using **Alt** and **click**.
7. Name the three groups as **A**, **B** and **C**.

Years			T: x	Band 13	English sets 4	Teaching Groups 9
Name	NCYr	Total		59	20 En ₄ 4 20 En ₄ 4 19 En ₄ 4	A 20 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 B 20 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 C 19 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9
7	7	162				
8	8	167				
9	9	176				
10	10	164				
11	11	160				
12	12	98				
13	13	94				
T	--	175				
			T: z	58		

Assuming that bands y and z are to contain similar blocks, then it would be useful to be able to copy both of the existing blocks in one operation.

Band 13 T: x	English sets 4 20 En ₄ 4 20 En ₄ 4 19 En ₄ 4	Teaching Groups 9 A 20 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 B 20 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 C 19 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9
Band 13 T: y	English sets 4 20 En ₄ 4 19 En ₄ 4 19 En ₄ 4	D 20 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 E 19 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 F 19 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9
Band 13 T: z	English sets 4 20 En ₄ 4 19 En ₄ 4 19 En ₄ 4	G 20 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 H 19 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9 I 19 Ar ₂ Dr ₁ Fr ₃ Mu ₁ Ps ₁ Re ₁ 9

- Hold down **Ctrl** and click the **Title** area of the **English** block, noting the colour change. Repeat with the **Teaching Group** block. Now that both blocks are selected (having released **Ctrl**), perform a **Copy** on either block and **Paste** into band **y**. Repeat for band **z**. Deselect the original two blocks by holding down **Ctrl** and clicking the title area of each block.

The copying process has produced identical names which need sorting. The preceding graphic shows the middle block as having been edited to D, E and F.

- Sort out the **Group Names** of the blocks, using single characters from **A** to **I**.

Although only one character has been used, it is possible to use one, two or three. This means that registration groups who are called after the name of the form tutor can carry a three character group name in circumstances where teacher codes use three letters.

As will become apparent later, the scheduling screens can make use of colour. For example, if the intention was to colour all English blocks a particular colour to make them stand out.

- Right-click the **Title** area of one of the **Year T English** blocks and select **Set Colour** from the menu displayed.

- Select any colour (except the top one) and confirm by clicking the **OK** button.

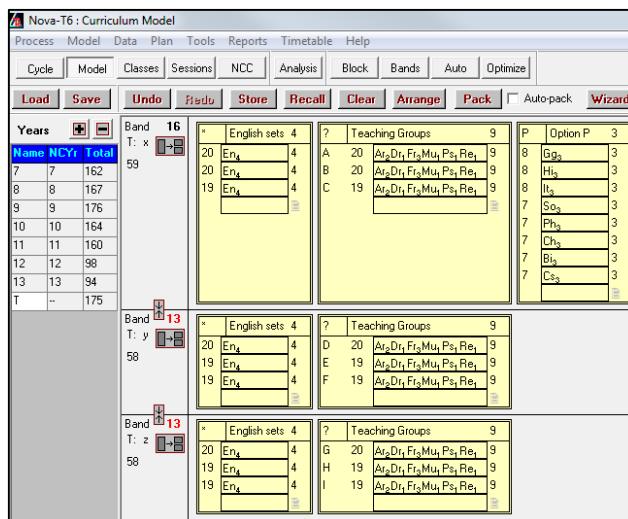
The selected colour will be displayed as a background in the Identifier field. It is also possible to use this colour on the scheduling displays. To colour all English blocks it is necessary to work through them one by one. It is the block that is being coloured, not the subject. The complete dataset may also be colour coded by selecting **Data | Edit Colour**. The process bar carries the defined colour and helps differentiate between datasets that in other ways may appear similar.

Step by Step – Creating an Option Block

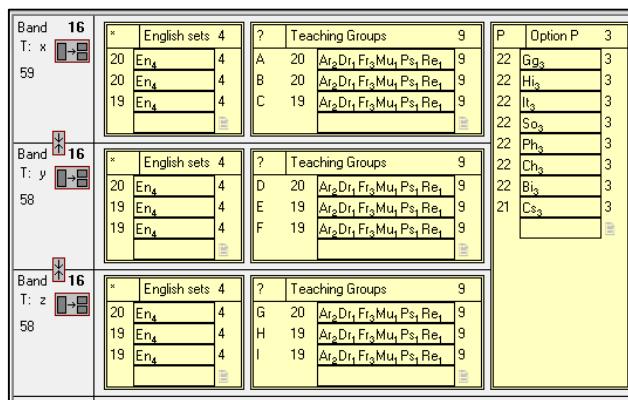
So far, two types of blocks have been examined and created; a single subject block and a linear block containing multi-subjects. The logic of the linear block is that for a particular group, all students study all subjects. There is a different type of multi subject block in which the logic is entirely different, this is the option block. Delegates will be familiar with this concept, used particularly in Key Stage 4 (KS4) and Post-16 structures. In an option block, subjects are placed vertically and scheduled simultaneously. Students normally only study one subject from the list.

An example of this is full year option block. The bands are named x, y and z and teaching groups are A to I, any option block serving the same year group should avoid using any of these letters so as not to cause confusion concerning class labels. A three period block will now be created containing the subjects Gg, Hi, It, So, Ph, Ch, Bi and Ci. The block will be called option P.

1. Select the first subject **Gg** and drag it next to the existing blocks in band **x**. Overtype the **Identifier** as **P**, change the name of the block to **Option P** and define the number of periods as **3**.
2. Select each additional subject in turn, click and drag it into the block on a new row.



3. Holding down **Ctrl**, hover over the lower edge of the block and stretch it to be the full year.



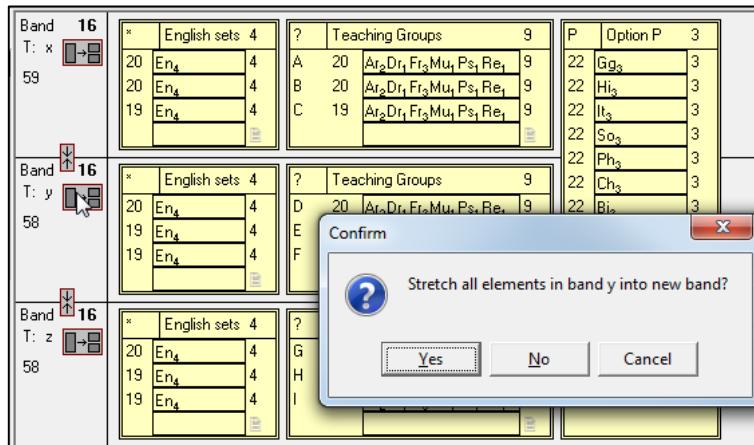
The vertical order of the subject codes within the option block may be changed by simply using click and drag.

4. Change the order of some of the subjects within the block.

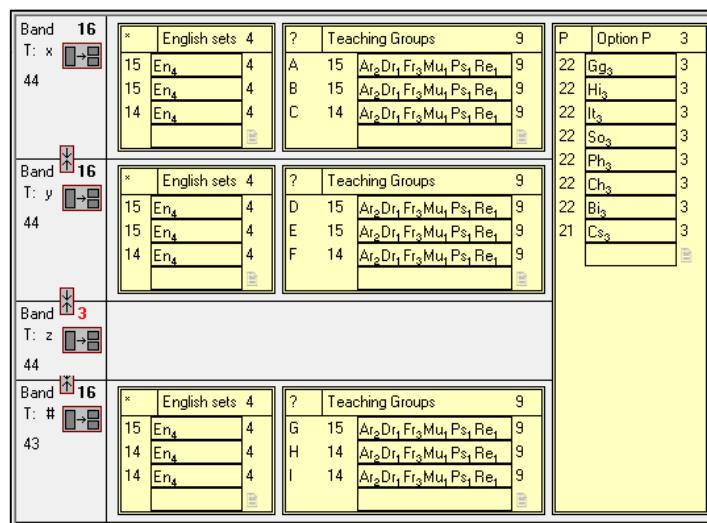
Step by Step – Extra Bands

If required to create another band between y and z:

1. Click the **Add Band** button, (for band y) as shown in the graphic displayed below.



2. Click the **No** button to the prompt in the preceding graphic.



The new band is called **z** and the original band **z** is now called **#**. Staff members may wish to rename the bands in some circumstances, because the response to the previous prompt was no. The only block stretched across the new band is the one that already went across the full year.

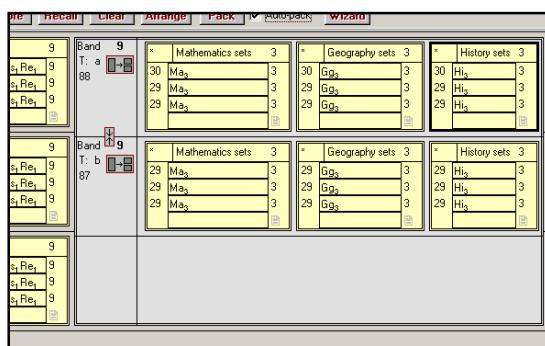
3. Click the **Undo** button to remove the additional band. The option block is not needed so remove it by right-clicking the **Title** area and selecting **Delete** from the menu displayed.

Step by Step – Creating Sub-Bands

In Nova-T bands may be defined either as base bands or sub-bands. In most year group structures it will not be necessary to use sub-bands, but should it become necessary, it is very important that they be used. If they are not used, problems will arise later in the process concerning placing students in the correct groups.

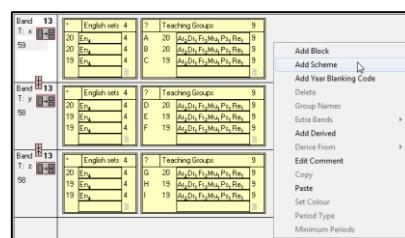
So far in the year T curriculum model three base bands have been used called x, y and z. It is the intention that students will be assigned to these bands on the basis of which mixed ability registration group they attend. Groups A, B and C will be placed in band x, for example. There will be no necessity to use sub-bands, so long as all subject areas are prepared to use this division of the year group based on membership of particular registration groups.

If it was intended to deliver Ma, Gg and Hi in half year ability blocks, this would mean to stream the bands. The existing bands x, y and z cannot define this request. The answer is to create two more bands; sub-bands. Then place the new blocks in these bands rather than the original base bands.

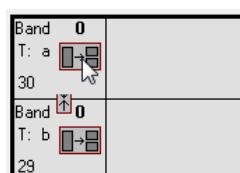


The preceding graphic shows two sub-bands called a and b (this is not the best choice of name, given the names of the registration groups in this year group). Band a contains 88 students and band b 87. These numbers are nominal, not actual, but they add up to the number of students placed in year T (175). The lower grey area is simply padding and adjusts in size depending on the number of classes in the blocks. In SIMS it will be necessary to say which students are in bands x, y and z and also which are in a and b. Sub-bands provide additional structures in the curriculum plan, structures that could not be defined using the original base bands.

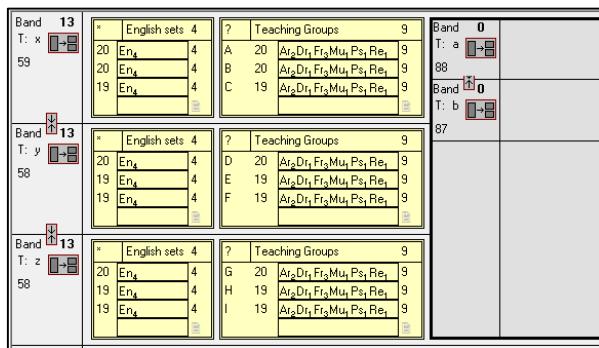
1. Right-click in an available space for band x and select **Add Scheme** from the menu displayed.



2. Click the **Add Band** button to create an additional band.



3. Holding down **Ctrl** and **left mouse** button drag the bottom of the band structure box so that it becomes full year, rather than being a structure of just x.



4. Create a **Ma**, **Gg** and **Hi** block for band **a** and copy down to band **b**.

Step by Step – Derived Years

Derived years is a concept which provides a mechanism for defining vertical blocks. For example, certain blocks may cater equally for students in years 12 and 13 - a common sixth form block.

The following example, as shown in the graphic displayed below, illustrates the process of creating an option block for year 12 band a and the whole of year 13. When, ultimately, this is exported to SQL, the tick grid in Academic Management will automatically list students in 12a and 13 for placement in the C6 band and thereby, the classes. This is a significant step forward in our ability to manage vertical arrangements.

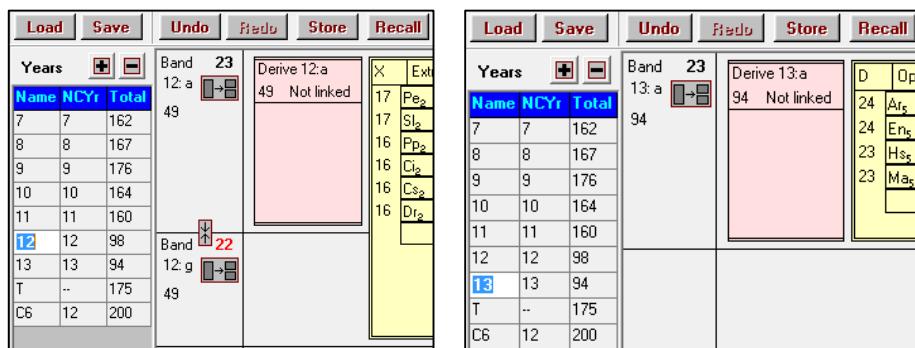
Firstly, it is necessary to create a year group that can be used for the common sixth form structure.

Load			Save			Undo			Redo		
Years			Band 0			C6 a					
Name	NCY	Total									
7	7	162									
8	8	167									
9	9	176									
10	10	164									
11	11	160									
12	12	98									
13	13	94									
T	..	175									
C6	12	200									

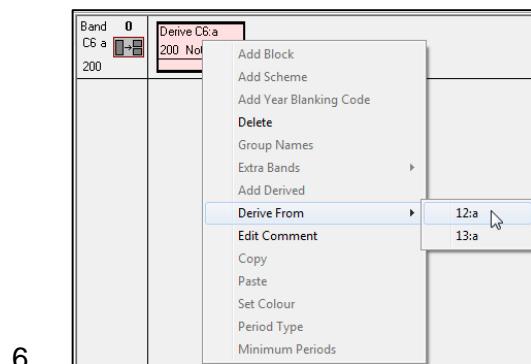
1. Create a new year group (after **Year T**) called **C6** (common sixth form) and associate it with national curriculum **Year 12** (it could have been 12 or 13). Do not edit the number of students belonging to this year.
2. Right-click the **Band** area of the **Model** and select **Add Derived** from the menu displayed.

Load			Save			Undo			Redo		
Years			Band 0			C6 a					
Name	NCY	Total									
7	7	162									
8	8	167									
9	9	176									
10	10	164									
11	11	160									
12	12	98									
13	13	94									
T	..	175									
C6	12	200									

3. Assuming that it is the intention that the common structure should serve **Year 12** band **a** and **Year 13**, change to each of these **Year Groups** and repeat step 2.

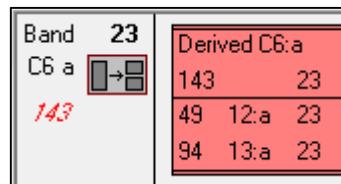


4. Return to **Year C6**, right-click the derived block and select **Derive From | 13:a**.
 5. Repeat this time selecting **Derive From | 12:a**.



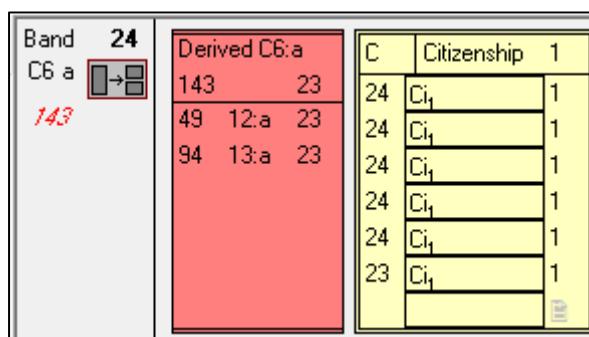
6.

What has been defined is the destination year C6 as being sourced from 13:a (94 students) and 12:a (49 students). So any blocks created in C6 will be expected to serve 143 students.



If the intention is to provide six groups of Citizenship for these 143 students:

6. Simply drag the subject **Ci** into the area used for blocks (just to the right of the derived structure). Define one period and create six groups.



The block in the preceding graphic has been given the **Identifier C** and the title **Citizenship**.

7. Change to **Year 12** and look at the derived structure.

The number of periods for band 12a is now 24 (whereas previously it was 23). The one period block in year C6 counts towards the entitlement of year 12, band a.

The same applies to year 13.

Years			Band 24	Source 12:a
Name	NCYr	Total	12:a	49 1
7	7	162	49	
8	8	167		
9	9	176		
10	10	164		
11	11	160		
12	12	98	Band 22	
13	13	94	12:g	
T	--	175	49	
C6	12	200		

In scheduling the sixth form structure, when the Citizenship block in year C6 is placed at a particular period, Nova-T will prevent any block serving 12a or 13a from being scheduled at the same time. This prevents double-booking of students. The autoschedule routines are also quite capable of working to this system.

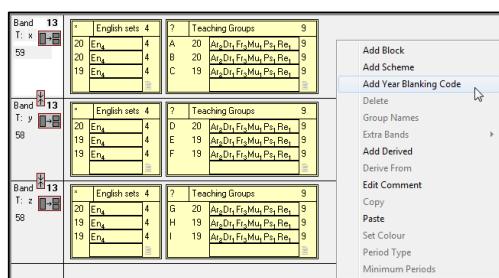
- Delete all the references to derived structures in **Years 12, 13 and C6**. Then delete the **Year C6** entirely.

Step by Step – Blanks in the Curriculum Plan

Some schools operate a cycle in which certain year groups do not have access to certain periods. The sixth form may have lessons in twilight periods not used by other year groups. Split lunches can result in similar rules needing to be observed by the scheduling routines. The concept of an extended school day may become more common, in which case many schools may need to use blanks.

It is possible to achieve the same actions using exclusivity of period types as discussed in Chapter 3. It is a timetabler's preference as to which is used.

- Change, if necessary, to **Year T** in the **Model** and right-click the band x area and select **Add Year Blanking Code** from the menu displayed.



Nova-T creates a fictitious block for band x, which can be extended across all three bands.

- Hold down **Ctrl** and drag the lower edge of the block down to band z, and then type **2** as being the number of periods needing to be blanked.

The figure consists of three vertically stacked screenshots of the Nova-T software interface. Each screenshot shows a grid of curriculum blocks for three bands (15, 15, 15). In the first screenshot, a block for 'T: x' is selected and has a red border. In the second screenshot, the block for 'T: y' is selected. In the third screenshot, the block for 'T: z' is selected. To the right of each band grid are two smaller windows: 'English sets 4' and 'Teaching Groups'. The 'Teaching Groups' window shows staffing details for various groups like A, B, C, D, E, F, G, H, and I. The bottom right window is titled 'BLANKING 2' and contains the value '175 Periods2 2'. The 'T: z' screenshot also shows a red border around the entire row of blocks for band 15.

As can be seen in the preceding graphic, the blanking block counts towards the curriculum entered for this year group, 16 periods including the blanks.

This block will not require staffing, but will need to be included in other procedures explained later in this booklet. When eventually the blank is scheduled, it will be automatically locked to the period(s) and cannot be unlocked. It cannot be moved (although it can be deleted and placed somewhere else). If the entire school misses the same period (such as last period on Friday), then one method of tracking this is to create a one period blanking block for each year group, then schedule them all at the same period.

Step by Step – Transfer Curriculum

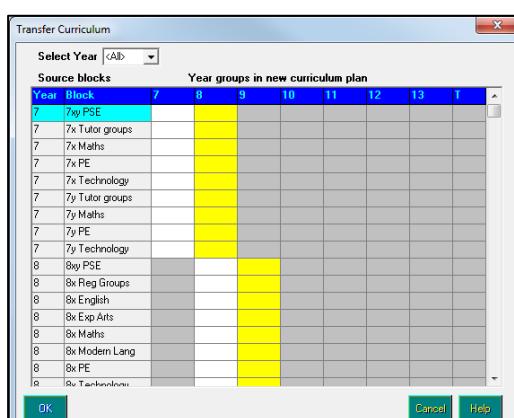
Transfer curriculum is the mechanism by which parts of the curriculum plan for the current year may be cloned and made available for next year.

This usually involves certain blocks moving up a year, others moving across and possibly even some moving down. It is common for the year 10 structure to be moved to year 11, complete with staffing. Year 7 blocks may well be retained for the next year 7, but without staffing.

Normally, transfer curriculum is one of the first steps to preparing for the next year. It has been delayed until this point in the training booklet, because knowledge of the curriculum model is a prerequisite to understanding the routine.

Using transfer curriculum creates a new dataset which requires saving.

- Change to **Year 7** in the **Model** and note the various blocks defined, nine in all.
- Select **Data | Transfer Curriculum**.



The routine defaults to listing all blocks in the curriculum plan, but the list may be filtered using **Select Year**. The most likely columns for receiving transfers are coloured white (for moving across) and yellow (for moving up). In fact, a block may be transferred to any or all year groups, including grey ones.

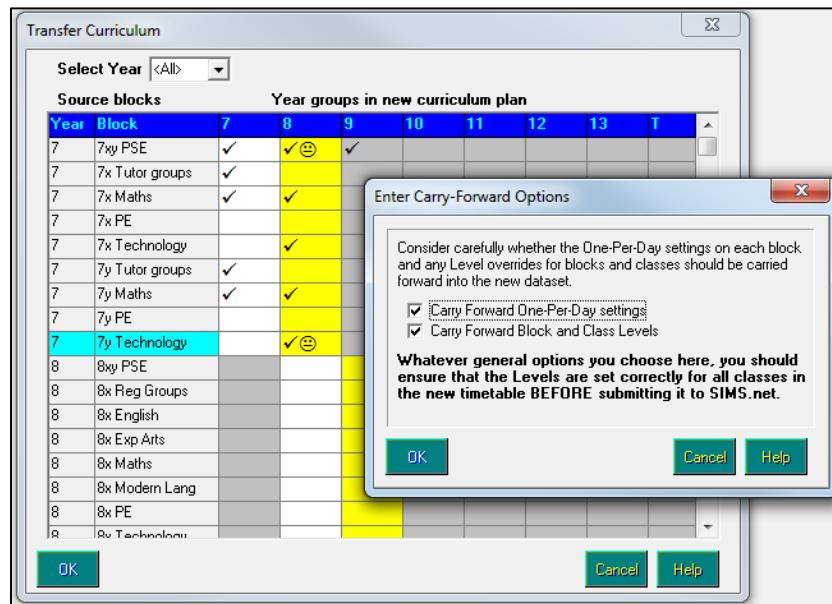
Clicking into a cell places a tick, a second click adds a face and a further click removes everything from the cell. Right-clicking always removes the contents. The tick signifies that the block is copied, whereas the face implies that both staff and rooms (attached to classes in the curriculum plan) will also be included. This means that rooming carried out subsequent to scheduling will not be copied, but rooms dragged onto classes in the plan will be.

3. Set up the situation as shown below.

Transfer Curriculum		Select Year <All>						
Source blocks		Year groups in new curriculum plan						
Year	Block	7	8	9	10	11	12	13
7	7xy PSE	✓	✓	✓				
7	7x Tutor groups	✓						
7	7x Maths	✓		✓				
7	7x PE							
7	7x Technology			✓				
7	7y Tutor groups	✓						
7	7y Maths	✓		✓				
7	7y PE							
7	7y Technology			✓				
8	8xy PSE				✓			
8	8x Reg Groups							

4. Confirm the transfer by clicking the **OK** button.

Before carrying out the transfer instructions, the routine prompts for clarification regarding what it should do with two kinds of settings; the one-per-day rule and class levels. The full significance of these settings will not be obvious until you have completed the course. For the moment, it is sufficient to note that a choice is being given.



- Leave the ticks in place, confirm the transfer process by clicking the **OK** button and note the effect in the **Model** of the newly created curriculum plan.
- Change to the **Classes** process and note colour of the cells in the existing three year groups.

A white background represents an under-staffed class, whereas grey indicates fully staffed.

One also has to consider what levels will be applied to the classes included in the transfer and whether they are correct for the new dataset. This is discussed under the tools section of *Part B*.

Under normal circumstances the new plan should be saved. For the purposes of this training course you do not need to and can leave it as <**NoName**>. The original plan has not been lost and is still in memory.

7. Select **Data | Select**, note the possibilities, and then swap between the two datasets eventually settling for the original one named **T6 (1)**.

Step by Step – The Alternative Curriculum

Definition of Alternative Curriculum

Schools have for many years carried out a strategy in which individual students are withdrawn from normal timetabled classes (at particular periods), to follow one or more alternative activities for which provision has been made. Common examples are; peripatetic music lessons, support in Numeracy or Literacy and off-site activities that cut across the normal timetabled day. Special schools may consider similar examples such as attendance at the physiotherapy or sensory rooms.

As these alternative activities overlay the normal curriculum provision, in most cases, it is necessary to withdraw students from standard lessons in order for them not to be double-booked. One exception to this is in Post-16 studies, where students may attend an alternative activity during an otherwise free period.

To benefit from Attendance and Performance functionality in SIMS and to be able to produce accurate student timetables and class lists, schools wish to electronically record these arrangements.

While most classes within the school curriculum last for the full working academic year, these alternative structures themselves may exist for a variety of date ranges, and the student memberships may be particularly fluid, with different students attending at different periods and for different date ranges.

Most standard classes cater for students from one year group whereas alternative structures may be more vertical in concept, for example, Key Stage 3 (KS3) Literacy support. Nova-T uses the concept of derived years to cater for vertical curriculum structures. However, staff members need a more effective solution.

