

**Unit guiding question:** How can we share design ideas with other people?



Follow this Link to tutorials on the Telford Langley School D&T YouTube channel.

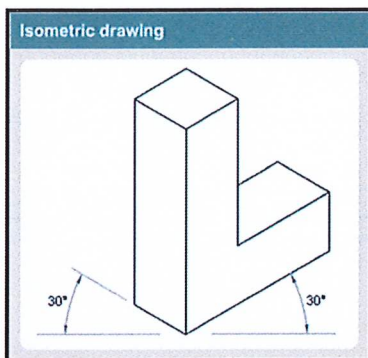
**The threshold concept that is truly essential to enable you to access future learning is ...**  
To understand that ideas can be graphically communicated to other people.

To understand that appropriate 3D drawing techniques can enhance design ideas

To understand that Computers can streamline the design process.

You Will:

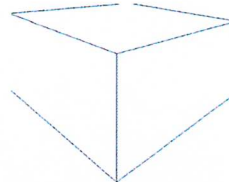
- Be able to add simple notes and labels on designs.
- To recognise the different styles of 3D drawing commonly used.
- To be able to use basic rendering techniques.
- To know what CAD is.
- To be able to use CAD to produce simple shapes
- To be able to use drawings and CAD to produce a simple design



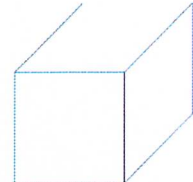
The only two angles you need in isometric drawing are 30 degrees and 90 degrees. You never draw horizontally.

A grid is used to help you draw. Staying on the grid lines makes sure you are drawing at the correct angles.

There are different ways to

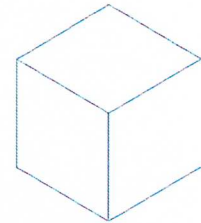


Perspective drawing



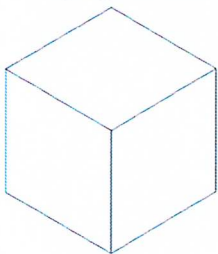
Oblique

Isometric drawings do not attempt to show any perspective at all. This means that dimensions and proportions are shown accurately.

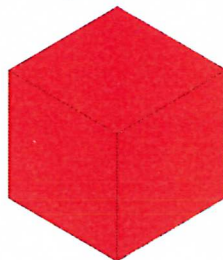


Isometric

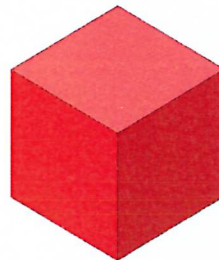
**Enhancing drawings.** Tone is used to enhance 3D drawings. Tone is how light or dark something is and by showing shadows and highlights we can make drawings look more realistic and 3 dimensional.



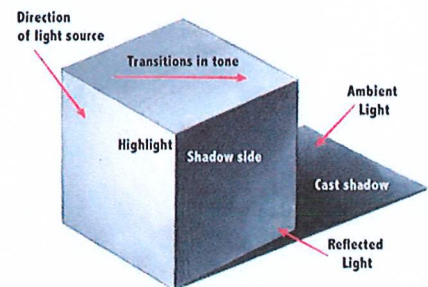
Line Drawing



Coloured



Rendered using shade and tone



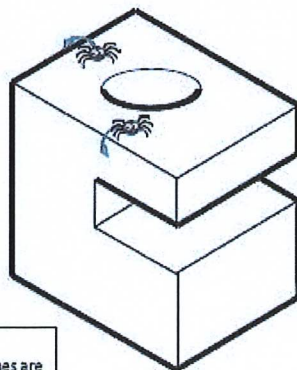
### THICK AND THIN LINE TECHNIQUE

Applying thick and thin line technique to a drawing is one of many ways that a designer can enhance the form (shape) of a design drawing.

Look carefully at your drawing and imagine a spider walking over the shape.

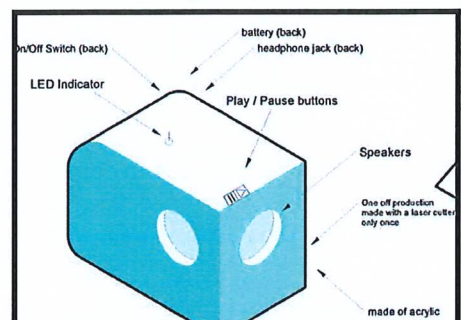
If the spider is able to disappear around an edge, then this edge will be drawn with a thick line.

