Cycle A Spring Term Year 5/6 DT Knowledge Organiser - Structures

Key Vocabulary

Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional

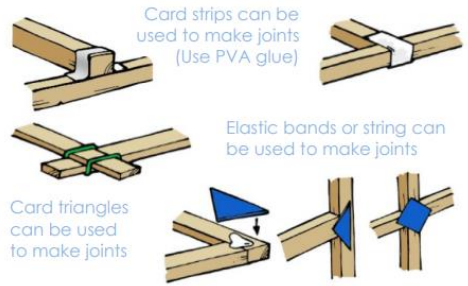
Glossary

Accurate	Neat, correct shape, size and pattern with no mistakes
Arch bridge	A bridge which is built with a curved arch
Bench hook	A tool which hooks onto the edge of the workbench. It's used to hold woodwork still when sawing.
Coping saw	A saw with a narrow D-shaped metal blade, used for cutting curves in wood.
Cutting Template	A pattern used to measure each part (component) accurately)
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 wood.
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

Learning Objectives:

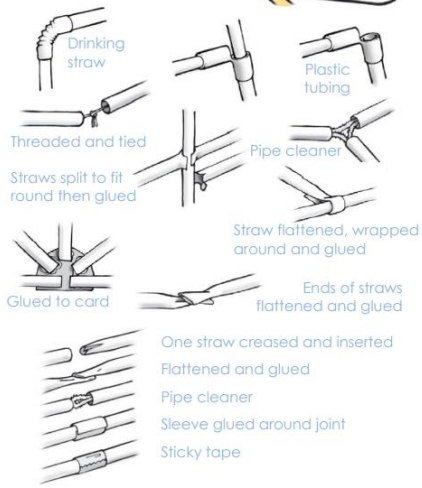
I can explore how to reinforce a beam (structure) to improve its strength.
I can build a spaghetti truss bridge.
I can build a wooden truss bridge.
I can complete, reinforce and evaluate my truss bridge.

Joining thin sectioned pieces of wood



Techniques for building frame structures

Joining straws



Equipment/Tools

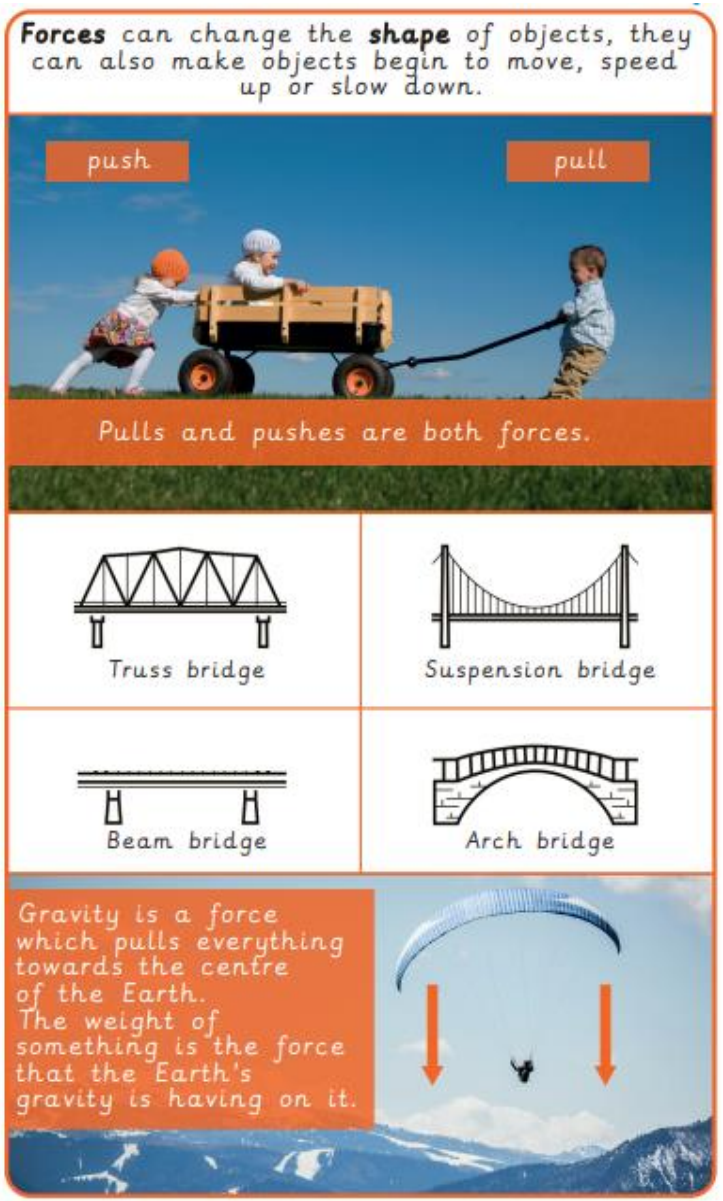

File


Tenon Saw


Coping Saw


Bench Hook

(Sticky) Knowledge & Skills that I need to remember



Name _____

DT Evaluation – Spring - Structures Year 5/6

My Structure (photo)	What I enjoyed
What I was good at:	What I would change

Name _____

DT Quiz – Structures Year 5/6

1: What is the name of this tool?

a) Hack Saw
b) Tenon Saw
c) Coping Saw
d) Jig Saw

2: What is the name of this tool?

a) File
b) Screwdriver
c) Rasp
d) Chisel

3: What are these tools used for?

a) Removing large sections of material
b) Creating holes in different materials
c) Marking out an angle on different materials
d) Smoothing down rough edges on different materials

4: What is a try square or set square?

a) A linear ruler used to measure in straight lines
b) A right- angle plate for drawing lines at 90° 45°60° or 30°
c) An arched wood or metal plate used for marking curves
d) A tool used to cut out squares from different materials

5: What type of bridge is this?

a) Angular
b) Truss
c) Beam
d) Arch

6: What helps this bridge distribute weight evenly?

a) Triangle formations
b) Pillars
c) The central beam
d) Bolts

7: What are material properties?

a) A description of the materials aesthetics only
b) The weaknesses of a material
c) Words that describe the materials form and function
d) The strengths of a material

8: What are the material properties of softwood (Pine)?

a) Easier to shape, light and strong
b) Hard, heavy and stiff
c) Difficult to carve, strong and waterproof
d) Flexible, transparent and weak.

9: What is a cutting template used for?

a) Placing the material on to draw around it like a stencil
b) Getting a rough idea of how much material is needed
c) Something that cuts out the material for you
d) Measuring each component accurately

10 – discuss why spaghetti is a poor building material choice: