National Curriculum Maths Unit 3

Level 1 Unit 3 - Maths (Geometry measures)

1. Learners will work with shapes using everyday language to describe a range of their properties

1.1 I can work with 2-D and 3-D shapes [1]

1.2 I can identify squares, rectangles triangles circles and cubes [2]

1.3 I can describe the position of one object in relation to another using next to, above, below, inbetween and middle [3]

1.4 I can measure objects to give their approximate sizes [4]

1.5 I can put objects and shapes into order by comparing sizes or other features [5]

1.6 I can put events into order using the terms before and after [6]

Level 2 Unit 3 - Maths (Geometry measures)

1. Learners will work with shapes using everyday language, quantifying attributes such as number of sides and discussing angles. They will make simple measurements of length and mass.

1.1 I can name traingles, squares, rectangles, circles, ovals, spheres, cones, cubes and cuboid [8]

1.2 I can describe shapes in terms of their number of sides and corners [9]

1.3 I can distinguish between straight and turning movements [10]

1.4 I can explain angle as a measurement of turn [11]

1.5 I can identify a right angle [12]

1.6 I can measure lengths and state my units [13]

1.7 I can measure mass and state my units [14]

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Level 3 Unit 3 - Maths (Geometry measures)

1. Learners will work with shapes using mathematical properties to classify them. They will use a range of units to measure length, capacity, mass and time.

1.1 I can classify 3-D and 2-D shapes using numbers of sides, edges, corners and symmetry [16]

1.2 I can measure length and capacity and state my units [17]

1.3 I can measure mass and state my units [18]

1.4 I can measure time and state my units [19]

Level 4 Unit 3 - Maths (Geometry measures)

1. Learners will make 3-D models and construct 2-D shapes and their reflections. They will use a range of measuring instruments coping with relevant units.

1.1 I can make 3-D mathematical models by linking given faces or edges [21]

1.2 I can draw common 2-D shapes in different orientations on grids [22]

1.3 I can reflect simple shapes in a mirror line [23]

1.4 I can choose and use appropriate tools and units for measurements [24]

1.5 I can read a variety of scales with appropriate accuracy [25]

1.6 I can find perimeters of simple shapes [26]

1.7 I can find areas by counting squares [27]

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Level 5 Unit 3 - Maths (Geometry measures)

1. Learners will construct and draw shapes accurately using linear and angular measures, appreciating symmetry and using these in pratcial situations. They will make sensible estimates of measurements and convert between metric units.

1.1 I can measure angles to the nearest degree [29]

1.2 I can draw angles to the nearest degree [30]

1.3 I can construct and draw shapes accurately [31]

1.4 I can use language associated with angles [32]

1.5 I can recall the angle sum of a triangle and that of angles at a point [33]

1.6 I can identify all the symmetries of 2D shapes [34]

1.7 I can calculate the area of a triangle from its dimensions [35]

1.8 I can estimate the approximate size of things without measuring them [36]

1.9 I can convert between metric units [37]

Level 6 Unit 3 - Maths (Geometry measures)

1. The learner will solve a range of problems including practical problems, using drawings and mathematics related to polygons and their properties. The learner will understand how formulae and instructions can be used to generate shapes

1.1 I can recognise and use common 2-D representations of 3-D objects [39]

1.2 I can recall and use the properties of quadrilaterals [40]

1.3 I can solve problems using angles and symmetry [41]

1.4 I can use the properties of polygons [42]

1.5 I can explain the angle properties of intersecting and parallel lines [43]

1.6 I can devise instructions for a computer to generate and transform shapes and paths

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[44]

1.7 I can use appropriate formulae for finding circumferences and areas of circles [45]

1.8 I can use appropriate formulae for finding the areas of plane rectilinear shapes [46]

1.9 I can use appropriate formulae for finding the volumes of cuboids [47]

Level 7 Unit 3 - Maths (Geometry measures)

1. The learner will calculate the dimensions of 2-D and 3-D objects, carry out scale enlargements and appreciate similarity. The learner will appreciate degrees of precision in measurements and understand compound measures.

