

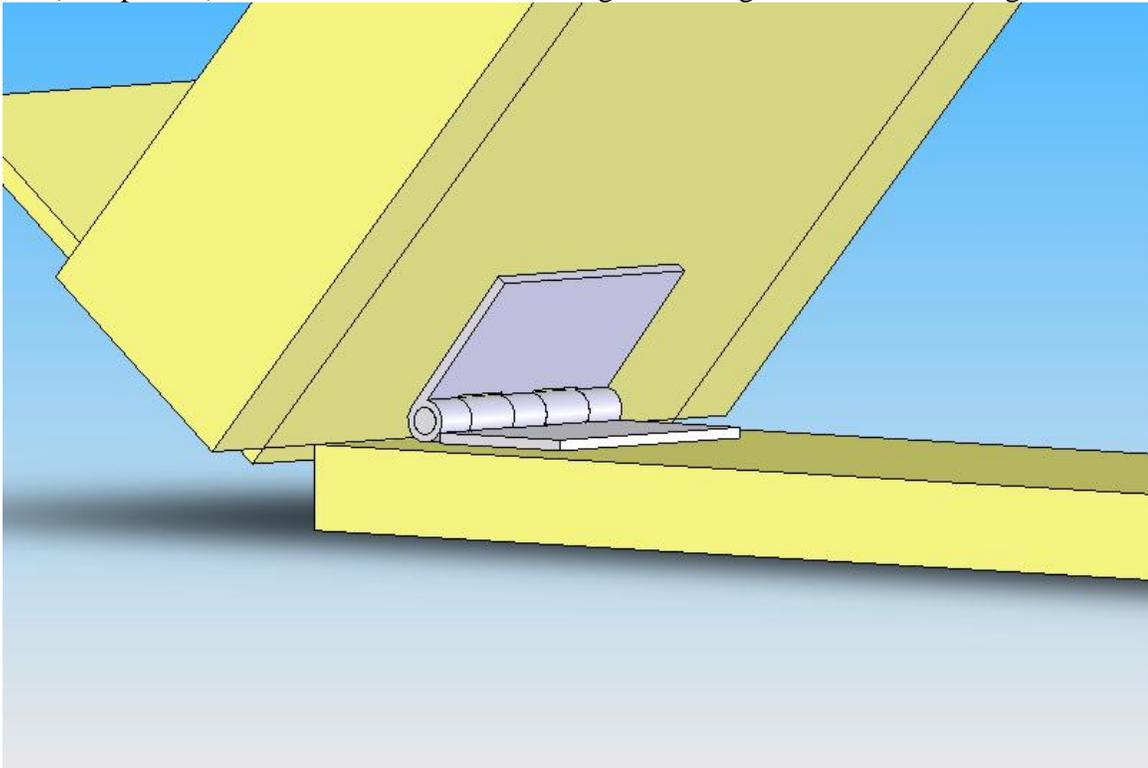
# Ramp Construction

## Materials:

6' x 8" x 1" Pine board  
20' of 1" x 3" Strapping  
6' x 6" x 1" Pine board  
Scrap 1" thick wood  
3' x 4" x 1" Pine board  
8" x 6" Plywood  
2 L-Brackets  
2 Door Hinges  
Screws