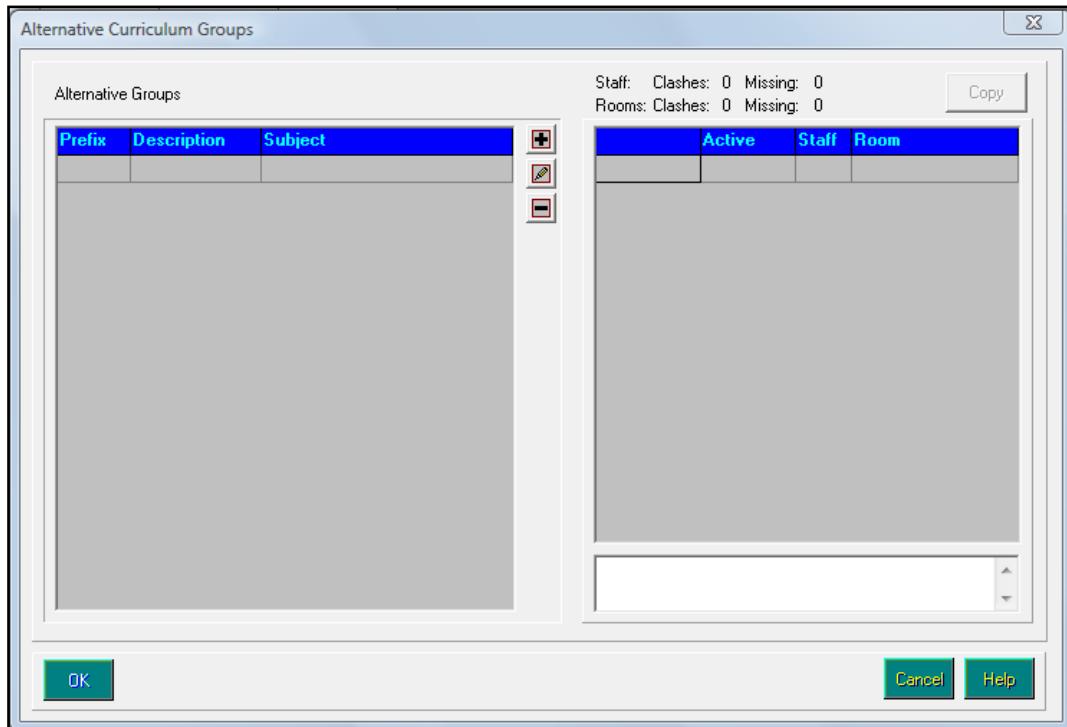
Given that the structures for the Alternative Curriculum originate in Nova-T, it follows that they should be period based. It is not possible to schedule a group that exists for only part of a period. Neither is it possible to schedule one after the normal school day, unless a twilight period has first been added to the timetable cycle. This would have to be flagged as teaching rather than non-teaching otherwise the timetable could not be transferred to SQL.

Each structure is associated with a single subject. In the case of a Literacy unit it would be possible either to create a new subject or associate it with an existing one, such as En. When looking at certain staffing reports within Nova-T, if it is thought necessary to differentiate between contributions to English and Literacy support, for example, then a new subject might be preferable.

For structures such as basic skills, that involve a number of subject areas, it might also be preferable to create a new subject.

To add the Literacy unit to the timetable at period five on each day:

1. Select **Data | Alternative Curriculum**.



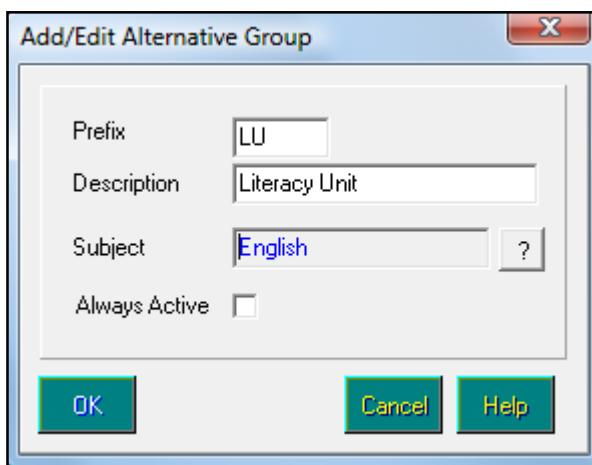
In this Nova-T dataset no previous alternative curriculum groups have been created.

2. Click the **New** button.



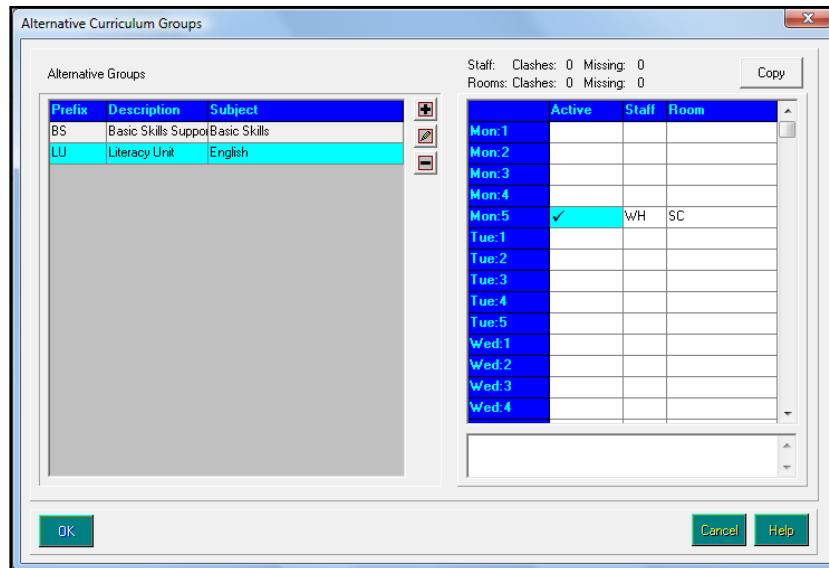
New Button

3. Type the **Prefix**, **Description** and **Subject**, as shown in the graphic displayed below and deselect the **Always Active** check box.

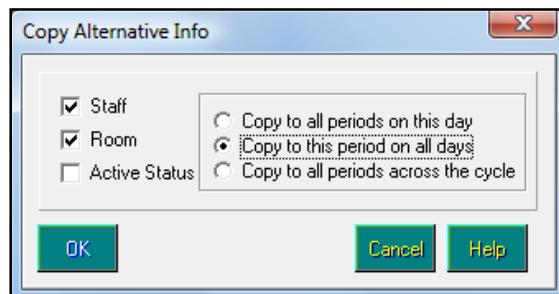


If the intention was to schedule the unit at all periods of the cycle, then the Always Active check box would be left selected. This would result in every period having a tick in the first column, which would save time.

4. Confirm the definition of the new group by clicking the **OK** button, and then select the new group from the left-hand list.
5. Place a tick at **Mon:5** (use <Space> or double-click) and add teacher **WH** and room **SC**.



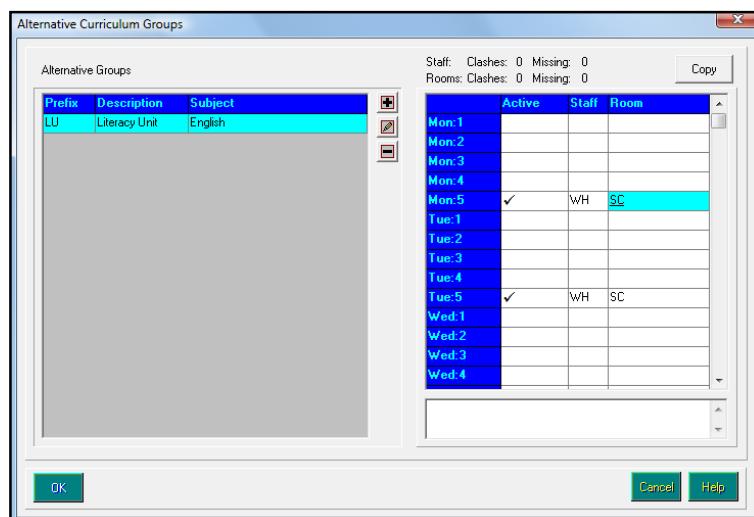
6. Ensure that one of the cells on Mon:5 row is selected and click the **Copy** button at the top right, and then select the **Copy to this period on all days** radio button. Note the other possibilities.



7. Confirm by clicking the **OK** button.

Nothing is likely to happen because no other period has the active tick.

8. Repeat the **Copy**, but also select the **Active Status** check box.



The existence of the Literacy unit, together with the resources attached to it, is copied to period five on all days.

9. Confirm the changes by clicking the **OK** button.

This is all that is required to define the alternative curriculum activity. When the timetable is eventually exported to SQL, routines within SIMS will enable individual students to be withdrawn easily into the alternative structure at one or more periods.

In most school situations, it is likely that the timetable will have been completed before defining alternative curriculum activities. When using the Copy functionality (as outlined in step 8 above) this can result in the double-booking of staff or rooms. Any such possibility is highlighted in the appropriate cells, as shown in the graphic displayed below.

	Active	Staff	Room
Mon:4			
Mon:5	✓	WH	SC
Tue:1			
Tue:2			
Tue:3			
Tue:4			
Tue:5	✓	WH	SC
Wed:1			
Wed:2			
Wed:3			
Wed:4			
Wed:5	✓	WH	SC
Thu:1			
Thu:2			

Ms W Harris [WH] is in use by 8x/Te3 at Wed:5

For more information on Alternative Curriculum please refer to the Alternative Curriculum training guide.

05

Resourcing Classes

This chapter contains:

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Assigning Classes to teachers	65
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Chapter Introduction

As a general principle, before scheduling, the timetabler assigns to each class in the curriculum plan those resources which are deemed essential for the class. The most common example of this is teachers, but rooms and equipment can also play a part. When the curriculum plan is scheduled (finding a period at which each class may be timetabled) the attached resources limit the number of periods where a particular class may be placed. The most obvious example is where a class cannot be scheduled because the teacher is already occupied on a previously scheduled class or is a part-time teacher and not employed at that time.

Specialist accommodation places similar limits on scheduling. A school may employ three teachers of IT, but may only have two IT rooms. Working on the principle that IT classes should be located in a specialist room, and then the maximum number of IT classes that can be placed at any one period is two, rather than three.

Most schools will possess only one Drama theatre and it is common for many classes to need access to this single resource. Only by attaching this room to all the Drama classes before scheduling can it be guaranteed that two such classes will never be scheduled together.

Competition for equipment occasionally needs to be taken into consideration when scheduling. For example, a school may have two trolleys of computers that are wheeled around as required. Ignoring the fact that the school probably also has access to computer rooms, no more than two classes requiring the trolleys should be scheduled simultaneously.

The more resources that are attached to classes before scheduling, the more difficult the job of scheduling can be. This is the name of the game when building a timetable. If it is deemed essential that a class has a particular resource, then it should be assigned to the class before scheduling. In this way, classes that compete for the same resource cannot inadvertently be scheduled at the same period.

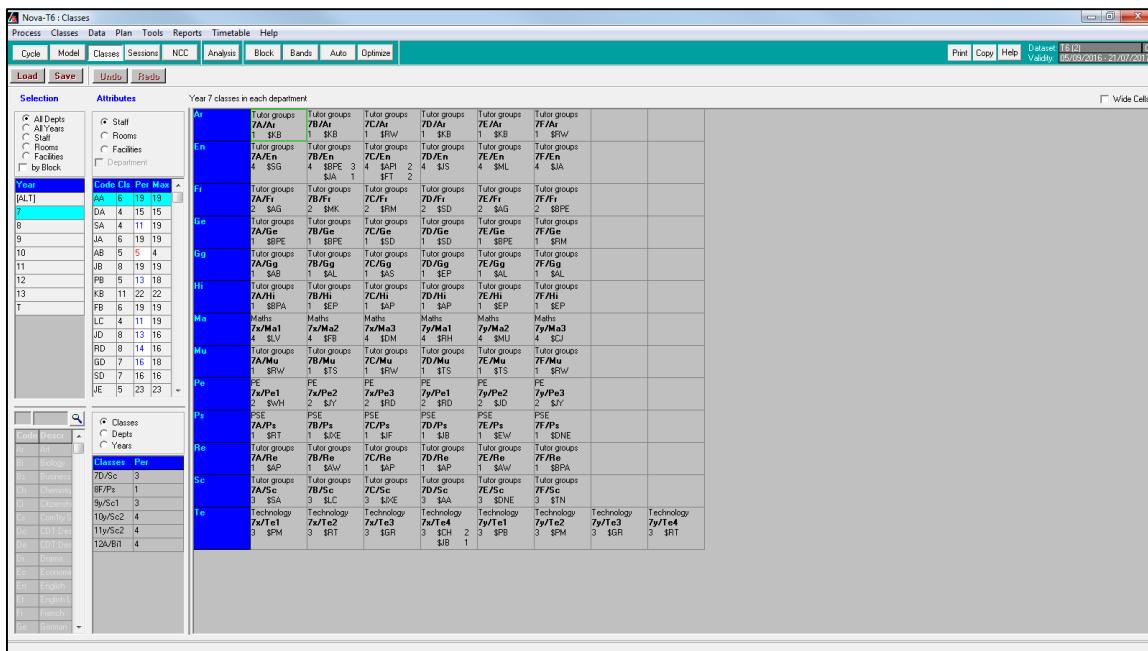
There is another approach to scheduling. Some schools opt not to assign teachers to classes before scheduling, but do place a limit on how many classes of a particular subject may be placed at any period. The timetable is therefore constructed without particular teachers being assigned to particular classes. Once the timetable is complete, heads of department are then asked to assign staff based on the pre-existing schedule.

Other schools adopt a mixture of the two main approaches. Teachers are attached to certain year groups or classes, but not all, and the classes are then scheduled. Once the timetable is complete the other teachers are assigned on the basis of who is free to take this class. The disadvantage of staffing after scheduling is that it does tend to result in more split classes, particularly lower down the school.

The Classes process in Nova-T enables three types of resource to be assigned to classes, which are teachers, rooms and facilities. These will be discussed in turn, starting with teachers.

Step by Step – Assigning Teachers to Classes

1. Before continuing please select **Load** followed by **Load new file**, select **Local Dataset**, and then click the **Next** button. Browse if necessary, to the **2016** folder and select the **T6 (2)** file. Click the **Finish** button.
 2. Click the **Classes** process button and change to **Year 7** at the middle left.



The process shows all year 7 classes in a grid in which each row is a subject. Teachers have already been assigned to these classes and the codes of the teachers are prefixed with a \$ in each cell. It can be seen that on the second row, 7B/En and 7C/En have each been split between two teachers sharing the four period total.

The teacher list (under attributes) is ordered according to the setting in **Tools | Ordering** which is by default in code order.

3. Keeping the Selection on All Depts, select the by Block check box.

Each row is now a block on the year 7 curriculum plan. The two tutor groups rows carry most of the classes and scrolling is required to see all the classes.

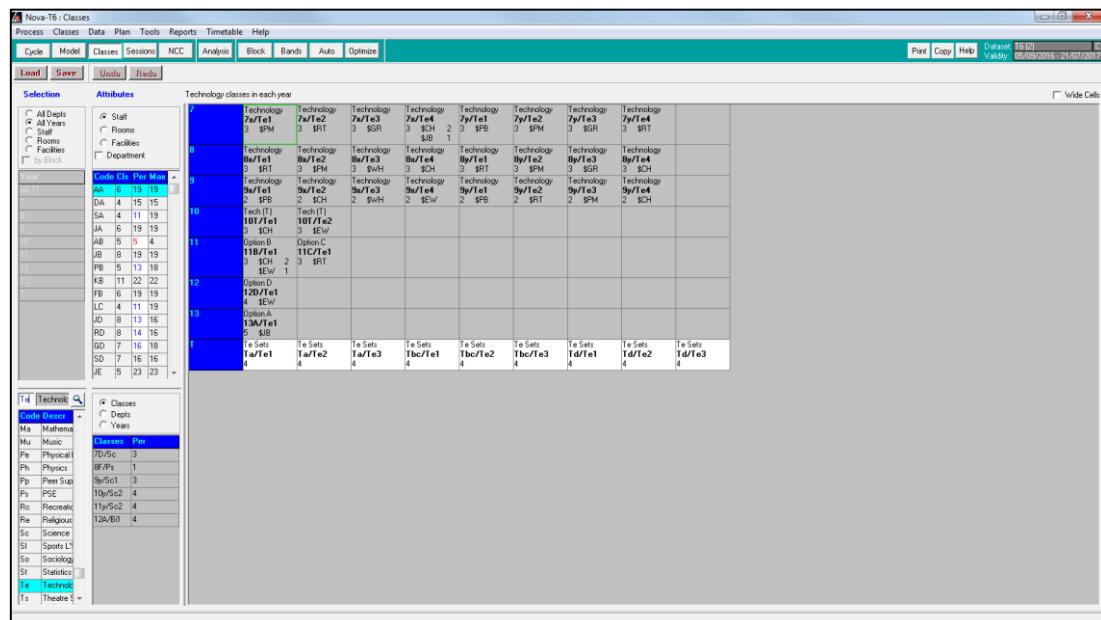
4. Deselect the by Block check box and select Year T instead of year 7.

The classes in year T are not staffed and the white coloured background to the cells indicates under-resourcing.

5. In the Selection section, select the All Years radio button.

The display routine defaults to displaying the first subject alphabetically: Ar.

6. Either type or browse for **Te** as the subject. Select the **Department** check box under **Attributes**.

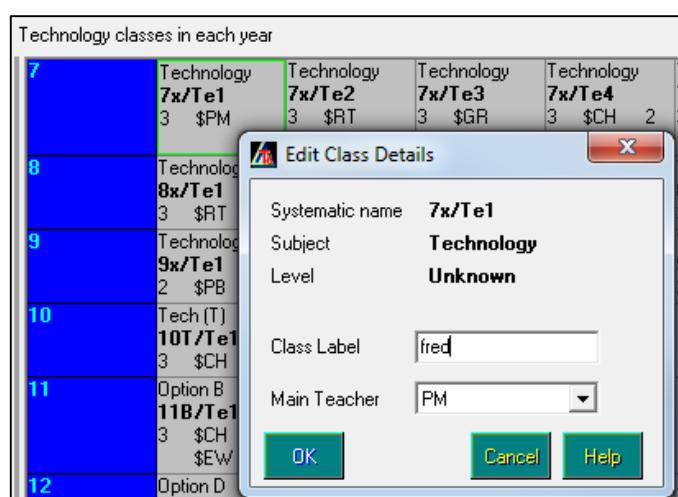


This arrangement is more helpful when assigning staff to a particular subject through the school. It should be noted that it is subject and not department. The teacher list is filtered to those who have been defined in **Plan | Teacher Departments** as being able to contribute to this subject.

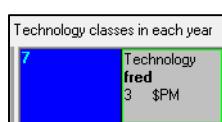
The bottom row of the grid contains all the Technology classes created in year T by the wizard. All the other classes are already fully staffed (hence, the grey background).

The labels that are automatically created by Nova-T are known as systematic names. There are occasions when it is required for a particular class to override the systematic label and create a user defined label.

7. Select the first class on the top row, and then select the class name.
8. Type **fred** as the **Class Label** and click the **OK** button to confirm.



9. From the Menu Select **Classes | Display Class Labels**.



Wherever a user defined label has been created, this is displayed. Where no label is defined the systematic name is displayed as before.

Other processes are sensitive to this setting which can toggle the user labels on or off.

Sometimes it becomes necessary to remove user defined labels that are no longer thought to be helpful. There are two ways to remove them; one by one or all at once. Selecting a cell, then selecting the class label brings up the Edit Class Details field previously described. The text can then be removed from the class label field. Alternatively, all user defined labels in the entire curriculum plan may be removed (without a warning prompt) by selecting **Classes | Remove user-defined class labels** from the menu.

10. Ensure that teacher **CH** is selected and examine the three numbers adjacent to his code.

Code	Cls	Per	Max
JB	8	19	19
PB	5	13	18
WH	9	17	12
CH	8	18	18
PM	8	19	19
GR	5	15	18
RT	7	18	18
EW	7	17	17

Cls 8
Mr Hughes has already been assigned to eight classes in the curriculum plan (and not necessarily all for Te). The classes concerned are listed in the section below the staff codes, together with the number of periods for each class.

Per 18
The total number of periods already assigned to him is 18. Changing the radio button in the lower section from classes to depts gives further details of which subjects make up the eighteen periods. Changing to years shows how the eighteen periods are divided amongst the various year groups.

Max 18
He should not be assigned to more than 18 periods as this has been defined as an upper limit (his loading in **Plan | Teacher Departments**). If max is exceeded by per, the colour of the background changes from grey to white and the number from black to red. For those teachers whose current allocation in per is under the max, the figure is in blue with a white background.

While pointing to either the teacher code or one of the numbers it is worth looking at the bottom left of the display. Hoverhelp is active.

To assign CH to the first year T Technology class, Ta/Te1:

11. Click and drag the code **CH** from the **Teacher** list into the first white cell.
12. Repeat the process with the same teacher for **Ta/Te2**.

Selection	Attributes	Technology classes in each year		
<input type="radio"/> All Depts <input checked="" type="radio"/> All Years <input type="radio"/> Staff <input type="radio"/> Rooms <input type="radio"/> Facilities <input type="checkbox"/> by Block	<input checked="" type="radio"/> Staff <input type="radio"/> Rooms <input type="radio"/> Facilities <input checked="" type="checkbox"/> Department	7 Technology fred 3 \$PM	Technology 7x/Te2 3 \$RT	Technology 7x/Te3 3 \$GR
Year [All]	Code Cls Per Max	8 Technology 8x/Te1 3 \$RT	Technology 8x/Te2 3 \$PM	Technology 8x/Te3 3 \$WH
7		9 Technology 9x/Te1 2 \$PB	Technology 9x/Te2 2 \$CH	Technology 9x/Te3 2 \$WH
8		10 Tech (T) 10T/Te1 3 \$CH	Tech (T) 10T/Te2 3 \$EW	
9		11 Option B 11B/Te1 3 \$CH \$EW 1	Option C 11C/Te1 2 \$RT	
10		12 Option D 12D/Te1 4 \$EW		
11		13 Option A 13A/Te1 5 \$JB		
12		T Te Sets Ta/Te1 4 \$CH	T Te Sets Ta/Te2 4 \$CH	T Te Sets Ta/Te3 4 \$EW
13				
T				

The first three classes on the year T row are from the same block, so it is impossible for teacher CH to take both group one and group two since they will be scheduled at the same time. To indicate this impossibility the two occurrences of \$CH are turned red. It can also be seen that CH is allocated twenty six periods out of a twenty-five period cycle.

Each of these Technology classes has been given four periods, so it would be possible for CH to share group one and two with someone else.

13. Successively right-click the **\$CH** for **Group one** until the number of periods after the code increments to two. Repeat for **Group two**.

This is not impossible and the \$CH turns to black in each cell.

14. Click and drag teacher **EW** also onto both classes. Click **No** to the prompt regarding replacing the existing teacher.

Selection	Attributes	Technology classes in each year		
<input type="radio"/> All Depts <input checked="" type="radio"/> All Years <input type="radio"/> Staff <input type="radio"/> Rooms <input type="radio"/> Facilities <input type="checkbox"/> by Block	<input checked="" type="radio"/> Staff <input type="radio"/> Rooms <input type="radio"/> Facilities <input checked="" type="checkbox"/> Department	7 Technology fred 3 \$PM	Technology 7x/Te2 3 \$RT	Technology 7x/Te3 3 \$GR
Year [All]	Code Cls Per Max	8 Technology 8x/Te1 3 \$RT	Technology 8x/Te2 3 \$PM	Technology 8x/Te3 3 \$WH
7		9 Technology 9x/Te1 2 \$PB	Technology 9x/Te2 2 \$CH	Technology 9x/Te3 2 \$WH
8		10 Tech (T) 10T/Te1 3 \$CH	Tech (T) 10T/Te2 3 \$EW	
9		11 Option B 11B/Te1 3 \$CH \$EW 1	Option C 11C/Te1 2 \$RT	
10		12 Option D 12D/Te1 4 \$EW		
11		13 Option A 13A/Te1 5 \$JB		
12		T Te Sets Ta/Te1 4 \$CH	T Te Sets Ta/Te2 4 \$CH	T Te Sets Ta/Te3 4 \$EW
13				
T				

The background of the cells turns pink because of over-resourcing; six teacher periods on a four period class.

15. Adjust **EW's** assignment also to two periods for each class.

Selection	Attributes	Technology classes in each year		
<input type="radio"/> All Depts <input checked="" type="radio"/> All Years <input type="radio"/> Staff <input type="radio"/> Rooms <input type="radio"/> Facilities <input type="checkbox"/> by Block	<input checked="" type="radio"/> Staff <input type="radio"/> Rooms <input type="radio"/> Facilities <input checked="" type="checkbox"/> Department	7 Technology fred 3 \$PM	Technology 7x/Te2 3 \$RT	Technology 7x/Te3 3 \$GR
Year [All]	Code Cls Per Max	8 Technology 8x/Te1 3 \$RT	Technology 8x/Te2 3 \$PM	Technology 8x/Te3 3 \$WH
7		9 Technology 9x/Te1 2 \$PB	Technology 9x/Te2 2 \$CH	Technology 9x/Te3 2 \$WH
8		10 Tech (T) 10T/Te1 3 \$CH	Tech (T) 10T/Te2 3 \$EW	
9		11 Option B 11B/Te1 3 \$CH \$EW 1	Option C 11C/Te1 2 \$RT	
10		12 Option D 12D/Te1 4 \$EW		
11		13 Option A 13A/Te1 5 \$JB		
12		T Te Sets Ta/Te1 4 \$CH	T Te Sets Ta/Te2 4 \$CH	T Te Sets Ta/Te3 4 \$EW
13				
T				

In the list of teachers the figure in the Per column for CH and EW is red, therefore indicating that it is over their defined loading (max).

NOTE: Each time a second teacher is dragged onto a class, the software prompts about replacing the existing teacher. This prompt may be by-passed by holding down Ctrl while using click and drag.

There are occasions when it is necessary to completely remove the teacher assignment from a particular class. This is done by holding down Ctrl and right-clicking the code of the teacher in the class cell.

NOTE: Classroom Support

The concept of supplying support for a class, in a sense, is deliberate over-resourcing of a class with teacher periods. In reality these teachers may be classroom assistants, learning support assistants, parents or even visitors.

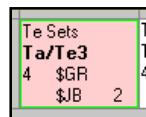
In SIMS there is functionality which enables the definition of those people who are allowed on the timetable. This includes teachers, but can also be those otherwise known or unknown, to the SQL (SIMS) database.

Via **Focus | Person | Manage Classroom Staff** it is possible to give a person a timetable code which, if it matches one in Nova-T, will enable the person to be included in an export from Nova-T to SQL, without being flagged as unrecognised. Nova-T does not differentiate between teachers and non-teachers as all are included in **Plan | Teachers**.

For further information see Chapter 10 of the Academic Management Handbook which is available on the documentation tab in SIMS. See also The Appendix at the back of this booklet.

NOTE: Even though most support arrangements are carried out after the completion of the main timetable, if there is a particular reason why the third group (in the Technology block currently being resourced) should be given one teacher for all four periods and another teacher for just two, then it should be carried out at this stage.

16. Click and drag teacher **GR** onto **Ta/Te3** and repeat for **JB**. Adjust **JB's** periods down from **4** to **2**.



Assigning Classes to teachers

There is an alternative method of assigning teachers to classes, which operates in the reverse way to that already described. This is best described while in view.

