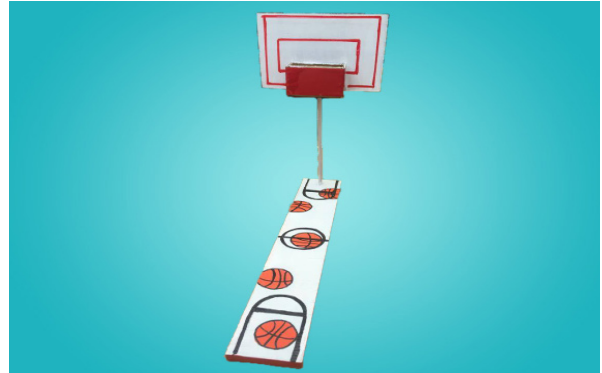
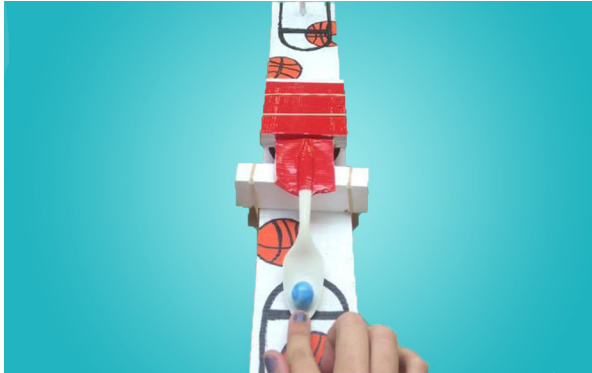




Basketball Catapult Game



Supplies:

- plastic spoon
- duct tape
- cardboard (corrugated)
- 3 rubber bands
- 4" x 1" x 0.5" piece of wood
- 18" x 3" x 0.5" piece of wood
- 4" x 3" x 0.5" piece of wood
- 1' of 1/4" diameter dowel
- balls of aluminum foil, marbles, pebbles, pom poms, erasers, etc.
- craft knife
- ruler
- marker
- drill
- 1/4" drill bit
- hot glue gun with glue sticks

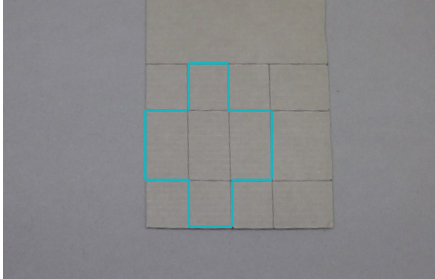
Optional:

- copper tape
- insulated hookup wire
- wire strippers
- electric tape
- LED
- 3V piezo buzzer
- coin cell

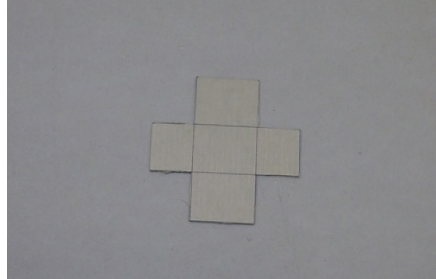




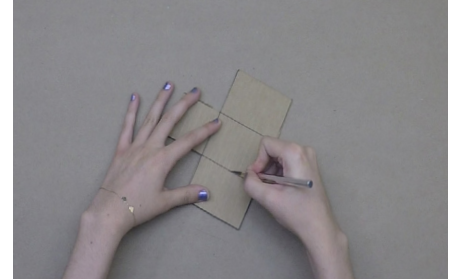
Basketball Catapult Game



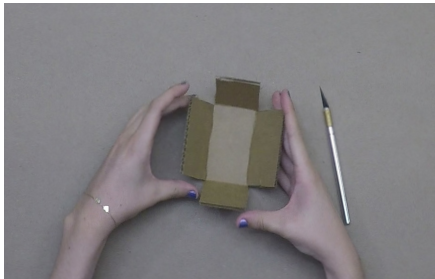
1. Draw a box template onto cardboard. It can be any size you want! Just, make sure it is large enough to catch your projectiles, but small enough to be supported by the dowel.



