

SCOTTISH NATIONAL GUIDELINES 5 TO 14

In our opinion, the items shown in red relate to the part of the software that covers the Guideline.

PROBLEM SOLVING AND ENQUIRY

STARTING A TASK

Identify and interpret the problem.

Discussion when introducing project.

Decide what information is needed and is known.

Studying track plans and worksheets.

Consider, select and discuss strategies, concepts, facts and techniques; and make appropriate mathematical connections.

Practice lap strategy

Guess, check and improve a solution.

Experimenting with workshop adjustments.

Make a conjecture and test it.

Experimenting with workshop adjustments.

Interpret graphs, diagrams and drawings.

Categorising features on track plans. Interpreting post race graphs.

Prove results.

Comparing the performances of different cars.

Evaluation.

Compare methods and results.

Compare the cars prepared by individual teams.

INFORMATION HANDLING

DISPLAY

Level D

By constructing graphs involving simple fractions or decimals and grouped data with the aid of a computer package.

Use conversion graphs and post race analysis.

Level E

Constructing straight line and curved graphs.

Use conversion graphs and post race analysis.

INTERPRET

Level E

Describing the main features of a graph to show awareness and significance of the information.

Use conversion graphs and post race analysis.

Calculating the mean to compare sets of data.

Practice lap graphs

NUMBER, MONEY AND MEASUREMENT

RANGE AND TYPE OF NUMBERS

Level D

Work with whole numbers up to 100,000, fractions, percentages, decimals to two places and equivalences among these applications.

Fuel calculation. Scaling track plans. Calculating safe speeds.

Level E

Work with all widely used fractions and equivalence and decimals.

Fuel calculation. Scaling track plans. Calculating safe speeds.

Work with decimals to three places, practical application in measurement.

Fuel calculation. Scaling track plans. Calculating safe speeds.

ADD AND SUBTRACT, MULTIPLY AND DIVIDE, ROUND NUMBERS, FRACTIONS, PERCENTAGES AND RATIO

Levels D and E

Every Attainment Target is covered, with the exception of money.

MEASURE AND ESTIMATE

Level D

Measure in millimetres and metres.

Scaling track plans.

Recognise when kilometres are appropriate.

Categorising track plans.

Level E

Measure and draw using standard units.

Categorising track plans.

Estimate measurements in millimetres and metres.

Categorising track plans.

Read scales including estimating between graduations.

Categorising track plans. Scaling track plans.

TIME

Level D

Calculate speeds (practical activities).

Practice lap speeds. Race speeds.

PERIMETER, FORMULAE, SCALES

Level D

Calculate the perimeter of a shape.

Fuel calculation.

Level E

Use scales and ratios to interpret maps, plans and diagrams.

Categorising track plans. Practice laps.

SHAPE, POSITION AND MOVEMENT

RANGE OF SHAPES

Level D

Make use of 2D shapes.

Categorising track plans.

ANGLE

Level D

Draw, copy and measure angles accurately within 5 degrees.

Measuring angles on track plans.

Level E

Use the fact that vertical opposite angles are equal.

Measuring angles on track plans.