

Design and Technology – Sawing and Joining

Knowledge organiser

Essential vocabulary

Joint	A point at which parts of an artificial structure are joined.
Concept	An idea or invention.
Design	A plan or drawing produced to show the look and function or workings of a building, garment or other object.
Derby	A race or contest open to all comers or to a specified category of contestants.
Buggy	A small motor vehicle, typically with an open top.
Chassis	The base frame of a car, carriage or other wheeled vehicle.
Axle	A rod or spindle passing through the centre of a wheel or group of wheels.
Prototype	A simple model that lets you test out your idea.
Aerodynamic	The way air moves around things.
Gravity	An invisible force that pulls objects towards each other.
Air resistance	A type of friction between air and another material.
Friction	Force between two surfaces that are sliding or trying to slide across each other.

Designing

Things to think about when designing:

- How am I going to make it go the fastest?
- What materials am I going to use?
- How much of each material am I going to need?
- How will I make it aerodynamic?
- How is it going to work?
- What shape should the chassis be?
- What do you already know which could influence your design?

Types of joints

Mitre joint: a joint made by cutting each of the two parts to be joined, across the main surface, usually at a 45° angle, to form a corner, usually a 90° angle.

Butt joint: Stick two ends together with no shaping.

Making links to previous learning

Golden Vocabulary

Forces	Friction acts upon a moving object.
Forces	Gravity is used to propel the buggy forwards.
Forces	Air resistance acts against a moving buggy.

Concept drawings

Concept drawings or sketches are drawings, often freehand, that are used by designers such as architects, engineers and interior designers as a quick and simple way of exploring initial ideas for designs.



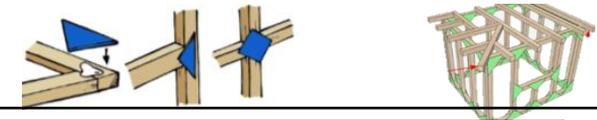
Using wood

-When using wood, PVA glue is most appropriate. Joints should be securely clamped together to allow for drying time.

-Card strips can be used to create secure joints.

-Card triangles can be used to create secure corner joints.

- One suitable alternative is elastic bands, which can be securely fastened around beams and columns, in order to create secure joints.



Equipment



Hacksaw



Glue gun



Clamp



Drill



Bench hooks



Wood