

TARGETS IN MATHEMATICS - INFORMATION FOR PARENTS AND CARERS

WORKING TOWARDS HIGHER LEVEL QUESTIONS

ALGEBRA

ALG1 - *Trial and Improvement Methods*

- T1 I can use systematic trial and improvement methods to find approximate solutions to equations such as $x^3 + x = 20$.
- T2 I can use systematic trial and improvement methods to find solutions to one or two decimal places.
- T3 I can use ICT tools such as a simple computer spreadsheet to carry out the trials.

ALG2 - *Linear Equations*

- T1 I can *construct* linear equations with integer coefficients.
- T2 I can *solve* linear equations with integer coefficients.
- T3 I can solve linear equations with brackets.
- T4 I can solve linear equations with unknowns on both sides.

ALG3 - *Sequences*

- T1 I can generate the terms of a sequence using the *term-to-term* rule on paper and using ICT.
- T2 I can generate terms of a sequence using the *position-to-term* rule on paper and using ICT.
- T3 I can write an expression to describe the *n*th term of an arithmetic sequence.

ALG4 - *Graphs of Linear Functions*

- T1 I can complete a table of values for a linear function.
- T2 I can plot points and draw a graph of the form $y = mx + c$.
- T3 I recognise that equations of the form $y = mx + c$ correspond to straight-line graphs.
- T4 I can decide if a point lies on a line by using the equation.

ALG5 - *Real-Life Graphs*

- T1 I can interpret graphs arising from real-life situations.
- T2 I can construct functions arising from real-life problems.
- T3 I can plot graphs corresponding to real-life problems.

NUMBERS AND THE NUMBER SYSTEM

NNS1 - *Comparing Proportions*

- T1 I can recognise fractions, decimals and percentages that are equivalent.
- T2 I can convert between simple fractions, decimals and percentages without using a calculator.
- T3 I can use a calculator to convert between simple fractions, decimals and percentages.
- T4 I can compare proportions using these skills.

CALCULATING

CAL1 - *Fractions, Decimals and Percentages*

- T1 I can find percentages of a number without using a calculator.
- T2 I can find the amount of a percentage *increase* without using a calculator.
- T3 I can find the amount of a percentage *decrease* without using a calculator.

CAL2 - *Ratio*

- T1 I can divide an amount into two or more parts in a given ratio.
- T2 I can solve problems involving ratio and direct proportion.

CAL3 - *Proportional Reasoning*

- T1 I can choose the correct number to take as 100% or, or as a whole, when solving a proportional reasoning problem.
- T2 I can solve a proportional reasoning problem involving percentages.
- T3 I can solve a proportional reasoning problem involving ratio.

CAL4 - *Fractions*

- T1 I can add and subtract fractions by writing them with a common denominator.
- T2 I can calculate fractions of quantities using fraction answers.
- T3 I can multiply an integer by a fraction.
- T4 I can divide an integer by a fraction.

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SHAPE, SPACE AND MEASURE

SSM1 - Quadrilaterals

- T1 I know the names of all the special types of quadrilaterals.
- T2 I know the geometric properties of the special quadrilaterals.
- T3 I can identify special cases of special types of quadrilaterals (e.g. rhombus).
- T4 I can use the properties of quadrilaterals to solve problems.

SSM2 - Geometrical Problems

- T1 I can solve geometrical problems using the properties of intersecting lines.
- T2 I can solve geometrical problems using the properties of parallel lines.
- T3 I can solve geometrical problems using the properties of angles.
- T4 I can solve geometrical problems using the properties of triangles and other polygons.

SSM3 - Angles

- T1 I can identify alternate angles.
- T2 I can identify corresponding angles.
- T3 I can prove that the sum of the angles of a triangle is 180° .
- T4 I can prove that the sum of the angles of a quadrilateral is 360° .