1.1 I can apply Pythagoras' theorem to solve problems in two dimensions [49]

1.2 I can calculate lengths, areas and volumes in plane shapes and right prisms [50]

1.3 I can enlarge shapes by a fractional scale factor, and appreciate the similarity of the resulting shapes [51]

1.4 I can determine the locus of an object moving according to a rule [52]

1.5 I can identify imprecision of measurement [53]

1.6 I can quantify the possible range of accuracy for a measurement given to the nearest whole number [54]

1.7 I can explain how a compound measure such as speed is made up from measurements of distance and time [55]

Level 8 Unit 3 - Maths (Geometry measures)

1. The Learner will use trignometrical functions in right angled triangles to solve problems in two dimensions. They will understand congruance and mathematical similarity.

1.1 I can identify congruent and similar triangles and explain the difference [57]

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1.2 I can use sine, cosine and tangent in right-angled triangles to solve problems in two dimensions [58]

Level 9 Exceptional Performance Unit 3 - Maths (Geometry measures)

1. The learner will understand trignometrical functions and construct formal geometrical proofs. They will calculate a range of non-linear dimensions and understand analogue scales used in pratical measurements

1.1 I can sketch the graphs of sine, cosine and tangent functions for any range of angles [60]

1.2 I can generate and interpret graphs based on these functions [61]

1.3 I can use sine, cosine and tangent of angles of any size together with Pythagoras' theorem to solve problems in two and three dimensions [62]

1.4 I can construct formal geometric proofs [63]

1.5 I can calculate lengths of circular arcs and areas of sectors [64]

1.6 I can and calculate the surface area of cylinders and volumes of cones and spheres [65]

1.7 I can explain how to make common analogue measuring scales eg for length, mass, time and temperature [66]

1.8 I can explain the relationship between a digital scale and a corresponding analogue scale [67]

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[9] https://theingots.org/community/ncl2u3masx#1.2
[10] https://theingots.org/community/ncl2u3masx#1.3
[11] https://theingots.org/community/ncl2u3masx#1.4
[12] https://theingots.org/community/ncl2u3masx#1.5
[13] https://theingots.org/community/ncl2u3masx#1.6
[14] https://theingots.org/community/ncl2u3masx#1.7
[15] https://theingots.org/community/ncl2u3masi
[16] https://theingots.org/community/ncl3u3masx#1.1
[17] https://theingots.org/community/ncl3u3masx#1.2
[18] https://theingots.org/community/ncl3u3masx#1.3
[19] https://theingots.org/community/ncl3u3masx#1.4
[20] https://theingots.org/community/ncl3u3masi
[21] https://theingots.org/community/ncl4u3masx#1.1
[22] https://theingots.org/community/ncl4u3masx#1.2
[23] https://theingots.org/community/ncl4u3masx#1.3
[24] https://theingots.org/community/ncl4u3masx#1.4
[25] https://theingots.org/community/ncl4u3masx#1.5
[26] https://theingots.org/community/ncl4u3masx#1.6
[27] https://theingots.org/community/ncl4u3masx#1.7
[28] https://theingots.org/community/ncl4u3masi
[29] https://theingots.org/community/ncl5u3masx#1.1
[30] https://theingots.org/community/ncl5u3masx#1.2
[31] https://theingots.org/community/ncl5u3masx#1.3
[32] https://theingots.org/community/ncl5u3masx#1.4
[33] https://theingots.org/community/ncl5u3masx#1.5
[34] https://theingots.org/community/ncl5u3masx#1.6
[35] https://theingots.org/community/ncl5u3masx#1.7
[36] https://theingots.org/community/ncl5u3masx#1.8
[37] https://theingots.org/community/ncl5u3masx#1.9
[38] https://theingots.org/community/ncl5u3masi
[39] https://theingots.org/community/ncl6u3masx#1.1
[40] https://theingots.org/community/ncl6u3masx#1.2
[41] https://theingots.org/community/ncl6u3masx#1.3
[42] https://theingots.org/community/ncl6u3masx#1.4
[43] https://theingots.org/community/ncl6u3masx#1.5
[44] https://theingots.org/community/ncl6u3masx#1.6
[45] https://theingots.org/community/ncl6u3masx#1.7
[46] https://theingots.org/community/ncl6u3masx#1.8
[47] https://theingots.org/community/ncl6u3masx#1.9
[48] https://theingots.org/community/ncl6u3masi
[49] https://theingots.org/community/ncl7u3masx#1.1
[50] https://theingots.org/community/ncl7u3masx#1.2
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[52] https://theingots.org/community/ncl7u3masx#1.4
[53] https://theingots.org/community/ncl7u3masx#1.5
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[60] https://theingots.org/community/ncl9u3masx#1.1
[61] https://theingots.org/community/ncl9u3masx#1.2
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