

## **S1/S2 Course, Forrester High School**

The S1/S2 mathematics course at Forrester High School, Edinburgh is based on a topic approach where the students go through a series of mathematical topics. These topics are differentiated so that students can work at different levels on the same topic. They are designed so that 5–14 levels up to level F can be accommodated and also to fit in directly with Standard Grade curricula.

Entry points for primary pupils transferring to S1 are considered based on an initial assessment by the secondary school combined with records and assessment results from the primary schools. The difficulty the school finds is that some pupils transfer from schools outwith the Forrester-associated group and so it is not easy to find consistency in the interpretation of primary assessments.

The Assistant Principal Teacher of Mathematics has a role to assist with liaison within the Forrester group of associated Primary Schools. He is timetabled into these schools throughout the school year and tends to operate this timetable by spending four or five weeks in one school and then moving on to another. Following discussion with the Primary teachers, his main concentration is on aspects of the Mathematics curriculum with which the teachers would like help.

All pupils in S1 are placed in mixed-ability classes and move into a form of broad-band setting in S2. The pupils are assessed at the end of each topic using 5–14 grade-related criteria. At the end of two years a pupil profile is built up. This, together with a summative test at the end of S2, determines the level for pupils moving into Standard Grade courses in S3.

The staff in the mathematics department use a variety of course material, including a large amount of self-created activities. These mainly take the form of booklets of work and are also used for homework. Other booklets have been put together and these are used for assessment of the various sections of the course. Direct teaching is used widely in the department and emphasis is placed on oral interaction as well as on necessary written work.

This system has been built up in the school over the past four years and, as new materials and new emphases appear, is in the process of being further developed and updated as required.

The following is the course plan for the S1/S2 course.

## S1/S2 Course Plan

S1

S2

**Algebra**

**Whole Numbers 1:** Involves negative numbers

**Angle**

**Ratio**

**P.S.** Guess and Check

Make a table

**Scales and Scale Drawings**

**Operations on Integers**

**Whole Numbers 2**

**Time Distances and Speed**

**P.S.** Interpreting and Sketching

Graphs

**Equations 1**

**Coordinates**

**Length, Area and Volume**

**Functions**

**Decimals 1**

**P.S.** Patterns

Make a model

**Pythagoras' Theorem**

**The Circle**

**3-D Shape**

**Fractions 2**

**Decimals 2**

**P.S.** Game Strategy Types

**Fractions 1**

**Transformations**

**Percentages 1**

**Statistics 1**

**2-D Shape**

**P.S.** Estimation

Simplify

**Equations and Inequations**

**Triangles**

**Percentages 2**

**Proportion**

**Statistics 2**

**P.S.** Number Pattern Types

**Number: Includes Standard Form**

**Patterns and Sequences**

**Estimating: Practical**

**P.S.** Mixture involving the six

taught strategies

**Change of Subject**

**Equations of a Straight Line**

**P.S.** Data Handling –

Spreadsheets, etc.

The topic of 'Angles' is given below as an example of the topic-based approach and of how different entry points are accommodated.

## Angle

**Time: 12 Periods**

In this topic pupils fall into two distinct groups: those who can use a protractor properly (either straight away or after a quick reminder) and those who cannot. Therefore there are only two entry points here. Entry point 1 for pupils who have difficulty using a 180 degree protractor and entry point 2 for the rest. The most able pupils would be expected to do more of the extension material.