## Construction Procedures

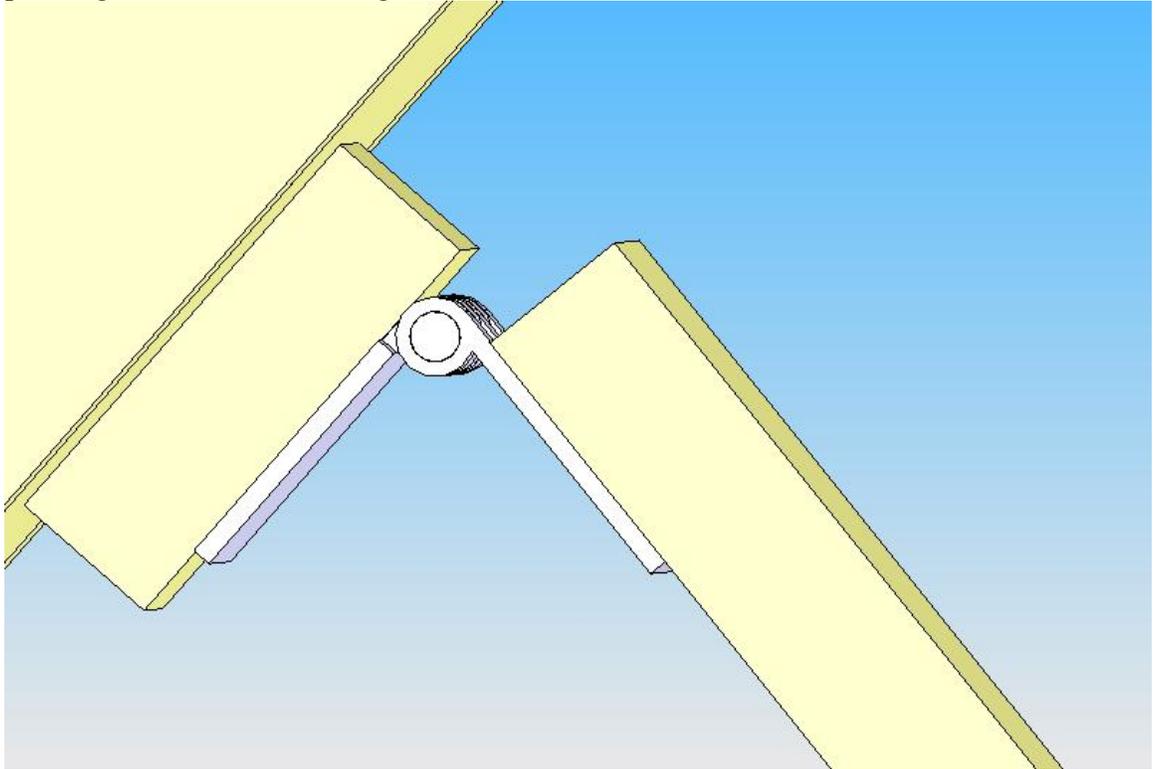
1. Lay the 6' x 8" x 1" pine board (Ramp Surface) and the 6' x 6" x 1" pine board (Ramp Base) end to end and screw them together using one of the door hinges.



**Figure 1: Ramp Surface hinged to Ramp Base (Step 1)**

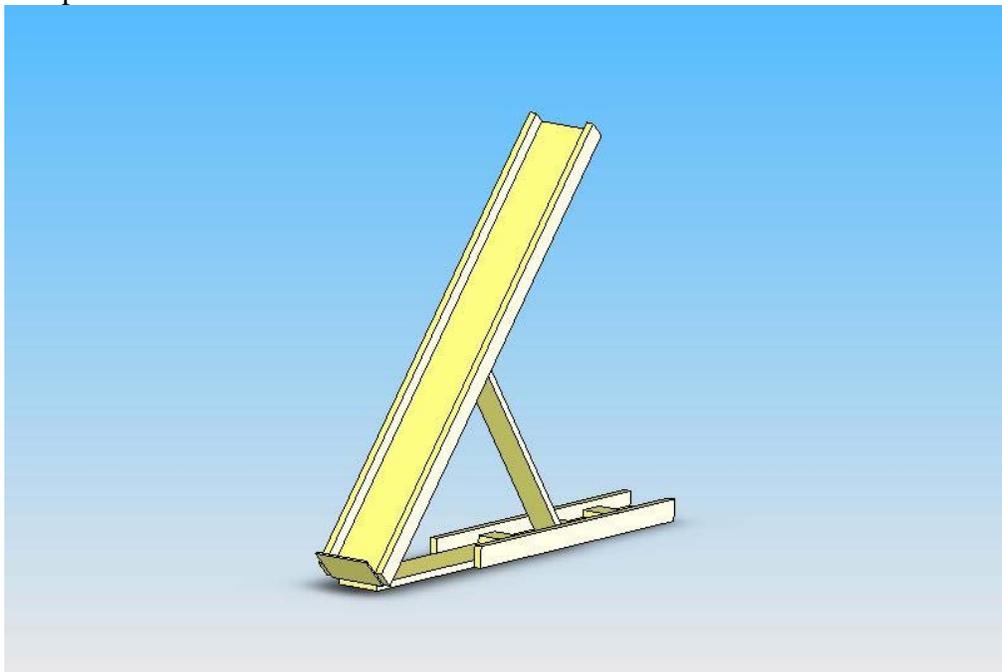
2. Mark 3' from the hinged end of the 6' x 8" x 1" pine board. Make sure the mark is on the same side as the hinge.
3. Screw a 1" thick piece of scrap wood that is wide enough for another hinge to the center of the 6' x 8" x 1" pine board at the 3' mark so that there is 3' between the hinge and the scrap wood.

