

Know your wood.

Every bird feeder starts as a tree. Find out where timber comes from, how it is prepared, and how to choose it responsibly.



name:

teacher/class:

date:

WE ARE LEARNING TO

- identify hardwoods and softwoods
- explain how timber is prepared for use
- make sustainable choices about timber

I CAN

- ☐ sort timbers into hardwoods and softwoods
- ☐ explain why timber is seasoned and spot common flaws
- ☐ say what FSC and PEFC labels mean
- ☐ choose a timber for my feeder and give reasons

01 Hardwood or softwood?

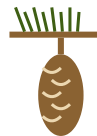
All timber comes from trees. We sort timber into two groups by the **type of tree** it comes from.



HARDWOOD

From **broad-leaved** trees. Seeds grow inside a **fruit or nut** (like an acorn). Most lose their leaves in autumn. They usually grow **slowly**, so the wood is often denser and costs more.

Examples: oak, ash, beech



SOFTWOOD

From **conifers**: trees with needles. Seeds grow inside **cones**. Most keep their needles all year. They usually grow **quickly**, so the wood is often cheaper.

Examples: pine, spruce, cedar

Careful! The name tells you about the **tree**, not how hard the wood is. **Balsa** is a hardwood but it is very soft. **Yew** is a softwood but it is very hard.

1a Sort the timbers in the word bank into the correct column. Each timber goes in one box.

(10 marks)

Oak

Scots pine

Ash

Larch

Beech

Western red cedar

Mahogany

Sitka spruce

Meranti

Balsa

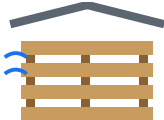
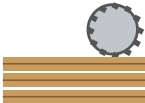
Hardwoods	Softwoods

- 1b Larch is a conifer with needles and cones, but it **drops its needles every winter**. Is larch a hardwood or a softwood? Explain how you know. (2 marks)

02 From forest to workshop

Before timber reaches your workshop it goes on a journey. The stages below are **mixed up**.

- 2a Number the stages 1 to 5 in the correct order. (2 marks)

	Seasoning The planks are stacked and dried, in the open air or in a kiln.	STEP
	Growing A tree is planted in a managed forest and grows for 30 to 100+ years.	STEP
	Conversion The log is taken to a sawmill and sawn into planks.	STEP
	Felling The tree is cut down by a forestry worker or a harvesting machine.	STEP
	PSE Machining Dry planks are planed smooth to exact sizes (PSE: planed square edge) and sold.	STEP

DID YOU KNOW? SEASONING

A freshly felled (**green**) tree is full of water. As wood dries it **shrinks**, and it can **warp** or **split**. Timber is dried (seasoned) **before** it is used, so this happens before you make something with it, not after.

Air drying: planks are stacked outside under a roof, with thin **stickers** between them so air can flow. Cheap, uses no fuel, but slow: months or even years.

Kiln drying: planks are dried in a heated chamber where heat and moisture are controlled. Fast (days or weeks) and can dry wood further, but it uses energy and costs more.

- 2b Explain **why** timber must be seasoned before you use it to make a product. (2 marks)

- 2c Give **one** advantage of air drying and **one** advantage of kiln drying. (2 marks)

AIR DRYING

KILN DRYING



03 Spot the flaw

Wood is natural, so no two pieces are the same. **Flaws** (defects) can make timber weaker or harder to work. Always check your timber **before** you mark it out.

3a Name each flaw. Use the word bank.

(5 marks)

Bow

Knot

Twist

Cup

Split

A



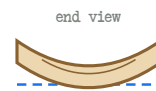
A hard, dark patch where a branch grew.

B



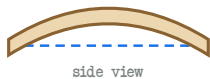
A crack along the grain, often at the end.

C



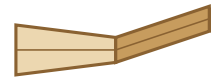
Curves **across** its width.

D



Curves **along** its length, like a banana.

E



Twisted, like a propeller.

Tip: hold a board at eye level and look along its edge to spot bow and twist.

3b You are marking out the back panel of your bird feeder and find a large knot. Where should you **avoid** placing the knot, and **why**? (2 marks)

04 Be responsible

Trees soak up carbon dioxide (CO₂) and lock the carbon away in their wood. Forests are home to wildlife, including birds. Using timber is **sustainable** when forests are **managed**: trees are replanted as fast as they are cut down.

Look for an **FSC** (Forest Stewardship Council) or **PEFC** label. These show the timber came from a responsibly managed forest and can be traced back to it. **Sitka spruce** is the most planted tree in Scotland's forests.

4a Is each action a **good** or a **poor** sustainable choice? Tick one box for each.

(6 marks)

Action	Good	Poor
Buying timber that carries an FSC or PEFC label.	☐	☐
Using a piece from the offcut box to make a small part.	☐	☐
Cutting a small part from the middle of a new board, leaving two short offcuts.	☐	☐
Buying uncertified tropical hardwood for a garden project.	☐	☐
Planning where every part goes on the timber before cutting.	☐	☐
Binning a part with a small mistake instead of trying to fix it.	☐	☐

- 4b Give **one** environmental reason why it is a good idea for a Scottish school to use timber grown in Scotland. (1 mark)

05 Choose the timber for your feeder

A designer chooses a material by thinking about **where** the product will be used, **how** it will be made and **how much** it will cost. Your feeder will live **outdoors** in Scottish weather and be cut by hand.

Material	Type	Outdoors?	Working it by hand	Cost
Scots pine (red pine)	Softwood	Low: rots unless protected with a finish	Easy to cut; often has knots	£
Larch	Softwood	Moderate: better than pine; protect with a finish	Fairly easy; resin can be sticky; may split near ends	££
Western red cedar	Softwood	Good: natural oils resist rot	Easy, light and soft; dents easily	£££
Oak	Hardwood	Good: very durable	Hard and heavy to cut; stains black with steel screws	££££
MDF	Manufactured board	Very poor: swells and falls apart when wet	Easy to cut; smooth surface	£

- 5a Choose the **best** material for an outdoor bird feeder made by S1–S3 pupils. Give **two** reasons for your choice using the table. (3 marks)

MY CHOICE:

- 5b Explain why MDF would be a **poor** choice for the feeder. (1 mark)

- 5c **Challenge:** your school makes 120 feeders every year. Describe **one** way the department could make the project more sustainable. (2 marks)

How did I do?	Not yet	Nearly	Got it!
I can sort timbers into hardwoods and softwoods	☐	☐	☐
I can explain seasoning and spot flaws	☐	☐	☐
I can say what FSC/PEFC labels mean	☐	☐	☐
I can choose a timber and give reasons	☐	☐	☐

Total: ____ / 38