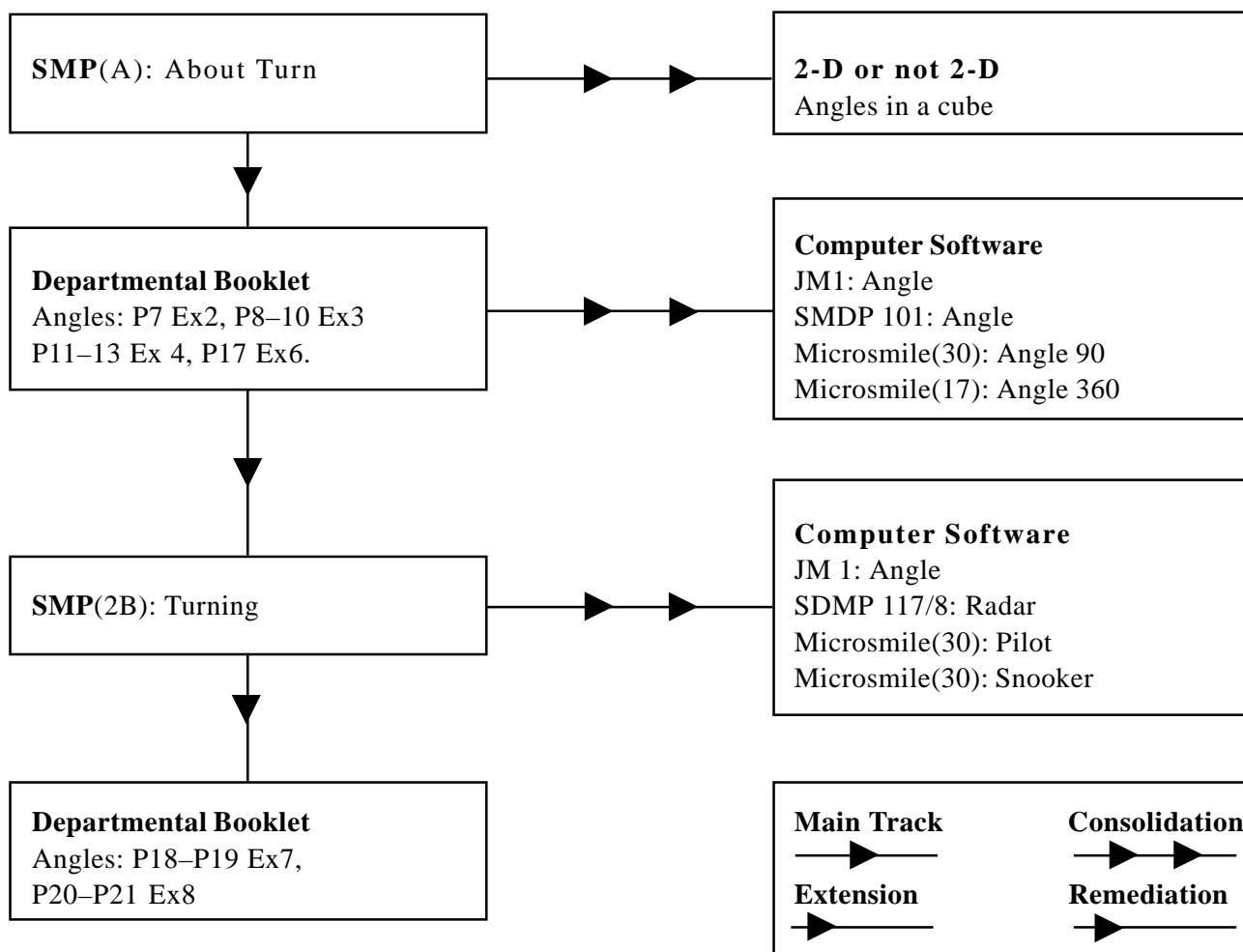
The computer complements the measuring work perfectly. By making pupils estimate angles it gives them an idea of what an angle of, say, 30 degrees looks like. This should eliminate 'silly' mistakes when measuring.

The approach can be flexible. The teacher can use the departmental booklet as the main resource. It will enable her/him to emphasise the setting out of working and naming of angles etc.

