Maths - ALL, MOST, SOME Statements

Year 5

(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 to at least 1 000 000 and determine the value of each digit
ALL – I can read and write numbers up to 1 000 000
MOST – I can order and compare numbers up to 1 000 000

ALL – I can determine the value of each digit in numbers up to 1 000 000

Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
ALL – I can count forwards in steps of powers of 10 from any given number up to 1 000 000
MOST – I can count forwards and backwards in steps of powers of 10 from any given number to 1 000 000
MOST – I can determine the step in number sequences with missing numbers

Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
ALL – I can count forwards and backwards with positive and negative numbers (with a number line to support me)
MOST – I can count forwards and backwards with positive and negative numbers, including through zero, from any given number
MOST – I can interpret negative numbers in context
SOME – I can solve problems involving increase, decrease and difference involving negative numbers in context

Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
ALL – I can round to the nearest 10, 100 and 1 000
MOST – I can round any number to the nearest 10, 100, 1 000, 10 000 and 100 000
SOME – I can determine the smallest and largest possible values when rounding

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

Read Roman numerals to 1000 (M) and recognise years written in Roman numerals
ALL – I know the letters for the numbers: 1, 5, 10, 50, 100, 500 and 1000
MOST – I can use the Roman numeral system to make any number to 1000
SOME – I can perform calculations and solve problems involving Roman numerals to 1000

Number – addition and subtraction

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
ALL – I can use the column method to add and subtract numbers with more than 4 digits

Add and subtract numbers mentally with increasingly large numbers
ALL – I can employ a chosen strategy to add and subtract increasing larger numbers mentally
SOME – I can choose, with justification, the most efficient strategy for mental addition and subtraction

Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
ALL – I can round to the nearest 10, 100 or 1 000 to estimate and check answers to addition and subtract calculations
MOST – I can round (up to nearest 100 000) to estimate and check answers
SOME – I can determine the degree of accuracy to round to in order to estimate and check answers

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

Number - multiplication and division

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
ALL – I can find multiples of any number

ALL – I can give factors of any number
MOST – I can employ a systematic approach to ensure that I have every factor pair of a number and all common factors of two numbers

Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers
ALL – I know that prime number only has two factors
MOST – I can correctly use the vocabulary of prime and composite numbers
SOME – I can break a number down into its prime factors

Establish whether a number up to 100 is prime and recall prime numbers up to 19
ALL – I can recall prime numbers to 19
MOST – I can establish whether a number to 100 is prime or not using my knowledge of finding factors
SOME – I can employ a systematic approach to establishing whether numbers to 100 are prime or composite

Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
ALL – I can use a formal written method (column multiplication) multiply a number with up to 4 digits by a one-digit number
MOST – I can use a formal written method to multiply a 4-digit number by a 2-digit number

Multiply and divide numbers mentally drawing upon known facts
SOME – I can choose, with justification, the most efficient strategy for mental multiplication and division

Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
ALL – I can use a formal written method to divide numbers with up to 4 digits by a one-digit number
MOST – I can interpret remainders appropriately for a real-life context
SOME – I can choose, with justification, the most appropriate way to express a remainder (integer, fraction, decimal, or rounding) according to the context

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
ALL – I can multiply and divide whole numbers by 10, 100 and 1 000
MOST – I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1 000

Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})
ALL – I can recognise square numbers to 144
MOST – I can recognise and use square and cube numbers, and use square numbers to construct equivalence statements (eg 4 x 35 = 2 x 2 x 35)
SOME – I can use square and cube numbers to construct equivalence statements

(Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes)

(Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign)

(Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates)

Number – Fractions (including decimals and percentages)

Compare and order fractions whose denominators are all multiples of the same number

ALL – I can compare and order fractions with the same denominator, or when the denominators are all multiples of the same number
MOST – I can compare and order fractions with different denominators
SOME – I can compare and order fractions, including fractions greater than one with mixed numbers and improper fractions

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

ALL – I can recall and identify equivalent fractions for common fractions: ½, ¼, 1/3, 1/5, 1/10
MOST – I can use multiplication and division to make a common denominator and find equivalent fractions
SOME – I can ensure that I have found the lowest possible common denominator by finding the lowest common multiple

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5]

ALL – I know that when the numerator is greater than the denominator the fraction is greater than one, and when the numerator and denominator are equal the fraction is equal to one
MOST – I can use my knowledge of multiplication and division to convert between mixed numbers and improper fractions
MOST – I can recognise when my answer is an improper fraction and convert to a mixed number
SOME – I can appropriately apply the skill of converting between mixed numbers and improper fractions in a range of contexts

Add and subtract fractions with the same denominator and denominators that are multiples of the same number

ALL – I can add and subtract two fractions with the same denominator or with common fractions with denominators that are multiples of the same number eg ¼ + ½ or 2/3 + 1/6
MOST – I can add and subtract any fractions (two or more) when the denominators are multiples of the same number
MOST – I can add and subtract two mixed numbers when the denominators are multiples of the same number
SOME – I can subtract mixed numbers when the subtrahend fraction is greater than the fraction part of the minuend mixed number eg 2 ¼ - 5/8

