

# Year 7 Design Technology– Knowledge Organiser

## What is design and technology?

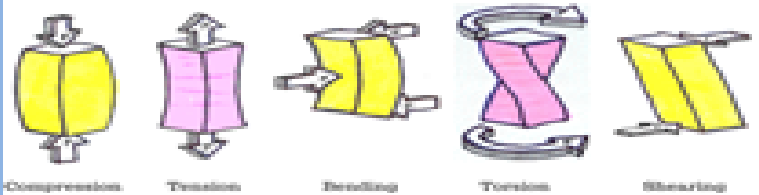
Design and technology gives young people the skills and abilities to engage positively with the designed and made world and to harness the benefits of technology. They learn how products and systems are designed and manufactured, how to be innovative and to make creative use of a variety of resources including digital technologies, to improve the world around them.

### How to use Tenon saw



1. The saw has to be held in the hand carefully.
2. The index finger must point in the direction of sawing and it also helps to support the whole saw as it moves forward.
3. The saw must not move from side to side or it will jam in the wood making sawing difficult.

### Forces on structures



### Triangulation

Unstable structures can sometimes be made more rigid by adding triangles to the shape.

#### No triangulation



#### Triangulation



**Practical:** - Booklets in the middle of the table. Hair tied back. Wear an apron. Stools stacked in four.

**Equipment:** Pencil, ruler, scissors, glue stick, hole punch, pliers, Tenon saw, bench hook, hot glue gun, file, brush.

### Budget

#### BUILDING MATERIALS

2 A4 sheets of card  
Wire – 1m  
600mm length of MDF x2  
Glue stick

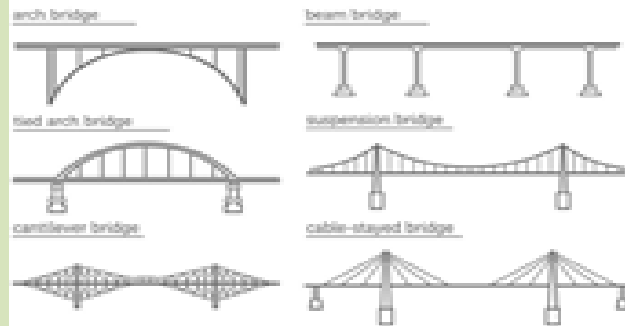
Additional BUILDING MATERIALS can be bought 100,000 fund

A4 sheets of card	£10,000
Wire – 200mm	£3,000
Or x5	£10,000
600mm length of MDF	£25,000
Tape 300mm	£3,000

### Planning

Part	Draw the part of the bridge you will making.	Tools needed	Quantity	Time (mins)
1				
2				
3				

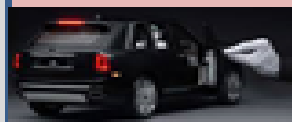
## TYPES OF BRIDGES



### Practical products



**Mock up**, is a scale or full size model of a design or device, used for teaching, demonstration, design evaluation, promotion.

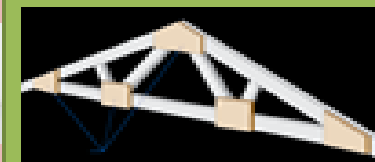


A **prototype** is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from.

**Model**, a three-dimensional representation of a person or thing or of a proposed structure, typically on a smaller scale than the original.



### Gusset plate



A metal plate used to strengthen and support a structure.

### Structures



**Shell Structure**  
A structure made of a sheet of material.

**Framed Structure**  
These have interlinked bars and struts which create a framework of parts.



Wider thinking / further reading: <https://www.stem.org.uk/home-learning/secondary-design-technology>