17. In the **Selection** section select the **Staff** radio button and select both the **Year** and **Department** check boxes in the **Classes** section.

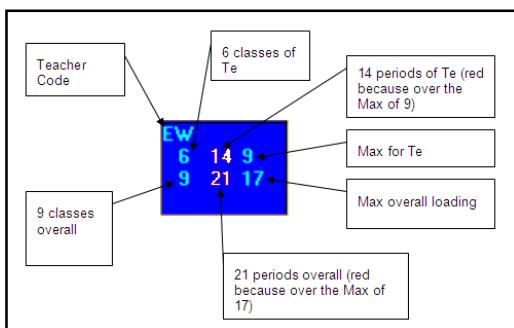
The graphic displayed below illustrates the situation.

The screenshot shows a software window titled "Nova-T : Classes". The menu bar includes "Process", "Classes", "Data", "Plan", "Tools", "Reports", "Timetable", "Help". The toolbar has "Load", "Save", "Undo", and "Redo". The left sidebar shows "Selection" and "Classes" with checkboxes for "All Years", "Year", "Term", "Room", and "Teacher". Below this is a tree view of "Subject Tree" with various subjects like Maths, English, Science, etc. The main area is a table titled "Classes allocated to staff in Technology department". The table has columns for "Subject", "Teacher", "Period", "Room", and "Status". It lists several rows of teacher names and their assigned classes. The table is styled with blue headers and red borders for certain cells.

Each row on the right-hand side is a teacher defined (in teacher departments) as being able to contribute to Technology. The list of classes in the table (previously used for teachers) is filtered to year 7 and subject Te due to a combination effect of the two check boxes and selected year (T) and subject (Te).

The table contains just the Te classes for year T and it can be seen that three are already staffed. The process is exactly the same only it is the classes in the table that are dragged onto the teacher's row to the right.

The blue headers contain a considerable amount of teacher information, as shown in the graphic displayed below.



18. Return this display to the original format by changing the radio button in **Selection** back to **All Years**.

Step by Step – Assigning Rooms to Classes

Most timetables require rooming and the majority of this activity is normally carried out once the construction phase is complete. This means staff members are finding rooms for scheduled classes, partly on the basis of the subject and partly on the teacher assigned to the class.

There are times when a particular room is so critical to a number of classes that it is necessary to take this requirement into consideration when building the timetable. The classes should have this particular room and it should not be double-booked.

Take a situation in which a school has two teachers of Drama and only one Drama theatre. Assuming that only one class may occupy the theatre at once, it is necessary to ensure that only one drama class is scheduled at any period. Even if no teachers were currently assigned to the classes, the same rule would still need to be observed.

It is possible to assign rooms to classes in much the same way as teachers, but bear in mind that most rooming will be carried out once the scheduling is complete.

- Stay on the **Classes** process and change the radio button in the **Attributes** section from **Staff** to **Rooms**.

Most of the display stays exactly the same as before, but the codes change from teachers to rooms. The max figure alongside the rooms changes to twenty-five (the cycle size) because rooms (unlike teachers) may be scheduled all week. It is possible to remove a room from use at particular periods such that the displayed max figure is less than twenty five (see later for the NCC process). This could be useful for a community school sharing rooms with other organisations.

- Scroll down to room **T1** (one of the Technology rooms) and (as an example) assign it to classes **Ta/Te1** and **Ta/Te2**, each for two periods.

The room is displayed in the class cells as #T1. Teachers carry the prefix \$.

Step by Step – Assigning Facilities to Classes

As the name suggests, Facilities are used to represent limited resources that place constraints on scheduling the timetable.

The two most obvious uses are rooming and equipment.

It is, for example, possible to define a facility called Science labs and quantity six. This facility is assigned to some or all of the Science classes to ensure that, when scheduling, no more than six of these Science classes are placed at any period. The significant phrase is no more than.

It may be that certain Technology classes need access to a mobile piece of equipment of which there are only two. By deploying onto certain classes a facility called computer controlled chainsaw, it is possible to ensure that the equipment is always available when needed. When scheduling, the necessary restrictions for any period could be described as no more than.

Some may consider a third use of facilities, such as teams of teachers. They would presumably not deploy actual staff onto the classes before scheduling, but rather use facilities such as English staff, quantity five. The similarity between this and the two previous examples is the concept of no more than at once.

This use of facilities might be considered by those who wish to produce an unstaffed draft timetable (as discussed at the beginning of this chapter). Certainly it would be possible to guarantee that a member of the English department would be available when needed, but it might not be the same teacher at each period when the class is scheduled. Using this approach tends to increase the number of split classes. The likely number of splits increases in proportion to the number of linear structures in the curriculum plan. The approach also has limited use if some teachers are either part-time or have expertise which lies across more than one department. The obvious attraction of this schedule first, then staff later approach is that it gives heads of department a framework in which to decide upon staffing.

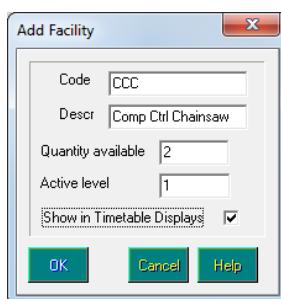
1. Change the **Attributes** radio button to **Facilities**.

The display is unchanged apart from the table that lists the available codes. In the case of facilities, there are no codes. This is because no facilities have been entered into the base data area of Nova-T.

As an example, a facility that represents equipment used by certain Technology classes, the computer controlled chainsaw. This is mobile and cannot be roomed in the way that a piece of heavy machinery could be said to always occupy the same room. There are two such chainsaws and it is important when scheduling to ensure that they will always be available for certain courses.

2. Select **Plan | Facilities | Edit Facilities**, select **Add** and type **CCC** as the **Code**, **Comp Ctrl Chainsaw** as the **Descr** and **2** as the **Quantity available**. Leave the **Active level** as **1**. Select the **Show in Timetable Displays** check box.

The graphic displayed below illustrates the data entry.



3. If necessary, confirm the data entry by clicking the **OK** button. Select **All Depts and Facilities**.
4. Click and drag the facility onto the **Ta/Te1**.
5. Using click, point to the **CCC** in the cell and increment the number assigned **CCC's** until it turns red.

The logic is that with two saws on a four period class, the maximum that could sensibly be assigned is eight.

Te Sets		Te Sets	
Ta/Te1		Ta/Te2	
4	\$CH	2	4
	\$EW	2	
	#T1	2	
	CCC	9	

6. Reduce the number to three and repeat the process for **Ta/Te2**.

There is ambiguity in this context about three. It could mean one saw for three periods each, or two saws for one period and one saw for the other two.

Further ambiguity is introduced if considering whether the four period block might be four singles, two doubles, a double and two singles, a triple and one single or a quadruple session. This major issue is discussed in the next chapter.

7. Also drag the facility onto a few other Technology classes.

Attributes	Technology classes in each year									
<input type="radio"/> Staff	Technology	7x/Te2	Technology	7y/Te3	Technology	7y/Te4	Technology	7y/Te1	Technology	7y/Te2
<input type="radio"/> Rooms	8x/Te1	3 \$PM	Technology	8x/Te3	3 \$GR	Technology	8x/Te4	3 \$CH	Technology	8y/Te3
<input checked="" type="radio"/> Facilities	3 \$RT	3 \$W	Technology	8x/Te1	3 \$W	Technology	8y/Te1	3 \$RT	Technology	8y/Te2
<input type="checkbox"/> Department	9x/Te1	2 \$PB	Technology	9x/Te2	2 \$CH	Technology	9x/Te3	2 \$W	Technology	9y/Te3
Code Cls Per Max	10x/Te1	2 \$PB	Tech (T)	10T/Te2	3 \$EW	Tech (T)	10T/Te3	3 \$CH	Tech (T)	10T/Te4
CCC 2 6 50	11B/Te1	3 \$CH	10T/Te1	3 \$CH	2 \$EW	11B/Te1	3 \$RT	2 \$PB	11B/Te2	3 \$PM
	Option B	11C/Te1	3 \$CH	11C/Te2	2 \$EW	Option C	11C/Te1	3 \$RT	11C/Te2	2 \$PM
	12D/Te1	4 \$EW	11D/Te2	4 \$EW	12D/Te1	4 \$EW	11D/Te2	4 \$EW	12D/Te3	4 \$EW
	Option A	13A/Te1	5 \$B	13A/Te2	5 \$B	Option A	13A/Te1	5 \$B	13A/Te2	5 \$B
	Te Sets	Te Sets	Te Sets	Te Sets	Te Sets	Te Sets	Te Sets	Te Sets	Te Sets	Te Sets
	Ta/Te1	Ta/Te2	Ta/Te3	Tbc/Te1	Tbc/Te2	Tbc/Te3	Td/Te1	Td/Te2	Td/Te3	Td/Te4
	4 \$CH	2 \$CH	2 \$GR	4 \$B	4 \$B	2 \$B	4 \$B	4 \$B	4 \$B	4 \$B
	3 \$EW	2 \$EW	2 \$B	3 \$B	3 \$B	2 \$B	3 \$B	3 \$B	3 \$B	3 \$B
	CCC 3	CCC 3	CCC 3	CCC 3	CCC 3	CCC 3	CCC 3	CCC 3	CCC 3	CCC 3

The preceding graphic shows eighteen periods of CCC having been assigned to six classes. Up to fifty periods can be assigned (two saws and a twenty-five period cycle) without creating an impossible situation. The colour coding of the Per figure is similar to that used with staff.

Later in the course we will use a more common example of facilities, Science labs. This will represent a suite of rooms that are considered interchangeable. So, there is no desire at this stage to assign a particular lab to a particular class, but simply to ensure that no more Science classes are scheduled at any period of the week than the number of available labs.

Staff will appreciate how useful the concept of facilities can be in restricting the software to producing viable solutions; solutions that can ultimately be roomed. Virtually any tight resource can be deployed and monitored by using a facility. In some situations a number of facilities need to be deployed and the amount of required click and drag is high. There is an alternative and much quicker global method of assigning facilities using a set of simple rules; this is discussed in the next chapter.

The data is preserved in its present state in the file **T6 (3)** if it is required to return to the current situation.

06

Session Lengths

This chapter contains:

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Step by Step – Defining Session Lengths Using Global Rules	79
Step by Step – Assigning Facilities Using Global Rules	81

Chapter Introduction

In Nova-T session length should not be taken to mean the length of a morning or afternoon session. It refers to the concept of multiple period sessions. By default all sessions are single period sessions.

Nova-T can cater for multiple-period sessions up to twenty four periods in length. This may seem rather more than might be required, but there are circumstances in which a very large period session is necessary. For most situations, staff tend to be concerned with singles (S), doubles (D), triples (T), quadruples (Q) and quintuples (P). In a five period day, P is useful for defining a whole day at college (or a part-time teacher's day off).

Given that Nova-T observes a one per day rule when scheduling (a class should have only one session per day of a particular subject), it is not really feasible to view a double period session as two singles manually placed side by side. It is a far better strategy to define the session lengths correctly, rather than to try to cheat the system.

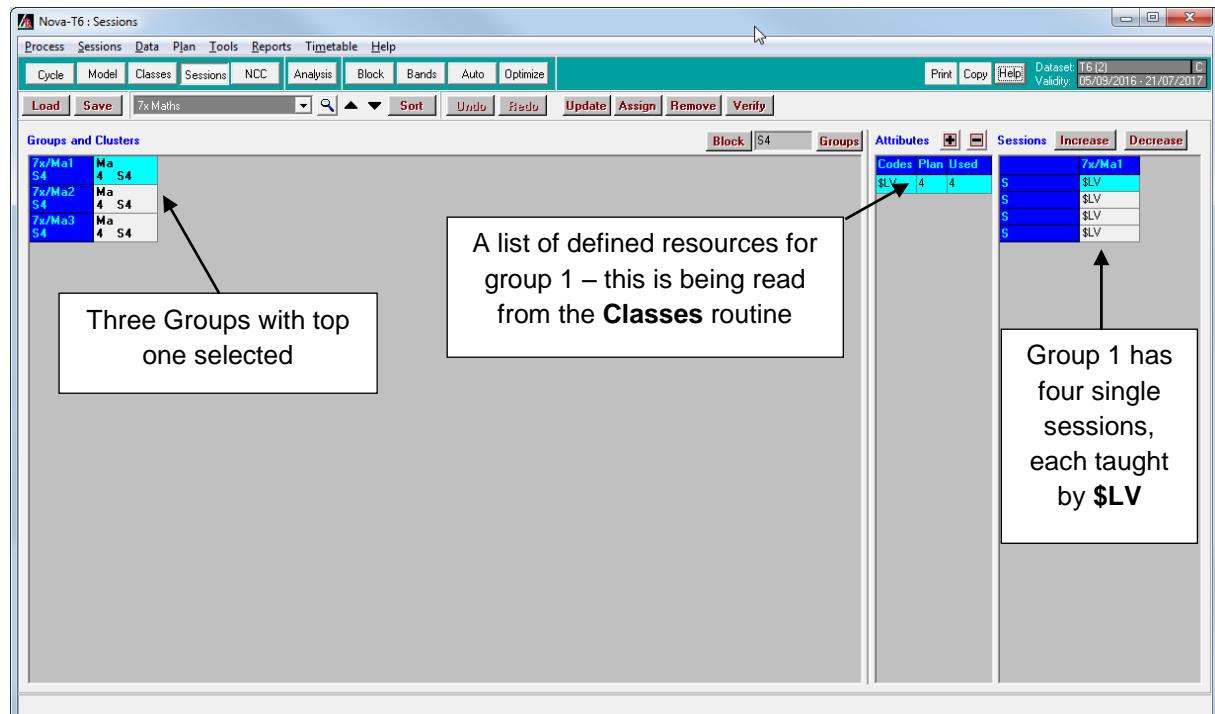
Session lengths can be defined either manually, class by class or via the application of a set of rules. Both methods are described in this section.

Step by Step – Defining Session Lengths Manually

1. If necessary **Load the Internal Dataset** called **T6 (3)**, and then click the **Sessions** process button.

This routine can only display information about one block at any one time. It is therefore necessary to select which block is to be examined.

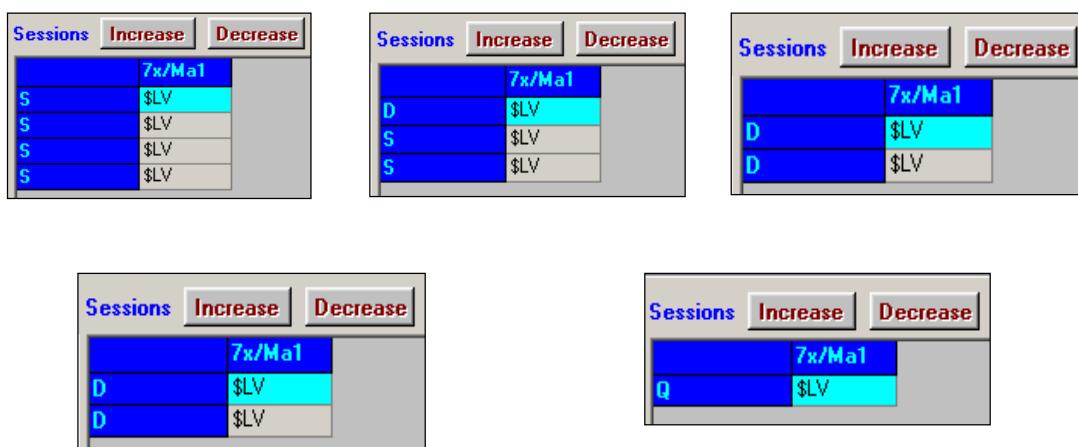
2. Click the **magnifying glass** browse button, and then select the **7x Maths** block.



At the left-hand side it can be seen that the description on each of the four groups is currently S4, four singles. Other possible configurations are DD, DSS, TS and Q.

In the right-hand section (called sessions) the four single-period sessions are arranged on separate rows and all assigned to teacher LV. By pointing to one of these sessions and clicking this session is merged with the one immediately below it. A right-click reverses the process. The **Increase** and **Decrease** buttons provide an alternative method of making the arrangement.

3. Experiment with this **Maths** block and define all five possible configurations for group **7x/Ma1** (as shown in the graphics displayed below).



If, for example, the maths block should be configured as DSS, then in this case, all three groups and the block shape should be defined as DSS, or the block will be impossible to schedule. The concept of a block shape may not be familiar. It refers to the bag that contains the groups. If the groups are to be scheduled for DSS then so should the bag.

4. Study the following graphics and define all three groups and the block shape as **DSS** according to the illustration displayed below.

The figure consists of three vertically stacked screenshots from the Nova-T software interface, showing the 'Groups and Clusters' window and the 'Set Block Sessions' dialog box.

- Screenshot 1 (a. Deal with one group):** Shows the 'Groups and Clusters' table with three groups: 7x/Ma1 (DSS), 7x/Ma2 (S4), and 7x/Ma3 (S4). The 'Block' button is highlighted. To its right is the 'Attributes' panel showing 'Codes Plan Used' for group 7x/Ma1 with sessions D, S, and \$LV. The 'Sessions' panel shows four sessions for 7x/Ma1: D (\$LV), S (\$LV), \$LV, and \$LV.
- Screenshot 2 (b. Then the block shape):** Shows the 'Set Block Sessions' dialog box. The 'Current shape' field is set to 'S4'. The 'New shape:' field is empty. A note below states: 'The new shape is a suggestion based on the sessions declared for the clusters within the block. You may edit this as you see fit.' Buttons for 'OK', 'Cancel', and 'Help' are at the bottom.
- Screenshot 3 (c. Ask the software to sort the other groups):** Shows the 'Groups and Clusters' table again, but now all three groups (7x/Ma1, 7x/Ma2, 7x/Ma3) have 'DSS' listed under their respective block shapes. The 'Block' button is highlighted.

It may not seem reasonable that the software does not immediately sort out the other groups and the block shape once one group has been defined. In many circumstances this would be a dangerous strategy, although in this particular instance it is fair comment. It would be easy to forget to sort out all the groups or the block shape and one simple test that can be run on the block is via the **Verify** button.

- Click the **Verify** button and note the prompt. One of the groups could be deliberately defined incorrectly and tried again if required.
- Return temporarily to the **Classes** process and examine the resources currently attached to the **Year T**, band a **Technology** block.

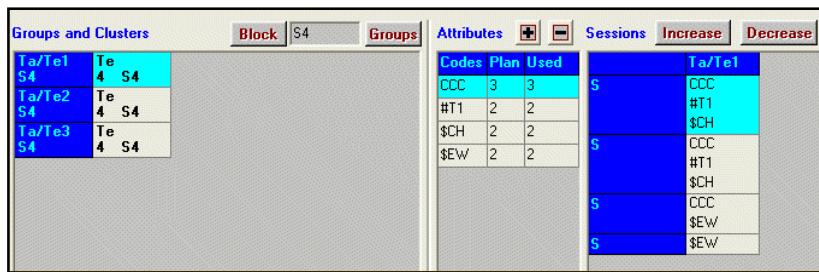
This is the current situation regarding the resourcing of the groups:

T	Te Sets Ta/Te1	Te Sets Ta/Te2	Te Sets Ta/Te3
4	\$CH 2	4 \$CH 2	4 \$GR
	\$EW 2	\$EW 2	\$JB 2
	#T1 2	#T1 2	
	CCC 3	CCC 3	

It could be interpreted in many ways even if it has been predetermined that this block should have a session length of DSS. For example, for groups one and two which of the teachers should have D as opposed to SS? Is the room #T1 to be used for D or SS? How should the three CCCs be spread over the four periods? With group three should the additional teacher JB be attached to D or SS?

It is on the sessions process that these questions may be answered without ambiguity.

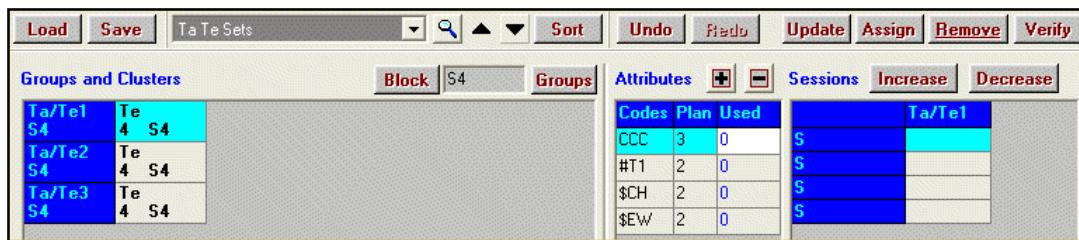
7. Select the **Sessions** process again and browse to the **Year T Technology** for band **a**.



It can be seen that the list in the attributes section describes exactly those resources attached to Ta/Te1 in the classes process. The right-hand sessions section has taken a guess as to how the resources might be deployed for each session. In the graphic it has placed the room #T1 with teacher \$CH. This may not be what was intended.

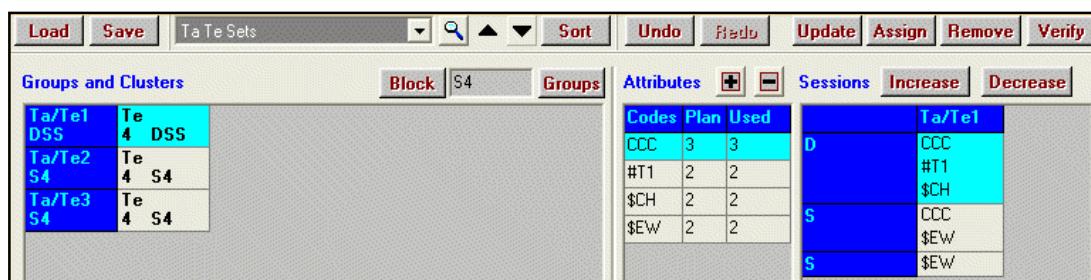
To correct wrong assumptions it is possible to remove particular resources from particular sessions, by right-clicking the offending code or by clicking the **Remove** button, in which case all the resources are removed from all sessions.

8. As a test, right-click to remove **\$CH** from one of the sessions, and then click the **Remove** button to clear the slate.



The attributes section lists the resources together with the number of periods for which each is intended to be used. It also makes it clear that currently none are attached to the sessions. If the block were to be scheduled in its current state, Ta/Te1 would have no teacher, no room and no chainsaw.

9. Merge two of the sessions to create **DSS** for **Group one**. Drag **\$CH** onto the **D**, **\$EW** onto **SS**, **#T1** onto **D** and **CCC** onto **D** and one **S**.



The order in which it presents the information in the sessions section is not important and the software is not consistent in the way it sorts the list. This is because the largest sessions are always at the top.

10. Select group **Ta/Te2** at the left-hand side and click the **Remove** button. Merge two single period sessions into a double.

Groups and Clusters		Block	S4	Groups	Attributes	Sessions	Increase	Decrease																							
Ta/Te1 DSS	Te 4 DSS				<table border="1"> <thead> <tr> <th>Codes</th> <th>Plan</th> <th>Used</th> </tr> </thead> <tbody> <tr> <td>CCC</td> <td>3</td> <td>0</td> </tr> <tr> <td>#T1</td> <td>2</td> <td>0</td> </tr> <tr> <td>\$CH</td> <td>2</td> <td>0</td> </tr> <tr> <td>\$EW</td> <td>2</td> <td>0</td> </tr> </tbody> </table>	Codes	Plan	Used	CCC	3	0	#T1	2	0	\$CH	2	0	\$EW	2	0	<table border="1"> <thead> <tr> <th colspan="2">Ta/Te2</th> </tr> </thead> <tbody> <tr> <td>D</td> <td></td> </tr> <tr> <td>S</td> <td></td> </tr> <tr> <td>S</td> <td></td> </tr> </tbody> </table>	Ta/Te2		D		S		S			
Codes	Plan	Used																													
CCC	3	0																													
#T1	2	0																													
\$CH	2	0																													
\$EW	2	0																													
Ta/Te2																															
D																															
S																															
S																															
Ta/Te2 DSS	Te 4 DSS																														
Ta/Te3 S4	Te 4 S4																														

11. Given that teacher **CH** has been given the double period session for **Group one** then **EW** should be given the double for **Group two**. With only one double for the block it is not possible for the same teacher to take both groups for the double period. On the same basis neither is it possible for both groups to be housed in room **#T1** for the double. If a mistake is made at this stage and the **Verify** button is clicked, the mistake will be spotted.
12. Assign **EW** to the double and **CH** to the two singles. Assign the room to the two singles and **CCC** to the double and either single.

Groups and Clusters		Block	S4	Groups	Attributes	Sessions	Increase	Decrease																															
Ta/Te1 DSS	Te 4 DSS				<table border="1"> <thead> <tr> <th>Codes</th> <th>Plan</th> <th>Used</th> </tr> </thead> <tbody> <tr> <td>CCC</td> <td>3</td> <td>3</td> </tr> <tr> <td>#T1</td> <td>2</td> <td>2</td> </tr> <tr> <td>\$CH</td> <td>2</td> <td>2</td> </tr> <tr> <td>\$EW</td> <td>2</td> <td>2</td> </tr> </tbody> </table>	Codes	Plan	Used	CCC	3	3	#T1	2	2	\$CH	2	2	\$EW	2	2	<table border="1"> <thead> <tr> <th colspan="2">Ta/Te2</th> </tr> </thead> <tbody> <tr> <td>D</td> <td>CCC</td> </tr> <tr> <td>S</td> <td>\$EW</td> </tr> <tr> <td>S</td> <td>CCC</td> </tr> <tr> <td>S</td> <td>#T1</td> </tr> <tr> <td>S</td> <td>\$CH</td> </tr> <tr> <td>S</td> <td>#T1</td> </tr> <tr> <td>S</td> <td>\$CH</td> </tr> </tbody> </table>	Ta/Te2		D	CCC	S	\$EW	S	CCC	S	#T1	S	\$CH	S	#T1	S	\$CH		
Codes	Plan	Used																																					
CCC	3	3																																					
#T1	2	2																																					
\$CH	2	2																																					
\$EW	2	2																																					
Ta/Te2																																							
D	CCC																																						
S	\$EW																																						
S	CCC																																						
S	#T1																																						
S	\$CH																																						
S	#T1																																						
S	\$CH																																						
Ta/Te2 DSS	Te 4 DSS																																						
Ta/Te3 DSS	Te 4 DSS																																						

13. Change to group **Ta/Te3** and merge two singles into a double.

Groups and Clusters		Block	S4	Groups	Attributes	Sessions	Increase	Decrease																	
Ta/Te1 DSS	Te 4 DSS				<table border="1"> <thead> <tr> <th>Codes</th> <th>Plan</th> <th>Used</th> </tr> </thead> <tbody> <tr> <td>\$GR</td> <td>4</td> <td>4</td> </tr> <tr> <td>\$JB</td> <td>2</td> <td>0</td> </tr> </tbody> </table>	Codes	Plan	Used	\$GR	4	4	\$JB	2	0	<table border="1"> <thead> <tr> <th colspan="2">Ta/Te3</th> </tr> </thead> <tbody> <tr> <td>D</td> <td>\$GR</td> </tr> <tr> <td>S</td> <td>\$GR</td> </tr> <tr> <td>S</td> <td>\$GR</td> </tr> </tbody> </table>	Ta/Te3		D	\$GR	S	\$GR	S	\$GR		
Codes	Plan	Used																							
\$GR	4	4																							
\$JB	2	0																							
Ta/Te3																									
D	\$GR																								
S	\$GR																								
S	\$GR																								
Ta/Te2 DSS	Te 4 DSS																								
Ta/Te3 DSS	Te 4 DSS																								

The preceding graphic shows that, although GR has been assigned by Nova-T to all three sessions, JB has been omitted. This is how the software always responds when a class is overstaffed. It is necessary to manually assign JB to either the two singles or to the double. It is not possible to assign JB to half a double and a single.