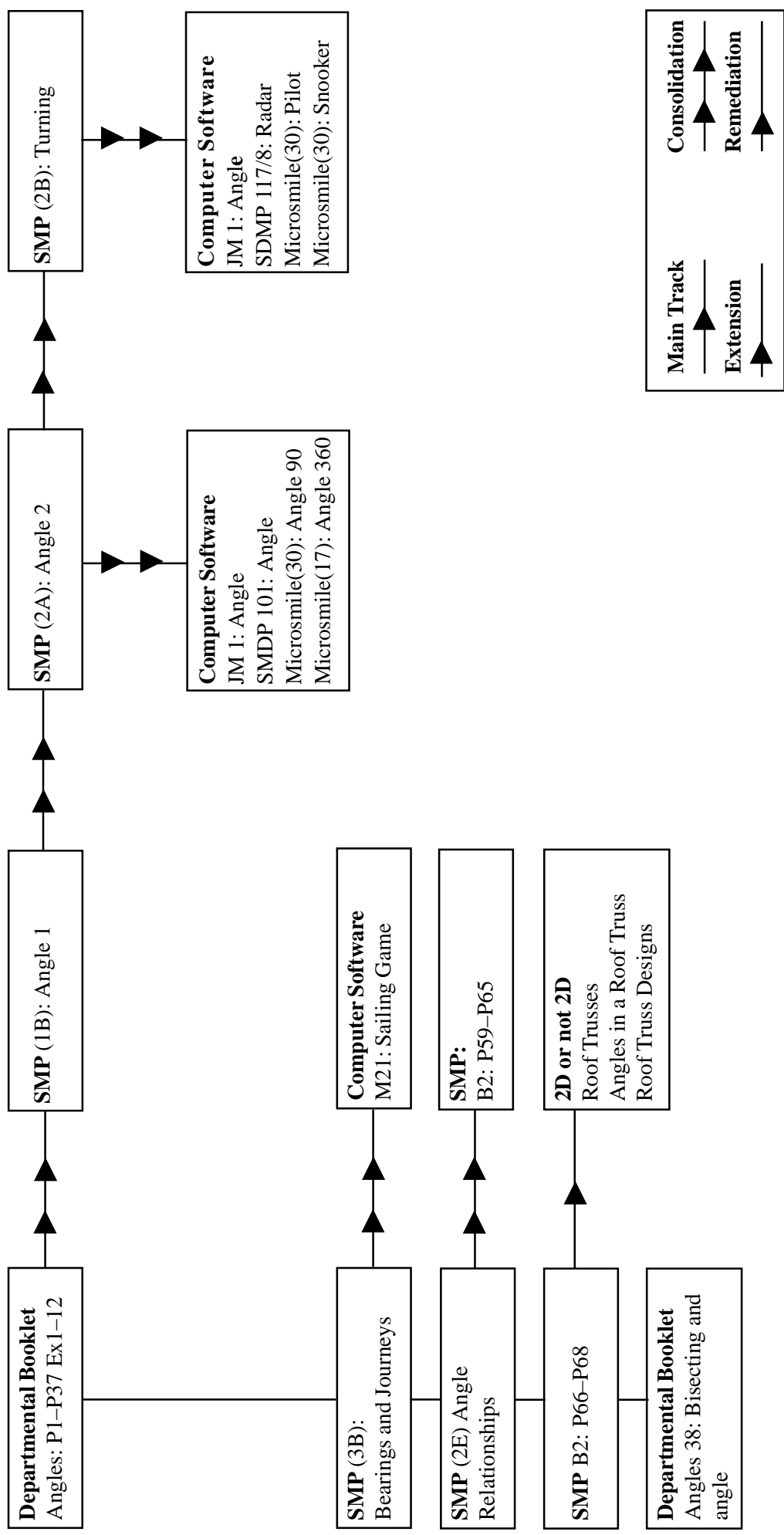
When doing Ex 3, 4 and 5 in the departmental booklet, the pupils can work in pairs, checking each other's work at regular intervals. This saves the teacher from running around the room checking and explaining.

### Suggested approach

**Entry point 1** (for pupils who regularly achieve A or B).



**SUGGESTED APPROACH**  
**Entry Point 2 (for pupils who regularly achieve C–F)**



<b>Main Track</b>	—▲—
<b>Extension</b>	—▲—
<b>Consolidation</b>	—▲—
<b>Remediation</b>	—▲—

