

Wood Sawhorse

Name: _____

Date: _____

Description:

The project is a wood sawhorse that can be used for workspace for future projects. It requires layout and wood working/construction skills.

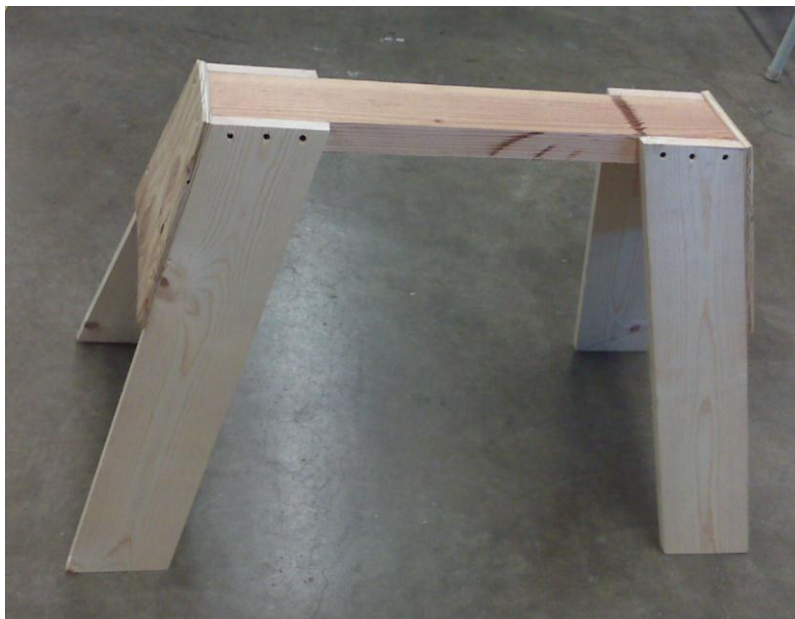
Materials:

4- 1x6x30" DF (or equivalent) - Legs
2- ½" x 10" x 12" Plywood - End Gussets
1-2x6x30" DF Top
40- 1-5/8" Drywall Screws
Glue
Sand Paper
Stain or Other Finish

Tools:

Compound Miter Saw
Cordless Hand Drill and Drill Bits
#10 Countersink Drill Bit
#2 Phillips Bit Driver and Bits
Cordless Circular Saw
Palm Sander
Steel Tape
Protractor
Sliding T Bevel
Framing Square
Pencil
Assorted Clamps

Drawing/Photo:

