

# Woodworking First Year

## Module 7 Meet Mr. Stanley



### *What this module is about*

This module presents the basic woodworking tools such as measuring tools, driving tools, testing tools, tooth-cutting tools, boring tools, holding tools, and sharpening tools.

Woodworking is the art of doing craft work, using woodworking tools and wood for materials.



### *What you are expected to learn*

In this module, you will be able to:

1. identify basic woodwork tools and equipment;
2. explain the use of each tool and equipment;
3. use the different tools and equipment properly;
4. identify the different cutting tools used in woodwork;
5. explain how to sharpen the cutting tools;
6. explain how to make accurate measurements using appropriate tools;
7. observe safety practices when working; and
8. observe proper care and maintenance of tools in woodwork.



### PRETEST

Directions: Choose and write the letter of the best answer in your answer booklet.

1. A tool used to bore  $\frac{1}{4}$  inch holes in diameter.
  - a. drill bit
  - b. expansive bit
  - c. straight bit
  - d. auger bit
2. The tool used to hold bits with a square tongue.
  - a. push drill
  - b. brace

- c. drill press
  - d. hand drill
3. A tool used to test the squareness of wood.
- a. t-square
  - b. framing square
  - c. tri-square
  - d. combination square
4. A tool used to file curved pieces.
- a. auger bit file
  - b. half-round file
  - c. irregular file
  - d. triangular file
5. The most commonly used and handy measuring tool.
- a. yardstick
  - b. pull-push rule
  - c. foot rule
  - d. cloth tape
6. A saw for cutting wood across the grain.
- a. ripsaw
  - b. crosscut saw
  - c. coping saw
  - d. backsaw
7. A sharpening tool that is usually power driven.
- a. oilstone
  - b. file
  - c. slip stone
  - d. grindstone
8. A file used to make the saw teeth pointed.
- a. half-round file
  - b. triangular file
  - c. irregular file
  - d. auger-bit file
9. A tool made of steel used to clamp board edges.
- a. c-clamp
  - b. steel bar clamp
  - c. wood clamp
  - d. brace
10. A tool used to drive and pull out nails into the wood .
- a. mallet

- b. claw hammer
- c. screwdriver
- d. hatchet

## Lesson 1

### Measuring, Driving and Testing Tools

Have you seen some of your father's handy tools? Are you familiar with their use? Well, if not, this lesson will help you know the use of some of your father's handy tools which are also used in woodworking. This lesson will help you identify the common measuring tools, driving tools and testing tools. Are you excited now?



tri-square



backsaw



auger bit

#### Measuring Tools

1. Pull-push rule. This is a strip of metal provided with a scale, either in the English or the metric system of measurement. This is the most commonly used and handy measuring tool.
2. Foot rule and steel bench rule. A foot rule is usually 12 inches long, while a bench rule may be 12, 24 or 36 inches long.
3. Zigzag rule. This consists of section with scales in both English and metric systems that fold together. It is used to measure rough and final work and overhead lengths.

Driving tools are used to drive nails, chisels, screws and bolts into the wood. Claw hammer is an example of a driving tool. It is used to drive and pull out nails. Testing tools are used to determine the squareness, vertical and horizontal tendencies of any woodwork

job. A tri-square is an example of a testing tool. It is used to test the squareness of small pieces of wood.

### Activity 1

Find an armchair or a small cabinet at home that needs fixing. Try to fix it using a claw hammer. Share your experience to your friends and family members as you finished fixing the armchair or the small cabinet. If you're not able to repair, ask the help of your father for help.



Self-check:

Identify the following:

- \_\_\_\_\_ 1. Tools used to drive nails, chisels, screws and bolts into the wood.
- \_\_\_\_\_ 2. A tool used to measure overhead lengths.
- \_\_\_\_\_ 3. A measuring tool that is usually 12 inches long.
- \_\_\_\_\_ 4. This is used to drive and pull out nails.
- \_\_\_\_\_ 5. This is used to test the squareness of small pieces of wood.

