Year 7 Assessment without levels – MATHS

**Assessment 1**

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|  | Acquiring | Developing | Securing | Extending |
| Number | Using place values to arrange decimal numbers in order.  Adding, subtracting, multiplying and then dividing mentally and using a written method  Multiplying and Dividing numbers by 10 or 100.  Checking answers and approximations | Place value – including decimals  Multiplying by powers of 10  Rounding to nearest 1, 10, 100, 1000  Adding and subtraction of integers  Multiplication & division of integers  Checking answers and estimation | Place value  Multiplication & division by powers of 10  Calculations  Comparing decimals  Rounding decimal places -secure with 1 dp and learn 2/3 dp  4 operations with decimals  Estimating answers  BIDMAS | Rounding decimal places  Adding, subtracting, multiplying and then dividing with numbers and decimals with application questions and problem solving  Secure understanding of BIDMAS  Secure understanding when checking answers and approximations |
| Fractions | Using fractions to describe parts of a whole.  Find equivalent fractions.  Simplifying Fractions | Equivalent and Simplifying fractions  Changing mixed numbers to top heavy fractions  Adding and Subtracting done together  Multiplication to be done before dividing | Revision of equivalent fractions, simplifying fractions and changing mixed numbers to improper fractions.  Adding and subtracting fractions  Multiplying fractions  Dividing fractions  Mixed number with adding and subtracting | Adding and Subtracting done together  Multiplication to be done before dividing. Focus on cancelling fractions before multiplying.  Mixed number of each operation after proper fractions – consider different methods for addition and subtraction. Extend to reasoning and problem solving questions |

**Assessment 2**

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|  | Acquiring | | Developing | Securing | Extending | |
| Representing data | | Collecting Data Difference between categorical data and numerical data, then the difference between discrete data and continuous data  Grouping data –then bar charts for discrete data with gaps, grouped discrete data no gaps then bar charts for continuous data with continuous scale no gaps. Interpret and draw line graphs, bar charts & pictograms  Construct and Interpret at a basic level Pie Charts and Stem and Leaf Diagrams | Difference between categorical data and numerical data, then the difference between discrete data and continuous data  Grouping data –then bar charts for discrete data with gaps, grouped discrete data no gaps then bar charts for continuous data with continuous scale no gaps. Frequency polygons  Construct and interpret Stem and Leaf diagrams and Pie Charts | Difference between categorical data and numerical data, then the difference between discrete data and continuous data Grouping data –then bar charts for discrete data with gaps, grouped discrete data no gaps then bar charts for continuous data with continuous scale no gaps  Frequency polygons  Stem and Leaf, Pie Charts  Scatter Diagrams and Correlation | | Difference between categorical data and numerical data, then the difference between discrete data and continuous data Grouping data –then bar charts for discrete data with gaps, grouped discrete data no gaps then bar charts for continuous data with continuous scale no gaps  Frequency polygons  Stem and Leaf, Pie Charts  Scatter Diagrams and Correlation focus should be on interpreting diagrams as well as constructing  Transfer data from one diagram to another diagram |
| Decimal | | Use written and mental methods to add and subtract decimals.  Use written methods to multiply and divide decimals – basic dividing decimal by an integer  Using approximation to solve problems with decimals. |  |  | |  |