14. Assign **JB** to the two singles.

Groups and Clusters		Block	S4	Groups	Attributes	Sessions	Increase	Decrease																	
Ta/Te1 DSS	Te 4 DSS				<table border="1"> <thead> <tr> <th>Codes</th> <th>Plan</th> <th>Used</th> </tr> </thead> <tbody> <tr> <td>\$GR</td> <td>4</td> <td>4</td> </tr> <tr> <td>\$JB</td> <td>2</td> <td>2</td> </tr> </tbody> </table>	Codes	Plan	Used	\$GR	4	4	\$JB	2	2	<table border="1"> <thead> <tr> <th colspan="2">Ta/Te3</th> </tr> </thead> <tbody> <tr> <td>D</td> <td>\$GR</td> </tr> <tr> <td>S</td> <td>\$GR</td> </tr> <tr> <td>S</td> <td>\$GR</td> </tr> </tbody> </table>	Ta/Te3		D	\$GR	S	\$GR	S	\$GR		
Codes	Plan	Used																							
\$GR	4	4																							
\$JB	2	2																							
Ta/Te3																									
D	\$GR																								
S	\$GR																								
S	\$GR																								
Ta/Te2 DSS	Te 4 DSS																								
Ta/Te3 DSS	Te 4 DSS																								

All that remains to be done with this block is to sort the block shape (which is currently S4).

15. Click the small **Block** button just to the left of the **S4** and accept the software's suggestion of **DSS**.

Groups and Clusters		Block	DSS	Groups	Attributes	Sessions	Increase	Decrease
		Codes	Plan	Used				
Ta/Te1	Te	\$GR	4	4				
DSS	4 DSS	\$JB	2	2				
Ta/Te2	Te	D						
DSS	4 DSS	S						
Ta/Te3	Te	S						
DSS	4 DSS	\$GR						
		\$JB						

Clarifying all of this information for just one block may seem to be a great deal of work but this particular block has a complex combination of a double and two single sessions with teachers, rooms and facilities assigned. Two teachers are sharing two groups and a third group is deliberately overstuffed.

We will now focus on a linear block.

16. Click the **magnifying glass** to browse to **7x Tutor Groups**. Select the **Sc** cell for the top group **7A**.

The graphics displayed below illustrate the block from the point of view of the model and sessions processes.

Band	25	?	Tutor groups	15
7:	x	81	A 27 Ar ₁ En ₄ Fr ₂ Ge ₁ Gg ₁ Hi ₁ Mu ₁ Re ₁ Sc ₃	15
			B 27 Ar ₁ En ₄ Fr ₂ Ge ₁ Gg ₁ Hi ₁ Mu ₁ Re ₁ Sc ₃	15
			C 27 Ar ₁ En ₄ Fr ₂ Ge ₁ Gg ₁ Hi ₁ Mu ₁ Re ₁ Sc ₃	15
				[File]

If the Science department has requested that all three groups should have DS, it is not mandatory (unlike in the case of the Maths block) that all three groups should have the same session requirement, however, that is the request. In the graphic displayed below, the sessions have been defined separately for 7A, 7B and 7C. Use of the small **Block** button has resulted in a block shape of DS13.

Groups and Clusters		Block	DS13	Groups	Attributes	Sessions	Increase	Decrease
		Codes	Plan	Used				
7A DS13	Ar 1 S	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S 3 DS
7B DS13	Ar 1 S	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S 3 DS
7C DS13	Ar 1 S	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S 3 DS

While it might at first glance appear that the block shape definition is not particularly important, quite the reverse is true.

Block Session Requirements: DS13

D	S	S	S	S	S	S	S	S	S	S	S	S	S	S
7A	Sc	Ar	En	Fr	Gg	En	Fr	Hi	En	Ge	En	Sc	Rs	Mu
7B	Sc	En	Fr	Ge	Ar	Fr	En	Mu	Gg	Sc	Rs	En	Hi	En
7C	Sc	Fr	En	Mu	En	Ge	En	Ar	Sc	Hi	Gg	Rs	En	Fr

For all 3 groups, the group session requirements are:
Ar-S En-S4 Fr-S5 Ge-S Gg-S Hi-S Mu-S Re-S Sc-DS

CAPITA



The graphic describes our current situation; three groups each requiring fifteen periods of a mixture of subjects and all single periods except Sc which requires DS.

It is quite obvious that for each group the session requirements are DS13, but what of the block session requirements?

Nova-T would have no option but to schedule all three groups for the Double Science session at the same time. This is because there is only one occasion in the week when the block is enabled to have a double that is DS13.

There are many ways in which the singles could fit, but for the double of Science there is absolutely no flexibility with a block session requirement of DS13. This might be what is wanted, all three groups having a double period of Science at the same time. However, the singles of Science will not necessarily be together. If more than one group had the same teacher for Science, the scheduling would be bound to fail.

The situation could be relaxed by changing the block definition to D2S11 or to go further D3S9. The graphic displayed below illustrates D3S9.

Block Session Requirements: D3S9

	<i>D</i>	<i>D</i>	<i>D</i>	<i>S</i>										
<i>7A</i>	<i>Sc</i>	<i>Ar</i>	<i>En</i>	<i>Fr</i>	<i>Gg</i>	<i>En</i>	<i>Fr</i>	<i>Hi</i>	<i>En</i>	<i>Ge</i>	<i>En</i>	<i>Sc</i>	<i>Rs</i>	<i>Mu</i>
<i>7B</i>	<i>En</i>	<i>Fr</i>	<i>Sc</i>	<i>Ge</i>	<i>Ar</i>	<i>Fr</i>	<i>En</i>	<i>Mu</i>	<i>Gg</i>	<i>Sc</i>	<i>Rs</i>	<i>En</i>	<i>Hi</i>	<i>En</i>
<i>7C</i>	<i>Mu</i>	<i>En</i>	<i>Fr</i>	<i>En</i>	<i>Sc</i>	<i>Ge</i>	<i>En</i>	<i>Ar</i>	<i>Sc</i>	<i>Hi</i>	<i>Gg</i>	<i>Rs</i>	<i>En</i>	<i>Fr</i>

**For all 3 groups, the group session requirements are:
Ar-S En-S4 Fr-SS Ge-S Gg-S Hi-S Mu-S Re-S Sc-DS**

CAPITA

 helping schools inspire

It can be seen that it is now possible to spread out the Science doubles over the three doubles and fill the gaps with single periods of two different subjects.

Given that, at this stage in the process, the timetabler probably has no idea what would be the best arrangement for these Science doubles, they might be forgiven for thinking that the optimum block definition would be D7S. With this definition it would be possible for the Science doubles to be at the same time or to be spread right across the fifteen periods, with only one double at any one time.

While it certainly is possible to define D7S it might, over time, prove to be an expensive mistake.

With a block definition of D7S, when the scheduling is under way, to place virtually every session of this block on the timetable, it will be necessary to find two consecutive free periods. Had the definition been D3S9, then on only three occasions would staff be looking for two consecutive periods and on six other staff would simply need one free period. D7S, places greater demands on the shuffling routines, be they human or electronic. A linear block such as the one staff are considering is likely to be one of the last to be scheduled and it might be thought sensible to schedule the doubles earlier than the singles.

It may be that, during the process of scheduling, the timetabler may need to experiment with certain block session requirements.

It may first appear that, with the possibility of more than 100 blocks in a curriculum plan, this fluidity represents a unreasonable additional variable for the timetable. It only applies to linear blocks which require multiple period sessions. In most schools these represent well below 10% of the total number of blocks.

Returning to our training data and the 7x tutor group block, each group requires fifteen periods including DS for Science. What should the block shape be? The graphic shown below displays the current situation.

Groups and Clusters										Block	DS13	Groups	Attributes			Sessions	Increase	Decrease
										Codes	Plan	Used	7A/Sc					
7A		Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc		3 DS						
DS13		1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	3 DS								
7B		Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc		3 DS						
DS13		1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	3 DS								
7C		Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc		3 DS						
DS13		1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	3 DS								

The default block shape selected by the software (when using the small **Block** button) is DS13. Unless this is changed all three groups are bound to be given the D session at the same time, although the S sessions can be distributed anywhere amongst the other thirteen periods. Given that in the block as a whole there are only three Ds to be fitted, a block shape of D3S9 would enable all possible combinations ranging from three groups of Science at once to one group at once. This is shown in the graphic displayed below.

Groups and Clusters										Block	D3S9	Groups	Attributes			Sessions	Increase	Decrease
										Codes	Plan	Used	7A/Sc					
7A		Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc		3 DS						
DS13		1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	3 DS								
7B		Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc		3 DS						
DS13		1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	3 DS								
7C		Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc		3 DS						
DS13		1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	3 DS								

17. Click the small **Block** button and overtype the suggested block shape with **D3**, then click the **OK** button to confirm.

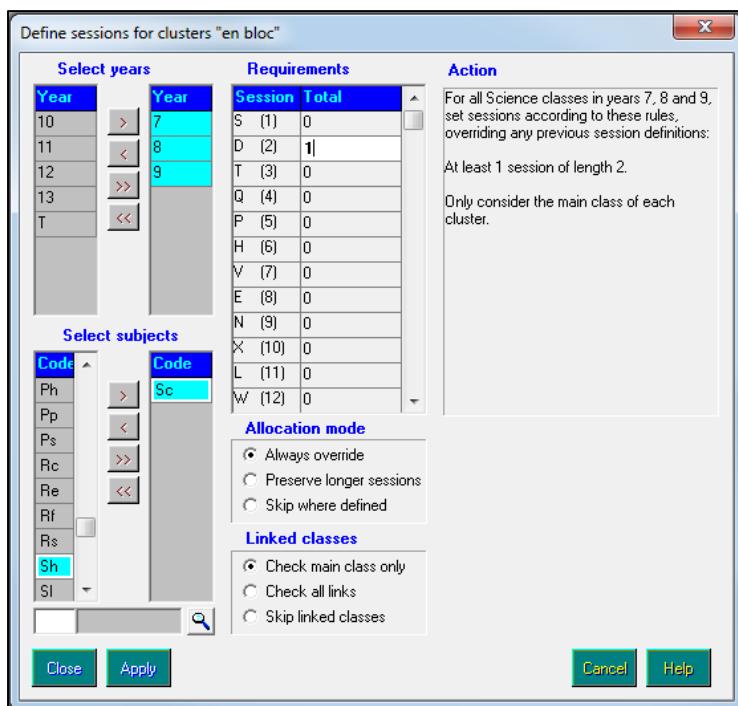
Nova-T adds the singles so that the actual block shape becomes D3S9.

Step by Step – Defining Session Lengths Using Global Rules

Defining multiple period sessions in the time-consuming way described in the previous step by step will not have much appeal to a timetabler. The curriculum plan contains, for example, a large percentage of doubles. Those who are familiar with the concept of interleave will be aware that this involves defining the vast majority of the plan as multiple period sessions. The manual process is really only intended to be used as means of tweaking the odd class or large scale definition of multiple period sessions a global routine is provided, as described in this step by step.

If, for example, Sc is to be delivered as DS in KS3 and DSS in KS4 and that Te is to be delivered as DS in years 7 and 8 and D in year 9. The common denominator between Sc and Te is that in KS3 all classes should receive one D session.

1. Reload file **T6 (3)**. In the **Sessions** process, if necessary, browse to block **7x Tutor Groups** and select the **7A/Sc** class.
2. Select **Sessions | Set Session Lengths** to open the en bloc method of defining multiple period sessions.
3. Send **Years 7-9** across to the right-hand box. This can be achieved by double-clicking the year, dragging the year or selecting and using the **arrow** buttons.
4. Select the subjects **Sc** and **Te** also by any of the three methods.
5. In the **Requirements** box, type **1** alongside the **D**.
6. Click the **Apply** button noting the number of operations about to be carried out. Confirm the prompt by clicking the **OK** button.



- Click the **Close** button to close the screen and examine the **Sc** classes in the **Tutor Group** block.

Groups and Clusters										Block	S15	Groups	Attributes	Sessions	Increase	Decrease
	7A	Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc						
DS13	1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	1 S	3 DS						
7B	Ar	En	Fr	Ge	Gg	Hi	Mu	Re	Sc							
DS13	1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	1 S	3 DS						
7C	En	Fr	Ge	Gg	Hi	Mu	Re	Sc								
DS13	1 S	4 S4	2 SS	1 S	1 S	1 S	1 S	1 S	1 S	3 DS						

Although the classes are correct, the block shape is not.

- Reopen the routine (**Sessions | Set Sessions Lengths**) and define one **D** for **Years 10** and **11** for just **Sc**. Click the **Apply** button, then click the **OK** button to confirm.

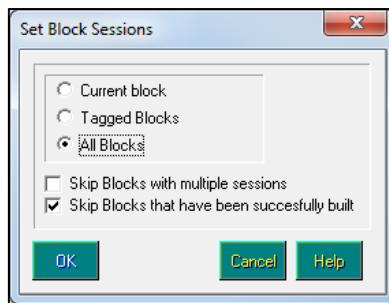
One very useful feature of this routine is the ability to enter **M** in the total column, rather than a number. M represents maximum and can be used to create a floating rule. Typing **M** alongside D causes the routine to define as many doubles as possible, given the number of periods allocated to the subject. For example, two periods would become D, three would become DS, four would become DD and so on.

To sort out all the block shapes (block sessions requirements) it is necessary to change to the auto process.

- Click the **Auto** process button.

Much more needs to be said about the auto process once scheduling is under way. For the moment, it is sufficient to note that each row represents a block in the curriculum plan (apart from a couple of blanking blocks that will be explained later). The white column carries information about the block shape and all of these are singles. This is incorrect since staff know that most of the blocks containing Science and Technology will require the block shape to contain at least one double.

10. Select Auto | Default Block Shape.



11. Change the setting to **All Blocks**, leave the check boxes as their default settings and confirm by clicking the **OK** button.

The shape of each block will be automatically adjusted to cope with the requirements of the groups within the block.

Step by Step – Assigning Facilities Using Global Rules

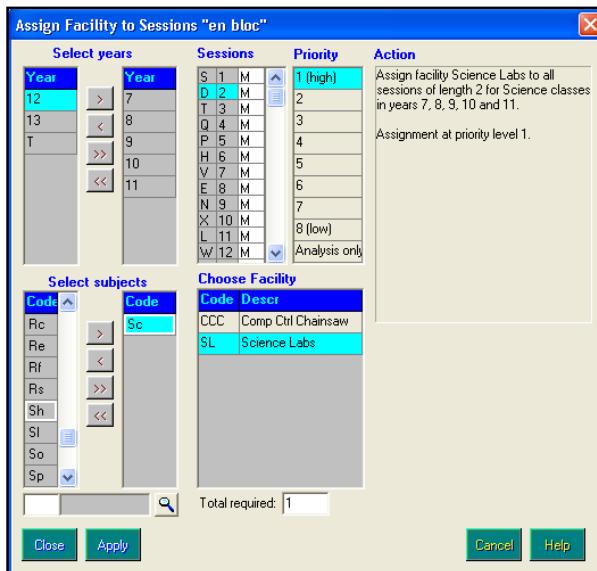
Consider a situation in which a school has nine labs and eleven Science teachers. The real limit to scheduling is, therefore, nine not eleven. Once the facility is defined, it is necessary to assign it to more or less every Science class in the curriculum plan. This is best carried out via a global routine, rather than on a class-by-class basis.

Given our situation that Science is taught in single and double periods, one could take the view that it is more important for the doubles to be in a lab than for the singles. In fact, when scheduling, the initial hope will be that all Science classes should get a lab all of the time. If this proves to be impossible, then the doubles are given priority over singles. The computer version of this strategy is to assign a priority (from one to eight) at the time at which the facility is deployed on the class.

Let us model the concept of differentiating doubles from singles in respect of priority use of labs.

1. Select the **Sessions** process and if necessary, browse to the **7x Tutor Group** block and select **7A/Sc**.
2. Select **Sessions | Allocate Facilities**.

3. It is clear from the **Choose Facilities** section of the routine that the only existing facility is **CCC**. A facility for the Science Labs will need to be defined.
4. Cancel the routine and select **Plan | Facilities | Edit Facilities**, then click the **Add** button.
5. Type **SL** in the **Code** field, **Science Labs** in the **Description** field and **9** in the **Quantity** field. Leave the **Active Level** as **1** and ignore the check box. Confirm the data entry screens by clicking the **OK** button.
6. Select **Sessions | Allocate Facilities**.

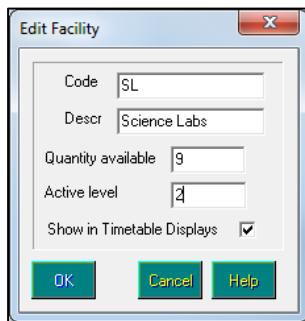


7. Select **Years 7-11**, subject **Sc**, facility **SL**, sessions **D 2** and leave the **Priority** field as **1**. Read the text in the **Action** section and check that it seems appropriate.
8. Click the **Apply** button and note the number of clusters (classes) affected.
9. Change the data slightly so that **S 1** is selected, the **Priority** field is **2**, then click the **Apply** button.
10. Click the **Close** button to close the routine and examine the **Science** classes in the **Sessions** process.

Groups and Clusters												Block	DS13	Groups	Attributes	Codes	Plan Used	Sessions	Increase	Decrease
7A DS13	Ar 1 S	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							7A/Sc				
7B DS13	Ar 1 S	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							SL	3 3			
7C DS13	Ar 1 S	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							\$SA	3 3			
																S		\$SA		

There is a colour differentiation at the right-hand side. SL for the double is black, but for the single it is white. This is indirectly due to the assignments having different priorities and is explained in the following text.

11. Select **Plan | Facilities | Edit Facilities** and edit the **SL** facility so that the **Active Level** is changed from **1** to **2** and confirm by clicking the **OK** button.

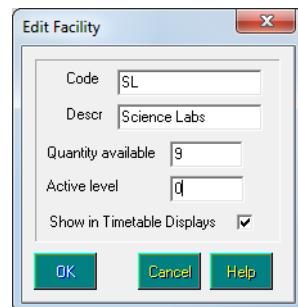


Groups and Clusters									Block	DS13	Groups	Attributes			Sessions	Increase	Decrease
7A DS13	En S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							7A/Sc		
7B DS13	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							D	\$SA	SL
7C DS13	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							S	\$SA	SL

Codes	Plan	Used
SL	3	3
\$SA	3	3

All the SLs in the sessions turn black, as shown in the preceding graphic.

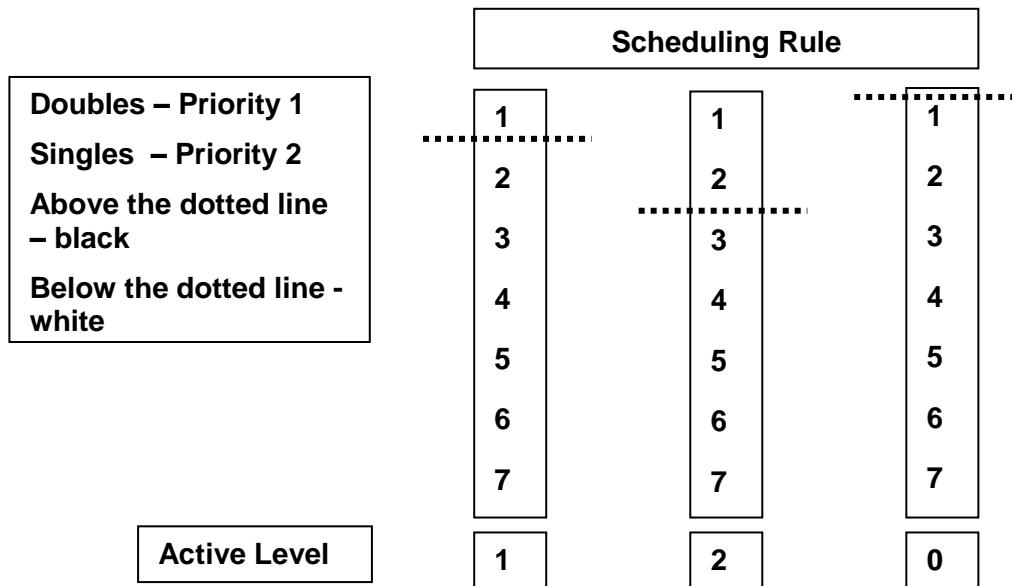
12. Select **Plan | Facilities | Edit Facilities** and change the **Active Level** field to **0** and confirm by clicking the **OK** button.



Groups and Clusters									Block	DS13	Groups	Attributes			Sessions	Increase	Decrease
7A DS13	En S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							7A/Sc		
7B DS13	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							D	\$SA	SL
7C DS13	En 4 S4	Fr 2 SS	Ge 1 S	Gg 1 S	Hi 1 S	Mu 1 S	Re 1 S	Sc 3 DS							S	\$SA	SL

Codes	Plan	Used
SL	3	3
\$SA	3	3

What is actually being changed when the active level is edited is the rule to be used when scheduling and the colour is a visual representation of the rule. This requires further explanation.



Requirements for the facility SL below the dotted line (white) are ignored whereas requirements above the line (black) are included.

So in our example, with the active level set to two, requirements for both double period and single period sessions are given equal consideration. With a quantity of nine SL defined, when manual scheduling is in progress, the software will warn if more than nine classes are placed at the same period whether for D or S sessions. When scheduling automatically the software will never produce solutions that would overflow the facility.

With the active level set to one, only priority one assignments (doubles, in our case) are counted when scheduling. So all the classes will still be scheduled, but staff members can only guarantee that no more than nine doubles are scheduled simultaneously. The single sessions could be scheduled anywhere because for them SL is no longer a requirement.

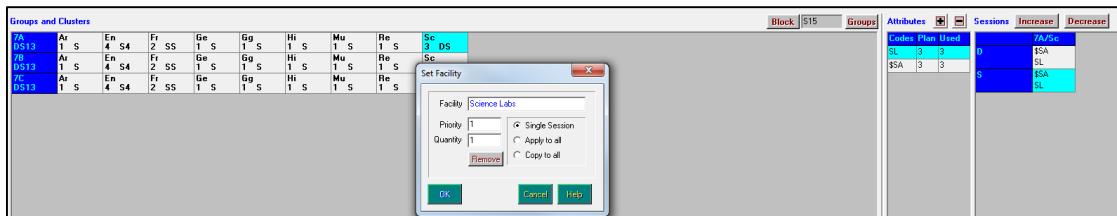
With the active level set to zero the requirement for SL is effectively switched off. The software is no longer counting any requirement in respect of Science labs.

In practice, start with an active level of two and try scheduling. If no solution can be found, the rule is relaxed from two to one and scheduling is restarted. If there is still no solution, the rule can be turned off and scheduling repeated. If there is still no solution, it is very likely that it is not the requirement for SL that is the problem, but probably staffing. So in effect, active level zero can be used in two ways. Firstly, it can be used to switch off the requirement for SL as it should not have been defined. Secondly, it can be used as a way of temporarily eliminating this additional restriction from the scheduling process to test the viability of other factors such as staffing.

It is likely that there will be a number of facilities operating simultaneously, but with different active levels. It should be noted that, although in our example staff members only used levels 1 and 2, a sliding scale of eight priority levels is available. Also in our example double period sessions were defined as being level one, but you may decide to identify certain year groups or particular blocks, which should be defined as having greater priority over restricted resources.

The colour differentiation on the sessions routine indicates which resources will be counted (black) and which will be ignored (white) when scheduling starts.

It is possible to edit the assignment of a facility to a particular class by right-clicking the facility. The ability to edit includes modifying the Quantity, the Priority level and deleting the assignment altogether. There is also the opportunity to modify at the same time other sessions of the same class.



Experiment with editing the SL facility assigned to the single sessions.

07

Non-Class Codes (NCCs)

This chapter contains:

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Chapter Introduction

NCCs are used in Nova-T to represent activities that should appear on the timetable, but do not arise out of scheduling the curriculum plan. Common examples are meetings, duties, registration time, planning, preparation and assessment time (PPA) and blanking.

A blank is a special type of NCC that is used to denote that at a particular period, a part-time teacher is not employed or a room is not available to the school.

A school might define a room called the college to identify the location of certain vocational courses. It would be necessary to blank the room at periods when no students go to the college in order for it not to appear in the free room list. Schools entering into a consortium agreement with a neighbouring school might define the other school as a room and would blank it at all non-used periods. NCCs are exported to the SQL (SIMS) database as part of the timetable send.

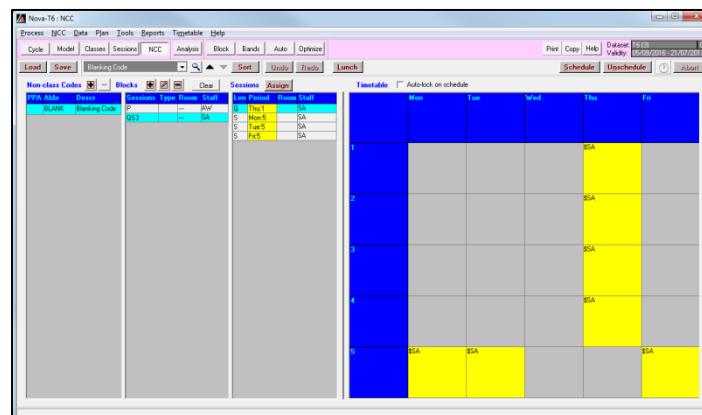
Step by Step – Blanking

1. Select the **NCC** process and press the **F8** function key.

The F8 function key is the shortcut to select **NCC | Show/Hide PPA**. At present, this additional functionality associated with PPA is not required.

