Maths - ALL, MOST, SOME Statements

Year 6

(Some of the problem solving objectives to be differentiated according to complexity of problem)

Number – number and place value

Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
ALL – I can read and write numbers up to 10 000 000
MOST – I can order and compare numbers up to 10 000 000

ALL – I can determine the value of each digit in numbers up to 10 000 000

Round any whole number to a required degree of accuracy
ALL – I can round any whole number to a required degree of accuracy
MOST – I can determine the smallest and largest possible values when rounding
SOME – I can determine the most effective degree of accuracy

Use negative numbers in context, and calculate intervals across zero
ALL – I can add and subtract with negative numbers (small values)
MOST – I can add and subtract negative numbers using effective mental strategies
SOME – I can add and subtract negative numbers in a range of contexts

(Solve number and practical problems that involve all of the above)

Number – addition, subtraction, multiplication and division

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
ALL – I can use a formal written method of long multiplication to multiply numbers with up to 4 digits by a 2-digit number

Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
ALL – I can use the formal written method of long division to divide numbers with up to 4 digits by a 2-digit number
MOST – I can interpret remainders as whole number remainders, fractions or by rounding
SOME – I can interpret remainders as whole number remainders, fractions, decimals or by rounding, choosing, with justification, the most appropriate way for the context

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
ALL – I can use the formal written method of short division to divide numbers with up to 4 digits by a 2-digit number
MOST – I can interpret remainders as whole number remainders, fractions or by rounding
SOME – I can interpret remainders as whole number remainders, fractions, decimals or by rounding, choosing, with justification, the most appropriate way for the context

Perform mental calculations, including with mixed operations and large numbers
ALL – I can perform mental calculations, including with mixed operations and large numbers
MOST – I can employ a range of strategies when performing mental calculations
SOME – I can choose, with justification, the most efficient strategy when performing mental calculations

Identify common factors, common multiples and prime numbers
ALL – I can identify common factors of given numbers
MOST – I can employ a systematic approach to ensure that I know have found *all* of the common factors of two or more given numbers

ALL – I can identify common multiples of given numbers

ALL – I can determine whether numbers to 100 are prime or composite numbers
MOST – I can employ a systematic approach to determining whether numbers to 100 are prime or composite
MOST – I can break down a number into its prime factors

Use their knowledge of the order of operations to carry out calculations involving the four operations
ALL – I can perform calculations involving mixed operations according to the order of operations (BIDMAS)
MOST – I can explain how changing the order of operations would change the answer to a calculation

(Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why)

(Solve problems involving addition, subtraction, multiplication and division)

Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
ALL – I can estimate the answer to a calculation
MOST – I can choose, with justification, an appropriate degree of accuracy according to the context of a problem

Number – Fractions (including decimals and percentages)

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
ALL – I can reduce a fraction to its simplest form
MOST – I can reduce a fraction to its simplest form by finding the highest common factor
SOME – I can identify the most efficient method of simplifying fractions
(MOST children can apply the skill of simplifying fractions as and when it is appropriate in other areas of the curriculum eg in answer of a calculation or to more efficiently solve a problem)

ALL – I can find equivalent fractions of two or more given fractions by finding a common denominator
MOST – I can find equivalent fractions with the lowest possible common denominator by finding the lowest common multiple

Compare and order fractions, including fractions > 1
ALL – I can compare and order fractions by finding a common denominator
MOST – I can compare and order fractions by finding a common denominator *and/or* a common numerator
SOME – I can choose the most efficient method of comparing and ordering fractions

Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
ALL – I can add and subtract fractions with different denominators by finding a common denominator
MOST – I can add and subtract fractions and mixed numbers
SOME – I can choose the most efficient method for adding and subtracting fractions and mixed numbers

Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8]
ALL – I can multiply a fraction by an integer

ALL – I can multiply pairs of proper fractions
MOST – I can multiply pairs of proper fractions, writing the answer in its simplest form
MOST – I can demonstrate the process of multiplying fractions using visual representations eg bar models

Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]
ALL – I can divide proper fractions by whole numbers
MOST – I can demonstrate the process of dividing fractions using visual representations eg bar models

Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]

ALL – I can use division to calculate decimal fraction equivalents

Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
ALL – I can identify the value of each digit in numbers given to three decimal places

ALL – I can multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places

Multiply one-digit numbers with up to two decimal places by whole numbers
ALL – I can use a written method to multiply decimal numbers by whole numbers
MOST – I can use a mental strategy to multiply decimal numbers by whole numbers
SOME – I can choose, with justification, the most effective strategy to multiply decimal numbers by whole numbers

Use written division methods in cases where the answer has up to two decimal places
ALL – I can use a written division method, expressing answers with up to two decimal places

(Solve problems which require answers to be rounded to specified degrees of accuracy)

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
ALL – I can recall the most common equivalences between simple fractions, decimals and percentages
MOST – I can recall and use the most common equivalences between simple fractions, decimals and percentages
SOME – I can recall the most common equivalences between simple fractions, decimals and percentages, including in a range of contexts

Ratio and proportion

Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
ALL – I can identify the relationship between two values or quantities
MOST – I can use the relationship between two values or quantities to find missing values
MOST – I can use the relationship between two values or quantities to calculate ratio in a range of contexts

ALL – I understand the link between ratio and simple fractions
MOST – I can use the link between ratio and fractions to solve problems

Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison *(To be taught in the FDP sequence of learning)*
ALL – I can calculate percentages of amounts when the percentage is a multiple of 5 or 10
MOST – I can calculate any percentage of an amount

