**Shape Level 7:** Four cube Houses (2 Weeks)

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|  |  |  | **Lesson 1: Phase 1** | **Lesson 2: Phase 1 cont.** | **Lesson 3: Phase 2** | **Lesson 4: Phase 3** |
| **BEGINNING OF LESSON/EXPLICIT INSTRUCTION** | **THE HOOK**: Grab students attention and put them in a receptive frame of mind 1-5 minutes | How will you “HOOK” the students into the lesson? | Slide show running as students enter  3 minutes Video of cube house  Student worksheet to set the scene  Property developer flyers | Show elevation plans of houses from brochures etc. | House and Land packages!  What does this mean? What might add to the cost of new home? What decisions would you have to make? | Use brochures to show students the type of “sales” language that is used. |
| **LEARNING OBJECTIVE:** Make the LEARNING INTENTIONS and SUCCESS CRITERIA clear to students | What are your learning intentions and success criteria, in student friendly language? | We are learning how to draw 3D figures in 2D using isometric dot paper.  You task is to design as many different 4 cube houses as you can and draw them. | Today we are learning how to represent 2D views of **different** sides of the houses using square dot paper. | Today we are learning how to cost our designs based on the prices shown on the design brief.  Use a table or spread sheet to complete the costing for your designs. | Today we are learning to use persuasive language to promote our designs. |
| **QUESTIONS:** Key questions to prompt and check |  | How many possible designs are there? What strategies can help you model them? How will you know you have found them all? | How are the 2D views different to the 3D views? Why is square dot paper used? | Would all of your designs cost the same amount? Do all of your designs take up the same amount of land? Do they all require stairs? Have the same roof area? | What language do the home developers use in their brochures? How would you market your designs to different buyers? |
| **INSTRUCTION:** The explicit teaching instruction that will be provided to students | Modelling the skills and understanding to be developed.  What activities or tasks will you get students to undertake?  How will you check for understanding? | Show a few different designs and explain “restrictions”. Demonstrate how to use isometric dot paper.  In groups of 3, begin to design houses. Each student to complete individual drawings using **pencils and rulers.**  Rove as students are working and check for rotational “isomers”. Select drawings to show in reflection stage and inform students. | Demonstrate how to obtain a 2D view by closing one eye & the use of square dot paper.  Students to choose at least 6 of their designs and draw front, side and top views. Need to number/name the designs to match with 3D drawings.  Rove, checking that views match the corresponding designs on isometric paper. | You could show students how to set up an EXCEL spread sheet and use formulas. Alternatively the work can be completed on paper or a table in WORD. | Choose your favourite design(s) and prepare promotional brochures like the ones supplied.  Name your design(s) and include 2D and 3D views as well as descriptions. The aim of your brochure is to make people want to buy your design.  Rove as students are working, encouraging & checking for persuasive language . |
| **REFLECTION** | **REVIEW:** Bring the lesson presentation to an appropriate conclusion by reviewing and clarifying the key points and tying them together into a coherent whole. | How will you review the lesson? | Collect pencils, drawings & cubes. Bring students to front of room.  Show some good examples of drawings.  Who can explain how to start a drawing and hints to make it easier? How did the special paper help? How many designs are there? (Ans: 15) | As for lesson 1.  Which views were the easiest/hardest to draw? Thinking about today’s drawings compared to those from yesterday, how are they the same/different? Which might be more useful to home buyers and developers? Why? | Which of you designs were the most expensive? What was it that added the most to the cost? How do you think this compares to a real life situation. | Have a “Gallery Walk” so that students can see others’ work. You might want to take a vote on the most professional, best sales pitch, most imaginative etc.  Reflection: Did you enjoy this project? Why or why not? Set yourself a goal for improvement. |

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| **ASSESSMENT** | **AusVELS Strand** | **6.5** | **7.0** | **7.5** | **8.0** |
| Number and Algebra | Correctly calculated cost of houses using a calculator. | Correctly calculated cost of houses using an efficient method. |  |  |
| Shape | Constructed 2D plan, side and front views of houses. | Constructed 2D isometric views of 3D houses. | Identified all 15 unique houses without assistance. | Grouped houses into families of shapes with reasons given. |
| Units of Measurement | Rank the houses by cost to identify the range. | Related the surface area of the cubes to the cost of the houses. | Identify which faces contribute how much to the total cost. |  |
| Proficiency | Developed a strategy to more efficiently complete a task. | Used the cost table to draw conclusions about similarities between the houses. | Used Excel to calculate cost of houses. | Explained why there are groups of houses with the same price. |
| ICT for Creating | Brochure includes relevant 2D and 3D views of houses. | Planned a brochure layout that clearly displays the information. | Used two or more different programs to produce the brochure design. | Brochure design and formatting is appropriate for intended audience. |
| Managing Personal Learning | Completed all 3 phases of the task, with teacher assistance. | Asked for assistance with or feedback about an aspect of the task. | Made choices to make the best use of class time and avoid distraction. | Planned and checked own progress by comparing to instruction slides. |