2. Ensure **Tools | Ordering Teachers** are set as **by Code**

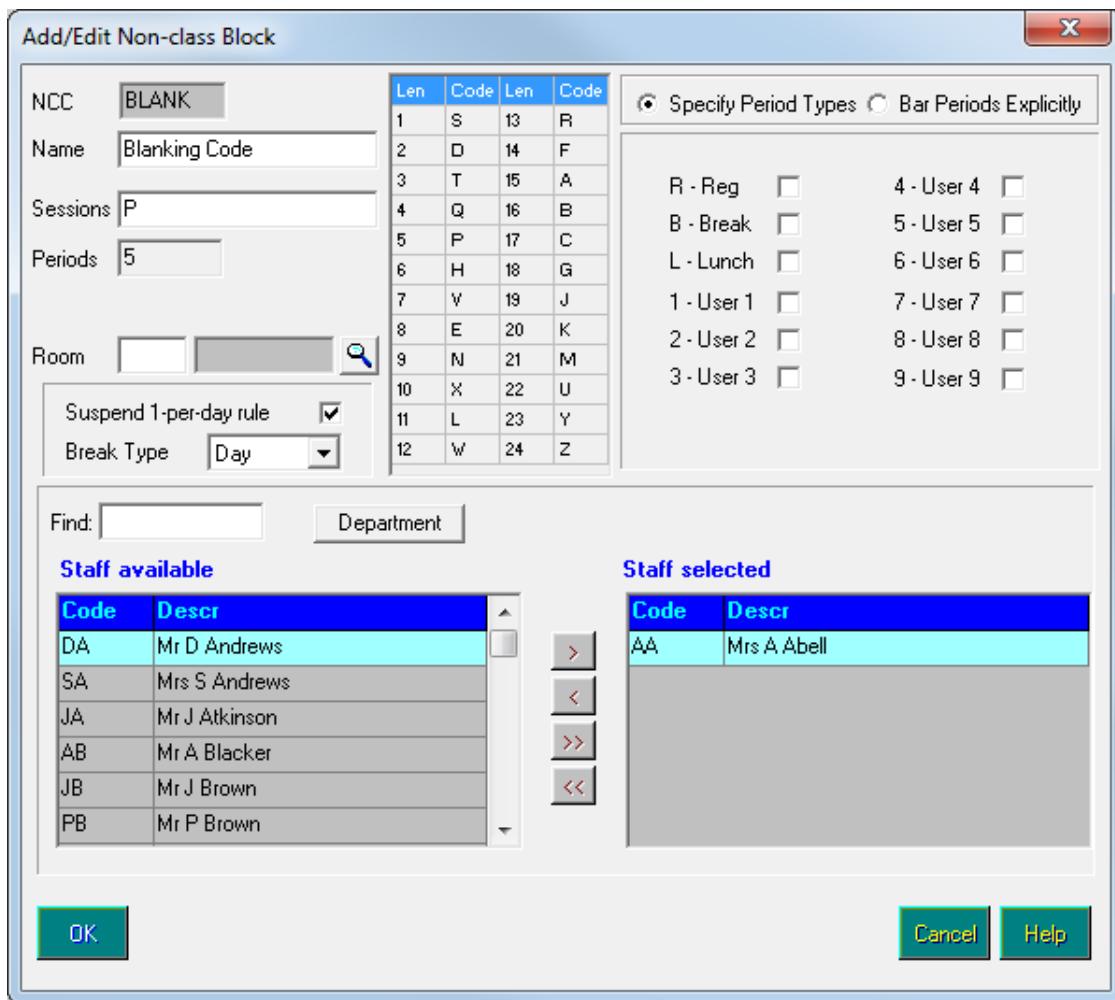
The only NCC code currently existing is the blanking code and it has been assigned to two teachers, AW and SA. Mrs Wheeler has one day off per week, whereas Mrs Andrews has most of Thursday off, coming into school only for the last period and leaves after period four on three other days. In terms of sessions her time off is described as QS3.



3. In the **Blocks** column select each teacher in turn and examine briefly the times defined for the time off.
4. Click the **Clear** button to remove all of this information, read the prompt and confirm by clicking the **OK** button.

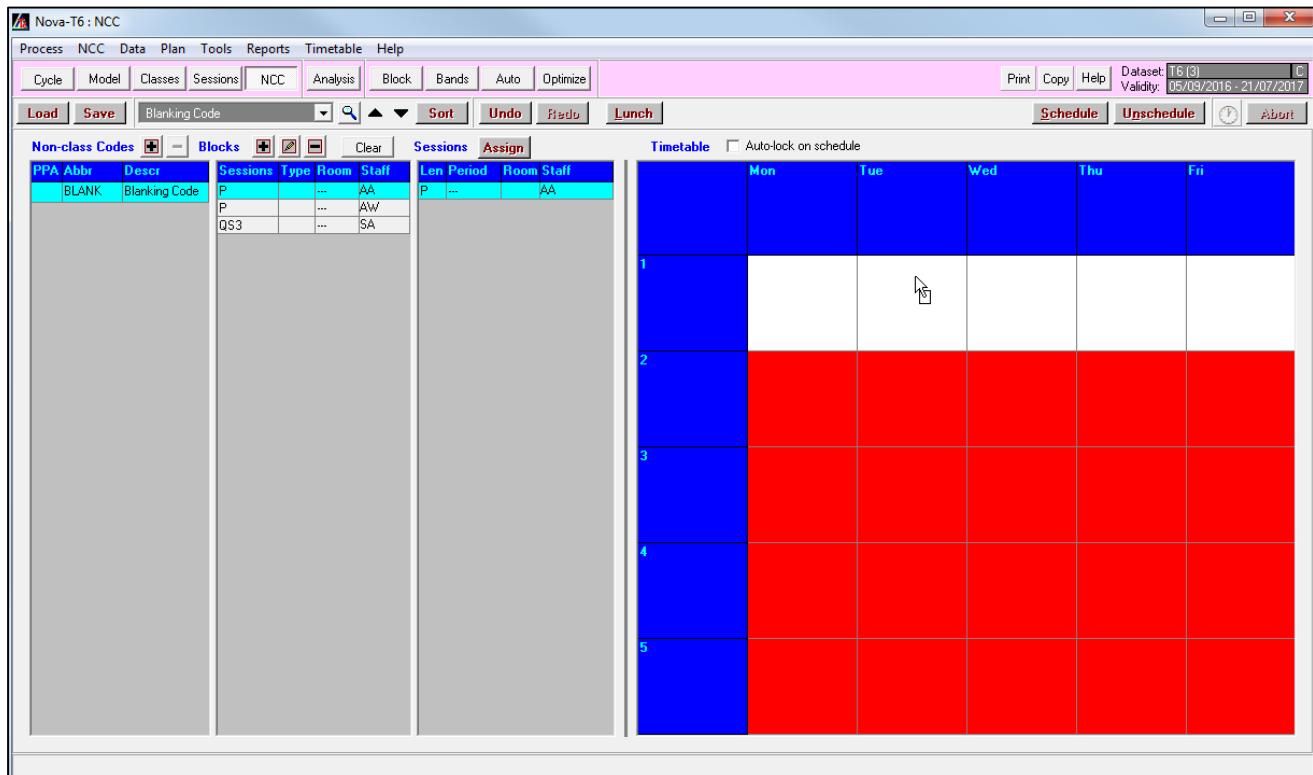
Suppose that Mrs Abell (AA) needs one day off per week and she does not mind in the slightest which day is selected.

5. Click the **+** button in the **Blocks** section of the NCC routine. Type **P** in the **Sessions** field (P being five consecutive periods or one day), as shown in the graphic displayed below. Select **Mrs Abell**.



6. Confirm the data entry by clicking the **OK** button, and then click the **Assign** button above the third column.
7. Click and drag from the **Sessions** row onto **Tue1** on the timetable grid to schedule the day off on **Tuesday**.

In Nova-T when scheduling, a red cell will denote an impossibility. On this occasion all cells but for period one are red because a day off has to start at period one. The graphic displayed below shows the scheduling just before releasing the mouse button on Tue1.



Once the block is scheduled, the yellow colour indicates that it is not locked. The significance of this is that the auto schedule routines may move it around the week to facilitate further scheduling. If this is not desirable, because Tue has been agreed, then the block needs to be locked.

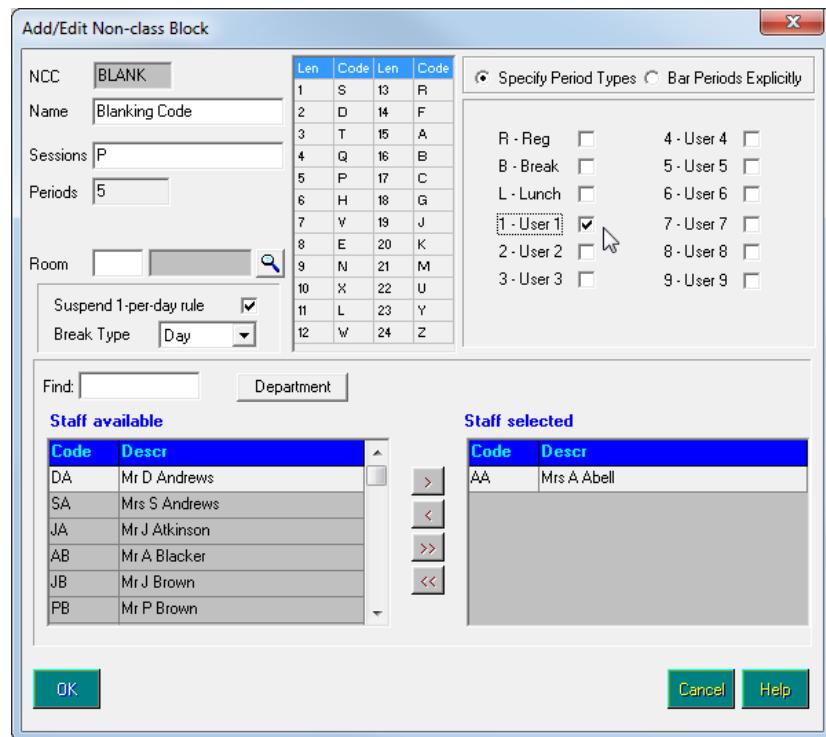
There are two levels of lock in Nova-T – hard and soft. No particular meaning is attributed to these, but they are hierarchical in the sense that soft locks may be removed without disturbing hard locks, but it does not work the other way round. More will be said about locks later in the course.

8. Experiment with locks by right-clicking the **yellow scheduled block** on the **Timetable** grid and select **Lock** followed by either **Hard** or **Soft**. Leave the block unlocked before moving on.

An example scenario is that Mrs Abell has given the school a degree of flexibility by requesting that her day off be either Monday or Friday, but it does not matter which. Is it possible for the software to negotiate the best solution in such a situation? This can be achieved by using the concept of period types.

There are twelve period types in Nova-T and by flagging certain periods as being of a particular type, it is possible to restrict the scheduling of particular activities to those periods only.

9. With the day-off scheduled on Tue click the **Edit** button (the pencil) in the **Blocks** column. Select the **User 1 Period Type**, as shown in the graphic displayed below.



10. Confirm the change by clicking the **OK** button and note that the day-off is promptly de-scheduled.

The logic is correct. The blanking block has been edited so that it can only be scheduled at periods marked as user 1. There are no such periods and hence the block is removed from the timetable.

11. Attempt to schedule the day off back to **Tuesday** and note how the software refuses.
 12. Change to the **Cycle** process, right-click the **Mon** header and select **Period Type**. Select **User 1** and confirm by clicking the **OK** button. Repeat for **Fri**.

The timetable grid should appear, as shown in the graphic displayed below.

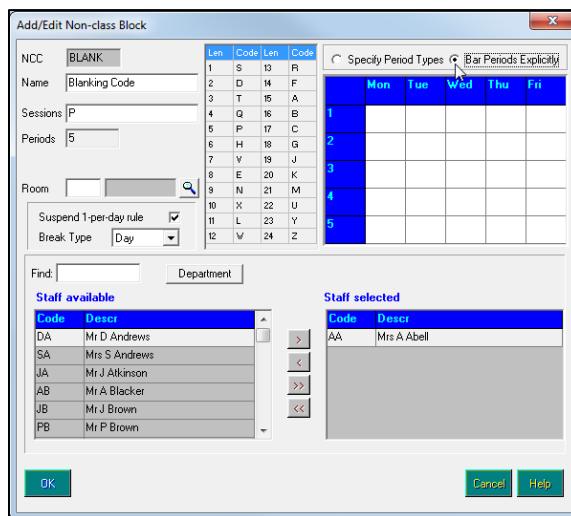
	Mon	Tue	Wed	Thu	Fri
1	1				1
2	1				1
3	1				1
4	1				1
5	1				1

13. Return to the **NCC** process and schedule the day-off again. The process will be constrained to either **Mon** or **Fri**.

If the block is left unlocked, during autoscheduling, it can be moved backwards and forwards between Monday and Friday. This is a very powerful tool that can be used to negotiate similar situations with blocks in the curriculum plan.

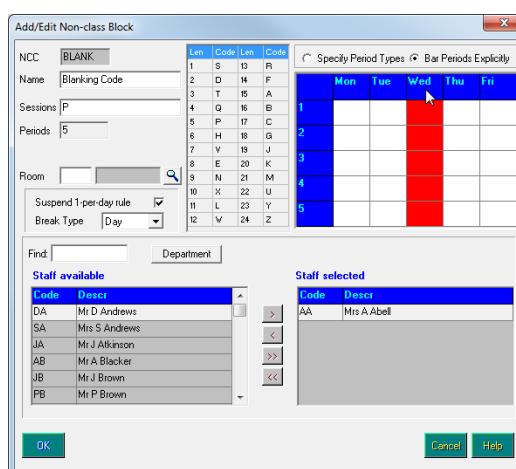
When using period types with NCCs it is necessary to specify exactly which periods may be used for the scheduling. In this case all periods on Monday and Friday were flagged on the cycle as being type user 1. Sometimes a slightly different logic prevails; schedule it anywhere but there. Suppose that Mrs Abell's day off could be on any day but Wednesday. It would be possible to flag all periods on the other four days as being user type 1, but there is an alternative method; specify where it cannot go rather than where it can.

14. Unschedule **Mrs Abell's** day off and edit the block by removing the requirement for **Period Type** one. Change the **radio** button from **Specify Period Types** to **Bar Periods Explicitly**.



The display removes the period types from view and replaces them with a timetable. It is possible to select individual cells or headers for the days and periods and mark periods as barred.

15. Select the **blue** header for **Wednesday** to indicate that the day off should not be on this day.



16. Confirm the change by clicking the **OK** button, and then schedule the day off on **Monday**.

If the scheduling is not locked, during subsequent auto-scheduling it might be moved by the software to any day of the week but Wednesday.

You are generally advised before embarking on any work for the new timetable, to ensure the cycle includes all periods that will ultimately be needed. This should include non-teaching periods. The reason for this advice is partly related to the fact that SIMS would require a new timetable cycle to be sent from Nova-T before the curriculum and timetable could be exported. Despite this advice it is not uncommon for these non-teaching periods to be added during, or after, the process of construction. This begs the question as to what should happen to the day off already defined and scheduled. If a full day blank session has already been scheduled, when additional periods are added, the session will be extended so as to include the additional period.

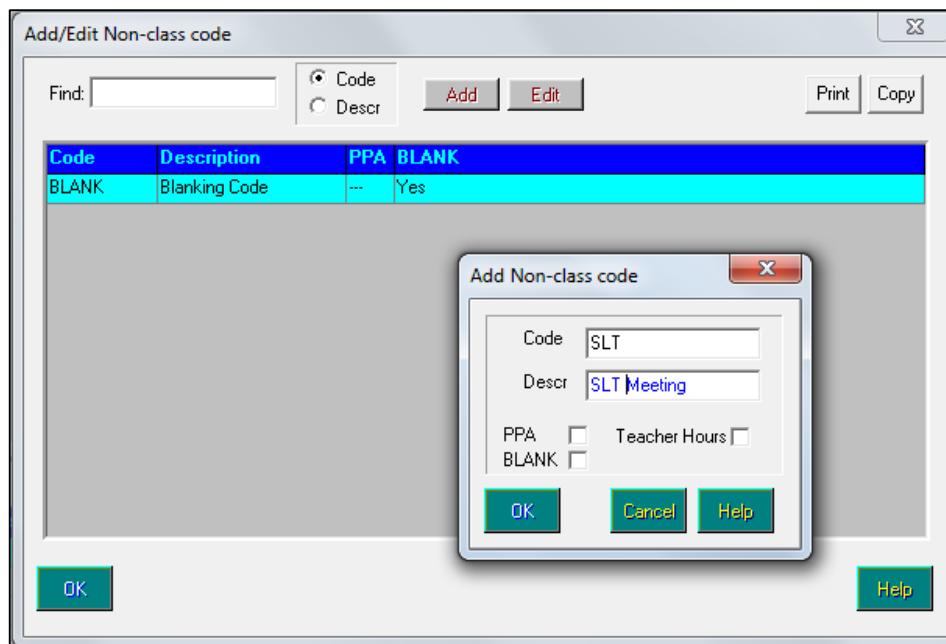
Step by Step – Other NCCs

There are many other NCCs used in secondary schools to track additional activities that should be visible on the timetable. One common example is the senior leadership team (SLT) meeting. The meeting takes place twice during the week (in school time) and should last for two periods and not be on the same day. The timetabler has a free hand.

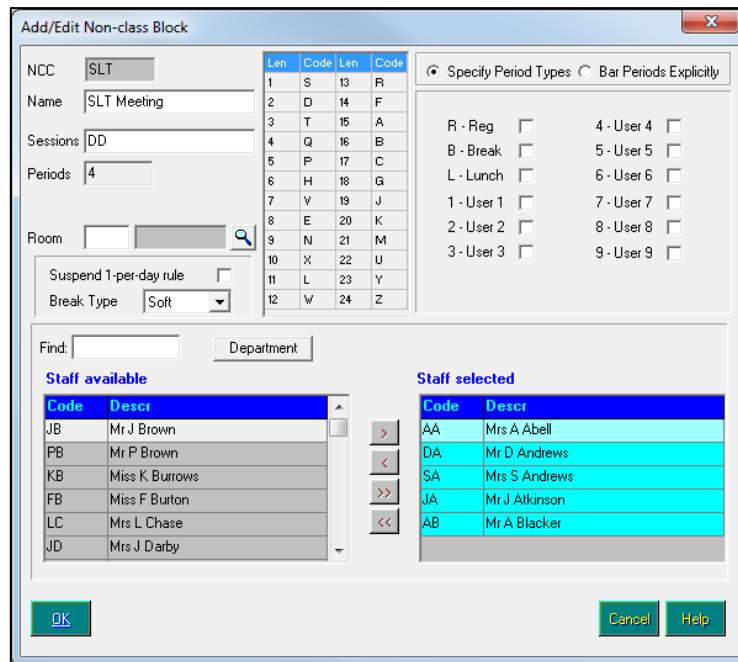
One strategy is to wait until the timetable is completed, then hope that the non-contact periods of the SLT coincide sufficiently to be able to arrange the meeting. The obvious advantage of this is that the scheduling of the curriculum plan is not restricted by having a group of teachers made unavailable by the pre-existing SLT meeting. The disadvantage is that there may not be any time during the week when all the required personnel are free together.

Possibly a better strategy is to define the existence of the meeting, but let the autoschedule routine move it around the week to facilitate scheduling of the curriculum plan.

1. Click the **+** button in the **Non-Class Codes** column and define a code (SLT) for the meeting. Confirm the new code by clicking the **OK** button.



2. Select the new code in the left-hand column and create a new block (+ in the **Block** column). Type **DD** in the **Sessions** box and select the first five teachers. In the graphic displayed below, the teachers represent senior management.



The order of the teacher list is determined by the setting in **Tools | Ordering**. By default it is in code order.

3. Confirm the data entry and click the **Assign** button above the third column.

There are two approaches to this:

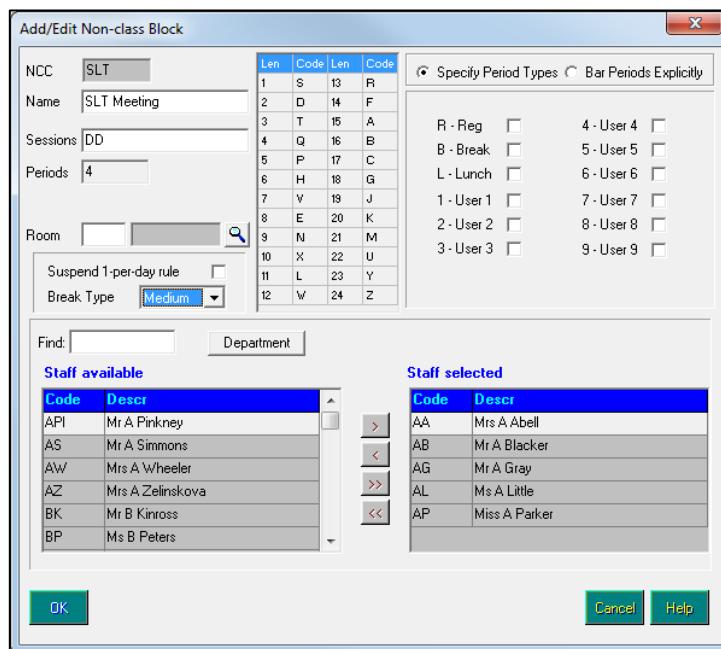
- a) Schedule the meeting twice, but do not lock it.
- b) Do not schedule it and leave the whole process to autoschedule.
4. Schedule each session of the meeting anywhere it will fit.

The screenshot shows the Nova-T software interface. The top menu includes Process, NCC, Data, Plan, Tools, Reports, Timetable, and Help. The toolbar includes Load, Save, SLT Meeting, Sort, Undo, Redo, Lunch, Schedule, Unschedule, and Abort. The main area has tabs for Non-class Codes, Blocks, Sessions, and Assign. The Non-class Codes table shows BLANK (Blanking Code) and SLT (SLT Meeting). The Sessions table shows DD and D sessions with various room and staff assignments. The Timetable grid shows a 5-day week (Mon-Fri) with 6 periods each day. Sessions are being assigned to specific periods, with some cells highlighted in yellow or red.

Break Rules with NCCs

The preceding graphic illustrates the meeting having been scheduled Tuesday one and two, and about to be scheduled at Thursday three and four. It is not possible to schedule the meeting at a red or grey period, thus, leave you wondering what is wrong with periods two, four and five. It is the breaks that are causing the problem. Nova-T defaults to not enabling multiple period sessions across breaks. The rule can be relaxed for blocks on an individual basis and the SLT meeting might also be a case for relaxation.

5. Right-click one of the scheduled meetings and select **Delete** (or simply click the **Undo** button).
6. Click the **Edit** button above the second column and change the **Break Type** from **Soft** to **Medium**.



7. Test the scheduling and note the additional possible locations.

On the cycle process morning break (soft) is after period two and lunch (medium) is after period four. The rule has been relaxed for the soft, but not the hard break.

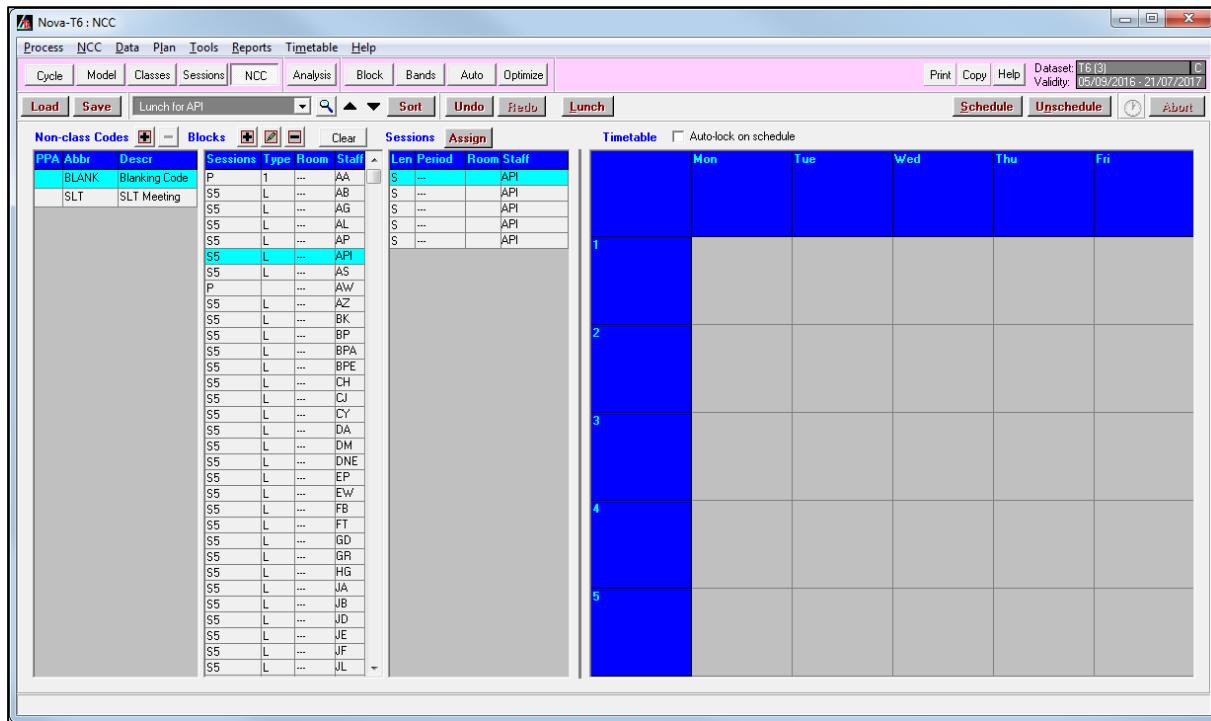
8. Edit the meeting block again and change the **Break Type** to **Hard**. Test the scheduling again.

Now the only period not enabled is the last period of the day. A double period meeting cannot start at period five. When the break rule is relaxed it is common to not be quite sure how the setting works. As there are three kinds of break, which are soft, medium and hard, they are hierarchical. The break type in edit block has to be set one further up. So to be able to go across a soft break, the break type has to be set to medium. To go across a soft or medium break, it has to be set to hard. Finally, to go across all three types of break, it should be set to day.

It is possible to use the concept of anywhere but here (see bar periods explicitly in previous step by step) with any NCC.

Split Lunches

There is another area of functionality on the NCC process and, although the training data does not make use of it, it is important to be aware of its existence. It is only used when a split lunch has been defined in the cycle process.



