



Preston Primary School - Design and Technology

Knowledge Organiser

In this DT Long Enquiry, we will be making a shell structure to package a product.

During this long enquiry:

- I will learn what the many purposes of shell structures are (protecting, containing, and/or presenting).
- I will learn to explore existing shell structures and use this to deconstruct and assemble the net of basic 3D shapes.
- I will discuss the properties of shell structured package.
- I will learn how to design and make shell structure packaging to contain and/or protect a product, which is appealing to users.
- I will use a variety of tools and materials to make shell structure packing and joints.
- I will evaluate my product both during the making process and after against the design criteria.

What I already know:

Previously, the children should have learnt about the following bullet points:

- Explore a variety of materials and describe their properties [soft, hard, strong, flimsy etc.] and their similarities and differences.
- Discuss similarities and differences between existing structures [houses, buildings].
- Begin to measure and join materials.
- Discuss ways to make material/product stronger.
- Use joining, rolling, or folding to make structure stronger.
- Design and make a structure that is can be made stronger, stiffer and more stable.
- Evaluate their ideas and products against design the criteria.
- Begin using materials to make simple joints [using glue, tape, and paper clips among other materials].



Topic: Shell structures	Term: Autumn 1	Year group: Unit 3	Duration: 5 weeks
Week 1	Week 2	Week 3/4	Week 5
<ul style="list-style-type: none"> <input type="checkbox"/> I know how to think like a designer, maker and evaluator. <input type="checkbox"/> I know what a shell structure is. <input type="checkbox"/> I know the similarities and differences between shell structure buildings and shell structure packaging. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can take apart existing shell structures and explore their parts. <input type="checkbox"/> I can explain why a designer has chosen a shape for a product's packaging. <input type="checkbox"/> I can research eco-friendly packaging. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can use the design criteria to design my own shell structure. <input type="checkbox"/> I can explain the purpose of my design. <input type="checkbox"/> I can follow my design to make a shell structure. <input type="checkbox"/> I can evaluate my product as I make it and make changes if needed. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can evaluate my shell structure. <input type="checkbox"/> I can use the design criteria to evaluate my product. <input type="checkbox"/> I can use the design criteria to evaluate other people's shell structures.

Word	Meaning
Structure	A building or other object constructed from several parts.
Shell structure	A structure built without a frame. An example of this could be a cereal box.
Packaging	Materials used to wrap or protect goods.
Joining	Become linked or connected to.
Prototype	A prototype is a first or early version of something that shows how it will look or work.
Functional	Functional means something works well and does what it is supposed to do.
Durable	Durable means something is very strong and lasts a long time, even when used a lot.

The Design, Make and Evaluate Model of Design and Technology:

We will use the Design, Make and Evaluate continuous cycle during every Design and Technology lesson. The cycle shows how we will be constantly evaluating during the design and make stages to improve our products or dishes along our invention journey. As well as evaluating our final product or dish at the end of our long enquiry to conclude what went well, what we would improve next time and what challenges we have faced along the way.

