

Lesson #14: How to use a Brace & Bit, Hammer, and Chisel

Objectives

Students will be able to...

- Use a brace and bit correctly.
- Use a hammer correctly.
- Use a chisel correctly.

Common Core Standards

Cabinetmaking and Wood Products Pathway

A1.4, A1.7, A2.1, A2.2, A3.1, A2.3, A6.1, A6.2 A3.4, A6.7, A4.1, A5.1, A5.2, & A5.4

Residential and Commercial Pathway

D2.1, D2.2, D3.1, D3.3, & D4.1

Reading 11-12.4

Writing 11-12.1

RIST 11-12.2

Problem Solving/Critical Thinking 5.4

Health and Safety 6.2, 6.3, 6.6, & 6.12

Responsibility and Leadership 7.4 & 9.3

Demonstration and Application 11.1

Technical Knowledge and Skills 10.1, 10.2, & 10.3

Materials

Brace and Bits (one for each student)

YouTube video <https://www.youtube.com/watch?v=fgiJxBIGYe0>

How To Handle A Hammer Notes

Hammers (one for each student)

YouTube video https://www.youtube.com/watch?v=x8Wn4zd1_fw

Chisels (one for each student)

Lesson Sequence

- Introduce a ***brace and bit***. Ask students if they remember what they may use a brace and bit for and how it may be used. Demonstrate how to use a brace and bit. (5 minutes)
- Watch ***YouTube video*** <https://www.youtube.com/watch?v=fgiJxBIGYe0> Answer any questions students may have (10 minutes).
- Have students practice using a brace and bit. (5-10 minutes).
- Introduce a ***hammer***. Ask students if they remember what they may use a hammer for and how it may be used. Demonstrate how to use a hammer correctly. (5 minutes)
- Pass out and review ***The How to Use A Hammer Notes*** (10 minutes).
- Have students practice using a hammer (5 minutes).
- Introduce a ***chisel***. Ask students if they remember what they may use a chisel for and how it may be used. Demonstrate how to use a chisel. (5 minutes)
- Watch ***YouTube video*** https://www.youtube.com/watch?v=x8Wn4zd1_fw Answer any questions students may have (10 minutes).
- Have students practice using a chisel (5 minutes)

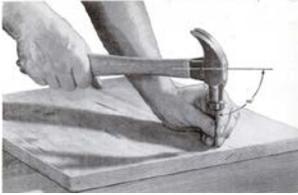
Assessment

Roam the room while students are practicing using tools independently. Support students as needed.

Accommodations/Modifications

One on One Support
Partner Pairing
Check for Understanding

How to Handle a Hammer Notes



Types of Hammers

Proper hammering begins with selecting the right hammer for the job. Using a hammer for tasks that it's not suited for can result in injury and shoddy work.

16-ounce claw hammer. If you've only used one kind of hammer in your life, it's probably this one. Its curved back makes it ideal for pulling out nails. This is a must for any toolbox.



16-ounce ripping hammer. When you have a small demolition job, this is your go-to hammer. Unlike the claw hammer, the back of a ripping hammer is straight. It's used for heavy carpentry work, framing houses, and of course, ripping crap up.

Rubber mallet. Use a rubber mallet when you hammer a finished-metal surface.



Ball peen hammer. Ball peen hammers are used in metalworking tasks like center punching and shaping soft metal



Drywall hammer. The serrated face of this appropriately named hammer gives you a better grip on the nail when installing drywall. You can use its hatchet-shaped back for cutting drywall.

Sledgehammer. For big demolition jobs, bring out the big guns. Concrete, walls, and porcelain bathtubs are no match for a 10-pound sledgehammer.



Hammer Safety

Use the right hammer for the job!

1. Don't upholster a couch with a sledgehammer or drive drywall nails with a tack hammer. You won't get the job done right, and you might end up injuring yourself.
2. Don't strike a hardened steel surface with a steel claw hammer. Flying metal chips can injure you or a bystander.
3. Never use a hammer with a loose or broken handle. The hammer's head could come flying off while in use. If you don't want to explain to your wife why grandma's china cabinet is in a million pieces, replace the handle if it's loose or cracked.
4. Never use a hammer with a chipped or cracked head. It's an accident waiting to happen.

How to Handle a Hammer

1. **Where to hold the hammer** Hold the hammer like you're shaking hands with somebody. When you need more control over the hammer, like when you're starting a nail, grip the hammer closer to the hammer head. When you need power, grip the hammer near the handle's end.
2. **Starting the nail.** Place the nail where you want to drive it and hold it between the thumb and forefinger of your non-dominant hand. Place your fingers near the top of the nail when holding it. If you hold the nail near the bottom, a missed hammer swing will crush your fingers between the wood and the hammer. Not a pleasant feeling.

Grip the hammer near the middle of the handle. Tap the nail lightly until the nail has sunk into the wood enough that it can stand on its own.

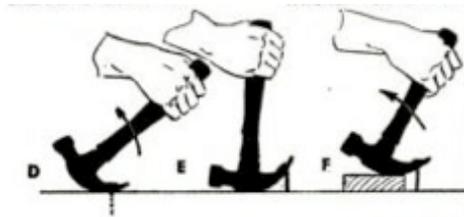
If you're driving in nails that are too small to hold between your thumb and forefinger, use this handyman tip: Grab a piece of thin cardboard or thick paper and push the nail through it. Instead of holding onto the nail, you hold onto the cardboard. Remove the cardboard before you finish driving the nail.

For some hardwoods, it's a good idea to drill a pilot hole before you hammer in a nail. It makes the job easier and prevents the wood from splitting.

- 3. Preventing wood splitting.** In addition to creating a pilot hole, lubricating the nail with beeswax and blunting the nail will also keep the wood from splitting. To blunt a nail, simply tap the nail point with your hammer. Also, avoid hammering a nail into the grain of the wood.
- 4. Swing from the elbow for power; swing from the wrist for control.** For maximum power and efficiency, swing from the elbow. When you need more control and finesse, swing from the wrist. Many hammer newbies try to hammer with just wrist action.
- 5. Focus on the nail, not the hammer.** When hammering, you want to avoid sideways and glancing blows. To score a direct hit every time, focus on the nail head, not the hammer.
- 6. Let the weight of the hammer do most of the work.** You don't need to use every ounce of strength in your body when hammering. That will only lead to wild swings and bent nails. The weight of the hammer's head plus your smooth swing provides enough force to get the job done.

Removing Nails

Claw hammers are designed to remove nails. Simply slide the claw underneath the nail head. Pull the hammer's handle towards you to extract the nail. Here's an old trick from grandpa to help you pull nails: Stop the first pull back before the hammer's poll touches the surface of the wood. Place a wood block under the hammer's head to provide some leverage. Using the block puts less strain on the hammer's handle and allows you to lift the nail straight up without bending it.



Place a block under the hammer after the first pull back.

Some nail heads are too small for the tongs of the hammer to grasp. To deal with such nails, hammers are sometimes made with a small v-shaped notch in one of the prongs. If yours lacks this feature, you can simply file a v-shaped notch into one of the claws with a metal file.