Staff Lunches is a very important concept. It can only be used when the cycle identifies certain periods (usually two per day) as being of the period type of lunch. Given that it is important that staff are given one lunch per day and not two on Monday and the next on Wednesday, the software needs to be capable of negotiating which period each member of staff should take for lunch on each day. The preceding graphic shows the functionality just after the **Lunch** button has been selected.

Automatically, each member of staff is assigned five lunches. Part-time teachers' allocation needs to be manually adjusted downwards. The autoschedule routine can then decide which periods are the most appropriate for lunch for each teacher and on each day. Scheduling is restricted to those periods defined in the cycle as being lunch in terms of period type.

Children are given lunch by virtue of the fact that blocks should previously have been set up in the curriculum plan and also flagged as being period type lunch. The subject in these blocks may be Lu (a fictitious subject) and each block need contain just one group, without teacher and defined for the same number of periods as required lunches, five or ten in most schools. If it is deemed that all year 7 should have lunch at the same time, then a full year block is created. It can even manually be scheduled and locked if the school wishes to ensure that year 7 always have, for example, an early lunch on every day.

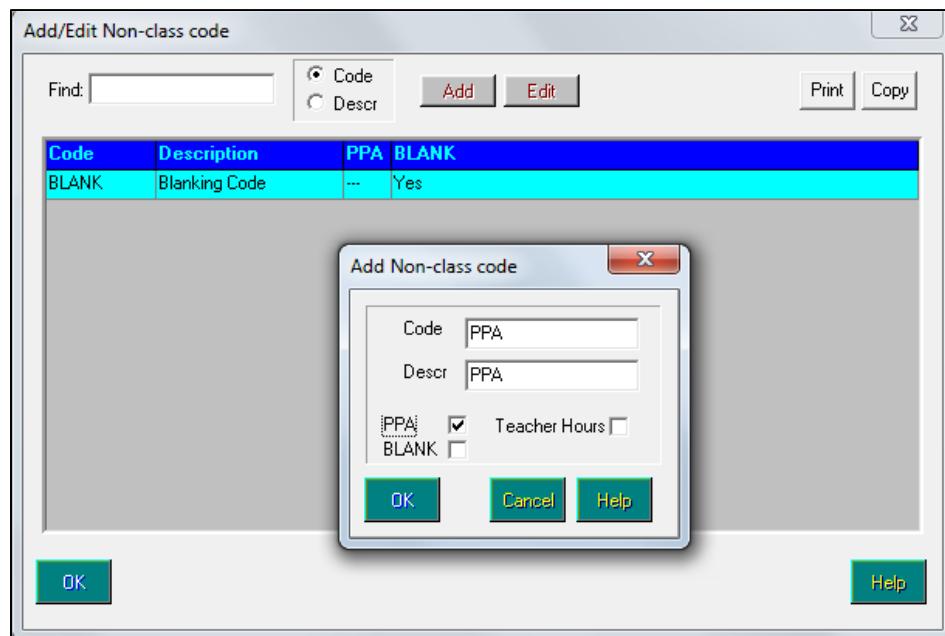
Planning, Preparation and Assessment Time

One very common NCC appearing on the vast majority of timetables is PPA. When scheduling this code, staff would benefit from additional information regarding the number of teachers not teaching at each period in the cycle. One would not be likely to agree to a member of staff taking Mon1 as a PPA period if it were known that he or she was the only member of staff not teaching at that particular period.

9. Press **F8** to make the additional functionality visible.

To see the functionality for PPA properly, move to a dataset in which the timetable is virtually finished.

10. Load the **Local Dataset T6 (9)**.
11. Add a new **NCC** by selecting the **+**. Use the **Type** and **Description** of **PPA** and select the **PPA** check box.



The purpose of the check box is to make it possible for multiple codes to be defined as being in the category of PPA. For example, administration, marking, preparation and planning could all be given unique codes, but still reside under the umbrella heading of PPA. It is likely that most schools will opt for the single PPA code.

The **Teacher Hours** check box, not used in this instance, enables certain codes to be deemed as counting towards 'time in the classroom'. This is picked up by the Teacher Hours report. For further information see *Part B* of this course.

12. Confirm the various screens, select the **PPA** code at the top-left and also select teacher **AA** in the bottom left-hand list.

Mrs Abell has six periods (white) at which nothing has been scheduled. At each of these periods the number in brackets indicates how many teachers are free. This is useful information when scheduling PPA. It enables the school to distribute the code while taking into consideration the impact on cover arrangements. Schools tend to go for the larger numbers while avoiding the smaller ones.

The table at the bottom-left not only carries the names of the teachers, but also a 10% calculation of their current teaching commitment. This is being read from the timetable rather than the curriculum plan. Staff may type into the second column the agreed number of PPA periods that should be scheduled, but this is optional.

13. Schedule Mrs Abell's PPA at Mon2 by selecting the cell.

One of the main advantages of this routine is that the software responds to the scheduling by working backwards. It retrospectively creates the block and the session on the basis of the scheduled code.

Abb	Descr	10%	Agd.	Sched.
AA	Mrs A Abell	1.9	0	1
AB	Mr A Blacker	0.5	0	0
AG	Mr A Gray	1.9	0	0
AL	Mrs A Little	1.8	0	0
AP	Miss A Parker	2.0	0	0
API	Mr A Pinkney	2.2	0	0
AS	Mr A Simmons	1.9	0	0
AW	Mrs A Wheeler	1.1	0	0
AZ	Mrs A Zelinskova	1.6	0	0
BK	Mr B Kinross	1.6	0	0
BP	Mrs B Peters	1.5	0	0
BPA	Miss B Patel	1.8	0	0
BPE	Mrs B Pearson	1.8	0	0

14. Schedule a second PPA at Wed5.

This technique of scheduling and retrospectively creating the block/session can be used for any code in which a single teacher is to be assigned. It cannot be used for meetings because more than one teacher needs to be selected in the same block. It could be used to define and schedule registration codes such as, 7DA, 8AB, in which only one teacher is assigned to each code and probably, in a unique room. The only prerequisite to using this technique is that the code should first have been defined.

NOTE: F8 toggles this additional functionality on and off.

08

Analysis

This chapter contains:

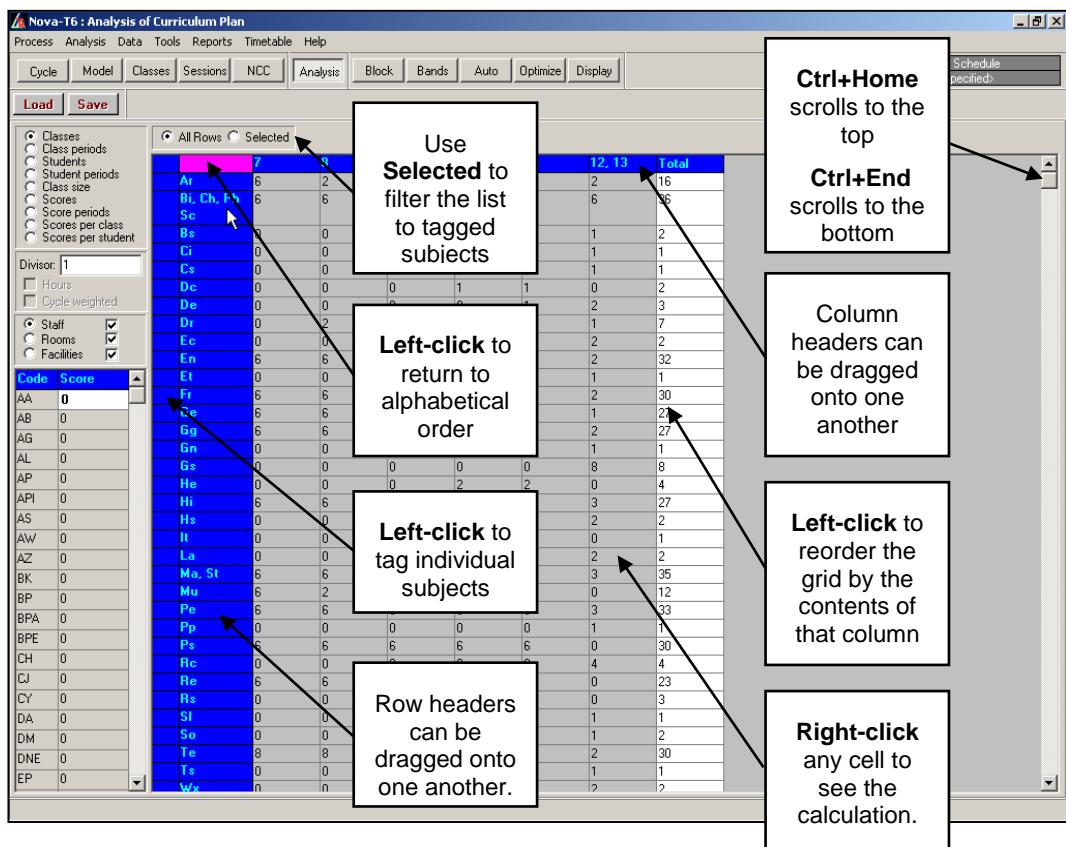
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Chapter Introduction

Once data such as that contained in the curriculum model has been entered, there are occasions when it is useful to be able to analyse the information from different points of view.

Step by Step – The Analysis Table

1. Before continuing, select **Load** followed by **Load new file**. Select **Local Dataset** and click the **Next** button. Browse to the **2016** folder and select the file **T6 (4)**, and then click the **Finish** button.
2. Select the **Model** process and check that **Year T** is missing. Also check the use of colour.
3. Select the **Analysis** process, read the information in the graphic displayed below and experiment with the grid. At this stage do not change the **radio** button from the top setting of **Classes**. The particular meaning of the numbers in the table is not important at present. This is given detailed coverage later.



Once either rows or columns have been merged, they may be unmerged by right-clicking the blue header, be it subjects on a row or years on a column.

Once exiting from this process, the layout of the table is lost. It is possible to save the layout and load it back in whenever required. This has the double benefit of enabling various layouts to be saved for different purposes.

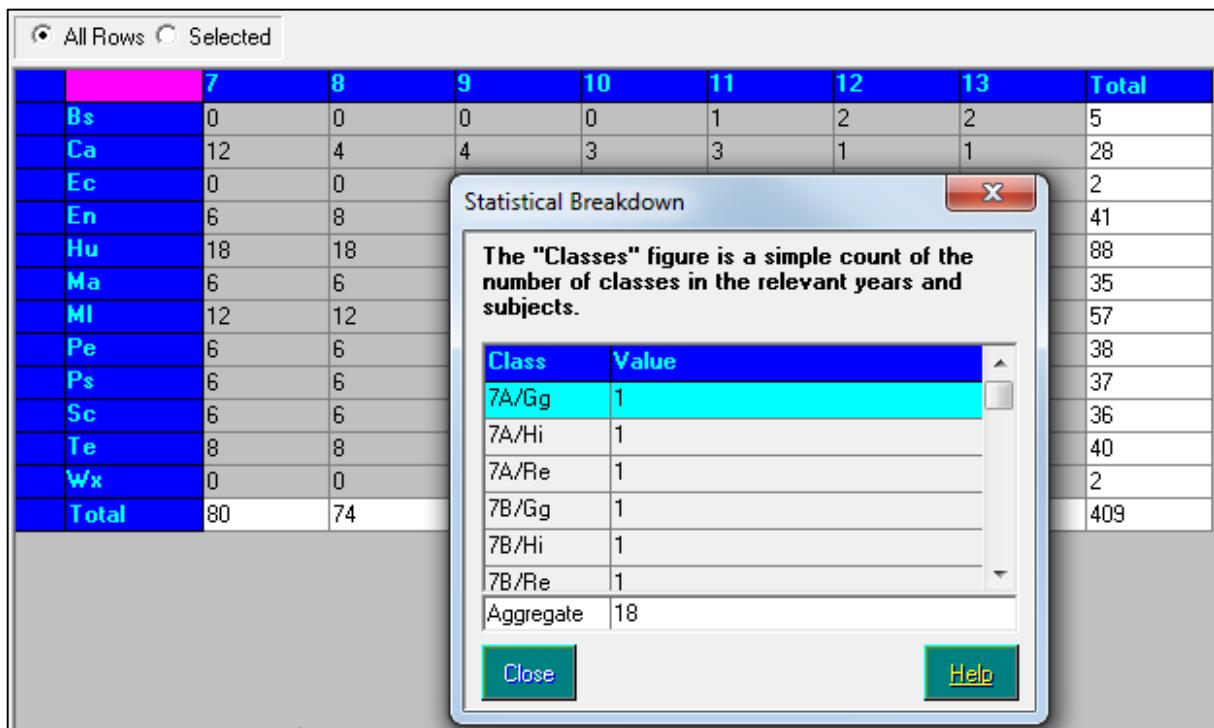
4. Modify the layout in some way that will be recognisable later, then select **Analysis | Save Layout**. Supply a name and click the **OK** button to confirm.
5. Select any other process button and immediately return to **Analysis**. Select **Analysis | Load Layout**, select the previously saved file and confirm by clicking the **OK** button.

The Merge functionality does not have to be used to create departmental rows of a combination of associated subjects, as this is built in as a feature.

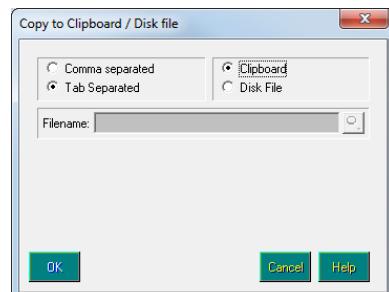
6. Select **Analysis | Subject Mode** and note the five choices.

Local simply means each subject on a separate row. The other three refer to the columns in **Plan | Subjects**.

7. Select **Faculty**, the number of rows will reduce. Right-click the number **18** on **Year 7 Hu** and note that the classes are actually **Geography, History and RE**.



8. Click the **Close** button to close the **Information** screen and drag the **Copy** button onto the **Analysis Table** and release.



It is possible to either copy directly to the Windows clipboard (so that Paste may be used in another program) or to save the information as a file for use later.

		C	D	E	F	G	H	I	J	K	L
4	Ec	0	0	0	0	0	1	1	2		
5	En	6	8	8	7	7	4	1	41		
6	Hu	18	18	18	9	12	6	7	88		
7	Ma	6	6	6	8	6	2	1	35		
8	MI	12	12	12	9	9	1	2	57		
9	Pe	6	6	6	6	6	3	5	38		
10	Ps	6	6	6	6	7	4	2	37		
11	Sc	6	6	6	6	6	3	3	36		
12	Te	8	8	8	6	6	2	2	40		
13	Wx	0	0	0	0	0	2	0	2		
14	Total	80	74	74	60	63	31	27	409		

The information is displayed correctly. Note that the formula are not sent; just raw figures. This can be seen from the eighty at the bottom of column C. It is purely a number and not the result of a summing of the figures above.

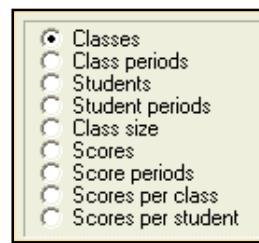
You can now look more closely at the types of information available on the analysis table.

9. Click the **Close** button to close down MS Excel without bothering to save the existing spreadsheet.
10. Return to displaying each subject on a row (**Analysis | Subject Mode | Local**).

Step by Step – Analysis without Using Scores

The various kinds of analyses are listed at the top-left. The first five are not dependent on classes having been resourced, but they do require a curriculum plan to present in the model process.

The last four use a concept of scores and these are further explained in this chapter.



1. The first analysis, classes, simply reads the curriculum plan and lists the number of classes of each subject in each year group. There is little that needs to be said about this set of figures.
2. Change the radio button to **Class periods**.
3. Right-click the figure **12** contained in the **Total** column for subject **De**.

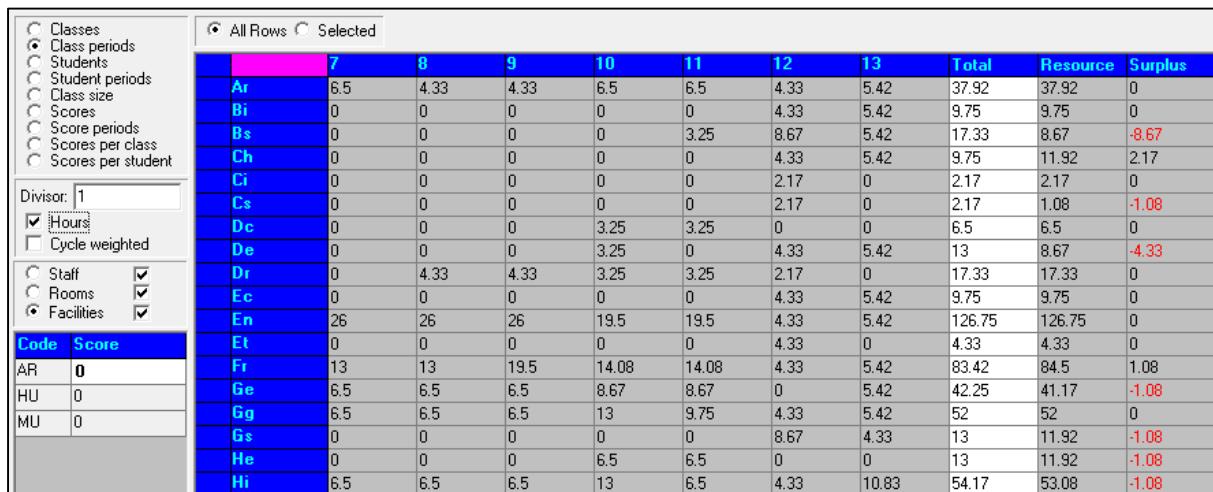
	7	8	9	10	11	12	13	Total	Resource	Surplus
Ar	6	4	4	6	6	4	5	35	35	0
Bi	0	0	0	0	0	4	5	9	9	0
Be	0	0	0	0	3	8	5	16	8	-8
Ch	0	0	0	0	0	4	5	9	11	2
Ci	0	0	0	0	0	2	0	2	2	0
Cs	0	0	0	0	0	2	0	2	1	-1
Dc	0	0	0	0	3	3	0	6	6	0
De	0	0	0	3	0	4	5	12	8	-4
Dr	0	4						16	16	0
Ec	0	0						9	9	0
En	24	24						117	117	0
Et	0	0						4	4	0
Fr	12	12						77	78	1
Ge	6	6						39	38	-1
Gg	6	6						48	48	0
Gs	0	0						12	11	-1
He	0	0						12	11	-1
Hi	6	6						50	49	-1
Hs	0	0						10	10	0
It	0	0						3	3	0
La	0	0						10	0	-10
Ma	24	24						119	118	-1
Mu	6	4						20	19	-1
Pe	12	12						65	65	0
Ph	0	0						9	9	0
Pp	0	0	0	0	0	2	0	2	2	0
Ps	6	6	6	6	6	0	0	30	29	-1
Rc	0	0	0	0	0	0	4	4	3	-1
Re	6	6	6	3	9	0	0	30	25	-5
Sc	18	18	18	24	24	0	0	102	102	0
Si	0	0	0	0	2	0	2	2	2	0

It is apparent that the total number of periods of De currently defined in the curriculum plan is twelve and that these apply to years 11-13 only. It is also clear that, according to Nova-T, only eight periods of staff are available, leaving a shortfall of four. The availability is being read from **Plan | Teacher Departments** in which teacher JE is identified as five periods for De and PM as three. If this information is accurate, then the analysis points to potential problems when it comes to staffing the De classes.

This analysis is very useful, particularly when one considers the ability to either drag selected subjects onto the same row or to use faculty rather than local (individual subjects). While a spreadsheet could be made to carry out many more functions, there should be many staff typing in the same information as supplied automatically on this analysis grid.

Given that this type of analysis is normally carried out fairly early in the timetable cycle (often before Christmas), it does mean that the curriculum plan would need to be entered via the model process sooner rather than later.

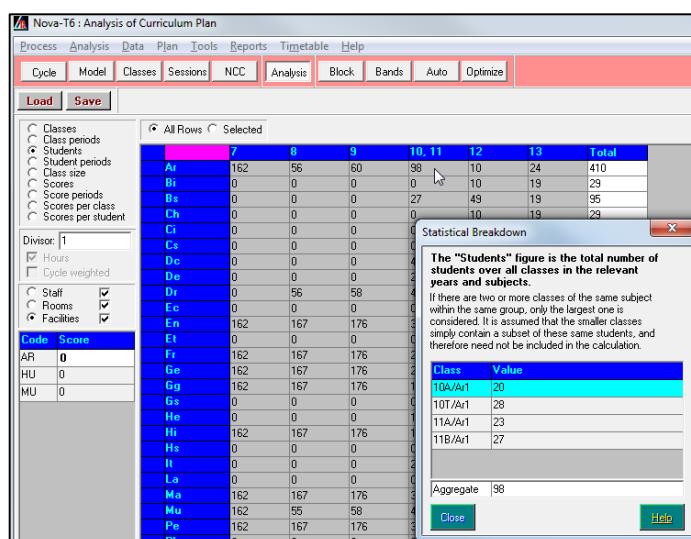
4. Select the **Hours** check box.



The screenshot shows the Nova-T software interface with the 'Analysis' tab selected. On the left, there is a sidebar with various analysis options like 'Classes', 'Students', etc., and a 'Divisor' dropdown set to 1. Below that are checkboxes for 'Hours' (which is checked) and 'Cycle weighted'. A table below lists subjects (Ar, Bi, Bs, Ch, Ci, Cs, Dc, De, Dr, Ec, En, Et, Fr, Ge, Gg, Gs, He, Hi) across years 7 through 13. The 'Hours' column is highlighted in red. The 'Score' column is blue. The 'Total' column shows numerical values, and the 'Resource' and 'Surplus' columns show the difference between staff and periods. Some values in the 'Resource' and 'Surplus' columns are in red, indicating a deficit.

The number of periods in each cell is converted into hours on the basis of the setting in the cycle process (60 or 65 minutes in our current dataset). This does mean that two models with different cycle sizes may easily be compared. The Cycle weighted check box provides similar functionality when the cycle is not one of five days.

5. Change the **radio** button to **Students**, drag the **Year 11** column onto **Year 10** and right-click the cell for subject **Ar** and **Year 10, 11**.



The screenshot shows the Nova-T software interface with the 'Analysis' tab selected. The sidebar now has 'Students' selected instead of 'Hours'. A context menu is open over the cell containing '162' for subject 'Ar' in 'Year 10, 11'. The menu includes options like 'Block', 'Bands', 'Auto', and 'Optimize'. A tooltip explains that the 'Students' figure is the total number of students over all classes in the relevant years. A small table at the bottom shows aggregate values for various classes.

In the preceding example, ninety eight students are studying Ar and the size of each class can be clearly seen. This may leave staff wondering as to how these numbers have arrived in Nova-T in the first place, and whether they are accurate. The student numbers are those contained in the model. Initially, these are nominal numbers used for planning purposes. It is possible to import exact student numbers from SIMS, and involves using the menu route **Data | Retrieve Student Memberships**.

- Select the **Student Periods** radio button and right-click the same cell as per the previous step.

The screenshot shows the Nova-T software interface with a 'Statistical Breakdown' dialog box overlaid on a main table. The dialog box contains the following text and table:

Statistical Breakdown

The "Student Periods" figure is derived by multiplying the number of students in each class by the number of periods.

The result for each class is displayed in the column headed "Value". If two classes are defined for a subject within a group, these will be considered separately - in contrast to the "Students" calculation.

Class	Value	Students x Periods
10A/Ar1	60	20 x 3
10T/Ar1	84	28 x 3
11A/Ar1	69	23 x 3
11B/Ar1	81	27 x 3

Aggregate: 294

Close Help

This analysis could be regarded as detailing student throughput. Some schools use this kind of data to drive certain financial decisions concerning dividing up the available monies between the various subject areas.

- Select the **Class size** radio button. Amalgamate the years to indicate **Key Stage 3**, **Key Stage 4** and **Post-16** and scroll down to the bottom of the table.

The screenshot shows the Nova-T software interface with a table displaying student data across different years. The table includes columns for '7, 8, 9', '10, 11', '12, 13', and 'Average'. The data shows various student counts and average values for each year group.

	7, 8, 9	10, 11	12, 13	Average
Ar	28.14	24.5	17.78	24.23
B	0	0	15	15
Bs	0	27	37.46	35.5
Ch	0	0	15	15
Ci	0	0	16	16
Cs	0	0	16	16
Dc	0	21	0	21
De	0	27	15	18
Di	28.5	22	16	24.5
Ec	0	0	15	15
En	28.06	27	18.67	27.01
Ei	0	0	12	12
Fr	28.24	26	15.89	26.04
Ge	28.06	26.75	19	26.36
Gg	28.06	24.29	16.33	24.21
Gs	0	0	24.17	24.17
He	0	27.25	0	27.25
Hi	28.06	27.33	17	24.7
Ha	0	0	20.5	20.5
It	0	26	0	26
La	0	0	15.4	15.4
Ma	28.06	26.94	15.62	26.38
Mu	27.71	22	0	26
Pc	28.06	27.11	15	25.58
Ph	0	0	15.33	15.33
Pp	0	0	16	16
Ps	28.06	27	0	27.63
Rc	0	0	23.5	23.5
Re	28.06	24.33	0	26.57
Sg	28.06	27	0	27.56
Sl	0	0	17	17

The average class size for the areas in this dataset indicates that KS3 is marginally greater than KS4 with Post-16 being around eighteen. By displaying the table in the subject mode of Faculty, comparisons are possible between conglomerates.

8. Select **Analysis | Subject Mode | Faculty** and examine the results.

It is worth bearing in mind that the figures in the table are the direct result of group numbers entered on the curriculum plan via the Model process. If these are inaccurate or even nominal, then the analysis is bound to be seriously flawed.

Step by Step – Analysis Using Scores

The remaining four types of analysis look at the way resources have been attached to classes in the curriculum plan. In Nova-T these resources may be teachers, rooms and facilities. It is possible to attach a number to each resource, and then use it for the purposes of analysis.

An example scenario is that the school wishes to analyse how staff have been deployed across the curriculum plan in respect of the number of years' experience. While it is possible to enter virtually any number, no matter how large, one will be used to denote a NQT and five to indicate a teacher of more than twenty-five years' experience.

1. Select the **Scores per class** radio button.
2. Type in a few random numbers (from **1** to **5**) alongside the teacher codes at the bottom-left of the display.

Various cells in the grid change from zero as a result of the entries. The grid is analysing where particular teachers are allocated and reflecting this in the table.

Once numbers have been typed in it is possible to save them for future use.

3. Amalgamate the columns to show the three key stage areas and select **Faculty** as the **Subject Mode**.
4. Select **Analysis | Load Scores**. Select the file **experience.ana**, and then click the **OK** button to confirm. Also confirm the wish to clear existing scores.

