

## FASTENER ACTIVITY

1. Select the appropriate stock from the metal rack.
2. Cut the stock to the prescribed length (1.5”).
3. File both ends so that they are 90°. Confirm this with a square.
4. Lay out where your holes are to be drilled
5. Measure 0.5” from one end, find the center, and center punch your stock.
6. Measure 0.25” from the opposite end, find the center, and center punch your stock again.
7. Take your piece to the drill press, set it properly in the vice, and drill a hole using the 7/32<sup>nd</sup> drill bit.
8. If the piece is hot, please take safety precautions (use pliers to move).
9. Use soft jaws to clamp piece in the vice.
10. Tap a 0.25” fine thread in one hole, and a 0.25” coarse thread in the other hole.
11. Find the appropriate bolt to check fit of the threads.
12. See instructor for a torque wrench and activity sheet.
13. Using the torque wrench, measure the force needed to snap the bolt off.
14. Record your readings/measurements.
15. Repeat this process for both bolts, noting any differences in your readings/ measurements.
16. Fill out the rest of the activity sheet.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### FASTENER ACTIVITY SHEET

Please answer the questions below as you are finishing the fastener activity.

1. What grade bolt have you selected to use? \_\_\_\_\_
2. What is the torque reading when your fine bolt fails/breaks? \_\_\_\_\_
3. What is the torque reading when your coarse bolt fails/breaks? \_\_\_\_\_
4. Which bolt had the higher torque reading? \_\_\_\_\_ Why do you think this is? \_\_\_\_\_  
\_\_\_\_\_
5. What type of torque wrench did you use for this activity? \_\_\_\_\_
6. What type of force caused the bolt to fail/break? (Circle one)  
  
Shear      Tension      Compression      Pressure      Compound
7. In order to remove the broken bolt, what tools do you need? \_\_\_\_\_  
\_\_\_\_\_
8. See instructor for the tools to remove your bolt.
9. Did you remove the bolt successfully? \_\_\_\_\_ Why or why not? \_\_\_\_\_  
\_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### FASTENER ACTIVITY SHEET

Please answer the questions below as you are finishing the fastener activity.

1. What grade bolt have you selected to use? \_\_\_\_\_
2. What is the torque reading when your fine bolt fails/breaks? \_\_\_\_\_
3. What is the torque reading when your coarse bolt fails/breaks? \_\_\_\_\_
4. Which bolt had the higher torque reading? \_\_\_\_\_ Why do you think this is? \_\_\_\_\_  
\_\_\_\_\_
5. What type of torque wrench did you use for this activity? \_\_\_\_\_
6. What type of force caused the bolt to fail/break? (Circle one)  
  
Shear      Tension      Compression      Pressure      Compound
7. In order to remove the broken bolt, what tools do you need? \_\_\_\_\_  
\_\_\_\_\_
8. See instructor for the tools to remove your bolt.
9. Did you remove the bolt successfully? \_\_\_\_\_ Why or why not? \_\_\_\_\_  
\_\_\_\_\_