

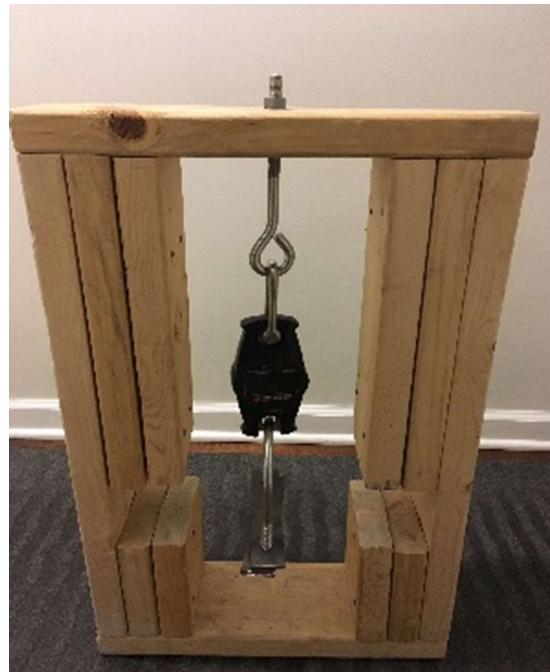
# Block Crusher Design Instructions

## Materials:

2 x 6 x 8 inch pieces of lumber (2 pieces)  
8 inch eyebolt, with washer and nut that fit  
6 inch U-bolt with washers and nuts  
16 inch long piece (or 2-8 inch pieces) of 1/4in steel  
300 lb. crane scale  
1 or 2 inch wood screws (box)

## Tools:

Electric drill  
Saws (for wood and metal)  
Tape measure  
Drill bits



## Assembly Instructions:

1. Cut the lumber:
  - a. 4 pieces, 14.5 inches long
  - b. 4 pieces, 6 inches long
  - c. 2 pieces, 24.5 inches long
  - d. 2 pieces, 17 inches long
2. Assemble the frame:
  - a. Make a box that is 17 inches wide and 27.5 inches tall. (**Figure 1**)
    - i. Use the two 17 inch pieces at the top and bottom
    - ii. Screw the 24.5 inch pieces into the sides of the box, so that they sit inside the 17 inch pieces.
3. Add the supports
  - a. On the inside of the box, attach the other pieces of lumber. Start at the top of the box, and screw the top corners the 14.5 inch pieces; two of them on each side. (Figure 2a)
  - b. At the bottom of the box, attach the 6 inch pieces. (Figure 2b)



**Figure 1**

**Figure 1:** The 17 inch pieces lay across the top and bottom. The 24.5 inch pieces are the sides of the frame. The 14.5 inch and 6 inch pieces are the internal supports.



**Figure 2a**



**Figure 2b**

**Figure 2a and 2b:** Details of the internal support. Place two 14.5 inch pieces at the top running along each (inner) side and two 6 inch pieces at the bottom along each (inner) side. There should be a gap in the middle.

4. Make the test rig.
  - a. Find the middle point of the top of the frame. Drill a hole just larger than your eye bolt; it will be attached up there (Figure 3a and 3b).
  - b. Cut the steel pieces into 2- 8inch pieces.
  - c. Measure the width of the U-bolt and drill holes into both pieces of the metal so that the U-bolt can slide into it. (Figure 4a)
  - d. Attach the U bolt to the bottom of the crane scale and the eye bolt to the top; your machine is complete. (Figure 4b) 😊



Figure 3a



Figure 3b

**Figure 3a:** Drill a hole in the middle of the top piece of lumber for the eyebolt.

**Figure 3b:** Place the eyebolt into the hole; fasten with a washer and nut.



Figure 4a



Figure 4b

**Figure 4a:** Attach the two pieces of steel to the U-bolt; take care to drill the holes carefully. The nuts and washers of the U-bolt hold the steel in place.

**Figure 4b:** Congratulations! The finished product!