

Year 9 Maths Curriculum & Video Lessons to Support Learning from Home

	Topic	<i>Video lessons to support learning from home:</i>
Autumn 1	<p>Straight Line Graphs</p> <ol style="list-style-type: none"> 1. Plot equations of a straight line 2. Compare gradients and y-intercepts 3. Use $y = mx + c$ 4. Interpret real-life graphs 5. Explore perpendicular lines <p>Forming and Solving Equations</p> <ol style="list-style-type: none"> 1. Solve equations and inequalities that include negatives 2. Solve equations and inequalities with an unknown of both sides of the equals sign 3. Substitute into formulae 4. Rearrange formulae <p>Testing Conjectures</p> <ol style="list-style-type: none"> 1. Prime factor decomposition 2. Evaluate true or false statements 3. Basic proof by induction 4. Expanding double brackets 5. Test conjectures with algebra 	<p>Straight Line Graphs</p> <ol style="list-style-type: none"> 1. https://vimeo.com/452824354 2. https://vimeo.com/452824565 3. https://vimeo.com/454341611 4. https://vimeo.com/454341239 5. https://vimeo.com/455754952 <p>Forming and Solving Equations</p> <ol style="list-style-type: none"> 1. https://vimeo.com/457714202 2. https://vimeo.com/457715289 https://vimeo.com/457716336 https://vimeo.com/457716360 3. https://vimeo.com/458885948 4. https://vimeo.com/458899991 https://vimeo.com/458886226 <p>Testing Conjectures</p> <ol style="list-style-type: none"> 1. https://vimeo.com/461311096 2. https://vimeo.com/461311367 3. https://vimeo.com/461315141 4. https://vimeo.com/461316570 5. https://vimeo.com/461319192



3D Shapes

1. Name and recognise 3D shapes
2. Recognise and draw accurate nets of 3D shapes
3. Plans and elevations
4. Surface area of 3D shapes
5. Volume of 3D shapes

Constructions and Congruency

1. Draw and measure angles
2. Construct and interpret scales drawings
3. Loci and constructions
4. Construct SSS, SAS and ASA from given information
5. Identify congruent triangles

3D Shapes

1. <https://vimeo.com/468132626>
2. <https://vimeo.com/468462209>
3. <https://vimeo.com/471682224>
4. <https://vimeo.com/471682335>
<https://vimeo.com/471682402>
<https://vimeo.com/477506963>
5. <https://vimeo.com/477507427>
<https://vimeo.com/477512193>

Constructions and Congruency

1. <https://vimeo.com/481595610>
2. <https://vimeo.com/481595638>
3. <https://vimeo.com/481595696>
<https://vimeo.com/481595698>
<https://vimeo.com/483971493>
<https://vimeo.com/483970980>
<https://vimeo.com/483971151>
<https://vimeo.com/483971293>
<https://vimeo.com/483971376>
<https://vimeo.com/485879759>
4. <https://vimeo.com/485879902>
5. <https://vimeo.com/485892119>
<https://vimeo.com/485880034>



Numbers

1. Understand the difference between integers, real and rational numbers
2. Understand and simplify surds (H)
3. Work with directed number
4. Solve problems with integers and decimals
5. Finding HCF and LCM from a list
6. Express a number as its product of primes & find HCF/LCM (H)
7. Operations with fractions
8. Converting between standard form and ordinary numbers

Using Percentages

1. Converting between FDP
2. Calculating percentage increase and decrease (with and without calc)
3. Calculating percentage change
4. Calculating a reverse percentage
5. Recognise and solve percentage problems
6. Solve problems with repeated percentage change (H)

Maths and Money

1. Solve problems with bills and bank statements
2. Calculate simple interest
3. Calculate compound interest
4. Solve problems with VAT
5. Calculate wages and taxes (H)
6. Solve problems with exchange rates
7. Solve unit pricing problems

Numbers

1. <https://vimeo.com/490422808>
2. <https://vimeo.com/491143049>
3. <https://vimeo.com/490423618>
4. <https://vimeo.com/491143156>
<https://vimeo.com/491143193>
5. <https://vimeo.com/491143221>
6. <https://vimeo.com/491143221>
7. <https://vimeo.com/491143282>
<https://vimeo.com/491144638>
<https://vimeo.com/490424468>
8. <https://vimeo.com/491143317>

Using Percentages

1. <https://vimeo.com/499302126>
2. <https://vimeo.com/499302528>
3. <https://vimeo.com/499302899>
4. <https://vimeo.com/499303280>
5. <https://vimeo.com/499304236>
<https://vimeo.com/499303812>
6. <https://vimeo.com/499304687>

