4 Schematic Diagrams

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Whenever a new curriculum diagram is proposed, or structural changes are made to an existing curriculum, it is essential to look at the viability of the new structure, to see if it is logically and practically possible.

This involves drawing a simplified timetable grid called a Schematic Diagram, to see if it shows us any impossibilities.

It is valuable to draw a Schematic Diagram for all, or part, of the curricular structure whenever the curriculum diagram changes, or whenever the constraints on the curriculum change.

It is far better to discover any problems at this stage, when you can see the underlying reasons, and find solutions, than later when you are deep in the complexities of scheduling.

And it was going so well, until I started to try to put lessons on the timetable...
4.2 Looking at the logic of the curricular structure

An 11-16 school in Derbyshire had only one Re teacher, so they teamed Re with Careers (Ca) and proposed a Curriculum Diagram like this:

Look at the Re + Ca blocks in the diagram. Is this feasible? To staff each of these small blocks needs only 1 Re teacher + 1 Ca teacher. But because everything else is blocked across the Year, all these Re+Ca blocks have to occur at the same time! And with only 1 Re teacher it means that this curriculum is not possible.

4.3 Looking at the spread that is available

A 2-form-entry school in Staffordshire proposed the following:

The Sc, Fr, Hi, Gg are in a Container Block, to provide 3 groups for each of these subjects, consistently-setted (see section 2.10), because the school has only one French teacher and only one Science lab. Ignoring the oddness of consistently-setting Science-with-French, is this structure possible?

In fact the last block is mathematically impossible. For Sc to be taught to 3 groups non-simultaneously needs $6 + 6 + 6 = 18$ periods:

But there are only $6 + 4 + 2 + 2 =14$ periods included in the block. It cannot be done.

The solution is to add at least 4 more periods to the block, so it is at least 18 periods wide. For example, bring Music and Art into the block:
4.4 Drawing a Schematic Diagram

A Schematic Diagram is like a simplified school timetable. It plots **classes** against **time** but it ignores (at least initially) some of the essential features of the final timetable.

A Schematic Diagram completely ignores the effects of period-breakdown (singles or doubles, etc), the effects of part-time teachers, the effects of fixed times for PSHE or swimming, or the requirement for the distribution of lessons over the timetable cycle.

Instead it focusses on **constraints**, to see whether these make the proposed Curriculum Diagram impossible.

Schematic Diagrams can be useful in answering “What if . . .?” questions, particularly when a major change in the curricular structure is being considered, or if the constraints on the curriculum change.

An 11-16 6-f.e. school in London proposed this Curriculum Diagram:

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</tbody>
</table>

periods: 3 3 3 3 3 3 3 4 2 2 1 1 = 25 pds

So far so good. But (like all schools) this school has some **constraints**:

1. Maths is shown in half-year blocks because the school does not have enough Maths teachers to teach both halves together. The same applies to En, Sc, Hu and Fr.
2. There is only 1 Re teacher.
3. There is only 1 Music room.
4. There are only 2 teaching-spaces for Pe (the Gym and the Hall).

**Question**: Is the Curriculum Diagram still feasible with these constraints?

The answer is to draw a Schematic Diagram, as shown on the next page.
The chapter continues with:

4.4 Drawing a Schematic Diagram: Worked Example 3
   Step-by-step guide to drawing a Schematic Diagram
4.5 The Limitations of a schematic diagram
4.6 Worked example 4: Constraints in Technology
4.7 Worked example 5: The effects of Constraints
4.8 Summary