



Big Question:



How did the design of the Roman shield help the Roman Army become so powerful?

Key Vocabulary:

Characteristic: A quality or appearance that makes an individual or group different from others.

Communicate: Giving, receiving or sharing information.

Compare: Seeing what is the same and different about things.

Design: A plan for how something will look or be made.

Evaluate: To assess the strengths and weaknesses of an object.

Improve: Make better

Material: The substance used to make something.

Product: A service or item

Prototype: A mock up of a design that will look like the finished product

Structure: Something of many parts that is put together.

Knowledge from Y1 that will help me answer the big question:

- Design criteria are the explicit goals that a project must achieve.
- Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper.

Knowledge from Y2 that will help me answer the big question:

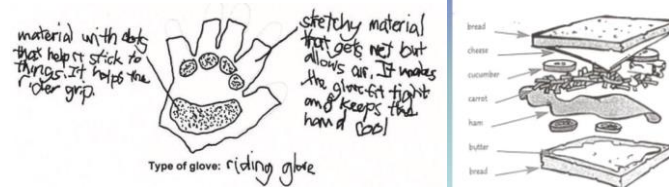
- Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable.

Knowledge from Y3 that will help me answer the big question:

- Shell structures are hollow, 3-D structures with a thin covering like a box.
- Frame structures are made from thin, rigid components like a tent frame.
- Design criteria are the exact goals a

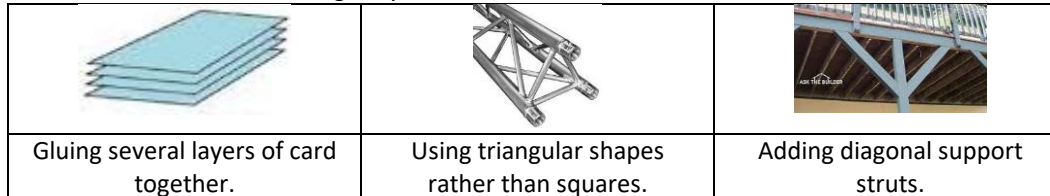
New knowledge that will help me answer the big question:

Annotated sketches and exploded diagrams can be used to show designs.



Prototypes is a mock up of a design that will look like the finished product but may not be full size or made of the same material.

We can make structures stronger by:



New knowledge that will help me answer the big question:

The design of the Roman shield helped the Roman Army become the most powerful in the world



New knowledge that will help me answer the big question:

Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

New knowledge that will help me answer the big question:

A comparison table can be used to compare products by giving each product a score for important criterion.

	Shield A Material: Wood	Shield B Material: Metal
Cost		
Availability		
Strength		
Defence		
Weight		
Total Score:		

As a designer, the essential knowledge I need to answer the big question is:	Date
The designer of the Roman shield helped to shape the world because their design helped the Roman Army become the most powerful in the world. The curved shape of their design meant soldiers could overlap their shields so there were no gaps and meant it was easier to deflect missiles. They also added extra strips of wood for strength.	
A comparison table can be used to compare products by listing specific criteria on which each product can be judged or scored.	
Choose from a range of materials, showing an understanding of their different characteristics.	
Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.	
A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them).	
Select, name and use tools with adult supervision.	
Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.	