Home-School Learning Collaboration – Mathematics

Topics in this cycle:	Taught: Autumn 2	Year Group: 9

Key knowledge/concepts to be learnt ('Tell me about….')	Websites/blogs/YouTube links and further reading to deepen and consolidate learning
Three dimensional shapes • Nets of cuboids and other 3D shapes • Plans and elevations • Surface area of cubes and cuboids • Surface area of triangular prisms • Surface area of a cylinder • Volume of cubes and cuboids • Volume of prisms and cylinders • Volume of cones and pyramids	https://vimeo.com/468132787 https://vimeo.com/471682224 https://vimeo.com/471682335 https://vimeo.com/477506963 https://vimeo.com/477507427 https://vimeo.com/477512193
Constructions & congruency • Locus of distance from a point/two points • Locus from a straight line/shape • Perpendicular bisector • Perpendicular from/to a point • Locus of distance from two lines • Construct an angle bisector • Congruent figures • Congruent triangles	https://vimeo.com/481595696 https://vimeo.com/481595698 https://vimeo.com/483971493 https://vimeo.com/483971151 https://vimeo.com/575518911

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Key Vocabulary and Definitions To Be Learnt	
Dimensions	2D two dimensional shapes (square, triangle…) 3D three dimensional shapes (cube, sphere, cylinder…)
Cuboid	3D shape with 6 rectangular faces
Cube	3D shape with 6 squared faces
Cylinder	3D shape, a prism with circular cross-section
Prism	3D shape that has a cross-section running through the length of the shape
Sphere	3D shape with only one curved face
Tetrahedron	3D shape with 4 faces that are equilateral triangles
Cone	3D shape with two faces (a circular base and one curved face)
Edge	A straight line that joints two faces
Vertex	A corner where edges meet
Net	A pattern that you can cut and fold to make a model of a solid shape
Plan	A drawing of something as viewed from above
Locus	The set of all points that share a property
Equidistant	Being same distant apart
Bisector	The line that divides something into two equal parts

What Will The Assessment Look Like?

Please follow the link to a full breakdown of topics covered in November assessment.

Link:

You may also want to try some samples of questions:

Link:

Family Learning Opportunities

Support you child at busting XP levels on SPARX MATH HOMEWORK.

Test understanding by asking questions:

Three dimensional shapes:

- **Nets of cuboids and other 3D shapes:**
  How many faces does cube have?
  What is the difference between a cube and a cuboid?
  How many sides does each edge connect to in a cuboid?
  Is there more than one way of drawing a net of a cube?
  If one of the lengths was increased, which part of its net would change?
- **Plans and elevations:**
  What can you see looking at shape from the front/side/above?
  Are there any parts of the shape you cannot see?

Surd	A number that can't be simplified to remove a square root (or cube root etc)	Why do you need to have three different perspectives to be able to construct the shape? • **<u>Surface area of cubes and cuboids</u>**: What is the same/different about the face of cubes and cuboids? What is an 'open' cube? • **<u>Surface area of triangular prisms:</u>** How many faces do all triangular prisms have? Are any of the faces the same in a triangular prism? Which dimensions of a triangle are used to find its area? • **<u>Surface area of a cylinder:</u>** How many faces does a cylinder have? How many of the faces are the same? How do you find the area of a curved face? How do you find the circumference of a circle? What does 'in terms of Π' mean? Is this form of answer exact or estimate? • **<u>Volume of cubes and cuboids:</u>** What units are used to measure volume? Can you built the shape using blocks? What is the difference between finding the volume and finding the surface area of a cube/cuboid? • **<u>Volume of prisms and cylinders:</u>** Which face is the constant cross-section? (Explode a range of prisms) What is the height of each prism? Could this also be called the depth of the prism? **More:** Have a look at the plans and elevations interactive website to help you understand the topic

		https://www.geogebra.org/m/n6y2hw3b You may want to look at revision resources to better understand LOCUS topic: https://thirdspacelearning.com/gcse-maths/geometry-and-measure/loci/