



Lesson #2: Types of Wood Joints

Objectives

Students will be able to...

- Understand the different between wood joints.
- Develop and understanding of how to cut a rabbet joint using hand tools.

Common Core Standards

LS 11-12.6

RSIT 11-12.2

RLST 11-12.2

Health and Safety 6.2, 6.3, 6.4, 6.5, 6.6

Leadership and Teamwork 9.1, 9.7

Technical Knowledge and Skills 10.1, 10.5

Demonstration and Application 11.1

Cabinetmaking and Wood Products Pathway A1.4, A1.7, A3.1, A4.1, A4.3, A4.4, A4.7A4.1, A4.4, A6.1

Residential and Commercial Pathway D2.1, D3.1, D3.2, D3.3, D3.4, D3.5, D3.6, D3.7

Materials

Common Wood Joints and Clamping Power Point

<https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3Afee56a00-ffd7-4ace-b3bc-405ccd5b20b5>

Cloze Notes worksheet on Wood Joints and Clamping

YouTube Video <https://www.youtube.com/watch?v=mYqwsRRTwxI>

Lesson Sequence

- Using the *power point lesson* instruct students on common joints. Pass out the *cloze notes worksheet* and have students fill in the blanks on their notes by using the material from the power point. Answer any questions students may have (30 minutes).
- Watch the *YouTube video* <https://www.youtube.com/watch?v=mYqwsRRTwxI> and answer any questions students may have (10 minutes)
- Have students write an exit ticket about how to cut a rabbet join using hand tools.

Assessment

Use exit ticket data to gather information on student understanding of how to cut a rabbit joint using hand tools. May need to reteach as needed.

Accommodations/Modifications

Check for Understanding
One on One Support
Visuals
Partner Support for Cloze Notes

Cloze Notes Worksheet on Wood Joints and Clamping

Directions: As you watch the Power Point on common wood joints fill in the missing information.

Joinery is a part of woodworking that involves joining together pieces of timber or lumber, to produce more complex items. Every place that two separate pieces of wood meet each other is considered to be a joint.

Joints is a term used to describe the close securing or _____ of two or more smooth, even surfaces. Most joints are permanently fastened together with glue and sometimes screws or nails.

The joint selected for each kind of construction depends to some extent on the need for:

- ✓ The strength
- ✓ The appearance
- ✓ _____
- ✓ _____

Therefore, different joinery techniques are used to meet differing requirements. You can build a project with countless different joinery methods. The most basic involves two boards butted together and connected with a fastener like a screw. Or, as you advance your skills, you can test out the more complex, traditional methods like a dovetail or mortise and tenon.

Nine basic wood joints

1. Edge
2. Butt
3. Rabbet
4. Dado
5. Miter
6. Lap
7. Mortise and Tenon
8. Dovetail
9. Finger

1. Edge-to-edge Joint

This joint is used when laminating boards together edge-to-edge to obtain a _____ piece of wood. It is used for tabletops, desktops and cabinet sides.

2. Butt Joint

A butt joint is a technique in which two pieces of wood are joined by simply placing their ends together without any special shaping. The butt joint is the _____ to make since it merely involves cutting the wood to the appropriate length and butting them together. It is used for simple boxes, cases, cheap drawers, frames and chairs. It is a _____ joint.

3. Rabbet Joint

To make this joint you need to make a cut or groove along or near the edge of a piece of wood that allows another piece to fit into it to form a joint. It is an _____ cut across the edge or end of one piece. It is used for joining cabinets or for making boxes where two edges need to fit together tightly.

4. Dado Joint

The dado joint is a _____ the grain. It is typically used in making bookshelves, drawers, steps, and bookcases. This is a _____ joint. In very old furniture, a dovetail dado joint is a real work of art because of the time the cabinetmaker had to spend to cut it.

5. Miter Joint

When you make this joint you are joining pieces that are cut at a _____ angle and joined to form a _____. They are very weak and are often reinforced with dowels, spline, or mechanical fasteners. Miters are used for decorative molding and for frames.

6. Lap Joints

These are really a large group of joints in which one side laps over the other. A cross-lap joint joins two pieces with flush faces, the pieces may _____. You need to cut dadoes of equal width and depth on the two pieces so that the face surfaces are _____ when they are assembled to make the joint. This joint is strong. These joints are used for legs of furniture, doors, furniture frames and braces.

7. Mortise and Tenon Joint

One of the most common joints used for joining the _____ of tables, chairs, and other type of furniture is the Mortise and Tenon joint.

The tenon is the part that _____ and glue is applied before the joint is pushed together. Clamps are then used to hold the joint firmly together, usually for twenty-four hours.

The *Plain Mortise and Tenon* joint is very common and is widely used for the joints of tables. Although it is quite strong, if enough force is placed on the joint it will eventually break or come lose.

The *Wedged Mortise and Tenon* joint is extremely strong because the tenon passes all the way through the mortise and is wedged at the other side. However, the Wedged Mortise and Tenon is more difficult to mark out and cut and requires much more technical skill. This is used as a joint on chairs and other pieces of furniture so that the joints do not break apart when extra weight is applied.

8. Dovetail Joint

This is very strong joint because of the way the tails and pins are shaped. This makes it difficult to pull the joint apart and virtually impossible when glue is added. This type of joint is used in _____ such as draws, jewelry boxes, cabinets and other pieces of furniture where _____ is required. There are different types of dovetail joints and when cut accurately they are very impressive and attractive.

9. Finger Joints

This joint is ideal for box constructions and is suitable for use with natural woods such as pine and mahogany or even man-made boards such as plywood and MDF. The joint is strong especially when used with good quality glue.