Year 3 Design and Technology: Structures using CAD

How can we use computer software to design and make packaging?

Prior Learning

• I have used different joining, cutting and finishing techniques with paper and card.
• I have a basic understanding of 2-D and 3-D shapes and the properties of some materials.
• I have some experience of using software to draw accurate shapes, such as Microsoft Word.

Sticky Knowledge

• I can investigate and evaluate a range of shell structures including the materials, components and techniques that have been used.
• I can develop my knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.
• I can develop and use knowledge of how to construct strong, stiff shell structures.
• I can talk about and show my ideas, focusing on the needs of the user, what the product will look like and how it will function.
• I can develop my ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.
• I can plan the order of the main stages of making.
• I can select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy.
• I can use computer-generated finishing techniques suitable for the product I am creating.
• I can test and evaluate my own product against design criteria and the intended user and purpose.

Vocabulary

Term	Definition
Product*	What you are making.
User*	Who is going to use the product.
Purpose*	What the product is going to be used for.
Function*	What does your product need to do to work.
CAD	Computer-Aided Design. The use of computer software to create part of a design.
Shell Structure	A hollow structure with a thin outer covering.
Net	The flat or opened-out shape of a object, such as a box.
Edge	Where two surfaces meet at an angle.
Face	A surface of a 3D (three dimensional) shape.
Vertex (vertices)	The corners of a 3D shape where edges meet.
Flap	An extra section of paper or cardboard used to glue a shell structure together.
Scoring	Scratch or cut a line on a surface.

Font—letters and symbols that are written in the same style.
Text—writing that is seen on packaging.
Graphics—an image or picture included on the packaging.
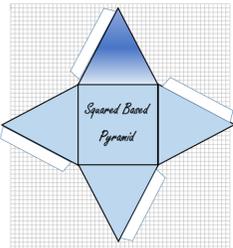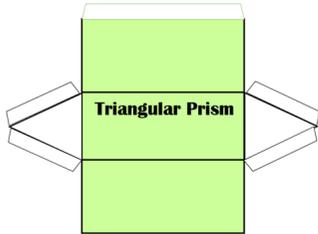**Logo**—an image that represents the people or company who have made the product.
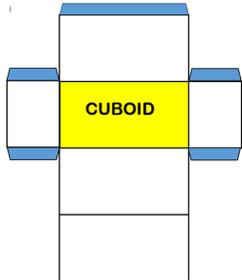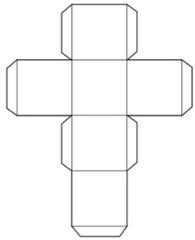
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How can we use computer software to design and make packaging?

What shape do I want my net to make?
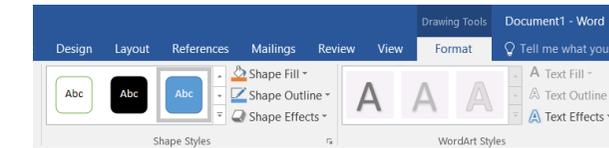
CUBOID

Triangular Prism

Squared Based Pyramid

How can I use Microsoft Word to create my packaging design?

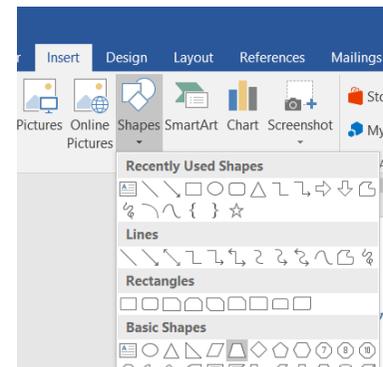**Help Video:** Creating Nets with Microsoft Word - YouTube
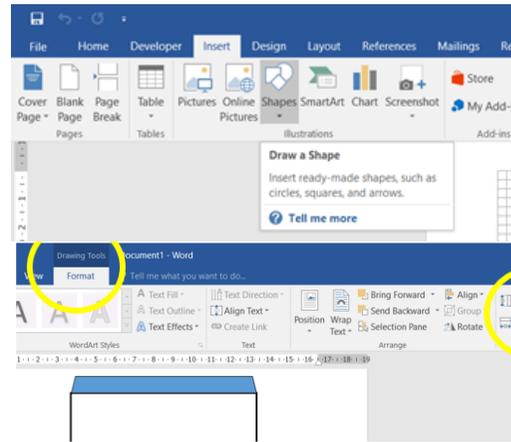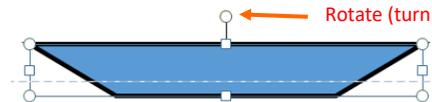
1. Insert your first **face** shape into Microsoft

2. Change the side lengths (or dimensions) if you need a certain size.

3. Use **copy** and **paste** to create more shapes that are exact same.

4. Use **format** tools to add text, graphics, colours and your design.

5. Insert **tabs** to make gluing your net together later easier.

Rotate (turn around)

6. Hold **ctrl** (don't let go) and click on all of the shapes. Group them together.