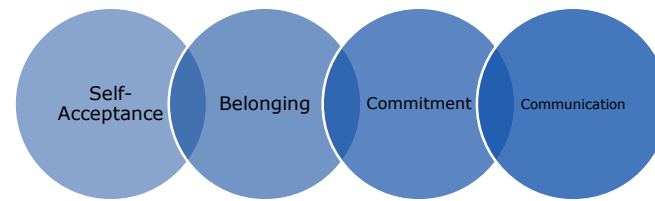


Prior Knowledge

- Triangulation is a way of making structures strong and stable. By connecting parts with triangles, engineers can make sure it stays sturdy (Y4, Spring Term)
- To join wooden dowel together, place the end of one piece against the end of another. This can then be glued to create a butt joint. The joint must be strengthened (Y4, Spring Term)

Key Knowledge

- It is important to cut materials with precision and refine the finish with appropriate tools e.g. sanding wood after cutting.
- A prototype is a test or original model from which improvements or fundamental changes can be made.
- In complex structures, triangulation is one way to strengthen a frame. Another approach is using beams and columns; in longships, internal beams helped maintain shape and support the hull.
- Wooden dowel can be joined together using butt or lap joints. A butt joint, joins two pieces of wood by one piece being placed against another; a lap joint involves overlapping the pieces for greater strength.
- Viking longships were light, flexible and fast. Their narrow shape allowed them to travel across open seas and up narrow rivers.
- Longships used a wooden frame strengthened by beams and ribs – similar principles we use when building model structures.
- The sail and oar system meant Vikings could adapt quickly to different conditions.
- Features such as the dragon-headed prow were decorative but also symbolic – important in understanding the cultural purpose of the ship.



What makes a Viking longship strong, stable and fit for purpose?

Key Vocabulary

prototype	a model from which improvements, upgrades or fundamental changes can be made.
lap joint	a way to join two pieces of wood by overlapping them.
beams	long pieces of material used to make a frame structure.
Viking longships	long, narrow boats used by Vikings for raiding, trading and exploring. Built from overlapping planks of wood (clinker-built), they were strong yet flexible, designed for both deep sea travel and shallow rivers.



The Oseberg Ship dates back to around 820AD. It is on display Oslo Viking Ship Museum, Norway.

Equipment



Hacksaw



Dowel



Bench Hook

Health and Safety

Walk slowly and carefully around the classroom.

If you are left-handed, the cutting mark should be lined up against the left edge of the bench hook.

If you are right-handed, the cutting mark should be lined up against the right edge of the bench hook.

To hold, place your thumb on the wood and push down/forward, grip your fingers over and around the back rest of the bench hook.

Pick the hacksaw up by using the handle. Be careful to not touch the blade and keep the saw pointing down.

Use a controlled forwards and backwards motion to cut.