SSM4 - Instructions for a Computer

- T1 I can interpret simple instructions for a computer.
- T2 I can devise simple instructions for a computer.
- T3 I can use a computer to generate and transform shapes and paths.

SSM5 - Visualisations

- T1 I can visualise 2D representations of 3D objects.
- T2 I can interpret and use plans and elevations of 3D objects.
- T3 I can construct the net of a simple 3D object.
- T4 I can use isometric paper to represent 3D objects.

SSM6 - Enlargement

- T1 I understand the meaning of scale.
- T2 I can identify and describe an enlargement.
- T3 I can enlarge a 2D shape given a positive, whole number scale factor and a centre of enlargement.

SSM7 - Transformations

- T1 I can identify and describe translations.
- T2 I can identify and describe rotations.
- T3 I can identify and describe reflections.
- T4 I know that translations, rotations and reflections preserve length and angle.
- T5 I understand which transformations map objects onto congruent images.

SSM8 - Constructions

- T1 I can construct a perpendicular bisector.
- T2 I can construct an angle bisector.
- T3 I can construct a line through a point and perpendicular to another line.
- T4 I can draw simple loci using construction.

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SHAPE, SPACE AND MEASURE - continued

SSM9 - Area and Volume

- T1 I can explain how the formula to calculate the area of a rectangle can be used to deduce the formula for the area of a triangle.
- T2 I can explain how the formula to calculate the area of a rectangle can be used to deduce the formula for the area of a parallelogram.
- T3 I can explain how the formula to calculate the area of a rectangle can be used to deduce the formula for the volume of a cuboid.
- T4 I can use the formula to calculate area of a triangle.
- T5 I can use the formula to calculate the area of a parallelogram.
- T6 I can calculate the volume of a cuboid.
- T7 I can calculate the surface area of a cuboid.

SSM10 - Circles

- T1 I know the formula to find the circumference of a circle.
- T2 I know the formula to find the area of a circle.
- T3 I can find the circumference of a circle given either the radius or diameter.
- T4 I can find the area of a circle given either the radius or the diameter.
- T5 I can use the formula for the circumference of a circle to find the radius or diameter.
- T6 I can use the formula for the area of a circle to find the radius or diameter.

HANDLING DATA

HD1 - Surveys and Experiments

- T1 I can design a survey or experiment to capture data from one or more sources.
- T2 I can design, trial and refine, where necessary, data collection sheets.
- T3 I can construct tables for large sets of raw data, choosing suitable class intervals.
- T4 I am aware of the impact that the size of sample can have on the accuracy of results or conclusions.
- T5 I can design and use two-way tables.

HD2 - Graphs and Charts

I can select, construct and modify, on paper and using ICT:

- T1
 - pie charts for categorical data.
- T2
 - bar charts and frequency diagrams for discrete and continuous data.
- T3
 - simple time graphs for time series.
- T4
 - scatter graphs.
- T5 I can identify which graphs or charts are most useful in the context of the problem.

HD3 - Probability

- T1 I can work systematically to find all possible mutually exclusive outcomes for a single event.
- T2 I can work systematically to find all possible mutually exclusive outcomes for two successive events.
- T3 I understand that the sum of probabilities of all mutually exclusive outcomes is 1.
- T4 I can use this (above) knowledge when solving problems.

HD4 - Statistical Enquiry

- T1 I can interpret the results of statistical surveys.
- T2 I can communicate the results and interpretations of statistical surveys using selected tables, graphs and diagrams in support.

Using and Applying Mathematics

- T1 I can solve problems and carry through substantial tasks by breaking them into smaller, more manageable tasks, using a range of efficient techniques, methods and resources, including ICT; give solutions to an appropriate degree of accuracy.
- T2 I can interpret, discuss and synthesise information presented in a variety of mathematical forms.
- T3 I can present a concise, reasoned argument, using symbols, diagrams, graphs and related explanatory texts.
- T4 I can use logical argument to establish the truth of a statement.