

Year: 6 Program of Study: Structures – Frame structures

N.C POS:

- *Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.*
- *Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams and prototypes.*
- *Select from tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately.*
- *Investigate and analyse a range of existing products.*
- *Evaluate their ideas and products against their own design criteria.*
- *Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.*

Concept: technology, impact, legacy, change, inventions, innovation, application, cause and effect.

Key Vocabulary: frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional.

Prior Learning: Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials. Basic understanding of what structures are and how they can be made stronger, stiffer and more stable.

Core Knowledge- non-negotiable

Designing

- Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.
- Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.

Making

- Formulate a clean plan, including a step-by-step list of what needs to be done and lists of resources to be used.
- Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.
- Use finishing and decorative techniques suitable for the product they are designing and making.

Evaluating

- Investigate and evaluate a range of existing frame structures.
- Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
- Research key events and individuals relevant to frame structures.

Wider Influences

- Shape and space

Design and Technology Y6 – Structures

- Festivals
- Celebrations
- Our school
- Toys and games
- Outdoors
- Our local community
- Weather
- Countries and cultures

Enduring Understanding

- Understand how to strengthen, stiffen and reinforce 3-D frameworks.
- Know and use technical vocabulary relevant to the project.