

**National FFA Agricultural Mechanic
Career Development Event
2013
Team Activity**

Directions for Team Activity (A teams)

Situation:

Your team is to construct an engine stand for a Briggs and Stratton engine and pump. The stand is to have a wooden base with a metal frame on top. The engine will attach to the metal frame.

Directions:

This activity consists of four tasks; construction of a wood base, construction of a metal frame, a written report and a bill of materials.

1. Begin by reviewing the pictures for the engine stand. These pictures are on a flash drive in the folder named *"pictures of engine stand."* The names of the files are:
 - a. Engine Stand wood base
 - b. Engine Stand metal frame
 - c. Engine Stand assembly
2. Review the mechanical drawing of the engine stand. These drawings are in the folder named *"mechanical drawings."* In the *"mechanical drawings"* folder are two folders named *"metal frame drawings"* and *"wood base drawings."* The names of the files in these folders are:
 - a. Angle Iron End Piece
 - b. Angle Iron Side Piece
 - c. Angle Iron Tab
 - d. Engine Stand Metal Frame
 - e. Wood Base Board
 - f. Engine Stand Wood Base
3. Delegate responsibilities to team members for the following tasks
 - a. Measuring and cutting wood for the base
 - b. Writing the summary and constructions steps
 - c. Constructing the bill of materials
4. Measure and cut the wood base. **Do not** drill the holes for mounting the metal frame until you have completed the metal frame in part II of this activity.
5. Assemble the wood base using the construction screws provided.
6. When you have completed part I, you will be instructed to move to part II where you will build the metal frame for the stand.

7. Measure and cut the angle iron for the sides and end pieces of the metal frame following the dimensions in the drawings.
 - a. **Do not** drill engine mounting holes in side pieces until you have welded the frame together to allow for fabrication warping or movement.
 - b. Measurements of the 7½" end pieces are drawn for the finished frame dimensions. You might need to adjust lengths of side pieces to account for spacing of your weld.
8. Weld the side pieces, end pieces and tabs together as illustrated in the drawings.
9. Drill the engine mounting holes in the frame as illustrated in the drawing.
10. When your metal frame and wood base are complete, fasten the frame to the base using the lag bolts and washers provided.
11. While you are constructing the base and frame, someone in your group should be working on the report and bill of materials.

Submission of final product:

Clearly mark your engine stand with the name of your state. Submit the stand to the judges.

Save your written report and bill of materials on the flash drive provided. Affix a label with the name of your state to the flash drive. Print a hard copy of your report and bill of materials. Submit your flash drive and your printed hard copy to the judges.