

Literacy T-Chart – 3-2-1

CIP 46.0401 Building/Property Maintenance

Identify multistep procedures and analyze results based on the text.

Program Task:	PA Core Standard: CC.3.5.11-12.C
313: Cut a miter using a miter saw.	Description: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Program Associated Vocabulary:	Reading Associated Vocabulary:
Miter saw Miter joint Miter gauge Square 45-degree angle 90-degree angle Perpendicular cut Bevel Miter trimmer	Analyze Procedure Summarize

Program Strategy:	Literacy Strategy:
<p>Use the 3-2-1 strategy to ensure students can identify steps in a procedure and predict potential outcomes prior to attempting the procedure.</p> <p>After introducing the 3-2-1 strategy, provide the following 3-2-1 prompts to students, then present the practice reading passage to students. This passage is related to the program task and is a simple text to read for practice. Read the passage aloud and model how you locate answers to the prompts. Providing the prompts in advance helps students focus their reading on the points you have identified as important.</p> <p>3-2-1 Safety with Saws 3—What are three crucial safety rules to always use when cutting with a miter saw?</p>	<p><i>Whole Group</i> Explain to students that developing the ability to identify key information during a process is a critical skill. The 3-2-1 strategy helps students pinpoint elements that they will need to remember and use.</p> <p><i>Guided Practice</i> Show a brief passage electronically, followed by 3-2-1 prompts. Read the passage aloud and model how you locate the answers to the prompts. A simple recipe is ideal for this exercise with prompts such as: 3 – What are the three steps? 2 – What two cautions are given? 1 – What is the one primary result that is expected?</p> <p>Point out that this is a form of summarizing information without writing a paragraph.</p>

Program Strategy:

2—What are two things that a person should NOT do when using a miter saw?

1—What is one new idea learned about miter saw safety?

Practice Reading: “Miter Saw Safety”

Power miter saws are simple to use and safe if you follow the precautions and instructions included. Take time to read and understand them. Here are a few of the most important safety precautions:

- *Unplug the saw when changing the blade or not using it.*
- *Keep fingers at least 6 in. from the path of the blade. Some saws have lines to indicate the danger zone.*
- *Wear safety glasses and hearing protection when operating the saw.*
- *Don't reach under the blade while it's spinning.*
- *Let the blade come to a complete stop at the end of each cut before lifting it.*

[Family Handyman—How to use a power miter saw](#)

Review answers with students.

Next, provide a text or resource article about the program task that contains the process students need to apply. In addition to textbooks, websites such as [Lowe's](#) provide articles with quick tips, ideas about safety and types of tools used. Another sample is below.

Provide the prompts for the 3-2-1 strategy and ask students to read individually.

Reading Passage: 3-2-1 “Cutting with a Miter Saw” ([Lowe's Woodworking and Crafts Projects](#))

3—What three steps are necessary before a power miter saw is lowered to cut? *Examples of possible answers are in italics.*

Use safety goggles and other PPE; stand to side of saw.

When cutting a board, rest more than half its length on the saw.

Place the board against the fence and use clamp and keep fingers at least six inches from blade. Start the saw at the top and let it reach full spinning before cutting and stop spinning before raising.

Literacy Strategy:

Application

Provide students with a text that gives a process that they need to apply. After giving time to read the material, give your prepared **3-2-1** prompts to be completed accurately before they are allowed to perform the procedure.

Review answers with students either individually, in teams or with the whole class to ensure maximum understanding of the content.

In debriefing, use the following questions:

- How did you find the answers to the prompts?
- Why did the final prompt that asked for one thing require more thinking?
- Why is it important to be able to answer questions like these?

Listen for:

- Lower level prompts can be answered by just locating information.
- Higher levels require some inference or combining information.
- If students do not understand the processes and possible outcomes before starting, errors may occur.

Program Strategy:	Literacy Strategy:
<p>2—What two decisions must be made about the blade used in miter cuts?</p> <p><i>Size of blade</i> <i>Diameter of the blade</i> <i>Number of teeth in the blade</i> <i>Rotating or sliding and/or swinging</i></p> <p>1—What is one angle that is often used in miter cutting for ceiling molding?</p> <p><i>45-degree angle</i></p> <p>After students answer the prompts individually, have them share with a partner or team to confirm their answers. Follow with a whole-class discussion to clarify any misconceptions. Students can submit their answers as an exit slip for formative assessment.</p>	

Instructor’s Script – 3-2-1

Cutting an angle with a miter saw is a basic skill for building maintenance, but there are multiple processes, depending on the specific task and the use of a circular miter saw (often called a chop saw) or a miter box. It is critical that students choose the appropriate tools for each job. They must learn the different procedures and processes that ensure a well-done miter and maintain a focus on safety. 3-2-1 gives students a scaffold to identify what is important.

Common Mistakes Made by Students

Students often expect to be able to answer questions by quick reading and looking for key words. If 3-2-1 prompts are constructed properly, students will need to make inferences and may have to re-read information to answer the two higher levels of questions. Students must still give answers that are grounded in the text.

CTE Instructor’s Extended Discussion

Many building and repair jobs require 45- or 90-degree cuts. These measuring and cutting procedures can be completed by following step-by-step directions. Students need to learn to follow these steps precisely and efficiently. This strategy provides support for identifying key information to be able to complete these tasks.

Students must also identify possible outcomes. As they complete different building maintenance tasks, different scenarios arise. They need to anticipate these outcomes and be prepared to adjust tools and procedures as needed.

Sample Questions

Career and Technical Concepts

Question	Answer
<p>A miter box is helpful when cutting is based on 90-degree right angles. When a miter box is not used, two methods that work are an adjustable angle tool or a sheet of paper folded to match the actual angle needed. Fold it in half to get the miter angle and use the paper to set the circular saw.</p> <p>Which angle below is made when not using the miter box?</p> <ul style="list-style-type: none">A. 45-degree angleB. 90-degree angleC. 35-degree angleD. 180-degree angle	<p>C. A 35-degree angle is not one-half of a 90-degree cut</p>

PA Core Reading Concepts

Question	Answer
<p>Read the information below and answer the question that follows:</p> <p>Accuracy refers to the closeness of a measured value to a standard or known value. For example, if in lab you obtain a weight measurement of 3.2 kg for a given substance, but the actual or known weight is 10 kg, then your measurement is not accurate. In this case, your measurement is not close to the known value.</p> <p>How could the described inaccurate measurement impact the experiment?</p> <ul style="list-style-type: none">A. Results will not be correct.B. New measurement tools are needed.C. The experiment needs to be scrapped.D. The standards need to be changed.	<p>A. Results will not be correct.</p>