 FSDe1CEC Scale drawings and house plans

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.

[Mathematics General Stage 6 Syllabus](https://www.boardofstudies.nsw.edu.au/syllabus_hsc/pdf_doc/maths-general-syl-2013-and-beyond.pdf) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2012.

| Content | Teaching Strategies | Resources |
| --- | --- | --- |
| Sketch plan views and elevation views of three-dimensional objects | Plan and elevation views are defined on this page: [Two dimensional drawings](https://sielearning.tafensw.edu.au/MPR/3204/3204a_20_reading_drawings/3204a_22_two_dimensional_drawings.htm). | There are many online teaching resources available,  Plans and Elevations, sourced from TES.  File – [Plans and Elevations TES 6040843.doc](https://www.tes.com/teaching-resource/plans-and-elevations-6040843)  Plan and Elevation, sourced from TES.  File – [Plans and Elevation TES 6335878.doc](https://www.tes.com/teaching-resource/plan-and-elevation-6335878)  Interactive online – [building houses with side views – teacher](https://mathslinks.net/links/building-houses-with-side-views/)  Interactive online – [building houses with side views – students](http://www.fi.uu.nl/toepassingen/02015/toepassing_wisweb.en.html) |
|  | House Plans  Consider real house plans and how the plan and elevations views help you understand the layout of a house. | For example – [Modscape Kimberley project](http://modscape.com.au/projects/kimberley/) gives photos and floor plan with plan and elevation views. |
|  | Modular Houses  Students are task with building three different four-cube houses. This is best modelled with centi-cubes or other interlinking blocks.  Draw each “house” on isometric paper and then draw plan and elevation views on the square grid paper. | File – 01 Modular Houses Pty Ltd.docx  Based on a resource from Allan White, UWS.  File – iso-and-square.pdf |
|  | In-class Assessment Task | Triangle See Assessment Task Example  File: FSDe1CEC Assessment Task.docx  (also via [DoE Tasks](http://mathslinks.net/dectasks/general-1#3647)) |
| recognise parallel, perpendicular and intersecting lines, in the context of twodimensional and threedimensional representations of houses and buildings |  |  |
| define and recognise planes in three-dimensional space in the context of three-dimensional representations of houses and buildings |  |  |
| interpret common symbols and abbreviations on house plans |  |  |
| use the scale on a plan, design or map to calculate actual dimensions, and vice versa | Simple Floor Plans  Recreate simple floor plans based on the file. Could be created on grid paper and/or using the online floor planner. | See Triangle  File: simple floor plans.pdf  Use the smallblueprinter Floor Planner  Teacher: [mths.co/3580](http://mths.co/3580)  Students: [gomaths.net/3580](http://gomaths.net/3580) |
| interpret plan views and elevation views to obtain internal dimensions of rooms |  | See Triangle |
| calculate area and volume based on information on a plan |  | See Triangle  [Flooring Technology website](http://flooringtech.com.au/shared/home/home.htm)  A comprehensive online teaching resource for a post-school course. Useful sections include:   * Making measurements * Planning and costing * Work documents   Check Supporting Resources in each section for printable resources that include real-life examples suitable for this course. |
|  | Considerations – finding the area of a house to be carpeted and the cost of purchasing the carpet | Other Resources   * [Carpet Your Area from ABC Splash](http://splash.abc.net.au/home#!/media/1477565/carpet-your-area)   Carpet Calculator:   * [Hycraft](http://www.godfreyhirst.com/au/hycraft/carpet-calculator) carpet calculator   Numeracy in the Home  File – tip2005\_06.pdf  downloaded from Queensland Council for Adult Literacy |
|  | Calculating the area to be painted and the cost of painting a room in a house | **Paint Calculator**  [Dulux calculator](http://www.dulux.com.au/products/paint-calculator)  Your could try to replicate the calculations made by this calculator from Bunnings, [How Much Paint Do You Need?](http://www.bunnings.com.au/diy-advice/planners-and-calculators/paint-calculator)  **Tables**  [JT Air Conditioning Sizing Chart](http://jtairconditioning.com.au/index.php/sizing-chart)  [Harvey Norman Air Conditioning Buying Guide](http://www.harveynorman.com.au/air-conditioning-buying-guide)  **Interactive:**  [Panasonic Air Conditioning Sizing Wizard](http://airconditioning.panasonic.com.au/sizingwizard/) |
| Apply right-angled triangle trigonometry and Pythagoras’ theorem to solve problems based on plans, including finding the pitch of a roof. |  |  |

Additional links

[MathsLinks FSDe1CEC: Scale drawings and house plans](http://mathslinks.net/browse/fsde1cec)

Other

[Reading drawings: Three dimensional drawings](https://sielearning.tafensw.edu.au/MPR/3204/3204a_20_reading_drawings/3204a_23_three_dimensional_drawings.htm)

[Use drawings, diagrams, schedules, standards, codes and specifications](http://www.hvaceducationaustralia.com/Resources/PDF/E107A%20Drawing%20_Electrical_%20Workbook%20Version%202%20BG.pdf) (PDF)

[How to read house construction plans](http://www.homedesigndirectory.com.au/how-to-read-plans/#.UVQwvxw0WuI)