

All children – regardless of gender, starting point or background – will have the opportunity to engage with a high-quality design technology education. They will be equipped with the knowledge, skills and vocabulary to use creativity and imagination to design and make products that solve real and relevant problems in a variety of contexts. We intend to inspire a sense of enjoyment and curiosity about design technology.

## 3D Structures – Frame Structures (Conway Shelter & Raft Building)

Summer 2

### Igniting Prior Knowledge:

Year 4 (Art & Design – 3D Sculpture - Saving the Deep Sculptures - Jacha Potgieter)

- Natural, man-made and recycled materials can all be used for sculpture.
- Two-dimensional refers to height, width and three-dimensional refers to height, width, depth.
- There is a relationship between two-dimensional and three-dimensional shapes: square to cube, triangle to pyramid, circle to sphere and cylinder.
- Tools can carve and add shapes, texture and pattern to sculpture.
- Time and decay can have an effect on sculptures.
- A maquette is a preliminary model or sketch.
- Tools such as glue guns, pliers, saws, wire cutters and hammers can be used to manipulate and join parts of sculptures.

### Key Vocabulary:

- strengthened,
- stiffened,
- reinforced,
- components,
- frame structure,
- rigidity,
- CAD
- temporary
- elements

### New Knowledge:

- A shelter is a place giving temporary protection from bad weather or danger.
- Shelters are what people and animals use to protect themselves from their surroundings. Shelters can keep living things safe from the weather, predators, and other dangers.
- 3D frames can be strengthened, stiffened and reinforced.
- Large humanitarian operations e.g. building shelters/refugee camps for refugees can inadvertently cause deforestation and loss of biodiversity.
- During the WWI Blitz, people used this air raid (Anderson) shelters to protect themselves. Often saving lives and preventing major injuries during air raids.
- Flat-pack, temporary shelters are designed especially for refugees whose circumstance is due to conflict and/or natural disasters.
- Some temporary shelters are built by refugees themselves, with material found locally.