Solve problems involving similar shapes where the scale factor is known or can be found
ALL – I can draw a 2D shape on a grid using a given (integer) scale factor
MOST – I can draw a 2D shape on a grid where the (integer) scale factor can be found
MOST – I can use multiplication and division facts to calculate missing information and scale factors
SOME – I can solve problems, involving the above, including decimal scale factors

Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples *(To be taught in the FDP sequence of learning)*
ALL – I can find fractions of amounts
MOST – I can find the whole amount from a known value of fraction
SOME – I can apply my knowledge of fractions of amounts to a range of contexts and problems

Algebra

Use simple formulae
ALL – I can use given simple formulae

MOST – I can recall and use appropriate formulae

Generate and describe linear number sequences
ALL – I can find missing values in linear number sequences
MOST – I can describe linear number sequences using a simple algebraic expression
MOST – I can generate linear number sequences using given simple algebraic expressions
SOME – I can accurately use all of the language of algebra when describing linear number sequences

Express missing number problems algebraically
ALL – I can express one step functions as algebraic expressions and use one step algebraic expressions
MOST – I can express two step functions as algebraic expressions and use two step algebraic expressions
SOME – I can determine the functions (two or more steps) when given input and output values

Find pairs of numbers that satisfy an equation with two unknowns
Enumerate possibilities of combinations of two variables
ALL – I can find pairs of numbers that satisfy a simple equation with two unknowns
MOST – I can employ a systematic approach to find pairs of numbers that satisfy a simple equation with two unknowns
SOME – I can find pairs of numbers that satisfy a more complex equation with two unknowns

Measurement

(Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate)

Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
ALL – I can use given conversions to convert between metric units if measure
MOST – I can recall and apply conversions between metric units of measure for length, mass, capacity and time

Convert between miles and kilometres
ALL – I can use a given fact to calculate approximate equivalence between miles and kilometres (involving multiples of the original fact – 5miles≈8km)
MOST – I can recall and apply the fact needed to calculate simple approximate equivalences between miles and kilometres
SOME – I can calculate any equivalence between miles and kilometres

Recognise that shapes with the same areas can have different perimeters and vice versa
ALL – I can draw rectilinear shapes that have the same area (by counting squares on a grid)
MOST – I can use my knowledge of factors to find dimensions of rectangles with the same area
SOME – I can apply my knowledge to identify rectilinear shapes with the same area

Recognise when it is possible to use formulae for area and volume of shapes
ALL – I can use given simple formulae to find area and volume of shapes
MOST – I can recall and appropriately use formulae to find area and volume of shapes

Calculate the area of parallelograms and triangles
ALL – I can use given simple formulae to find the area of parallelograms and triangles
MOST – I can recall and appropriately use formulae to find the area of parallelograms and triangles

Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]
ALL – I can find the volume of a cuboid by counting cubes
MOST – I can apply a formula to calculate the volume of a cuboid and compare with other cuboid/s
SOME – I can accurately estimate the volume of a cuboid or 3D compound shape

Geometry – properties of shapes

Draw 2-D shapes using given dimensions and angles
ALL – I can use a ruler to ensure a shape's dimensions are drawn accurately
MOST – I can use a ruler and protractor to accurately draw simple shapes
SOME – I can draw shapes accurately including when using a scale

Recognise, describe and build simple 3-D shapes, including making nets
ALL – I know that a net is two-dimensional figure that can be folded to make a 3D shape
MOST – I can identify common 3D shapes from given nets
SOME – I can accurately draw nets of 3D shapes

Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
ALL – I can find missing angles in triangles and quadrilaterals (when given necessary information)
MOST – I can recall and use facts to find missing angles in triangles and quadrilaterals (and some regular polygons)
SOME – I can recall and use facts to find missing angles in a range of polygons

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
ALL – I can identify the radius, diameter and circumference of a circle
MOST – I can use given radius to find diameter, and vice versa

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
ALL – I can calculate missing angles from right angles and straight lines (when there are two angles)
MOST – I can recognise angles where they meet at a point, are on a straight line, or are vertically opposite and find missing angles
SOME – I can use necessary given information to calculate missing angles in more complex problems

Geometry – position and direction

Describe positions on the full coordinate grid (all four quadrants)
ALL – I can describe positions in the first quadrant
MOST – I can describe positions on the full coordinate plane
SOME – I can use my knowledge of coordinates to find missing points on lines or shapes

Draw and translate simple shapes on the coordinate plane, and reflect them in the axes
ALL – I can translate simple shapes on the coordinate plane
MOST – I can translate shapes and describe translations
SOME – I can use my knowledge of translation to describe missing coordinates

ALL – I can reflect shapes in the x and y axis
MOST – I can use my knowledge of coordinates to ensure my reflections are accurate

Statistics

Interpret and construct pie charts and line graphs and use these to solve problems
ALL – I can interpret basic information from a simple line graph
MOST – I can construct a simple line graph, and interpret information from a line graph, including when the scale increases at different intervals
SOME – I can construct more complex line graphs, deciding on most appropriate scales and intervals

ALL – I can interpret basic information from a simple pie chart
MOST – I can interpret information from pie charts, applying my knowledge of fractions where necessary
SOME – I can apply my knowledge of fractions, percentages, circles and angles to construct accurate pie charts

Calculate and interpret the mean as an average

ALL – I can use addition and division to calculate the mean of a simple set of data

MOST – I can calculate the mean of a set of data (including when mean involves decimals)

SOME – I can find possible and missing data when given the mean

NB Differentiation and depth of understanding may also be demonstrated by: the learning stage (concrete, pictorial or abstract), level of support or the pupil's ability to:

- solve problems of greater complexity,
- apply their understanding within a wider range of contexts,
- explain processes and reason mathematically,
- justify their choice of method or approach,
- or work systematically.