4. Screw the hinge parallel to the 3' mark so that the axis point of this hinge is pointing toward the other hinge.



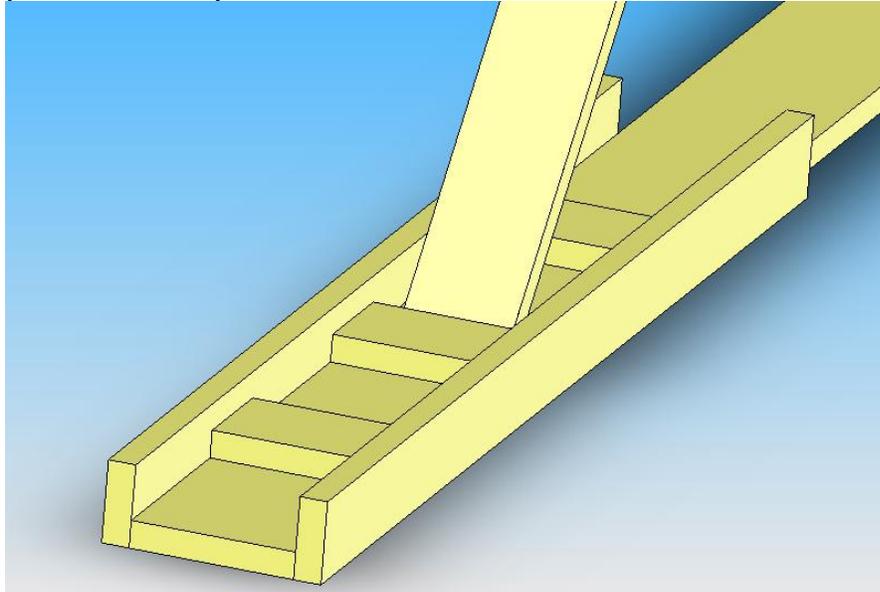
**Figure 2: Lever arm hinged to 1" thick scrap wood attached to underside of Ramp Surface (Step 5)**

5. Screw the 3' x 4" x 1" pine board (Lever Arm) to the hinge so that when the hinge is open the board is level with the scrap piece.
6. Screw a 6' length of strapping to each side of the Ramp Surface so they act as bumpers for the car.



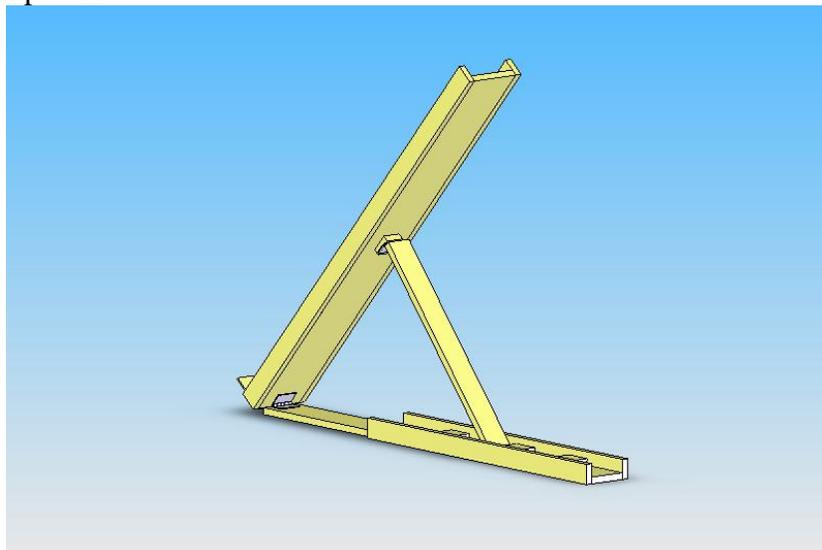
**Figure 3: Full ramp with strapping attached (Steps 6 and 7)**

7. Screw two 4' length of strapping parallel, 4" apart on the Ramp Base to act as a guide for the Lever Arm. The strapping should butt up against the non-hinged end of the Ramp Base, allowing for the Ramp Surface to reach low angles.
8. Within reasonable accuracy, use a protractor to measure the angle of the hinge between the Ramp Base and Ramp Surface, marking on the Ramp Base where the Lever Arm rests. Mark locations for 20 degrees to 70 degrees, incrementing by 10 degrees.
9. Screw a small, 4" wide piece of scrap 1" thick wood at each mark on the Ramp Base so that the Lever Arm is stopped, creating the appropriate angle between the Ramp Base and Ramp Surface.



**Figure 4: Lever Arm stoppers attached to the Ramp Base (Step 9)**

10. Attach the L-Brackets to the underside of the Ramp Surface on each side of the hinge, with the exposed arm pointing away from the Ramp Base. This will serve as the backboard to the plywood wall.
11. Screw the 8" x 6" plywood into the exposed arms of the L-Brackets at the base of the Ramp Surface.



**Figure 5: Completed Ramp**