 FSDe2CEC Design

MG1H-1 uses mathematics and statistics to evaluate and construct arguments in a range of familiar contexts

MG1H-3 makes predictions about everyday situations based on simple mathematical models

MG1H-4 analyses simple two-dimensional and three-dimensional models to solve practical problems

MG1H-5 interprets the results of measurements and calculations and makes judgements about reasonableness, including the conversion to appropriate units

MG1H-9 chooses and uses appropriate technology to organise information from a range of practical and everyday contexts

MG1H-10 uses mathematical argument and reasoning to evaluate conclusions drawn from other sources, communicating a position clearly to others.

| Content | Teaching Strategies | Resources |
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| Enlarge and reduce plane shapes by a specified scale factor, using a ruler and a pair of compasses | 3 times the pizzaA resource about area of circles and scale. | File: scale\_area.pptx |
| Recognise and apply similarity to calculate lengths and areas of regular and irregular plane shapes |  |  |
| Sketch common three-dimensional objects, including rectangular and triangular prisms, cylinders, pyramids and cones | VideosDifferent to a textbook, but engaging: | [How to Draw Prisms and Pyramids](https://www.youtube.com/watch?v=ESYL41y6RjY) (YouTube)Covers pyramids, triangular prism, cube[How to Draw a Pyramid](https://www.youtube.com/watch?v=tMkoYxQm2qw) (YouTube, Jonathon Harris)Also [cube](https://www.youtube.com/watch?v=STAg2ePg8lI), [cylinder](https://www.youtube.com/watch?v=hSAf6TXOEC0) |
| Recognise parallel, perpendicular and intersecting lines in two-dimensional shapes and three-dimensional objects |  |  |
| Identify line and radial symmetry (rotational symmetry) in common mathematical shapes, designs, artworks and architecture | Symmetry ArtistAn online tool for creating art using rotational symmetry. | Teacher: <http://mths.co/3361> Students: <http://gomaths.net/3361> |
|  | Rotational Symmetry Interactive | Teacher: <http://mths.co/1511> Students: <http://gomaths.net/1511> Also saved as a Flash file: rsymmetry.swf |
| Create, with the aid of a ruler, examples of simple perspective drawings | Perspective WorksheetsThere are two excellent sets of perspective worksheets available from this site. | One-point perspective worksheets[Lesson explanation and downloadable worksheets](http://dawnsbrain.com/one-point-perspective-worksheets/)Two-point perspective worksheetsDownloadable worksheets |
|  | Single and two point perspective worksheetThe PowerPoint file contains descriptive illustrations of perspective and some simple worksheets. | File: perspective.pptx[[Sourced from tes.co.uk](https://www.tes.co.uk/teaching-resource/single-and-two-point-perspective-worksheet-6182700)] |
|  | Two point perspective step by stepAnother PowerPoint instructional | File: 2pt\_perspective.ppt[[Sourced from tes.co.uk](https://www.tes.co.uk/teaching-resource/two-point-perspective-step-by-step-6289756), CC-BY-SA] |
| Identify examples of the golden ratio in art and design by appropriate calculation | The Golden number web-site | Lots of examples of the [golden ratio in Design](http://www.goldennumber.net/category/design/) (and art). |
| Recognise and construct simple tessellations of three kinds: regular, semi-regular and non-regular | Online resources: | Tessellation InteractivityTeacher: [mths.co/2351](http://mths.co/2351)Students: [gomaths.net/2351](http://gomaths.net/2351)Tessellation construction using rotation - RobocompassTeacher: [mths.co/3722](http://mths.co/3722)Students: [gomaths.net/3722](http://gomaths.net/3722)Tessellations in nature - [Behind the Beehive](http://mths.co/3035)Some Regular Polygons Can Tile The PlaneTeacher: [mths.co/4214](http://mths.co/4214)Students: [gomaths.net/4214](http://gomaths.net/4214)Attack on the pentagon results in discovery of new mathematical tileTeacher: [mths.co/4206](http://mths.co/4206)Students: [gomaths.net/4206](http://gomaths.net/4206) |
| Construct a simple design by hand and with technology, using common geometrical shapes. |  |  |

Additional Links: [MathsLinks FSDe2CEC: Design](http://mathslinks.net/browse/fsde2cec)