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 methodMultiplying 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, 1000Adding and subtraction of integersMultiplication & division of integersChecking answers and estimation | Place valueMultiplication & division by powers of 10CalculationsComparing decimalsRounding decimal places -secure with 1 dp and learn 2/3 dp4 operations with decimalsEstimating answers BIDMAS | Rounding decimal places Adding, subtracting, multiplying and then dividing with numbers and decimals with application questions and problem solvingSecure understanding of BIDMASSecure understanding when checking answers and approximations |
| Fractions | Using fractions to describe parts of a whole. Find equivalent fractions.Simplifying Fractions | Equivalent and Simplifying fractionsChanging mixed numbers to top heavy fractions Adding and Subtracting done togetherMultiplication to be done before dividing | Revision of equivalent fractions, simplifying fractions and changing mixed numbers to improper fractions.Adding and subtracting fractionsMultiplying fractionsDividing fractionsMixed number with adding and subtracting | Adding and Subtracting done togetherMultiplication 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 dataGrouping 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 dataGrouping 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 polygonsConstruct 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 gapsFrequency 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 gapsFrequency polygonsStem and Leaf, Pie ChartsScatter 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 integerUsing 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 tenths2. Finding fractions and percentages of amounts3. Check students know key equivalencies focus on multiples of eights 4. Check students know recurring notation for and $ \frac{1}{3}$ = 0.$\dot{3}$ and $\frac{2}{3}$ = 0.$\dot{6}$ | 1. Practise key equivalencies focus on multiples of thirds and eights 2. Check students know notation $\frac{1}{3}$ = 0.$\dot{3}$, if time also 0.232323 . . . = 0.$\dot{2}\dot{3}$ ,  0.23452345 = 0.$\dot{2}34\dot{5}$, 0.123232323 . . . = 0.1$\dot{2}\dot{3}$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 $\frac{1}{3}$ = 0.$\dot{3}$,  0.232323 . . . = 0.$\dot{2}\dot{3}$ ,  0.23452345 = 0.$\dot{2}34\dot{5}$, 0.123232323 . . . = 0.1$\dot{2}\dot{3}$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 permitting4. Worded and Problem solving questions on percentage increase/decrease5. Percentage change/loss/profit | Check students know key equivalencies focus on multiples of eights Check students know notation $\frac{1}{3}$ = 0.$\dot{3}$,  0.232323 . . . = 0.$\dot{2}\dot{3}$ ,  0.23452345 = 0.$\dot{2}34\dot{5}$, 0.123232323 . . . = 0.1$\dot{2}\dot{3}$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. Extended worded and Problem solving questions on percentage increase/decrease Percentage change/loss/profit |
| Measurement |  |  | Measuring lengths. Making sensible estimatesConverting between metric units of measurement |  |

**Assessment 3**

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|  | Acquiring | Developing | Securing  | Extending |
| Measurement | Measure lengths in cm and mmTime - changing between am, pm and 24 hour clock, finding finishing timesConvert 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 conversionsConverting metric units for capacity and mass |  |  |
| Area (& Pythagoras) | Shapes - recognizing and naming types of triangles, quadrilaterals & polygonsCongruent ShapesDrawing circles and learning language associated with circlesArea & Perimeters of Squares, Rectangles and Triangles | 2D shapesQuadrilateralsCongruency-Compound PerimetersAreas of quadrilateralsAreas of TrianglesArea of compound ShapesMissing sides | Identifying 2d shapesCongruenceAreas of quadrilaterals and triangles and working backwardsArea of circles and working backwardsCircumference of circles | Areas of quadrilaterals and triangles and working backwardsAreas of circles and working backwards then compound area involving circles, confident with problem solvingCircumferences of circles and working backwards then compound perimeter involving circles – confident with problem solving“Discovering” Pythagoras’ TheoremFinding the hypotenuse side and then the shorter side and applications |
| Volume | Volume - by countingVolumes of cuboids using the formulaNets of ShapesPlans 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 questionVolumes 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 volumesPlans 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 lengthsNets of shapesPlans and elevations | Learn how to round to 1 and 2 significant figuresVolumes 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 questionVolumes of cuboids, cubes, triangular prism and cylinders – confident with working backwards to find missing lengthsFitting small boxes into large boxes –discuss the two different methods of doing this ie considering lengths and volumesConfident 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 data2 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 mean2 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 numbersIf time and pupils confident try multiplying and dividing | Adding and Subtracting negative numbers Multiplying and dividing negative numbersUsing negative numbers in contextual questions  | Adding and Subtracting negative numbersMultiplying and dividing negative numbersUsing negative numbers in contextual questions  | Adding and Subtracting negative numbersMultiplying and dividing negative numbers Using negative numbers in contextual questions or with BIDMAS to extend |
| Algebra | Introduction to algebraic notation2. Simplifying and expanding algebraic expressions3. Substituting into expressions and formulae4. Creating expressions, formulae and equations 5. Number patterns and nth terms6. Solving Equations  | Factors and Prime Numbers2.Number patterns and number machines3.Introduction to algebraic notation4. Simplifying and expanding algebraic expressions5. Substituting into expressions and formulae6. Creating expressions, formulae and equations 7. Number patterns and nth termsSolving 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 notation2. Simplifying and expanding algebraic expressions3. Substituting into expressions and formulae4. Creating expressions, formulae and equations 5. Number patterns and nth termsSolving Equations 6. Solving equations with brackets |

**Final Topics**

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|  | Acquiring | Developing | Securing  | Extending |
| Straight line graphs | Coordinates -plotting in all four quadrantsKnow and use equations of horizontal and vertical linesPlot equations of simple straight lines eg y = 2x+3Looking at groups of points and finding the relationshipEg 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 quadrantsPlotting and recognising vertical and horizontal linesPlotting “diagonal lines” eg y = 4x – 6Checking if a specific point is on a line numerically Begin Working out the gradient of a lineStating 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 linesLooking at groups of points and finding the relationshipEg 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 – 6Checking if a specific point is on a line numericallyWorking out the gradient of a lineStating the y –intercept of a line and finding the equation of a lineBegin 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 linesLooking at groups of points and finding the relationshipEg 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 - 6Checking if a specific point is on a line numericallyWorking 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 languageand probability line All probabilities lie between 0 and 1Experiments to explore probability Listing outcomes of experimentsDifferent Ways of estimating probabilityUsing 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 probabilitiesUse 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 calculationsUse 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 part2. Simplifying ratio and solving problems with equivalent ratio3. Writing ratio is the form 1:n4. Divide an amount in a given ratio5 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 part2. Simplifying ratio and solving problems with equivalent ratio3. Writing ratio is the form 1:n4. Divide an amount in a given ratio5 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 allRotate shapes using a centre of rotation G3Reflect 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 notationEnlargements – 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 directionTranslating 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 directionTranslating 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
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| Angles | Revisit basic angle work from KS22. Angles. Measuring, drawing & identifying angles.3. Angles on a straight line, at a point and in a triangle/quadrilateralIdentifying types of triangles from the angles4. Tessellation - understanding of tessellation, which shapes tessellate,draw shapes which tessellate | . Measuring and classifying angles2. Revisit basic angle work from KS23. Angles on parallel lines4. Angles and tessellations.  | Revisit basic angle work from KS22. Angles on parallel lines3. Sum of angles in a polygon4. Exterior angles on any polygon and exterior angles of a regular polygon | 1. Revisit basic angle work from KS22. Angles on parallel lines3. Sum of angles in a polygon4. Exterior angles on any polygon and exterior angles of a regular polygon |