	7, 8, 9	10, 11	12, 13	Total
Ec	0	0	5	5
Ca	3.64	3.33	5	3.76
Pe	3.56	2.67	4.18	3.48
Hu	3.53	3.27	3.2	3.35
MI	3.45	3.21	3.07	3.32
En	3.38	3.29	2.53	3.23
Gn	0	0	3	3
Ps	2.39	3.67	3	2.98
Ma	2.67	2.92	3.62	2.84
Te	2.89	2.97	2.22	2.81
Sc	2.39	2.25	2.7	2.4
Bs	0	5	1.71	2.29
Wx	0	0	0	0
Total	3.1	3.04	2.92	3.04

The surprising result in the table shown in the preceding graphic is that Post-16 groups appear to have the least experienced teachers. Also, the Sc faculty has one of the least experienced teams. Whilst a computer is not needed to tell us that those in the Science department are mostly young teachers (or at least, inexperienced) the analysis is nevertheless impressive.

5. Right-click one of the cells and examine the calculation being used.

The numbers can be used for other purposes, for example, staff attendance, spinal point, exam results or salaries. The analysis becomes an interesting prospect.

Given that it is possible to attribute scores to rooms and facilities as well as teachers, many uses of this analysis may well come to mind.

Changing the radio button enables other scores to be entered. Deselecting the check box causes the analysis to ignore any scores entered for that resource.



For further information on scores please see Chapter 9.

Step by Step – Comparing Two Datasets

Nova-T can hold more than one dataset in memory at any one time. When a load new file is performed, the original dataset is stored in the background. It is possible to swap between datasets by selecting **Data | Select**. This does not only work on the analysis process but on all processes. Most staff would rather stick to one set of data and just use the Save/Load functionality as though there was only one set of data. On the analysis grid it can occasionally be useful to compare two sets of data.

One example is the ability to analyse two curriculum plans, not necessarily with the same cycle size and to compare the amount of time allocated to each subject area. This kind of comparison is useful when undergoing curriculum review, which is a time when various ideas may be under discussion.

You will now create an artificial example of such a comparison.

1. Select **Data | Duplicate**.

Nova-T clones the current dataset and calls it T6 (4) 1 {as opposed to the original T6 (4)}.

2. Select **Data | Select** and note that both versions are listed with the current one being the clone. It would be a simple matter to swap between the two datasets, but they are identical at the moment. Do not select anything at this point, but close the list, staying on the clone.

3. Change to the **Model** and select **Year 8**. Edit the periods in the **English** and **Maths** blocks for band **x** as shown in the graphic displayed below. The quickest way of adjusting periods is to use **Shift** and left or right-click.

The screenshot shows the Nova-T software interface with four subject blocks arranged in a grid:

- Top Row:**
 - English:** 5 periods. The first three rows are highlighted in yellow, and the last row is empty.
 - Exp Arts:** 2 periods. The first two rows are highlighted in yellow, and the last row is empty.
 - Maths:** 3 periods. The first three rows are highlighted in yellow, and the last row is empty.
- Bottom Row:**
 - English:** 4 periods. The first two rows are highlighted in yellow, and the last row is empty.
 - Exp Arts:** 2 periods. The first two rows are highlighted in yellow, and the last row is empty.
 - Maths:** 4 periods. The first two rows are highlighted in yellow, and the last two rows are empty.

En has increased by one period to five and Maths has reduced by one period to three.

4. Return to the **Analysis** process and ensure that the **Subject Mode** is **Local**.

5. Select the analysis to be **Class Periods**.

This is an analysis of the current dataset T6 (4)_1. Note that for year 8 the En and Ma figures are different than for years 7 and 9 (whereas before the edit they were the same).

6. Right-click **En** and **Ma** for **Year 8** and note the details.

At this point we will bring in a second dataset {which is the original T6 (4)}.

7. Select **Analysis | Select Alternate | T6 (4)**. Select the **Hours** check box.

The screenshot shows the Analysis grid with the following configuration:

- Left Panel:**
 - Radio buttons: Classes, Class periods, Students, Student periods, Class size, Scores, Score periods, Scores per class, Scores per student.
 - Text input: Divisor: 1
 - Checkboxes: Hours, Cycle weighted
 - Radio buttons: Staff, Rooms, Facilities
- Top Row:** All Rows, Selected, Alternate dataset = T6 (4)
- Columns:** 7, 8, 9, 10, 11, 12, 13, Total, Resource, Surplus
- Data:** The grid shows hours for various subjects (Ar, Bi, Ch, Ci, Cs, Dc, De, Dr, Ec, En, Et, Fr, Ge, Gg, Gn, Gs, He, Hi, Hs, It, La, Ma, Mu) across years 7 to 13. Notable values include +3.25 for En in Year 8 and -3.25 for Ma in Year 8.

The analysis grid displays where the two sets of data differ. Hence, the positive 3.25 hours on En year 8 and the corresponding negative on Maths.

8. Right-click **En +3.25** and note the details of the calculation.

The graphic displayed below assumes that the period length in the cycle process is set to 65 minutes.

Statistical Breakdown	
The "Class Periods" figure is reached by totalling the number of periods for each class in the relevant years and subjects.	
Dataset: T6 (4)_1	
Class	Value
8x/En1	5
8x/En2	5
8x/En3	5
8y/En1	4
8y/En2	4
8y/En3	4
Aggregate	$27 \times 65/60 = 29.25 \text{ hrs}$
Dataset: T6 (4)	
Class	Value
8x/En1	4
8x/En2	4
8x/En3	4
8y/En1	4
8y/En2	4
8y/En3	4
Aggregate	$24 \times 65/60 = 26 \text{ hrs}$
Close	Help

It is evident that even if the two cycle sizes had been different, either in respect of the number of periods per day or the number of days in the cycle, the analysis would have been accurate.

This functionality is very much in the area of curriculum modelling, rather than in construction and is particularly useful for those involved in the 'what if' of curriculum decision making.

9. Select Analysis | Select Alternate | Remove.

This returns the table to the display of a single dataset, T6 (4)_1.

Go back to the original dataset by selecting **Data | Select | T6 (4)** from the menu bar.

A

Appendix A

This chapter contains:

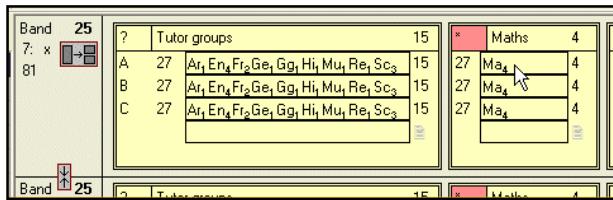
Class Names in Nova-T	109
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Class Names in Nova-T

Each class in Nova-T has a systematic name (automatically produced by the software) and an optional user defined label. Both labels are stored in Nova-T and SQL (SIMS).

The systematic name is brought about by an algorithm; for a particular class looks at the year group, the Identifier of the block, the subject and either the set number or the group name.

The Maths block has * as the identifier. This causes the band letter(s) to be used in the systematic name. The top group has the name 7x/Ma1. If the block were to serve more than two bands, such as x, y and z, then the label would be 7xz/Ma1.

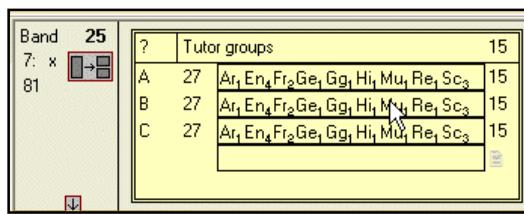


This is a block (as shown in the graphic displayed below) from the year 10 curriculum plan and the identifier is A. The top group has the systematic name of 10A/Dr1. All the systematic names will begin with 10A. This is useful if other option blocks contain the same subject and it is important to be able to distinguish between them.

A	Option A	3
23	Dr ₃	3
23	Mu ₃	3
23	Re ₃	3
23	Fr ₃	3
23	Gg ₃	3
23	Ar ₃	3
22	Dc ₃	3

By using click and drag, it is possible to change the vertical order of the groups within an option block. Take a situation in which a year 10 option block A contains (amongst other subjects) two Gg groups that are not vertically adjacent. The upper one will have the systematic name 10A/Gg1 while the lower one will be 10A/Gg2. If an export of the curriculum and timetable has already been carried out, care needs to be exercised if reordering these particular groups. It is common to want to move the groups of the same subject so that they are vertically adjacent. This is fine so long as they do not swap over. If the lower one (10A/Gg2) were inadvertently to be dragged above the upper one (10A/Gg1), then the systematic names would be recalculated and the group previously known as group one would become two and vice versa. On the next export of the timetable to SQL (SIMS) the names would be swapped round in SIMS. Students originally placed in group one would now be in, for example, group two. This leads to considerable confusion.

No identifier has been used in this tutor groups block (hence ? is placed by Nova-T as a reminder that none have been entered). The three groups have been named A, B and C. The middle music class has the name 7B/Mu. Group names may use up to three characters.



Selecting the original name of the class opens a dialogue box in which a class label may be entered. This is displayed on the grid if **Classes | Display Class Labels** is selected.

Year 7 classes in each department			
Ar	Tutor groups Fred 1 \$KB AR 1	Tutor groups 7B/Ar 1 \$KB AR 1	Tutor gro 7C/Ar 1 \$Rw AR
En	Tutor groups	Tutor groups	Tutor gro

If a class label is defined after the curriculum and timetable has been exported to SQL/SIMS, then on the next export the class label will be sent to SQL/SIMS and used instead of the systematic name.

Codes

Teacher, room and subject codes need to be consistently applied in Nova-T and SIMS. The following table summarises the procedure for maintaining the integrity between both systems.

	Nova-T	SIMS (SQL)
Subjects:	Add a new subject to Plan Subjects .	No requirement to add. Nova-T sends new subjects to SQL (SIMS) when the timetable is exported. The list may be accessed by selecting Tools Setups Subjects .
	Existing subject codes and descriptions may be edited. For example, Co Cookery could be edited to Ft Food Tech. Any occurrence of Co in Nova-T is replaced by Ft.	Using the example on the left, on export of the timetable, a new subject Ft is created in SQL (SIMS).
Rooms:	Add a new room to Plan Rooms .	
	If a room is physically changing name then an existing room code and description may be edited, in which case all references in Nova-T to the original room are replaced by the new one.	If a room is physically changing name then an existing room code and description may be edited, in which case all references in Nova-T to the original room are replaced by the new one.
Teachers:	Add a new teacher to Plan Teachers .	Add the new teacher to the Personnel section of SIMS. Then and only then, select Focus Person Manage Classroom Staff to identify him as eligible to be used on the timetable (see <i>Appendix</i>).
	In most cases, however, it is likely that the incoming teacher is replacing an outgoing teacher, and may well take over some, if not all, of the curriculum responsibilities. In this case the most appropriate action is to edit both the code and name of the outgoing teacher.	Add the new teacher to the personnel section of SIMS. Then and only then, select Focus Person Manage Classroom Staff to identify him as eligible to be used on the timetable (see <i>Appendix</i>).
	If an existing teacher changes name and code then simply edit the existing record in Plan Teachers .	If an existing teacher changes name and code, the name change may be carried out in the personnel section, and the code changed in manage classroom staff.

Manage Classroom Staff (in SIMS)

SIMS contains a personnel section into which information about teachers and other employees is entered by selecting **Focus | Person | Staff**. This information will include both contractual and personal data. The timetabler will use some of these members of staff on the timetable in Nova-T, they will feature in **Plan | Teachers**. Some of the people on this Nova-T list may not actually be teachers on roll. They could be, for example, teaching assistants, supply staff, parents, teachers from other schools or representatives from outside agencies.

It is important that when the timetable is exported from Nova-T into SQL (SIMS), all those featuring on the timetable should be accepted by SQL. Manage classroom staff enables the definition of exactly who is enabled on the timetable, whether or not they are teachers or even employees of the school.

Maintaining the data in manage classroom staff should therefore be regarded as an essential exercise. When a new teacher arrives in school, he or she should first be added to the personnel section of SIMS. A corresponding entry should then be made in manage classroom staff by locating the existing teacher record. If this is not carried out, then on subsequent attempts to export the timetable to SQL, the new person will still not be recognised. This in turn means that this person's information will not be correct in SQL. Take a similar situation in which a parent has been used in Nova-T as an unofficial classroom assistant. This person may or may not already be known to SIMS as a contact, but if the parent is not correctly defined in manage classroom staff, then again the information will not be correct in SQL.

For a more detailed explanation of Manage Classroom Staff please see Chapter 10 of the Academic Management handbook (available from within SIMS).

- Anyone may be added to the **NOVA-T Plan | Teachers list** and used on the timetable whether or not they are employed by the school.
- Only those with corresponding entries in manage classroom staff (MCS) will be included in the export to SQL.
- Teachers on roll should first be added to the personnel section of SIMS. Then they should be added to MCS. When carrying out this second operation, the software presents a list of matches therefore enabling the same person to be added to MCS and flagged as teacher.
- Teaching assistants should be treated similarly, adding them to personnel and MCS flagged as teaching assistant.
- Teachers from other schools (typical of consortium arrangements) will not feature in personnel, but should be added to MCS and flagged as teacher.
- Supply teachers (those without a temporary contract) filling in for extended periods of time in situations such as maternity leave, should be used in Nova-T in place of the teacher on leave. They may or may not need to be added to personnel depending on circumstances, but should be added to MCS and flagged as teacher.

The Curriculum Wizard (Optional)

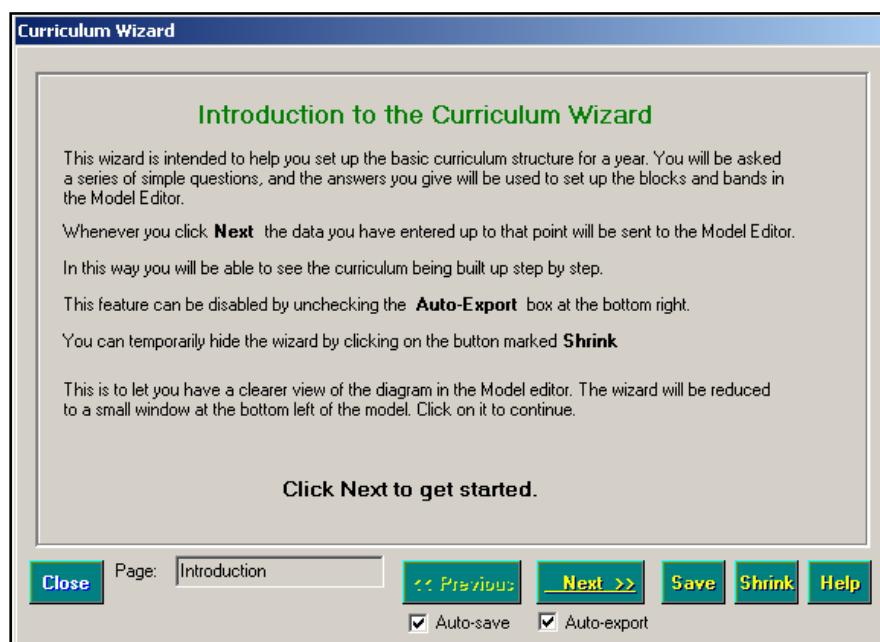
The Curriculum Wizard provides an alternative method of creating a curriculum plan from scratch. The staff member is required to answer a series of questions about a year group and the software draws the curriculum diagram. It is possible to save and reuse a wizard and to modify a previously saved wizard and save it again.

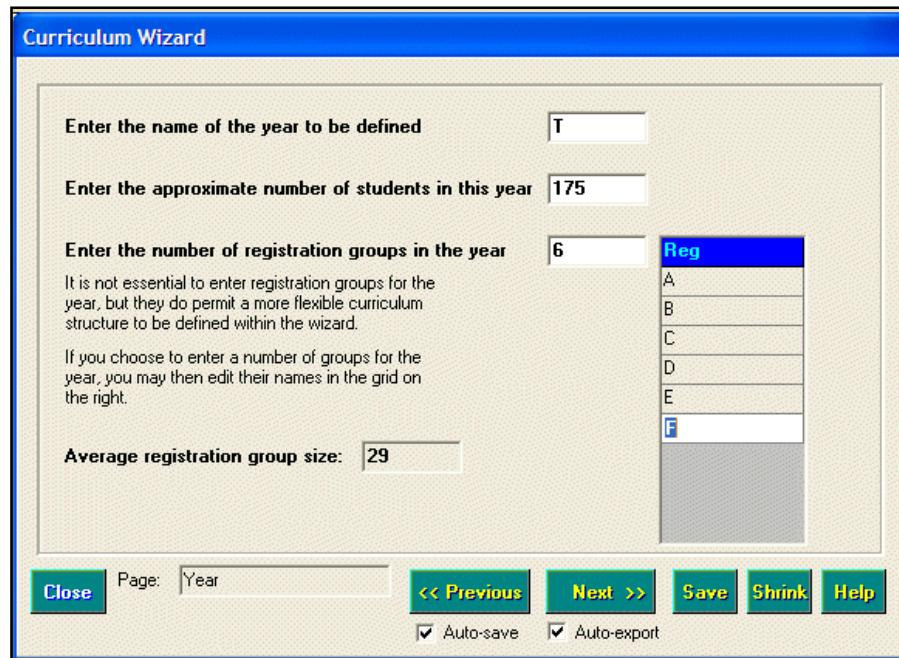
This could be described as the lego brick approach to curriculum planning. Once the wizard is closed control of the curriculum diagram is returned to the staff member, who can then manually modify it.

It is important to be aware that using the wizard creates new classes that do not have links to existing classes in SQL. This means that when the timetable is sent from Nova-T to SQL these classes will not contain any students. This is not likely to be a problem when working on a timetable for the following academic year.

The wizard is a particularly quick way of producing curriculum ideas that may not come to fruition. The following example displayed below will go through the process of defining part of a curriculum plan using the wizard.

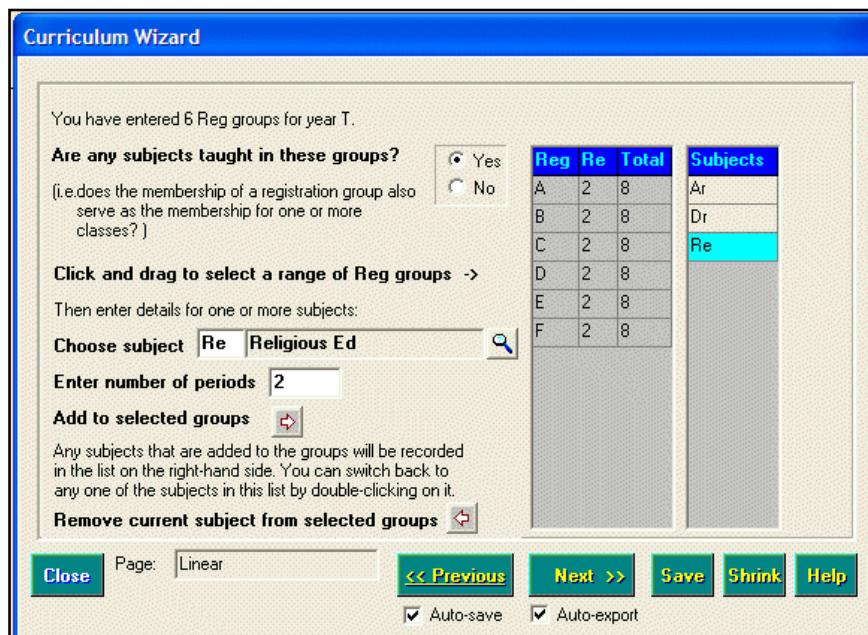
1. Change the **Year Group** to **Year T**.
2. There is already part of a **Curriculum Plan** in **Year T**. Running the wizard in this year group will cause this plan to be lost and replaced with the one coming from the wizard. The other year groups are unaffected by the wizard. It is safe to run the wizard for a new year 10 structure, without risking the removal of the existing plans for other year groups, such as year 11.
3. Click the **Wizard** button. Select **No** in response to the prompt regarding re-using a previous wizard.
4. The wizard wipes the existing curriculum plan, removes those parts of the **Model** screen that could be used to modify the developing plan and displays the first page of the process (the introduction).





5. Click the **Next** button, accept the name of the year and the number of students, but define six registration groups. In the **Reg Table** rename the groups (initially called **.1** to **.6**) as **A** to **F**.
6. Click the **Next** button.

The software moves to the next page. The term registration groups can also be taken to mean teaching groups. Some schools might define the groups in the wizard A to F as registration groups, even though they have nothing to do with the actual process of registering students. The important factor is that these groups will be taught a number of subjects (a linear block).



7. Select the **Yes** radio button to activate additional functionality.
8. Highlight (by clicking and dragging) all six registration groups.
9. Type **Ar** as the **Subject** and four periods, and then click the **right pointing arrow** button to add it to the **Reg** table.

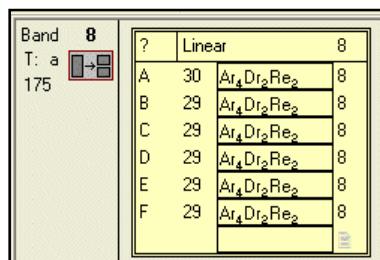
10. Repeat with **Dr** and **Re** for two periods each.

11. Click the **Next** button.

At this point the wizard visually updates the curriculum plan. Clicking the **Shrink** button enables the diagram to be viewed easily.

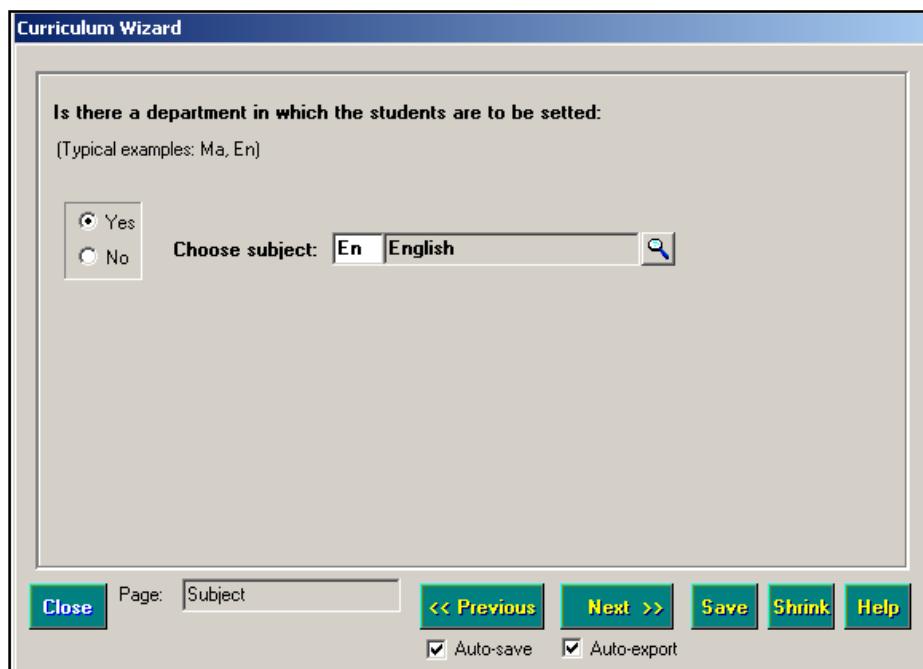
A small linear block has been created with six groups called A to F. Each group has eight periods made up of three subjects, as shown in the graphic displayed below

At this stage in the process banding has not become an issue.



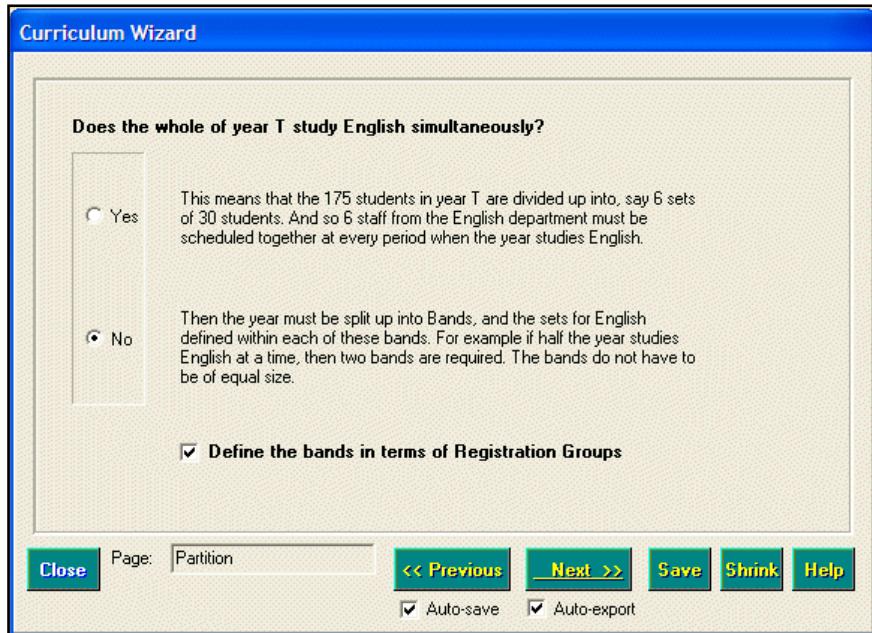
12. If necessary, select **Continue** to return to the wizard and click the **Next** button.

The wizard moves on to the subject screen in which it is possible to identify subjects that require individual groupings, for example, setting in English.



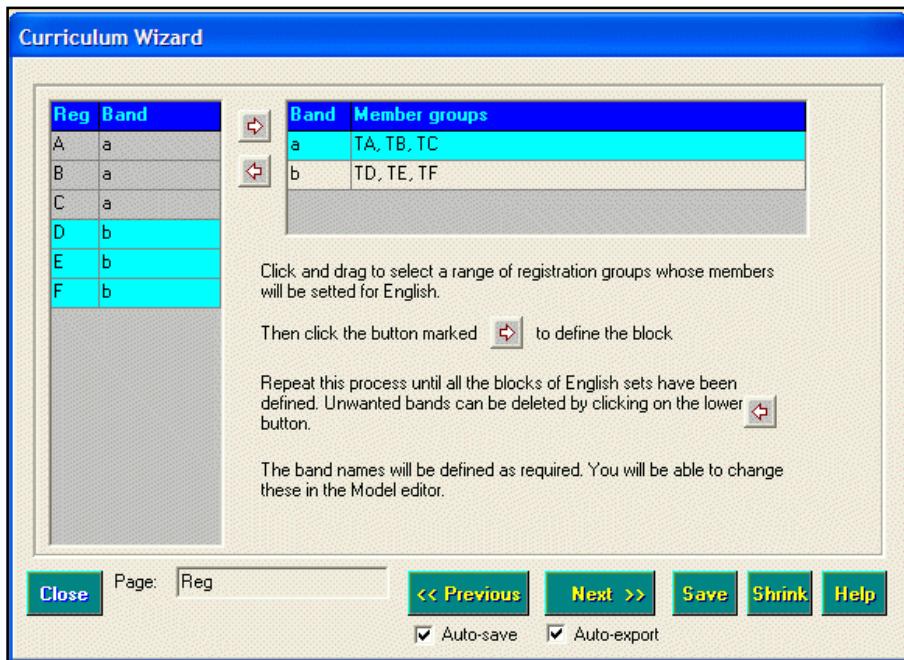
The term **Setted** should not be taken literally. Grouped might be a more appropriate description. Differentiation by ability is not implied.