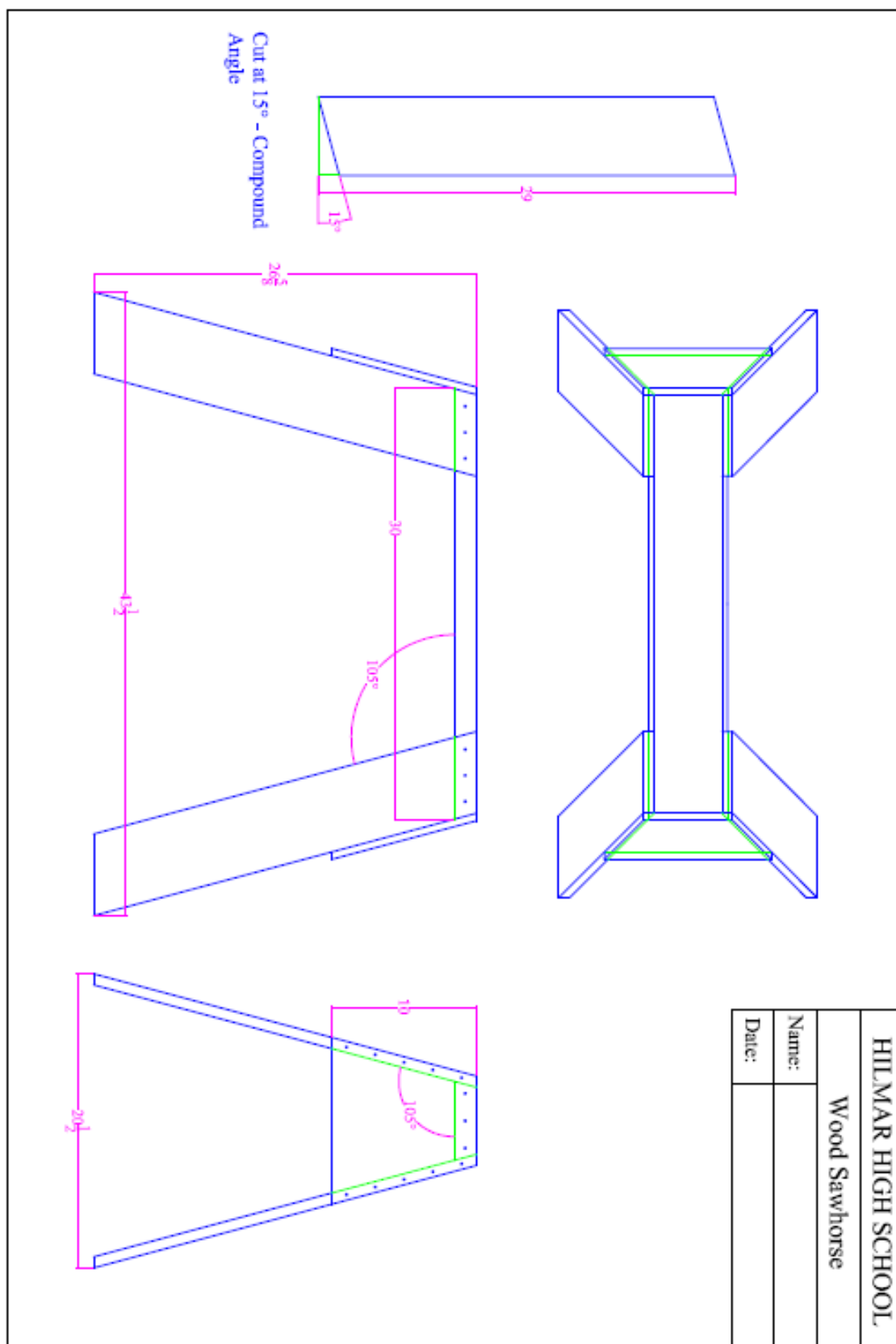


Directions:

1. Identify the materials and tools.
2. Review the plan. Select your lumber and determine the best layout.
3. Rip cut the 2 x 6 top piece so that both long edges are at a 15° bevel. The edges should slope away from each other (not parallel).
With the same side facing up, crosscut the ends of the 2 x 6 top so that the short edges are at a 15° bevel (again, sloping away from each other), and the overall length is 30".
4. Cut the legs from 1 x 6 stock on the Compound Miter Saw set to the desired angles The ends of the legs are cut at a compound angle which means that you will cut through the wood with the saw set at two angles (15° bevel and 15° angle). Cut to the correct length (see plans). It is important that all 4 legs are the same.
5. Rip plywood to 10" (gusset height) on the table saw and layout the gusset angles and cut angles on the Compound Miter Saw.
6. Layout and countersink the screw holes as per the plans.
7. Attach the legs using glue and Drywall Screws. Use 3 screws per leg. Once all 4 legs are attached, place the sawhorse on a flat portion of the floor to check if the sawhorse rocks.
8. Layout and countersink the holes for the end gussets.
9. Attach to the legs on each end. Use 13 screws per end gusset.
10. Sand smooth. Finish with stain or paint if desired.

Notes:

Plans:



Wood Sawhorse #2

Student Worksheet:

Name: _____

Date: _____

Complete this worksheet prior to starting the project.