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| F,D & P | Practise and learn the equivalences between fractions, decimals and percentages – focus on quarters, thirds and tenths  2. Finding fractions and percentages of amounts  3. Check students know key equivalencies focus on multiples of eights  4. Check students know recurring notation for and = 0. and  = 0. | 1. Practise key equivalencies focus on multiples of thirds and eights  2. Check students know notation = 0., if time also  0.232323 . . . = 0. ,  0.23452345 = 0.,  0.123232323 . . . = 0.1  3. Finding fraction and percentage of amount leading into percentage increase and decrease but adding/subtracting and then by multiplicative factor time permitting –calculator and non-calculator as appropriate.  4. Begin to solve Worded and Problem solving questions on percentage increase/decrease with support | 1. Practise and secure key equivalences  2. Check students know notation for = 0.,  0.232323 . . . = 0. ,  0.23452345 = 0.,  0.123232323 . . . = 0.1  3. Finding fraction and percentage of amount leading into percentage increase and decrease but adding/subtracting and then by multiplicative factor –calculator and non-calculator as appropriate time permitting  4. Worded and Problem solving questions on percentage increase/decrease  5. Percentage change/loss/profit | Check students know key equivalencies focus on multiples of eights  Check students know notation = 0.,  0.232323 . . . = 0. ,  0.23452345 = 0.,  0.123232323 . . . = 0.1  Finding fraction and percentage of amount leading into percentage increase and decrease but adding/subtracting and then by multiplicative factor –calculator and non-calculator as appropriate.  Extended worded and Problem solving questions on percentage increase/decrease  Percentage change/loss/profit |
| Measurement |  |  | Measuring lengths.  Making sensible estimates  Converting between metric units of measurement |  |

**Assessment 3**

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|  | | Acquiring | Developing | Securing | Extending |
| Measurement | Measure lengths in cm and mm  Time - changing between am, pm and 24 hour clock, finding finishing times  Convert km to m, m to cm, cm to mm –if possible do this by problem solving and reasoning questions not just lots of conversions  Angles – Using a protractor (more work with angles in the last term) | | Measuring and drawing lines accurately and making estimates for the lengths  Recap of change km to m, m to cm, cm to mm –where possible do this by problem solving and reasoning questions not just lots of conversions  Converting metric units for capacity and mass |  |  |
| Area (& Pythagoras) | Shapes - recognizing and naming types of triangles, quadrilaterals & polygons  Congruent Shapes  Drawing circles and learning language associated with circles  Area & Perimeters of Squares, Rectangles and Triangles | | 2D shapes  Quadrilaterals  Congruency-  Compound Perimeters  Areas of quadrilaterals  Areas of Triangles  Area of compound Shapes  Missing sides | Identifying 2d shapes  Congruence  Areas of quadrilaterals and triangles and working backwards  Area of circles and working backwards  Circumference of circles | Areas of quadrilaterals and triangles and working backwards  Areas of circles and working backwards then compound area involving circles, confident with problem solving  Circumferences of circles and working backwards then compound perimeter involving circles – confident with problem solving  “Discovering” Pythagoras’ Theorem  Finding the hypotenuse side and then the shorter side and applications |
| Volume | Volume - by counting  Volumes of cuboids using the formula  Nets of Shapes  Plans and Elevations | | Volumes of irregular shapes where the cross section is found and then multiply the length – include working backwards and using a mix of units to create a more complicated question  Volumes of cuboids, cubes, triangular prism and cylinders – work backwards to find missing lengths  Fitting small boxes into large boxes –discuss the two different methods of doing this ie considering lengths and volumes  Plans and elevations | Volumes of irregular shapes where the cross section is found and then multiply the length – confident with working backwards and using a mix of units to create a more complicated question  Volumes of cuboids, cubes, triangular prism and cylinders – confident with working backwards to find missing lengths  Nets of shapes  Plans and elevations | Learn how to round to 1 and 2 significant figures  Volumes of irregular shapes where the cross section is found and then multiply the length – include working backwards and confident with using a mix of units to create a more complicated question  Volumes of cuboids, cubes, triangular prism and cylinders – confident with working backwards to find missing lengths  Fitting small boxes into large boxes –discuss the two different methods of doing this ie considering lengths and volumes  Confident with Plans and elevations eg drawing 3D shapes from plans and elevations |
| Averages |  | |  |  | Revise mean from a set of data and then teach mode and median. Focus on calculator skills finding the mean.  Need to calculate averages and range before being able to interpret and compare them between two sets of data  Single sets of data, frequency tables, then grouped frequency tables – good understanding of what the process that they are carrying out |

