

Year 6 Marbulous Structures

What it looked like last year...

- To generate and create ideas through discussions.
- To research a range of materials.
- To use appropriate materials based on research.
- To research ideas to inform a design.
- To develop a design criteria.
- To build a framework accurately using a wide range of tools and equipment.
- To evaluate a product.

What it looks like next year...

- Develop detail design specification
- Evaluate products against original specification and find ways of improving them.
- Involve others in testing the product.
- Select from a wider more complex range of materials and components.
- Produce ordered sequences and schedules for making products they design and make.
- Use a broader range of manufacturing techniques.
- Apply a range of finishing techniques.

Vocabulary (definitions)

Bend	Functional	Structure	Accurate
Join	Support	Shape	Product
Test	Stiffen	Evaluate	Sturdy
improve	Stable	Tools	Reposition
Equipment	Strengthen	Existing	Design Criteria

Definition: Freestanding is defined as standing alone or on its own foundation, free of support or attachment.

Iterative design is designing but more specifically, understanding what you are designing through actually creating it.

Iterative process – The process of repeating steps.
Aesthetics – the way something looks
Reinforce – to strengthen

Sequence of Learning

1. Investigate a range of free standing structures and apply understanding of how to strengthen, stiffen and reinforce more complex structures thinking about cardboard tubes.
2. Select appropriate equipment and tools and explore techniques of joining cardboard tubes.
3. Select appropriate equipment and tools to perform tasks and explore how to create bends using cardboard tubes.
4. Investigate and explore a range of existing products concentrating particularly on commercial marble runs.
5. Select from a wide range of materials and components taking account of the functional properties and aesthetic qualities to make a marble run.
6. Evaluate design against design criteria and consider improvements that could be made.

Cultural Capital

- To use a wider range of tools and equipment to perform practical tasks accurately.
- To develop a range of practical skills to create bends.
- To select from and use materials and components to make a marble run.
- To investigate existing products.
- To evaluate and improve the design and technology work.
- To investigate free standing structures.
- **The real life knowledge that links is:** Understanding structures and how to reinforce them. Understanding materials and their properties.
- **The jobs it can be used in are:** Structural and engineering.