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

ALL – I can multiply proper fractions by whole numbers
MOST – I can multiply proper fractions (and simple mixed numbers when supported by materials and diagrams) by whole numbers
SOME – I can multiply proper fractions and mixed numbers by whole numbers and express my answer as a mixed number when the product is greater than one

Read and write decimal numbers as fractions [for example, 0.71 = 71/100]

ALL – I can read and write decimals as fractions (tenths)
MOST – I can read and write decimals and fractions (tenths and hundredths)
SOME – I can read and write decimal numbers as fractions, including numbers greater than one

Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

ALL – I can recognise the digit in the thousandths column
MOST – I understand the relationship between tenths, hundredths and thousandths and express thousandths as decimals

Round decimals with two decimal places to the nearest whole number and to one decimal place

ALL – I can round decimals to the nearest whole number when there is only one decimal place
MOST – I can round decimals with up to two decimal places to the nearest whole number and to one decimal place
SOME – I can determine the smallest and largest possible values when rounding numbers with decimal places

Read, write, order and compare numbers with up to three decimal places
ALL – I can read and write numbers with up to three decimal places
MOST – I can order and compare numbers with up to three decimal places

MOST – I can add and subtract numbers with decimal places, including a mix of whole numbers and decimals

(Solve problems involving number up to three decimal places)

Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
ALL – I can write percentages as fractions with denominator 100
MOST – I can write percentages as fractions with denominator 100 and decimals, and convert fractions to percentages when the denominator is a factor of 100
SOME – I can convert between percentages and fractions in a range of contexts

(Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25)

Measurement

Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
ALL – I can use given conversions to convert between metric units of measure
MOST – I can recall and apply conversions between metric units of measure for length, mass and capacity

Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
ALL – I can use approximate equivalences between cm and inches (in multiples of 2.5) when supported by materials and/or diagrams
MOST – I can use approximate equivalences between metric and imperial measures

Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
ALL – I can measure the perimeter of composite rectilinear shapes
MOST – I can calculate the perimeter of composite rectilinear shapes with some missing sides
SOME – I can calculate the perimeter of composite rectilinear, applying the most efficient method (formula)

Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
ALL – I can find the area of a rectangle by counting squares
MOST – I can use multiplication to calculate the area of rectangles
MOST – I can calculate the area of compound shapes
MOST – I can estimate the area of irregular shapes by counting squares
SOME – I can calculate, using the most efficient method, the area of compound shapes with some missing sides

Estimate volume [for example, using 1cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
ALL – I can identify when a shape or container has a greater volume or capacity than another
MOST – I can estimate volume of shapes or objects with increasing accuracy

(Solve problems involving converting between units of time)

(Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling)

Geometry – properties of shapes

Identify 3-D shapes, including cubes and other cuboids, from 2-D representations

Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
ALL – I can recognise acute, obtuse and reflex angles
MOST – I can use my knowledge of angles to estimate angles with increasing accuracy
MOST – I can use my knowledge of angles to compare angles
SOME – I can use a range of angles facts to estimate and compare angles, including within shapes

Draw given angles, and measure them in degrees (°)
ALL – I can draw given angles
MOST – I can accurately draw simple shapes using a ruler and a protractor
SOME – I can use my knowledge of angles to effectively assess my own work

ALL – I can measure angles in multiples of 5 using a protractor
MOST – I can measure a given angle using a protractor
SOME – I can use my knowledge of angles to effectively assess my own work

Identify:
- angles at a point and one whole turn (total 360°)
- angles at a point on a straight line and 2 1 a turn (total 180°)
- other multiples of 90°

ALL – I can solve missing angle problems when the given angle is bisected
MOST – I can solve missing angle problems when the given angle is divided into three or more parts

Use the properties of rectangles to deduce related facts and find missing lengths and angles
ALL – I can identify right angles in shapes
MOST – I can deduce information about angles when shapes appear on grids

MOST – I can apply my knowledge of the relations of area and perimeter to find missing lengths of rectangles
SOME – I can use my knowledge of factors and multiples to explore possible dimensions of rectangles when given the area or perimeter

Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
ALL – I know that regular means all the sides and angles in a shape are equal
MOST – I can distinguish between regular and irregular polygons
SOME – I can use my knowledge of regular polygons to work out missing angles and sides

Geometry – position and direction

Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

ALL – I can describe coordinates in the first quadrant
MOST – I can describe the position of a shape in the first quadrant

ALL – I can reflect coordinates/points in a given mirror line
MOST – I can reflect simple shapes in a given mirror line, giving reflected coordinates
SOME – I can apply my understanding of coordinates to ensure my reflections are accurate

ALL – I can translate coordinates/points on a grid
MOST – I can translate simple shapes on a grid, giving translated coordinates
SOME – I can use my understanding of coordinates to translate shapes and ensure my translations are accurate

Statistics

Solve comparison, sum and difference problems using information presented in a line graph
ALL – I can interpret basic information from a line graph
MOST – I can solve sum and difference problems from a line graph
SOME – I can solve more complex problems from line graphs in a range of contexts

Complete, read and interpret information in tables, including timetables
ALL – I can interpret information from simple timetables
MOST – I can interpret information from timetables, including when it is necessary to convert between units of time
SOME – I can accurately construct timetables

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.