Y4 Design packaging	
Links made with other subjects	English, Maths, Art
The BIG Question	Can you make a package to house a sandwich in?
The BIG Outcome	To make a strong shell structure which can be used for a variety of packaging
DT objectives (link to NC)	Design • Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Evaluate • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria Technical knowledge • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Prior knowledge What prior knowledge is needed for children to be successful in this unit?	• Used different joining and cutting methods relating to paper and card • Use a range of measuring, marking-out, cutting and assembling techniques • Learnt the differences between 2D and 3D shapes • Use nets to create 3D shapes This unit builds on: Year 1 - Moving pictures, castles Year 2 – Make a wheeled toy – build a car garage Year 3 – Greenhouses
Future learning Consider the conceptual knowledge within a subject that pupils need for future learning not just the recall of facts but the importance of concepts	This unit gives prior knowledge to: Y5 – Design and build a bridge. Y6 – Design and make a bird house.
DT strands	Design • Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

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Vocabulary/ Glossary	Font, graphic, decision, evaluating, criteria, fit for purpose, holds, scoring, tabs, adhesives, join, assemble, accuracy, three-dimensional (3D) shape, cube, cuboid, prism, net, edge, face, packaging, shell structure, capacity, mark out, cutting.
Knowledge (see italics for knowledge to remember)	The knowledge that children will learn and remember: *1. Investigate and analyse a range of existing products.* • Children to choose one small packet to investigate. What was the original purpose of the packet? Protecting? Containing? Presenting? What material is it made from? How has it been stiffened (folded, double layers)? Will it protect its contents? What size is it? What information does it show? • Children to look at a collection of different packages. Is all of the packaging necessary? How might minimal packaging be developed to serve the needs of the product? Are the materials recyclable or reusable? • Collect and discuss graphics on packaging – colours chosen, impact of style, and size of font. Does the type and lettering match the overall style of the package? • Ask the children to predict how many separate pieces of card have been used. Discuss their answers, asking for reasons. • Give the children the task of carefully taking a small package apart. Discuss the results and ask the children to identify the parts of the net including the tabs. How are the different faces of the package arranged? Does the package have a window cut in it? *2. Generate, develop, model and communicate their ideas through discussion and annotated sketches.* • To generate ideas for an item of packaging, considering its purpose and user/s • To create a package for a given purpose • Discuss with the children the task of designing and making a packet for a specific purpose. • Discuss with the children the uses and purposes of the packaging. What does the package need to do? Who is it aimed at? What do you need to know? Who could you ask? How will the purpose and user affect the design decisions? • Children to draw their initial designs first. These can then be discussed and any amendments made. Will it do what you intend it to? How can you improve it? How will this meet the needs of the product and the user? • Children to make mock-ups from paper. The final shape when decided can be transferred onto card. Text or graphics can also be trialled on the mock-ups, and added to the net before final assembly. *3. Use a range of tools and equipment to perform practical tasks accurately.* 4. Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.

	• Gather all of the equipment and materials that they will need.
	Use simple finishing techniques suitable for the product they are creating.
	6. Know and explain how to create a stable structure (children to think and talk through how their structure stands and what holds it together.)
	7. Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets the design criteria.
	    • Evaluate your design. What does this mean? Why is it important that we do this? Think, pair, then share your ideas.
	    • How successful was your greenhouse? Was it stable? Will it/does it do the job intended? What would you change? What would you keep the same?

SEND expectations	The knowledge that children will learn and remember:
	    1. Investigate and analyse a range of existing products.
	    • Children to choose one small packet to investigate. What was the original purpose of the packet? Protecting? Containing? Presenting? What material is it made from? How has it been stiffened (folded, double layers)? Will it protect its contents? What size is it? What information does it show?
	    • Collect and discuss graphics on packaging – colours chosen, impact of style, and size of font. Does the type and lettering match the overall style of the package?
	    • Give the children the task of carefully taking a small package apart. Discuss the results and ask the children to identify the parts of the net including the tabs. How are the different faces of the package arranged? Does the package have a window cut in it?
	    2. Generate, develop, model and communicate their ideas through discussion and annotated sketches.
	• To generate ideas for an item of packaging, considering its purpose and user/s
	• To create a package for a given purpose
	• Discuss with the children the uses and purposes of the packaging. What does the package need to do? Who is it aimed at? What do you need to know? Who could you ask? How will the purpose and user affect the design decisions?
	• Children to draw their initial designs first. These can then be discussed and any amendments made. Will it do what you intend it to? How can you improve it? How will this meet the needs of the product and the user?
	• Children to make mock-ups from paper. The final shape when decided can be transferred onto card. Text or graphics can also be trialled on the mock-ups, and added to the net before final assembly.
	
	    3. Use a range of tools and equipment to perform practical tasks accurately.
	    4. Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.
	    • Gather all of the equipment and materials that they will need.
	
	5. Use simple finishing techniques suitable for the product they are creating.
	6. Know and explain how to create a stable structure (children to think and talk through how their structure stands and what holds it together.)
	7. Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets the design criteria.
	    • Evaluate your design. What does this mean? Why is it important that we do this? Think, pair, then share your ideas.
	    • How successful was your greenhouse? Was it stable? Will it/does it do the job intended? What would you change? What would you keep the same?

Resources	• A collection of packaging for different purposes confectionery, biscuits, toys or breakfast cereal.

	• Paper, squared paper, coloured card, tissue paper, clear adhesive tape, masking tape, PVA glue, clear and tinted acetate film or sheet • Range of tools for marking out, cutting and joining paper and card, pencils, rulers, scissors, glue spreaders, coloured pencils and/or felt-tip pens