13. Either type or browse to the subject **En** and click the **Next** button.



The intention is to teach half the year at once. The half year will be defined as three of the six registration groups.

- Leave the settings as default. Select **No** to the '**whole year studying English simultaneously**' message. Then select the **Define the bands in terms of Registration Groups** check box.

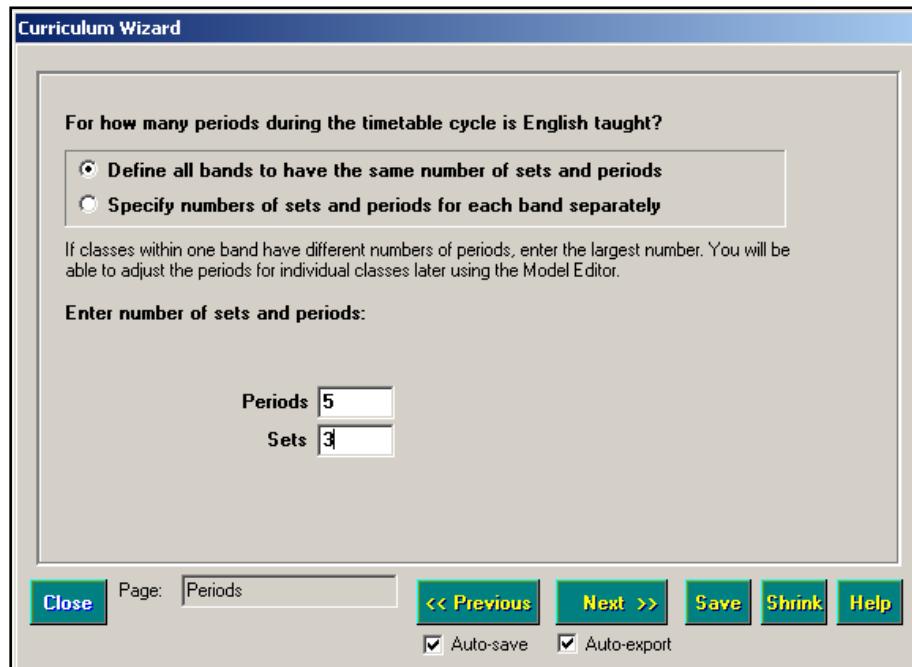


- Click and drag vertically from registration group **A** down to **C** and select either of the **right-pointing arrow** buttons.

- Repeat with **D** to **F**.

This is defining the banding for the half-year blocking.

- Click the **Next** button.



It is now necessary to define how many sets each block should contain.

18. Leave the radio button on the default setting so that each half year is identical.
19. Type **5** in the **Periods** field and **3** in the **Sets** field.
20. Click the **Next** button.

Band	Code	Periods	Sets
a	Ma	5	3
b	Ma	5	3

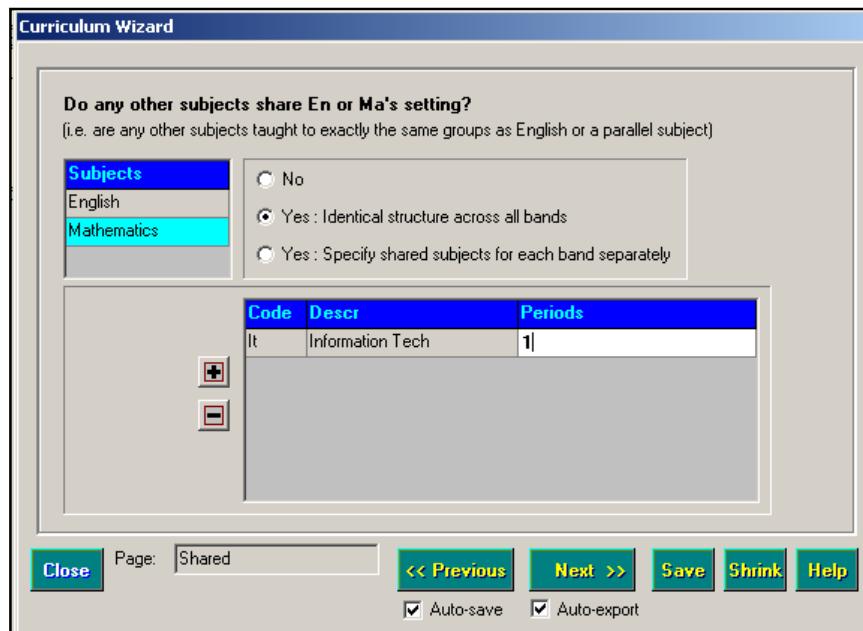
The preceding graphic illustrates both the developing curriculum diagram and the next stage in the process. Having defined half year En blocks, the wizard is seeking information as to whether other subjects should be treated in a similar way to En.

If Ma is also to be taught in half year blocks:

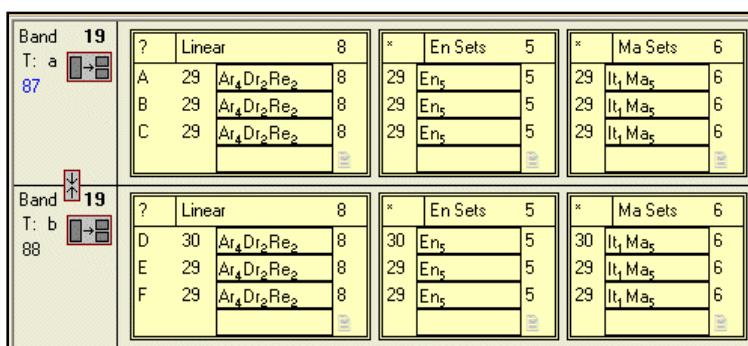
21. Enter or browse for **Ma** in the **Choose subject** field and type **5** in the **Periods** field, and then **3** in the **Sets** field. Click the **arrow pointing to the right** button. Repeat for the other band (left-hand table). Click the **Next** button.

The reason it is necessary to carry out the operation separately for each band, is that there is no compulsion that the two bands have the same curriculum profile. To quote a rather extreme example, one band might not even require Maths.

Sometimes timetablers sit a subject for which the school has limited resources on the back of another. The shared page provides a mechanism for achieving this. The graphic displayed below shows it being added to the **Ma** block for one period. Staff members are going to teach it to the Maths groupings.



22. Select the **Maths** subject and select the **Yes: Identical structure across all bands** radio button.
23. Click the **+** button and either enter or browse for **Info Tech** and change the number of **Periods** from **0** to **1**.
24. Click the **Next** button, click the **Shrink** button to shrink the wizard and examine the curriculum diagram, as shown in the graphic displayed below.

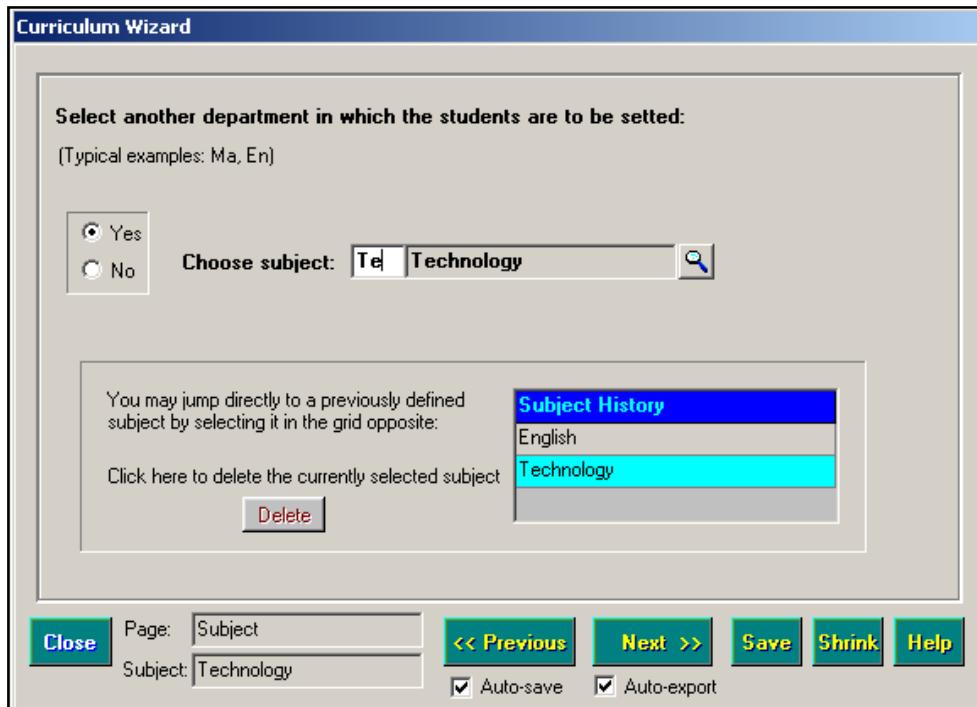




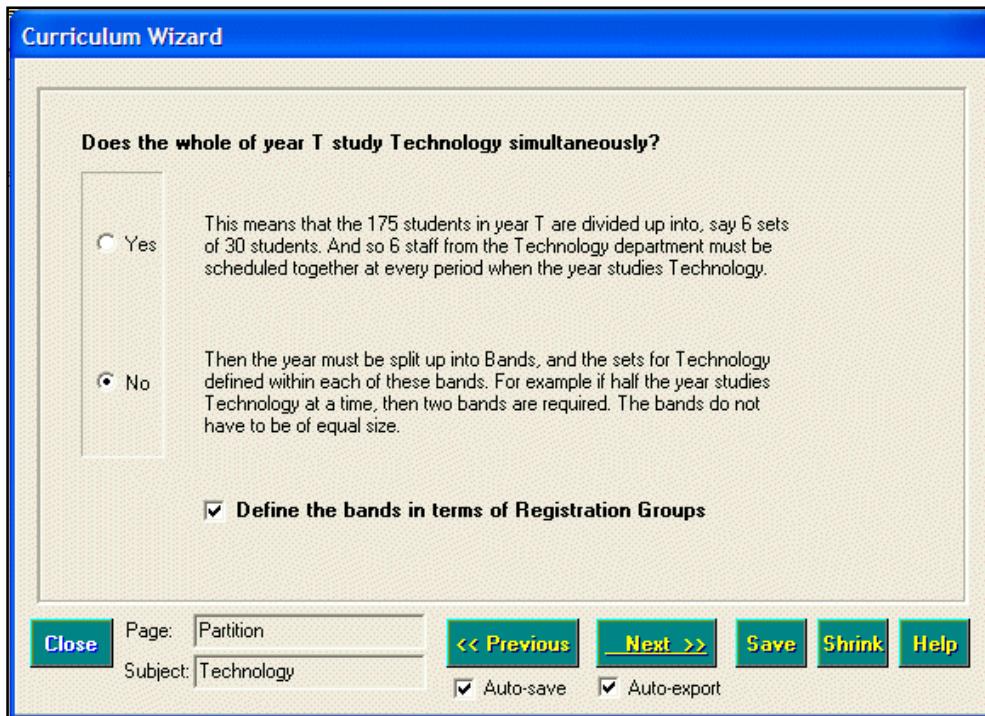
25. Continue with the wizard. Select the **Yes** radio button, and then click the **Next** button.

At this point in the wizard, the staff member is looped round to repeat previously completed operations, but for new subject areas.

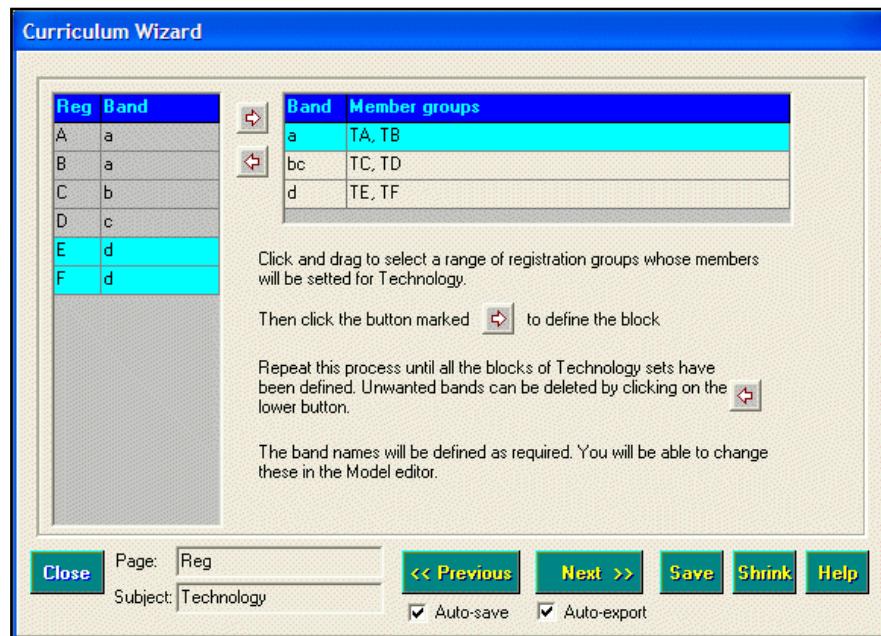
It is common with many schools that the Technology department wishes to deliver Te to as many students as possible at once, but limited resources restrict this to just two registration groups, divided into three Te groups. In a sixth form entry situation this means that Te will be taught in thirds of a year rather than half year, as in the case with Ma and En.



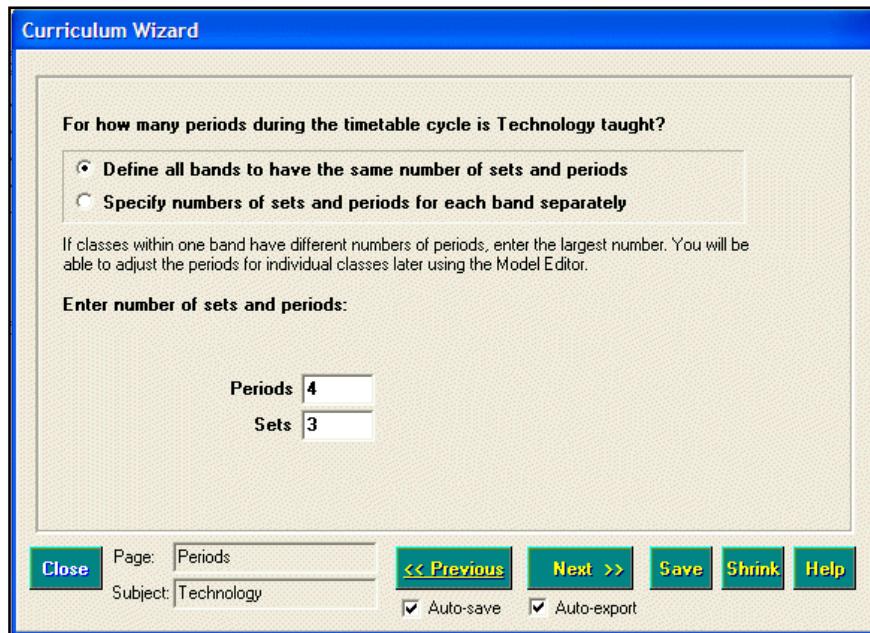
26. Enter or browse for **Te** as the subject and click the **Next** button.



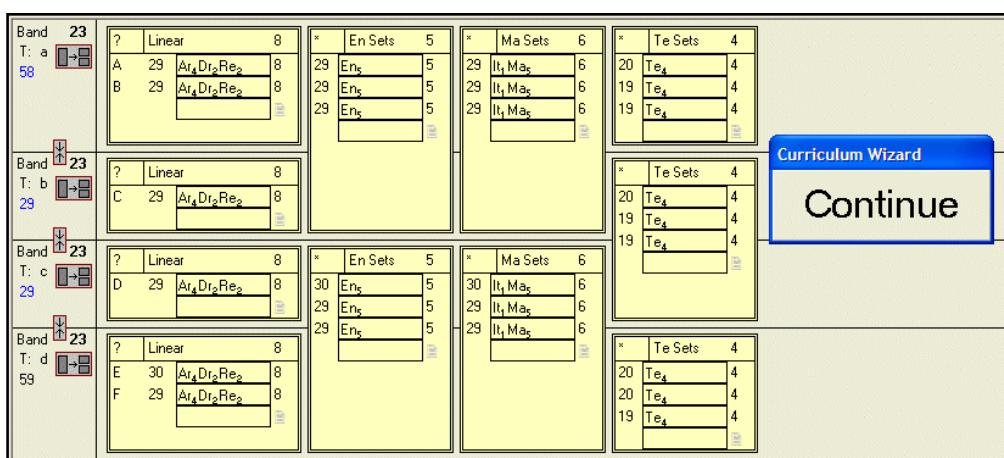
27. Leave the settings as default and click the **Next** button.



28. Select registration groups **A** and **B**, then click the **right-pointing arrow** button.
29. Repeat for **C** and **D**, then **E** and **F**.
30. Click the **Next** button and examine the curriculum diagram, clicking the **Shrink** button to shrink the wizard if preferred.



31. Continue with the wizard and type **4** in the **Periods** fields and **3** in the **Sets** field for the **Technology** structure.
32. Click the **Next** button and click the **Shrink** button to shrink the wizard.



The preceding graphic illustrates the current state of play. The wizard has created four base bands to track the developing curriculum plan. While this is absolutely correct the wizard does sometimes make mistakes in the following areas:

- the identifier may not always be appropriate
- the band letters may conflict with group names and identifiers.

In addition, the wizard cannot create option type blocks so these need to be manually entered once the wizard has closed and released control back to the staff member.

33. Continue with the wizard and click the **Close** button. Opt to save the wizard for future use and supply a name of your own. Confirm by clicking the **OK** button.
34. Staying with **Year T** click the **Clear** button.
35. Select the wizard and opt to use one previously saved. Select the one created in step 33 and confirm by clicking the **OK** button.

36. It can be seen that wizards can not only be used again and again, but they can be modified using the **Next** and **Previous** buttons, and then re-saved. This is very much the lego brick approach to producing a curriculum model.
37. Click the **Close** button to close down the wizard without saving it again.
38. Perform a **Save As** so as to preserve the year T plan. Supply a name.

*NOTE: If data is lost the file **T6 (2)** can be used to recover the situation to the present point.*

Nova-T Shortcut Key Processes Helpsheet

■ Add Items:

Add a year: click the + button at the top of the year list. Enter the name for the year and the projected number of students.

Add a block: drag the subject code over from the list on the right-hand side and drop it over the required band.

Add a new class: drag the subject code over from the list on the right-hand side and drop it on (to give the group another subject) or under (to create another group) the desired group.

Add a link class: hold down **Ctrl** and drag the subject code over from the list on the right-hand side and drop it exactly over the existing class.

Duplicate a group: hold down alt and perform a click while pointing to the desired group.

Duplicate a block: point to the block, perform a right-click and select **Copy** from the menu displayed. Point to the destination band, perform a right-click and select **Paste** from the menu displayed.

■ Delete Items:

Delete a year: from the left-hand list select the relevant year and click the - button.

Delete a block: point to the block, perform a right-click and select **Delete** from the menu displayed.

Delete a group: hold down **Alt** and perform a right-click while pointing to the desired group.

Delete a class: hold down ctrl and perform a right-click while pointing to the relevant class.

■ Edit Items:

Increase periods for a class: hold down **Shift** and perform a click while pointing to the relevant class.

Decrease periods for a class: hold down **Shift** and perform a right-click while pointing to the relevant class.

Move a block to another band: click and drag the top or bottom boundary of the block.

Stretch a block across more bands: hold down **Ctrl** and click and drag the top or bottom boundary of the block.

Allocate non-contiguous bands to a block: perform a right-click while pointing to the block and select extra bands from the menu displayed. Select or deselect bands as required.

Show group names of a block: perform a right-click while pointing to the block and select group names from the menu displayed.

Add, delete or edit comment (post-it) for the block: click the page symbol in the lower right corner of the block to call up the comment dialogue box.

Edit the number of students for a group: overtype the existing number.

B

Appendix B

This chapter contains:

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Chapter Introduction

Timetabling with Nova-T - Summary of Process

- in Nova-T clicking the **Help** button brings up the online handbook at the appropriate place
- F1 brings up helpful hints for every process
- contact your SIMS support provider.

	Task	Process Button	Help	Notes
Getting Started				
1	Transfer the curriculum	Menu: Data Transfer Curriculum	Starting with the current timetable use the routine to select which blocks should be transferred to next year.	Transfer staff as well if required.
2	Set cycle	Cycle	Check the cycle process to see if it matches the requirements for the new timetable. Add/remove periods as appropriate. Ensure non-teaching periods are correctly flagged.	
3	Set breaks	Cycle	Right-click a blue period number to set breaks, for example, soft for morning, medium for lunch.	
4	Period types	Cycle	Right-click a period to set period types.	Come back to this later.
5	Period length	Cycle	Fill in average period length in minutes. Cycle equivalence = 2 if two week cycle.	

	Task	Process Button	Help	Notes
6	Teachers	any	Plan Teachers. Add, edit or delete teachers so there is a correct list for the new timetable. This may be selected to include TAs in this list.	Your personnel manager will need to manage them in personnel as usual. Remember the manage classroom staff routine.
7	Teacher loadings	any	Plan Teacher Departments. For each teacher, allocate a loading, specifying planned subject contributions.	Essential for costing.
8	Subjects	any	Plan Subjects. Add, edit or delete subjects so there is a correct list for the new timetable.	When sending to SQL new subjects will be sent through.
9	Sites	any	Plan Sites. If single site just add one site.	Needed only for auto rooming.
10	Rooms Room sites	Any Any	Plan Rooms. Add, edit or delete, but new ones should be added in SIMS as well. Plan Room Sites - Specify a site for each room (shift and select to highlight all).	Needed for rooming.
11	Room subjects	any	Plan Subject Rooms. Add rooms to subjects.	Needed for both auto and manual rooming.
12	Teacher rooms	Any	Plan Teacher Rooms. Allocate rooms to teachers. Each teacher may be given a site room or a subject room.	Needed only for auto rooming.
The Curriculum Plan				
13	Pupil numbers	Model	Fill in pupil numbers for next year.	To help users see class size.
14	Bands	Model	Get the bands correct before starting, including sub-bands if required.	
15	Blocks	Model	Create the blocks.	(Identifier rules.)

	Task	Process Button	Help	Notes
Analysis – Staff Costing				
16	Staff costing	Analysis	Radio button on Class Periods to check staffing. Analysis Subject Mode Faculty to group by faculty.	
Assigning Staff, Rooms and Facilities				
17	Assigning teachers to classes	Classes	Radio button on all Years , select Department and under attributes select the Staff radio button and select the Department check box. Drag the teachers onto the classes.	
18	Assigning rooms to classes	Classes	Radio button on all Years , select Department and under Attributes select radio button for Rooms . Drag the rooms onto the classes only where essential.	
19	Assigning facilities	Classes	Plan Facilities Edit Facilities. Add facilities – resources that are in short supply.	
Session Lengths				
20	Defining session lengths	Sessions	Define multiple period sessions (doubles, trebles). This may be carried out either manually or globally – Sessions Set Session Lengths .	
21	Defining block shape manually	Sessions	Manually in the Sessions screen.	

	Task	Process Button	Help	Notes
22	Defining block shape globally	Auto	Globally Auto Default Block Shape.	
23	Staffing check	Reports	Reports Cluster Session Mismatches.	Checks staffing allocated on plan (classes) against those allocated on sessions.
Part-time teachers and non-class codes (NCC) needed before scheduling				
24	Part-time teachers	NCC	Select blank. Add blocks. Assign and schedule. Lock if needed. Make use of user type periods or bar periods explicitly if flexibility is required.	
25	Other non-class codes	NCC	Add other non class codes. Add blocks, assign and schedule.	Define only those that are required to affect the scheduling of classes, otherwise leave until the timetable is complete.
Building Blocks				
26	Manually building blocks	Blocks	Browse to the block. Manually drag the classes into the build or click the Build button.	
27	Globally building blocks	Auto	Browse to your block. Manually drag the classes into the build or click the build button.	Reports - unbuilt blocks.
Partial Scheduling trials				
28	Testing things can fit	Auto	Tools Partial Schedule trial tests for each department and each year group.	
Scheduling				
29	Scheduling	Bands	Use this process for blocks – fixed points first.	
30	Scheduling	Auto	Use this process for auto scheduling.	
31	Scheduling	Blocks	Use this screen for help with linear groups either	Remember group mode

	Task	Process Button	Help	Notes
			manual or automatic.	(F8).
32	Locking individual sessions	Blocks or bands	Lock fixed points by right-click.	
33	Locking globally	Auto	Auto Lock.	
34	Optimising	Optimise	Use this process to check distribution and improve.	
Rooming				
35	Choosing auto room requirements	Any	Plan Automatic Rooming Requirements.	
36	Auto allocate rooms	Any	Tools Allocate Rooms.	
37	Manually allocating rooms	Any	Timetable New Classes without rooms. Select the class and type X or press Ctrl and R .	Filter uses data from plan/subject rooms.
Non class codes after scheduling				
38	Adding PPA time	NCC	Non-class codes/+ to add PPA code and select. Remember F8.	
39	Adding other NC codes	NCC		
Non teaching Periods				
40	Add registration periods	Cycle	Right-click Periods to add registration periods.	
41	Set registration periods as non-teaching	Cycle	Right-click Registration Periods and set as non-teaching .	
Sending New cycle to SIMS				
42	Sending the changed cycle	Any	Data Export Timetable Cycle to SQL.	Only if changed since last year.
Sending Timetable to SIMS				
43	Check duplicate class names	Any	Reports Duplicate Curriculum Names.	

	Task	Process Button	Help	Notes
44	Unbuilt Blocks.	Any	Reports Unbuilt Blocks.	Ensure no blocks are unbuilt unless deliberately so.
45	Send timetable to SQL.	Any	Data Export Curriculum and Timetable to SQL.	Careful use of dates.
Academic Management – Students in sets				
46	Allocate students to sets in SIMS.		Carried out in SIMS Academic Management.	Covered in Academic Management training.
47	Print student and staff timetables.		Print timetables in Nova-T or SIMS.	