If the spider is still visible once it has crawled over an edge, then this edge will be drawn with a thin line.



**TASK**  
Go back to the three isometric drawings you did and add thick and thin lines. Try adding a hole to one of them.

**Top Tip!**  
Follow the spider and make sure the thick lines are correct before you put them in.



**Computer Aided Design (CAD)** is used to make more accurate drawings and **ANNOTATION** is added to describe parts of our designs and communicate our ideas.



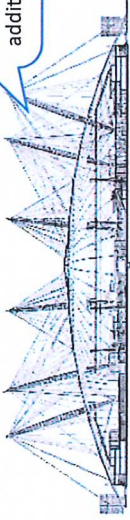


# LEXICON Here are some of the words you will use in – Year 9 – RM.

Words can often have more than one meaning.



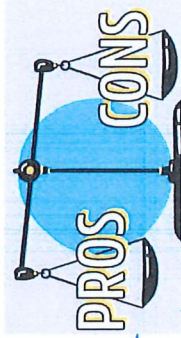
**3D** – 3 Dimension. A model is a 3D version of our 2D sketches



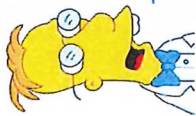
**Develop** – Add extra detail or information to a design or concept. Include fine detail, include additional purpose or function.



**Analyse** – A detailed look at an item – to list the positive and negative points



**Evaluate** – Similar to analyse. Evaluate is to compare the information, detail or components to a set of measured values



**Annotate** – adding a note to a diagram, sketch or drawing. It adds information which cannot be easily seen from the drawing itself. It is more than just a label!

A speech bubble graphic is commonly found in comic books to show which character is talking.

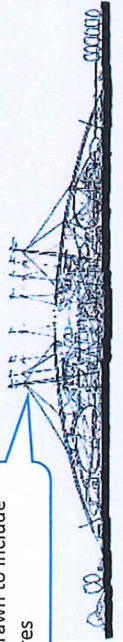
**Concept** – An idea which at this stage is un-proven. A concept sketch shows the idea but with a basic level of detail



**Design Brief** – The instructions which detail and describe what is required from the task



**Design** – An idea or a concept which has been drawn to include details and features



**Recyclable** – Capable of being returned into the raw material



**Renewable** – Capable of sustained use without running out.



**Solution** – An answer to a problem. (Note: a liquid can also be a solution)

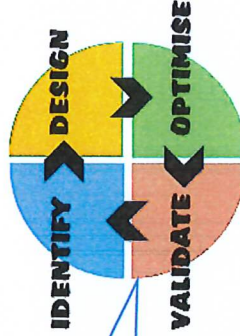
**Problem** → **Solution**  
think



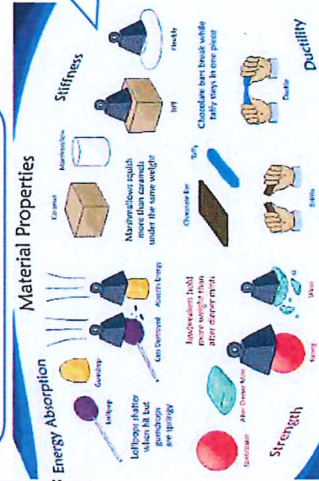
**Source** – Its origin or start. Where something came from originally (a material, a river or an idea).



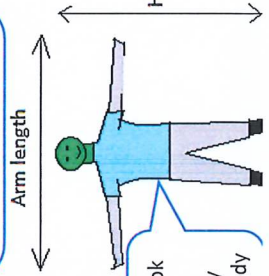
**Sustainable** – Can be used without running out (see renewable). The supply is manageable. A good example of a sustainable material is wood



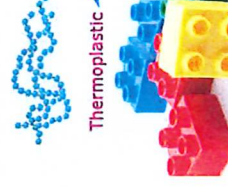
**Iteration** – Continual improvement. To look for and make improvements to an idea or concept – then to look for improvements to the improvements



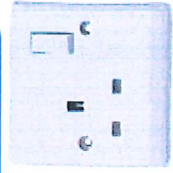
**Properties** – Physical mechanical components such as: density, mass, hardness, and toughness which the material possesses



**Proportion** – Correctly sized to look realistic. i.e. the arms and legs are correctly proportioned to the rest of the body



**Thermoplastic** – A polymer with weak cross link bonding, capable of being reheated and reshaped. (**RECYCLABLE**)



**Thermosetting plastic** – A polymer with strong cross link bonding. Cannot be reheated or reshaped (**NON-RECYCLABLE**)

