Learning Handsaw Technique

CARPENTRY

GRADES	LEARNING OBJECTIVE	CONCEPTS
• Grade 3 • Grade 4 • Grade 7 • Grade 10	Students will practice safe handsaw technique and efficiently cut material using the mitre box. This skill will prepare students for the projects associated with the Mitre Box Kit.	• Safety • Angles • Parallel • Perpendicular

Curriculum connections

GRADE 3 MATH

Guiding question: In what ways can length be communicated?

Learning outcome: Students determine length using standard units

Skills & procedures:

- Measure lengths of straight lines

GRADE 4 MATH

Guiding question: In what ways can angles be described?

Learning outcome: Students determine and express angles using standard units

Skills and procedures:

- Measure an angle with degrees using a protractor
- Describe an angle as acute, right, obtuse, or straight
- Estimate angles by comparing to benchmarks of 45°, 90°, 180°, 270°, and 360°

GRADE 7 MATH

General outcome: Describe the characteristics of 3-D objects and 2-D shapes and analyze the relationships among them.

Specific outcomes: 3. Perform geometric constructions, including perpendicular line segments, parallel line segments, perpendicular bisectors, and angle bisectors.

GRADE 10

- Math 10-3 – Geometry
    - Demonstrate an understanding of angles, including acute, right, obtuse, straight and reflex, by drawing, replicating, and constructing; bisecting; and solving problems.

Description

Students will learn the essential skill of using a handsaw safely and effectively. The lesson will begin with a video presentation, followed by a class discussion to reinforce key points. Students will learn about the different parts of a handsaw and the functions of each. Students will practice proper hand placement, posture, and cutting techniques. The instructor will introduce measuring, marking, and using mitre boxes for creating angled cuts. Students will have the opportunity to make both straight and precise 45-degree angled cuts on scrap wood using their handsaws and mitre boxes.

Throughout the lesson, safety practices will be emphasized. Class participation and understanding will be assessed, and students will receive feedback on their cutting skills to encourage improvement and accuracy. By the end of the lesson, students will have gained practical skills and knowledge in using a handsaw for carpentry projects.

Learning this skill is essential for aspiring carpenters, as it forms the foundation for many woodworking tasks. This skill will allow learners to achieve precise and accurate cuts, which are fundamental in creating high-quality structures and finished products. Moreover, mastering proper handsaw techniques and safety practices enhances efficiency and reduces the risk of accidents, making it an indispensable skill in the carpentry trade.

TIME	MATERIALS
• 30-45 minutes	• Handsaws • Mitre boxes • Clamps • Workbenches or sturdy tables • Scrap pieces of wood (various sizes) • Safety glasses • Gloves • Tape measures • Pencils

Procedure

PREPARATION

- Play the handsaw technique video that accompanies this kit.
- After playing the video, initiate a class discussion to recap the main points covered.
- Allow students to ask questions or share their thoughts about the information presented in the video.

STEPS

1. Introduce the concept of mitre boxes and their role in creating angled cuts.
    - Review parts of a handsaw.
    - Refer back to the video or use visual aids to reinforce the understanding of the different parts of a handsaw.
    - Encourage students to recall and discuss the functions of each part.
2. Review the measuring tape and how to measure.
    - Emphasize the importance of measuring and marking accurately before cutting.
3. Demonstrate how to set up the mitre box using the clamps and the locking pins.
    - The pins are used to secure the trim in place to keep fingers away from the saw.
4. Review the importance of safety.
    - Explain how safety glasses protect the eyes from debris.
    - Emphasize that gloves help prevent slivers.
    - Remind students to tie back long hair to keep it clear of tools and equipment.
5. Review proper hand placement and posture:
    - Review the video demonstration of proper hand placement and posture.
    - Have students practice the hand placement and posture techniques with their own handsaws.
6. Guide students in using a tape measure, pencil, and mitre box to measure, mark, and make a 45-degree angle cut on a scrap piece of wood.
7. Allow students to practice using the mitre box and hand saw to create angled cuts.
8. Review straight cuts.
    - Remind students of the video demonstration on making straight cuts with a handsaw.
9. Instruct students to practice making straight cuts on their own pieces of wood using proper hand placement and posture.
10. Conclusion and Discussion
    - Summarize the key points of the lesson, highlighting the importance of safety, proper hand placement, measuring, marking, and making both straight and angled cuts.
    - Engage students in a final discussion to share their experiences, challenges, and successes during the hands-on activity.

Assessment suggestions

ASSIGNMENT SUGGESTION 1

During the handsaw activity, observe students' handsaw techniques, hand placement, posture, safety practices, and the accuracy of their cuts. Provide guidance and feedback on their cutting motion, hand grip, and control. Make sure they position their hands correctly, maintain good posture, and adhere to safety precautions such as wearing safety goggles and using a mitre box or clamp. Assess the accuracy of students' cuts by comparing them to the intended markings and encourage precision.

Assess students' understanding through class participation and their ability to identify and explain the different parts of a handsaw. Evaluate their demonstration of proper handsaw techniques and mitre box usage. Review and provide feedback on their measured, marked, and cut lines for accuracy and alignment with the markings. Encourage active engagement during discussions and hands-on activities to promote learning and skill development.

This activity will prepare students for safe handling in the following project using the Mitre Box Kit.

Web resources

Mitre Box Kit: Station Set Up
Mitre Box Kit: Cutting and Framing

Contributors

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