Maths and Money

1. <https://vimeo.com/502961994>
2. <https://vimeo.com/502718231>
3. <https://vimeo.com/502719868>
4. <https://vimeo.com/502721401>
5. <https://vimeo.com/505611700>
6. <https://vimeo.com/505612625>
7. <https://vimeo.com/505613243>



Deduction

1. Angles in parallel lines
2. Solving angles problems
3. Conjectures with angles and shapes

Rotation and Translation

1. Identify the order of rotational symmetry of a shape
2. Rotate a shape about a point on a shape & not on a shape
3. Translate points and shapes by a given vector
4. Compare rotation and reflection of shapes
5. Find the result of a series of transformations (H)

Pythagoras' Theorem

1. Determine whether a triangle is right-angled
2. Calculate the hypotenuse of a right-angled triangle
3. Calculate the missing short side in a right-angled triangle
4. Use Pythagoras on coordinate axis
5. Explore proofs of Pythagoras' theorem
6. Use Pythagoras's theorem in 3D shapes (H)

Deduction

1. <https://vimeo.com/509894521>
2. <https://vimeo.com/509894834>
<https://vimeo.com/509895143>
3. <https://vimeo.com/509895684>
<https://vimeo.com/515220729>

Rotation and Translation

1. <https://vimeo.com/516749713>
<https://vimeo.com/516750060>
2. <https://vimeo.com/518615617>
<https://vimeo.com/516750304>
3. <https://vimeo.com/518618837>
4. <https://vimeo.com/518622283>
5. <https://vimeo.com/518615680>

Pythagoras' Theorem

1. <https://vimeo.com/521971114>
2. <https://vimeo.com/521971544>
3. <https://vimeo.com/524881106>
4. <https://vimeo.com/524881840>
5. <https://vimeo.com/524882478>
6. <https://vimeo.com/524893478>



Enlargement and Similarity

1. Recognise enlargement and similarity
2. Enlarge a shape by a scale factor from a point
3. Work out missing sides and angles in a pair of given similar shapes
4. Solve problems with similar triangles (H)
5. Explore ratios in right-angled triangles (H)

Solving ratio & proportion problems

1. Solve problems with direct and inverse proportion
2. Direct proportion and conversion graphs
3. Graphs of inverse relationships (H)
4. Solve ratio problems given the whole or a part
5. Solve best buy problems
6. Solve problems using ratio and algebra (H)

Rates

1. Solve speed, distance, time problems
2. Use distance-time graphs
3. Solve problems with density, mass and volume
4. Solve flow problems and their graphs
5. Rates of change and their units
6. Convert compound units (H)

Enlargement and Similarity

1. <https://vimeo.com/530692761>
2. <https://vimeo.com/530343385>
<https://vimeo.com/530343832>
<https://vimeo.com/530344238>
<https://vimeo.com/530344590>
3. <https://vimeo.com/530345022>
4. <https://vimeo.com/530345423>
5. <https://vimeo.com/530345978>

Solving ratio & proportion problems

1. <https://vimeo.com/538593641>
<https://vimeo.com/538594782>
2. <https://vimeo.com/538594402>
3. <https://vimeo.com/538598556>
4. <https://vimeo.com/539655119>
5. <https://vimeo.com/539667974>
6. <https://vimeo.com/539667310>

Rates

1. <https://vimeo.com/542186166>
2. <https://vimeo.com/542187014>
3. <https://vimeo.com/542186927>
4. <https://vimeo.com/546553901>
5. <https://vimeo.com/546554579>
6. <https://vimeo.com/547453933>



Probability

1. Single event probability
2. Relative frequency
3. Expected outcomes
4. Independent events
5. Use tree diagrams with replacement (H)
6. Use tree diagrams without replacement (H)
7. Use diagrams to work out probabilities

Algebraic Representation

1. Draw and interpret quadratic graphs
2. Interpret other graphs, including reciprocal and piece-wise
3. Investigate graphs of simultaneous equations (H)
4. Represent inequalities on an axis

Probability

1. <https://vimeo.com/548330041>
2. <https://vimeo.com/548330422>
3. <https://vimeo.com/548360948>
4. <https://vimeo.com/548330861>
5. <https://vimeo.com/548350382>
6. <https://vimeo.com/548331118>
7. <https://vimeo.com/548340966>

Algebraic Representation

1. <https://vimeo.com/559356351>
2. <https://vimeo.com/559357256>
3. <https://vimeo.com/559357485>
4. <https://vimeo.com/559357637>
- 5.

