LITHERLAND HIGH SCHOOL

LIVO CATCH-UP 10

Year 7 Design Technology

Manufacturing - Picture Frame

1 WHAT IS A PICTURE FRAME?

A picture frame holds and protects a photo or artwork. It is a useful, decorative product that can be made from wood and finished in different ways.

- Frames can be simple or decorative.
- They can be made from softwood, hardwood or manufactured boards.
- Design choices include size, shape, finish and style.
- The frame should be strong, accurate and well finished.
- It should suit the target user and where it will be used.



A good frame is functional, attractive and made to a high quality.

2 WHICH TOOLS DO WE USE?

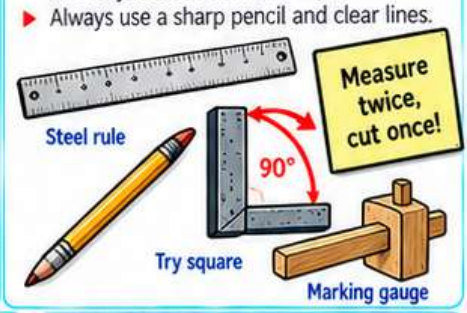
We use a range of tools to measure, mark out, cut, shape and finish timber safely and accurately.



3 HOW DO WE MEASURE AND MARK OUT?

Accurate measuring and marking out is important to make a high quality frame.

- Use a steel rule to measure accurately.
- Use a try square to check and draw 90° (right angles).
- Use a marking gauge to mark a parallel line for joints such as a half lap.
- Always use a sharp pencil and clear lines.



4 HOW DO WE CUT TIMBER SAFELY?

We use a tenon saw to cut straight, accurate lines. Follow the correct technique to stay safe.

- Use correct posture and a bench hook.
- Use the 'trigger finger' grip and tuck your thumb in.
- Let the saw do the work – use smooth, steady strokes.
- Keep checking your line and cut squarely.

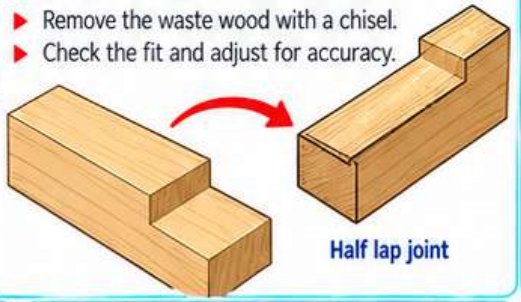
Safe technique gives accurate cuts and a better finish.



5 WHAT IS A HALF LAP JOINT?

A half lap joint is used to join two pieces of timber at right angles. A section of each piece is removed so they fit together.

- Use a marking gauge to mark the depth.
- Cut down to the line with a tenon saw.
- Remove the waste wood with a chisel.
- Check the fit and adjust for accuracy.



6 HOW DO WE FINISH OUR FRAME?

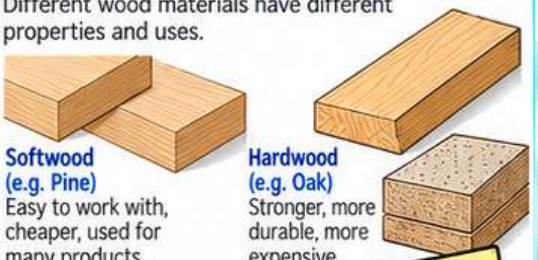
A good finish makes your frame look professional and smooth.

- Use glass paper to remove rough edges and equal out all pieces.
- Use different grades of sandpaper (e.g. 60–240).
- Add a finish such as paint, varnish or stain.
- Always check for quality and a smooth surface.



7 WHAT TYPES OF TIMBER AND MATERIALS CAN WE USE?

Different wood materials have different properties and uses.



Softwood (e.g. Pine)
Easy to work with, cheaper, used for many products.

Hardwood (e.g. Oak)
Stronger, more durable, more expensive.

Manufactured boards (e.g. MDF, plywood, chipboard)
Made from wood fibres, often used for larger products.

Choose the right material for your design and purpose!

8 WHAT IS THE DESIGN PROCESS?

We follow a design process to develop, make and evaluate our frame.

1. Identify the problem (design situation)
2. Research and collect information
3. Generate design ideas
4. Develop and finalise your idea
5. Make your product
6. Evaluate and suggest improvements

A good design follows a clear process!



9 HOW DO WE EVALUATE OUR FINAL PRODUCT?

We check our finished frame against the design brief and use ACCESSFM.

- **A** Aesthetics – does it look good?
- **C** Cost – is it good value for money?
- **C** Customer – does it meet their needs?
- **E** Environment – is it sustainable?
- **S** Size – is it the right size?
- **S** Safety – is it safe to use?
- **F** Function – does it work well?
- **M** Manufacture – is it well made?

Think about how you could improve your design!

10 YOUR CATCH-UP 10

1. What is a picture frame? What is it used for?
2. Name three tools used to measure and mark out timber.
3. How do you use a try square and what angle does it help you check?
4. What safety rules should you follow when using a tenon saw?
5. What is a half lap joint and how is it made?
5. Name three different finishing techniques.
7. Give three examples of timber or manufactured boards.
8. List the six stages of the design process.
9. What does ACCESSFM stand for? Explain two of the letters.
10. How could you improve your finished frame?

FINAL CHECK

- ☐ I understand what a picture frame is and its purpose.
- ☐ I can name and use tools safely and accurately.
- ☐ I can measure and mark out timber accurately.
- ☐ I can cut and shape a half lap joint.
- ☐ I can use a chisel safely.
- ☐ I can finish wood using sanding and a suitable finish.
- ☐ I can name different types of timber and boards.
- ☐ I can explain the stages of the design process.
- ☐ I can evaluate my finished product using ACCESSFM.
- ☐ I can suggest improvements to my design.

NOW I'M READY TO REVISE THE LESSON!