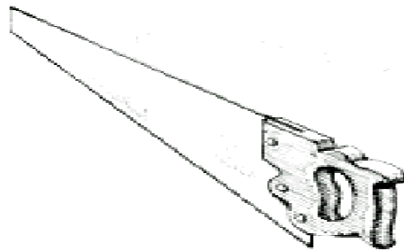
## Lesson 2

### Tooth-Cutting and Boring Tools

Tooth-cutting tools are made of tapered steel with teeth used for cutting. Below are examples of tooth-cutting tools.

#### Tooth-cutting Tools

1. Crosscut saw. This saw is used to cut across the grain of wood. Its teeth are set and filed to keep them sharp.



2. Ripsaw. This is used for ripping or cutting along the grain of wood. Its teeth are large and they cut into the wood with short, chisel-like strikes.

3. Backsaw. This is a thin crosscut saw with five teeth, with a blade stiffened by a thick back.



## Activity 2

Saw a piece of wood, using any of tooth-cutting tools. Write an essay on your experience in using the different tooth-cutting tools. Present it to your teacher.

## Boring Tools

Boring tools are used to bore and drill to make the desired sizes of holes. Below are examples of boring tools.

1. Auger bit. This is used to bore  $\frac{1}{4}$  to 1 inch holes (6.4 to 25.4 mm) in diameter.



2. Twist drill. This boring tool has a square tongue to fit the brace. It is thirty-second and forty-fourth of an inch and ranges from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch (3.18 to 12.7 mm) in diameter.

3. Expansive bit. This is a type of boring tool that has a scale on the movable spur or cutter. It is used to bore holes larger than 1 inch (25.4 mm) in diameter.

## Activity 3

Examine the spur of the auger bit and differentiate the spur of the auger bit with that of the twist bit and expansive bit.



Self-check:

Write **T**, if the statement is true and **F**, if false.

- \_\_\_\_\_ 1. A twist drill has a round tongue to fit the brace.
- \_\_\_\_\_ 2. The crosscut saw is used to cut wood across the grain.
- \_\_\_\_\_ 3. The backsaw is used for ripping and cutting along the grain of the wood.

- \_\_\_\_\_ 4. Tooth-cutting tools are made of tapered steel with teeth used for cutting.  
\_\_\_\_\_ 5. Auger bit is an example of a boring tool.

## Lesson 3

### Holding and Sharpening Tools

#### Holding Tools

Holding tools are used to hold objects in a desired position or place before they are fastened or installed. Below are some of the holding tools used in woodworking.

1. Brace – this tool is used to hold bits with a square tongue.
2. Steel bar clamp – this tool is used to clamp boards edge to edge, to increase width and hold large projects.
3. C-clamp – this tool resembles letter C, and is used to hold small projects. The opening of this clamp ranges from 2 ½ to 12 inches (63.5 to 304.8 mm).



#### Sharpening Tools

Sharpening tools are used to hone tools to make them more effective. There are five types of sharpening tools used in sharpening.

1. Oilstone – this sharpening tool has different grades. Some oilstones have a fine side and a coarse side.
2. Grindstone – the grindstone is usually power driven. It is used when the plain iron is nicked or worn out.
3. Burnisher – this kind of tool is often used to keep the scraper and other tools sharp.
4. Slip stone – this stone is used to whet turning tools, gauges and curving tools.
5. File – this tool is very important in tool maintenance as well as in smoothing rough edges of other tools. There are various types of file.

- a. Triangular file – this is used in sharpening and making the saw teeth pointed. It is also used to sharpen auger bits.
- b. Auger-bit file – this is the most appropriate tool for sharpening auger bits.
- c. Irregular file – this is used for filing irregular or curved pieces.
- d. Half-round file – this tool is used for concave or convex filing.



Self-check:

Fill in the missing word or words to make each statement correct.

1. A tool used to hold bits with a square tongue is \_\_\_\_\_.
2. A \_\_\_\_\_ resembles the letter C.
3. Sharpening tools are used to \_\_\_\_\_ tools to make them more effective.
4. A tool used to smoothen rough edges is a \_\_\_\_\_.
5. Holding tools are used to \_\_\_\_\_ objects in a desired position.