**Assessment 4**

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|  | | Acquiring | Developing | Securing | Extending |
| Averages | |  | Need to calculate averages and range before being able to interpret and compare them between two sets of data  2 Single sets of data, frequency tables, then grouped frequency tables | Revise mean from a set of data and then teach mode and median. Focus on calculator skills finding the mean  2 Need to calculate averages and range before being able to interpret and compare them between two sets of data  Single sets of data, frequency tables. |  |
| Negative numbers | | Negative Numbers in context eg temperature  Adding and subtracting negative numbers  If time and pupils confident try multiplying and dividing | Adding and Subtracting negative numbers  Multiplying and dividing negative numbers  Using negative numbers in contextual questions | Adding and Subtracting negative numbers  Multiplying and dividing negative numbers  Using negative numbers in contextual questions | Adding and Subtracting negative numbers  Multiplying and dividing negative numbers  Using negative numbers in contextual questions or with BIDMAS to extend |
| Algebra | Introduction to algebraic notation  2. Simplifying and expanding algebraic expressions  3. Substituting into expressions and formulae  4. Creating expressions, formulae and equations  5. Number patterns and nth terms  6. Solving Equations | | Factors and Prime Numbers  2.Number patterns and number machines  3.Introduction to algebraic notation  4. Simplifying and expanding algebraic expressions  5. Substituting into expressions and formulae  6. Creating expressions, formulae and equations  7. Number patterns and nth terms  Solving Equations | 1. Properties of numbers 2. Number machines 3. Introduction to algebraic notation 4. Simplifying expressions 5. Expanding expressions 6. Substitution 7. Solving simple linear equations 8. Finding nth terms | Introduction to algebraic notation  2. Simplifying and expanding algebraic expressions  3. Substituting into expressions and formulae  4. Creating expressions, formulae and equations  5. Number patterns and nth terms  Solving Equations  6. Solving equations with brackets |

