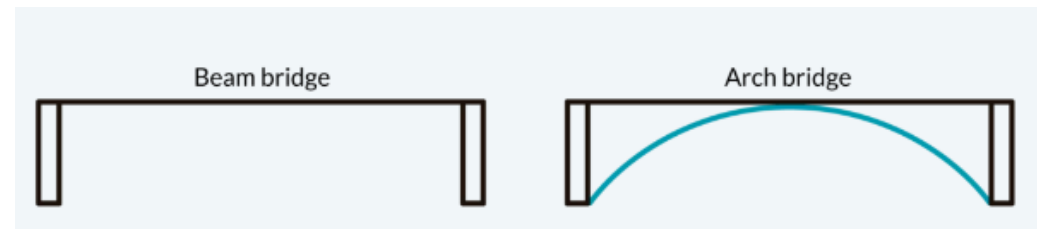


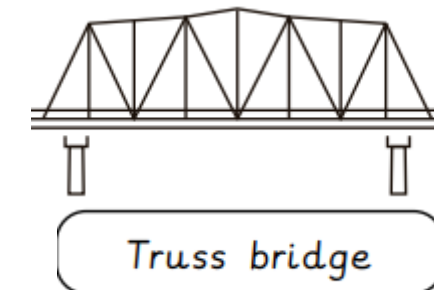
Key Vocabulary

Accurate	Neat, correct shape, size and pattern with no mistakes.
Arch bridge	A bridge which is built with a curved arch.
Beam bridge	A bridge which is built with horizontal beams and vertical pillars.
Bench hook	A tool which hooks onto the edge of the workbench. It's used to hold woodwork still when sawing.
Compression	A squashing force caused when parts of a structure are pushed together.
Coping saw	A saw with a narrow D-shaped metal blade, used for cutting curves in wood.
File	A tool used to smooth down rough edges on wood or metal materials.
Mark out	To measure and mark where a piece of material needs to be cut or shaped.
Reinforce	To make a structure or material stronger, especially by adding another material or element to it.
Sand paper	Strong paper with sand on one side to smooth or polish woodwork.
Set square or Try square	A right-angle triangular plate, wood or metal tool used for drawing lines at 90°, 45°, 60°, or 30°.
Shape	The form of an object.
Structure	Something which stands, usually on its own.
Suspension bridge	A bridge which is supported by vertical cables and suspended by cables which run between pillars that are connected onto either end of the bridge.
Tenon saw	A saw with a flat blade, used for cutting wood in straight lines or angles.
Tension	A stretching force caused by two parts of a structure being pulled apart.
Truss bridge	A bridge which is built from a series of triangular beams.

Arch and beam bridges



Truss bridge



Building bridges



Materials chosen for a bridge must withstand the weather conditions, and temperature changes outdoors without leading to weakness.



Hardwood (deciduous)

- Typically hardwoods:
- ✓ Are harder and more durable.
 - ✓ Are heavy.
 - ✓ Have a tight tree ring structure.
 - ✓ Grow slowly.
 - ✓ Are more expensive.
- Examples are oak, teak and mahogany.

Softwood (coniferous)

- Typically softwoods:
- ✓ Are easier to shape and carve.
 - ✓ Are light.
 - ✓ Have a loose tree ring structure.
 - ✓ Grow quickly.
 - ✓ Are less expensive.
- Examples are pine, spruce and fir.



Finalising bridges

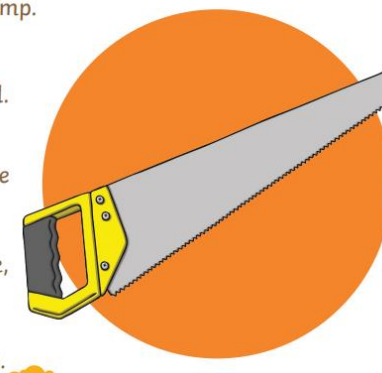


Quantity	Type	Length of each piece (mm)
27	Straight	100
6	Angled - 45°	127



How to Use a Saw

- Fix the wood in a vice or clamp.
- Hold the saw with one hand.
- Place the other hand on the table, away from the saw.
- Start by pulling the saw back, before gently sawing.
- Try to keep the saw straight.



Evaluate



Evaluate - say what has gone well and what could be improved.

How much weight can your bridge hold?

What has gone well?

What could be improved?