1. What angle do you set the compound miter saw to cut the legs for the sawhorse? _____
2. What is a compound angle? _____
3. How long should the legs be once they are cut? _____
4. What part of the sawhorse is assembled first? _____
5. What size and type of fastener is used? _____
6. How many screws are used in the whole project? _____
7. Why is it important that the 4 legs are the same? _____

Grading Rubric:

Criteria (tolerance 1/8")	Possible	Score
Top Piece - Accurate Dimensions	5	
Legs, All 4 are the same	5	
Angles - Correct (15°)	5	
Fit up of the legs - Accurate and flush	5	
Countersinks and screw installation on legs	5	
End Gussets - Accurate and Flush	5	
Countersinks and screw installation on Gussets	5	
Cuts clean and square	5	
Workmanship (fit, screws, finish)	5	
TOTAL	45	

Wood Sawhorse #2 Teaching Notes:

Agricultural Standards Met:

4.0 Technology - Students know how to use contemporary and emerging technological resources in diverse and changing personal, community, and workplace environments:

4.6 Differentiate among, select, and apply appropriate tools and technology.

5.0 Problem Solving and Critical Thinking - Students understand how to create alternative solutions by using critical and creative thinking skills, such as logical reasoning, analytical thinking, and problem-solving techniques:

5.1 Apply appropriate problem-solving strategies and critical thinking skills to work-related issues and tasks.

5.3 Use critical thinking skills to make informed decisions and solve problems.

6.0 Health and Safety - Students understand health and safety policies, procedures, regulations, and practices, including the use of equipment and handling of hazardous materials:

6.1 Know policies, procedures, and regulations regarding health and safety in the workplace, including employers' and employees' responsibilities.

6.2 Understand critical elements of health and safety practices related to storing, cleaning, and maintaining tools, equipment, and supplies.

6.4 Maintain safe and healthful working conditions.

6.5 Use tools and machines safely and appropriately.

6.6 Know how to both prevent and respond to accidents in the agricultural industry.

B1.0 Students understand personal and group safety:

B1.1 Practice the rules for personal and group safety while working in an agricultural mechanics environment.

B1.2 Know the relationship between accepted shop management procedures and a safe working environment.

B2.0 Students understand the principles of basic woodworking:

B2.3 Know how to identify, select, and implement basic fastening systems.

B2.4 Complete a woodworking project, including interpreting a plan, developing a bill of materials and cutting list, selecting materials, shaping, joining, and finishing.

Objectives:

By successfully completing this project students will be able to:

- Read a plan to obtain critical dimensions
- Measure and layout a wood project
- Identify by name common woodworking tools
- Select and properly used hand and power tools used for wood work
- Cut and assemble wood components successfully

Alternate Tools:

A hand saw can be used to cut the wood to replace the compound miter saw and the circular saw. A band saw can replace the compound miter saw on some cuts.

Safety Review:

- Use of the hand power drill.
- User of the compound miter saw.
- Use of the circular saw.

Project Time:

Demonstration: 15-30 minutes

Build: 3 - 5 hours

Demonstration Notes:

(Tips, methods to stage the project)

1. Begin by reviewing materials and tools used for the project.
2. Review the plan and show how the plan describes the project.
3. Demonstrate the proper use of compound miter saw and a circular saw.
4. Demonstrate how to measure and mark the cuts you need, especially the angles.
5. Demonstrate cutting the wood and accounting for the amount the saw takes out of the wood.
6. Demonstrate how to layout and install the legs.
7. Review hand power drill safety as you demonstrate drilling and countersinking the screw holes for the legs and gussets.
8. Remind students of workmanship. Final project should be clean and free of sharp edges.

Bill of Materials

(Excel, update with local prices)

Projects: 20

Size	Description	Units	Qty/Project	Cost/Unit	Order	Amount
2 x 6 DF	Top	10' Length	0.25	\$ 4.50	5	\$ 22.50
1 x 6 DF	Legs (4)	10' Length	1	\$ 9.00	20	\$ 180.00
1/2" Ext.	Plywood - Gusset	Sq Feet	2	\$ 1.00	40	\$ 40.00
1/8" x 1/2"	Drywall Screws	5lb Box	1	\$ 19.97	1	\$ 19.97
					0	\$ -
					0	\$ -
					0	\$ -
	Cost Per Project:	\$ 13.12			TOTAL	\$ 262.47

Project from: Dick Piersma