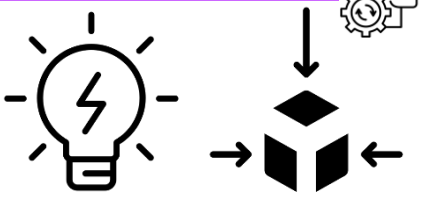
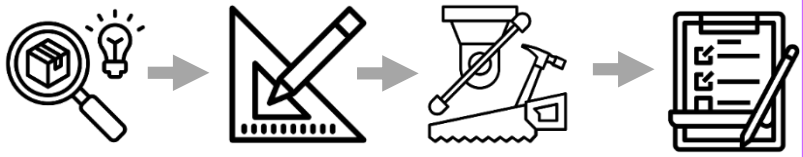
Design Brief: To make a model Anderson shelter with a working electrical circuit and a switch.

Strand of DT



Electrical systems & Structures

DT process



Product Research | Design | Make | Evaluate

29 AIMS OF EDUCATION

31 REST, PLAY, CULTURE, ARTS

Vocabulary	
Anderson shelter	One of the many forms of protection that people used against air raids during World War II.
shell structure	A hollow structure made from a thin outer layer.
frame structure	A carefully arranged set of beams, columns, and slabs that can withstand heavy weight.
combined structure	A structure that is a combination of a shell, solid and frame structures.
realistic	Representing things in a way that is accurate and true to life.

What?

- The main purpose of a shelter is to provide protection to its inhabitants.
- There are many different types of shelters built for a variety of purposes: a bus stop, a tent, a cabin, a castle, a house etc.
- Shell structures provide containment and protection.
- Frame structures give support.
- Combination structures have both a shell and frame structure.
- Different materials can be used to make a shelter including wood, brick, felt and fabric.
- The purpose of a join is to fix two sections together.
- The design of a shelter can vary based on the material used and size as well as design.
- Anderson shelters were created so people could try to protect themselves from the night-time bombings in WW2.

- A frame structure can reinforce and strengthen a shell structure.
- A combination structure has both a shell and frame structure.
- Anderson shelters mainly have a hexagonal (or pentagonal) front and back.

Finished product

Design criteria:

- Includes a frame structure covered by a shell structure.
- Has a cylinder centre.
- The frame structure has a pentagon or hexagon front and back.
- Shell structure is made using corrugated materials.
- Paint colour should be natural e.g. brown and green.
- Authentic decoration with moss, sand bags or vegetable garden.
- Includes a working circuit where wires and battery cell are hidden.
- Includes a switch which is accessible from the exterior.

Skills

painting, cutting, joining

Production process:

- Make the frame structure and place on the cardboard base.
- Add texture to material used to represent corrugated iron.
- Cut out the front and back panels for the Anderson shelter.
- Cut to size and bend the curved card/cardboard around the frame structure to create the cylinder centre.
- Insert the circuit into the roof of the model.
- Secure the front and back panels on to the model.
- Paint and decorate the model hiding the battery and wires leaving access to the switch.

- Evaluations of structures should look at both appearance and strength and stability.
- Finished products should be compared with original designs.
- Evaluations should include suggesting ways to improve the finished product in relation to the design criteria whilst also identifying the positive elements of the product.