Year 7 Standard for 2D Shapes (Summer 1)

Fluency

- I can name different types of shapes and parts of a circle.
- I can measure shapes and count squares to find perimeters and areas.
- I can find the perimeter and area of squares, rectangles, triangles, parallelograms and trapeziums.
- I can recall and use the formulae for area and circumference of a circle.

Reasoning

- I can identify properties of shapes and use these to classify them.
- I can justify whether two shapes are congruent, similar or neither.
- I can explain how to find the area and circumference of a circle and parts of these..

- I can use the perimeter and area of 2D shapes to work backwards to find missing lengths.

Problem-Solving

- I can solve worded problems involving the area and perimeter of 2D shapes.
- I can apply knowledge of individual shapes to find the area and perimeter of compound shapes.
- I can work with 2D shapes in contexts involving different types of numbers and algebra.
- I can investigate the effects of enlargement on the perimeter and area of any 2D shape.

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Year 7 Standard for Probability (Summer 2)

Fluency

- I can write a probability in words or as a fraction, percentage or decimal.
- I can calculate with probabilities given as fractions, percentages or decimals.
- I know and use the fact that the total probability of all of the outcomes is 1.
- I can Find probabilities of successive events.

Reasoning

- I can describe probabilities using words and apply this understanding in different scenarios.
- I can record all of the possible combinations and outcomes in a given situation.
- I can work out probabilities from frequency tables, frequency trees, two-way tables and Venn diagrams.
- I can calculate, compare and explain relative frequencies and theoretical probabilities.

Problem-Solving

- I can solve worded problems involving probabilities.
- I can choose the best way to represent a scenario in order to find a probability.
- I can apply probabilities to graphs.
- I can link knowledge of probabilities to situations involving algebra, shapes and types of numbers.

Minimum Expected Standards

Mathematics Year 7

Inside this booklet you will find a summary of all the knowledge and skills that the academy expects you to master in this subject by the end of the year.

These are the **minimum standards** that we set for all students. If you achieve this you should be on track to achieve at least a **grade 5/6 in your GCSE** in year 11.

During each half-term you will have regular **'learning checks'** to assess how well you are progressing against the expected standards. If you do not reach the expected standard in any of these checks you should be seeking help from your teacher, asking for study supports and using the materials on TGiSpace to help you improve.

If you wish to push yourself further your teacher will also be sharing with you examples of how to go **beyond the expected standards**

Tudor Grange Academy Solihull

Year 7 Standard for Integers (Autumn 1)

Fluency

- I can add, subtract, multiply and divide any whole numbers (including negative numbers and using BIDMAS for order of operations).
- I can find and use even numbers, odd numbers, square numbers, triangular numbers, sums, products, prime numbers, factors, multiples, common multiples and factors, and positive powers of a number.
- I can express numbers as a product of their prime factors.
- I can use index laws and start to work with negative/fractional powers and square roots of numbers that are not square.

Reasoning

- I can add numbers, brackets or operations in missing spaces to make a calculation correct.
- I can find the highest common factor or lowest common multiple within a real life context.
- I can explain, prove or disprove statements about numbers.
- I am starting to use algebra to generalise and prove more complex statements about numbers.

Problem-Solving

- I can solve worded problems involving calculations or types of numbers.
- I understand how to use connections between certain numbers and operations to help with problems.
- I can model situations using understanding of different types of numbers, their properties and calculations.
- I can solve problems linking number and algebra.

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Year 7 Standard for Place Values (Autumn 2)

Fluency

- I can add, subtract, multiply and divide any decimal numbers (including negative numbers and using BIDMAS for order of operations).
- I understand place value and use this to order numbers (including recurring decimals and fractions, decimals and percentages).
- I can round numbers to a given power of 10, number of decimal places or number of significant figures.
- I can convert to and from, and calculate with, numbers in standard form.

Reasoning

- I can place numbers, brackets or operations in missing spaces to make a calculation correct.
- I use and evaluate estimations for calculations.
- I can explain the consequences of multiplying and dividing by a number between 0 and 1.
- I can find upper and lower bounds for rounded numbers, and use these appropriately in calculations.

Problem-Solving

- I can solve worded problems involving calculations with decimals.
- I understand how to use connections between certain numbers and operations to help with problems.
- I can convert recurring decimals to fractions.
- I can solve problems linking number and algebra.

Year 7 Standard for Expressions (Spring 1)

Fluency

- I can simplify expressions.
- I can substitute into an expression including positive, negative and non-integer numbers (and use BIDMAS if required).
- I can expand brackets, including double and triple brackets, and factorise linear expressions.
- I can apply the index laws to algebraic expressions.

Reasoning

- I can decide whether something is an expression, equation, formula or identity and explain why.
- I understand how algebraic notation can be used to represent scenarios, calculations and different types of numbers (such as even, odd and consecutive numbers).
- I can find numbers to satisfy conditions on an expression.
- I can deduce the index laws.

Problem-Solving

- I can write expressions arising from worded or shape problems.
- I can generalise a numerical problem with an expression.
- I can factorise quadratics (double brackets), with or without the use of an image to represent it.
- I can complete algebraic proofs using knowledge of expressions.

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Year 7 Standard for Fractions (Spring 2)

Fluency

- I can find any fraction of any amount.
- I can write one number as a fraction of another.
- I can convert between fractions, decimals and percentages.
- I can add, subtract, multiply and divide fractions.

Reasoning

- I can use equivalent fractions to add, subtract and order fractions (including working with mixed numbers and top heavy fractions).
- I can fill in missing numbers in fraction calculations.
- I understand pictorial representations of fractions.
- I can explain common misconceptions when working with fractions.

Problem-Solving

- I can solve worded problems involving calculations with fractions.
- I can work with sequences of fractions.
- I can convert recurring decimals to fractions.
- I can apply knowledge of fractions to a variety of scenarios, including in algebra and shape contexts.