**Final Topics**

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|  | Acquiring | | Developing | | Securing | | Extending |
| Straight line graphs | Coordinates -plotting in all four quadrants  Know and use equations of horizontal and vertical lines  Plot equations of simple straight lines eg y = 2x+3  Looking at groups of points and finding the relationship  Eg 1 (1,2) (2,4), (3,6), (4,8)  Eg 2 (1, 5), (2, 6), (3, 7), (4, 8)  Eg 3 (1,-1), (2, -2) (-3,3), (-4,4) | | Plotting and reading coordinates in all 4 quadrants  Plotting and recognising vertical and horizontal lines  Plotting “diagonal lines” eg y = 4x – 6  Checking if a specific point is on a line numerically  Begin Working out the gradient of a line  Stating the y –intercept of a line and finding the equation of a line Begin recognising and using the form of the line y = mx +c and what m and c stand for | | Plotting and recognising vertical and horizontal lines  Looking at groups of points and finding the relationship  Eg 1 (1,2) (2,4), (3,6), (4,8)  Eg 2 (1, 5), (2, 6), (3, 7), (4, 8)  Eg 3 (1,-1), (2, -2) (-3,3), (-4,4)  Plotting “diagonal lines” eg y = 4x – 6  Checking if a specific point is on a line numerically  Working out the gradient of a line  Stating the y –intercept of a line and finding the equation of a line  Begin recognising and using the form of the line y = mx +c and what m and c stand for  If time Investigating the difference between parallel lines –  Begin interpreting straight line graphs eg C=30n +20 is the cost in £ of a plumber’s bill for n hours- that £20 is the “call out change” and £30 in the cost per hour | | Plotting and recognising vertical and horizontal lines  Looking at groups of points and finding the relationship  Eg 1 (1,2) (2,4), (3,6), (4,8)  Eg 2 (1, 5), (2, 6), (3, 7), (4, 8)  Eg 3 (1,-1), (2, -2) (-3,3), (-4,4)  Confident with plotting “diagonal lines” eg y = 4x - 6  Checking if a specific point is on a line numerically  Working out the gradient of a line  Stating the y –intercept of a line and finding the equation of a line.  Confident in recognising and using the form of the line y = mx +c and what m and c stand for  Investigating the difference between parallel lines – if time find some equations of parallel lines  Confident with Interpreting straight line graphs eg C=30n +20 is the cost in £ of a plumber’s bill for n hours- that £20 is the “call out change” and £30 in the cost per hour |
| Probability | | Introduce language  and probability line  All probabilities lie between 0 and 1  Experiments to explore probability  Listing outcomes of experiments  Different Ways of estimating probability  Using equally likely outcomes to find probabilities | | Using the probability scale  Discuss and use different ways of estimating probability List outcomes of experiments  Use equally likely outcomes to calculate probabilities  Use P(A’) notation when calculating the probability of an event not happening | | Using the probability scale  Discuss and use different ways of estimating probability  List outcomes of experiments  Use equally likely outcomes to calculate probabilities  Use P(A’) notation when calculating the probability of an event not happening | Using the probability scale Discuss and use different ways of estimating probability  List outcomes of experiments  Use equally likely outcomes to calculate probabilities  Use P(A’) notation when calculating the probability of an event not happening - extend to e.g.using fraction calculations  Use relative frequency to work out probability if time extend to problem solving |
| Ratio | |  | |  | | Write worded information in ratio form and visa versa and ensure understanding that ratio is a way of comparing part to part  2. Simplifying ratio and solving problems with equivalent ratio  3. Writing ratio is the form 1:n  4. Divide an amount in a given ratio  5 Finding amounts when the difference between 2 ratios are given | 1. Write worded information in ratio form and visa versa and ensure understanding that ratio is a way of comparing part to part  2. Simplifying ratio and solving problems with equivalent ratio  3. Writing ratio is the form 1:n  4. Divide an amount in a given ratio  5 Finding amounts when the difference between 2 ratios are given |
| Transformations | | Reflective & Rotational Symmetry only brief as this is not on the GCSE specification at all  Rotate shapes using a centre of rotation G3  Reflect shapes given a line of symmetry  Translations using words (i.e not vector notation)  -if can cope with vectors then use them | | Reflecting shapes using basic lines of symmetry eg x = 4, y = - 2, and if possible  y = x, y = -x  Rotating shapes using a centre of rotation, angle and direction  Translating shapes using vector notation  Enlargements – scale factors just positive integers and begin using a centre of enlargement.  Begin Describing all 4 transformations using correct terminology | | Reflecting shapes using basic lines of symmetry eg x = 4, y = - 2, and if possible  y = x, y = -x  Rotating shapes using a centre of rotation, angle and direction  Translating shapes using vector notation  Enlargements – scale factors just positive integers and begin using a centre of enlargement.  Begin describing all 4 transformations using correct terminology | Reflecting shapes using basic lines of symmetry eg x = 4, y = - 2, y = x, y = -x  Rotating shapes using a centre of rotation, angle and direction  Translating shapes using vector notation  Enlargements – scale factors just positive integers and using a centre of enlargement.  Confidently describing all 4 transformations using correct terminology |
| Money | | 1. Practise basic calculations using money 2. Focus on using and applying maths | |  | |  |  |
| Angles | | Revisit basic angle work from KS2  2. Angles. Measuring, drawing & identifying angles.  3. Angles on a straight line, at a point and in a triangle/quadrilateral  Identifying types of triangles from the angles  4. Tessellation - understanding of tessellation, which shapes tessellate,  draw shapes which tessellate | | . Measuring and classifying angles  2. Revisit basic angle work from KS2  3. Angles on parallel lines  4. Angles and tessellations. | | Revisit basic angle work from KS2  2. Angles on parallel lines  3. Sum of angles in a polygon  4. Exterior angles on any polygon and exterior angles of a regular polygon | 1. Revisit basic angle work from KS2  2. Angles on parallel lines  3. Sum of angles in a polygon  4. Exterior angles on any polygon and exterior angles of a regular polygon |