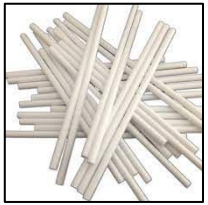
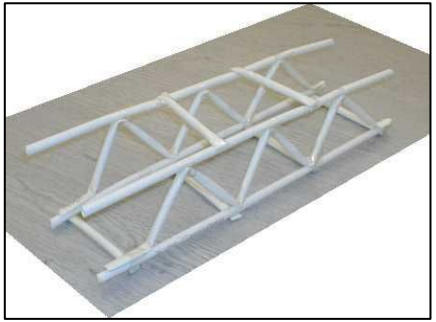
Key Question: Can you create a bridge for a toy car to travel across a river?

Bridges- Explore, design and create (Structures)

Vocabulary	
Beam Bridge 	A beam bridge is the most simple bridge consisting of a beam across a gap.
Arch Bridge 	Arch bridges have a curved underside which strengthen the bridge.
Trestle Bridge 	Trestle bridges are made of tripod platforms that support the bridge.
Suspension Bridge 	A suspension bridge has cables running from one tower to another, with vertical hangers that hold the road in place.
Cable tied/ Cantilever Bridges 	A cantilever bridge has two sections that are attached to one side and joined at the centre (like the human arm).
Span	The distance between two points.
Join	The connecting of two parts.
Strengthen	To make or become stronger.





In this topic, **we are learning to**:

- **Explore** different types of bridges.
- **Generate** different designs and evaluate their practicalities,
- **Decide** upon a final idea and include detailed plans of how to make it.
- **Create** a final product using appropriate techniques.
- **Evaluate** our final products deciding upon successes and area for improvement.

Skills required:

- Measure
- Cut
- Join

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Does the different structure affect the strength of the bridge?
Does the material and joining technique affect the strength of the bridge?
What makes a good bridge design?

Explore:
- identify a purpose and establish criteria for a successful product.
- understand how well products have been designed, made, what materials have been used and the construction technique.
- learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.
- start to understand whether products can be recycled or reused.
- begin to disassemble and evaluate familiar products and consider the views of others to improve them.
- evaluate the key designs of individuals in design and technology has helped shape the world

Generate:
- with growing confidence generate ideas for an item, considering its purpose and the user/s.
- know to make drawings with labels when designing.

Decide:
- when planning explain our choice of materials and components including function and aesthetics.
- select a wider range of tools and techniques for making their product i.e. construction materials and kits.
- explain their choice of tools and equipment in relation to the skills and techniques we will be using

Create:
- measure, mark out, cut, score and assemble components with more accuracy.
- start to work safely and accurately with a range of simple tools.
- start to think about our ideas as we make progress and be willing to change things if this helps them to improve our work.
- start to measure, tape or pin, cut and join materials with some accuracy.

Evaluate:
- start to evaluate our product against original design criteria e.g. how well it meets its intended purpose