Strand: Spatial sense and geometric reasoning
Band: Primary years
Standard: 3
Year Level: 5

Key Idea
Students understand and appreciate the extent to which shape and structure help them to make sense of their world. [F] [Id] [T]

Students explore and communicate the ideas and language of geometric change and transformation. They use combinations of mathematical transformations. [T] [C] [KC2]

Students develop their capacity to think about and describe geometrical form, using a variety of spatial attributes, in more abstract and precise formulations. [T] [C]

Outcome
3.12 Describes and generalises spatial relationships within and between groups of 2-D and 3-D shapes and objects and appreciates their application in a range of cultural contexts. [Id] [In] [KC2]
3.13 Analyses the result of a series of flips, slides, rotations and reflections and translations and uses scales to undertake enlargements and reductions of figures and objects. [T] [C] [KC1]
3.14 Produces, uses and critiques scaled maps and plans and envisages alternative possibilities. [F] [T] [KC3]

Task/Activities
1. Design a 3D structure (eg a robot) which you can make in technology.
2. Describe the 3D solids which make up the total structure.
3. Draw, on grid paper or on computer, your design with all its parts.
4. Label each 3D solid and its attributes.
5. Create nets to make each solid shape.
6. Make the structure and decorate it.

Examples of evidence towards achievement of outcomes
Students:
- Use mathematical language to identify 3D solids and their attributes
  - cubes, prisms, spheres, etc
  - vertices, edges, faces, etc
- Create nets to make 3D solids accurately
Work example

Robot plan

![Diagram of a robot plan showing vertices, edges, faces, and a rectangular prism.](image-url)