## Lesson 4

### Proper Care and Maintenance of Tools

The quality of the finished product depends on the good condition of your tools. Using dull tools is dangerous and does not give the best results. Hence, always check your tools before using them.

This lesson will enlighten you on the care and maintenance of some tools and equipment as well as the safety practices that should be observed while using woodworking tools.

#### A. Safety rules in using the grinder

1. Always wear a pair of goggles to protect your eyes.
2. Remove unnecessary things on your body and near the motor.
3. Switch the motor until it reaches maximum speed.
4. Set the tool rest about 1/16 to 1/8 away from the one with an average pressure.
5. Watch your hands and fingers and be sure they do not reach the revolving wheel.
6. Switch the motor off and pull out the cord of the grinding motor.

#### B. Filing the teeth of a crosscut saw

1. Fasten the saw to the clamp bench wise with the teeth pointing upward.
2. Start filing from the point or narrow end of the saw using the triangular file.
3. Rub small amounts of oil on the blade of the saw.

### C. Filing the teeth of a rip saw

1. Hold the file level at right angle to the saw blade; push it straight across the teeth.
2. Repeat the same stroke and apply average pressure on every tooth being filed.
3. Repeat the same stroke until every tooth is filed.
4. Rub a small amount of oil on the blade of the saw.

### Safety Practices when Working

To keep accident from happening in shopwork, everyone is advised to follow rules and regulations. Here are some to follow:

1. Work quietly and pay attention to your job.
2. Keep your tools and equipment under control.
3. Never indulge in houseplay or other foolish activities during shopwork.
4. Don't put sharp objects, such as screwdriver in your pocket.
5. Be sure that your clothes are right for the job.
6. Avoid spills of oil, grease or any liquid on the floor which will cause accident.
7. Always wear eye protection such as goggles when using a grinding machine.
8. Always use the right tool for the job.

Do you observe the rules and regulations mentioned while working at the shop? Do you realize the importance of the following safety measures while working?

Congratulations! You have just finished the last lesson of this module. If you learned a lot from the lessons presented, you will surely be able to answer correctly the posttest.



### POSTTEST

Directions: Select only the letter of the best answer. Write your answer in your test booklet.

1. A measuring tool that is usually 12 inches long.
  - a. steel rule
  - b. foot rule
  - c. zigzag rule
  - d. pull-push rule
2. The most commonly used and handy measuring tool.
  - a. yardstick
  - b. pull-push rule
  - c. foot rule
  - d. cloth tape
3. The tool used to test squareness of wood.
  - a. ruler



- b. framing square
  - c. tri-square
  - d. combination square
4. The tool used to hold bits with as square tongue is the
- a. push drill
  - b. brace
  - c. drill press
  - d. hand drill
5. A tool used to bore holes larger than 1 inch.
- a. drill bit
  - b. expansive bit
  - c. straight bit
  - d. auger bit
6. The tool made of steel used to clamp board edges is the
- a. C-clamp
  - b. steel bar clamp
  - c. wood clamp
  - d. brace
7. The tool used to drive and pull out nails into the wood.
- a. mallet
  - b. claw hammer
  - c. screwdriver
  - d. chisel
8. A file used to make saw pointed.
- a. half-round file
  - b. triangular file
  - c. irregular file
  - d. auger bit file
9. The most appropriate tool for sharpening auger bits.
- a. file
  - b. triangular file
  - c. half-round file
  - d. auger bit file
10. The saw used for cutting wood across the grain.
- a. backsaw
  - b. rip saw
  - c. coping saw
  - d. crosscut saw



## ANSWER KEY

### Prettest

1. d
2. b
3. c
4. c
5. b
6. b
7. d
8. b
9. b
10. b

### Lesson 1: Self-check

1. driving tools
2. zigzag rule
3. foot rule
4. claw hammer
5. tri-square

### Lesson 2: Self-check

1. F
2. T
3. F
4. T
5. T

### Lesson 3: Self-check

1. brace
2. C-clamp
3. hone
4. file
5. hold

### Post Test

1. b
2. b
3. c
4. b
5. b
6. b
7. b
8. b
9. d
10. d