2. We made one that is 2" x 2" x 3".



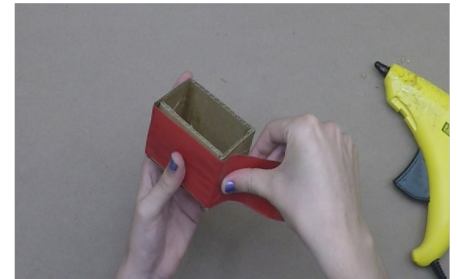
3. Lightly score the four sides where the flaps meet the bottom of the box.



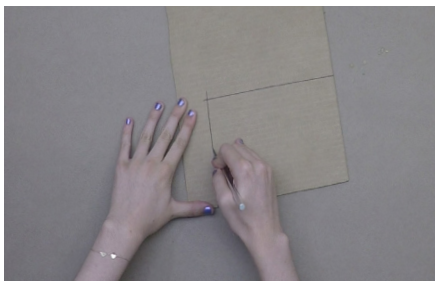
4. Fold all of the sides up.



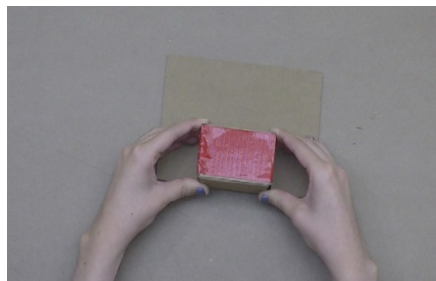
5. Hot glue the sides together.



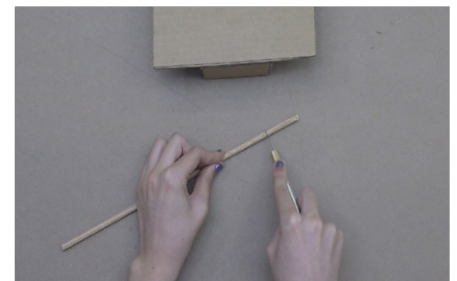
6. If you would like to reinforce your basket, wrap it in duct tape!



7. Cut out another piece of cardboard for your backboard. This too can be any size that you want, as long as your dowel can support the weight. Ours is 5" x 7".



8. Center your cardboard basket along the bottom edge of the backboard and stick it on with hot glue.



9. Roughen about 2 inches on one side of the dowel with a craft knife (this makes it stick better.)

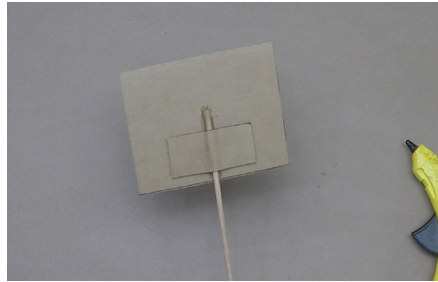




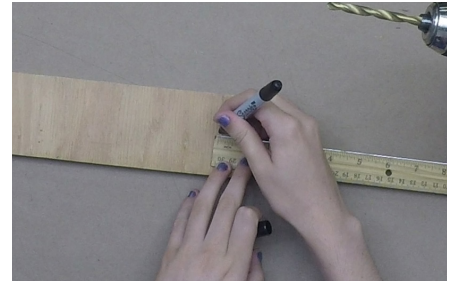
Basketball Catapult Game



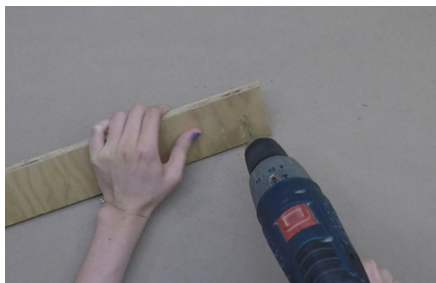
10. Glue this rough side to the center of the flip side of the backboard.



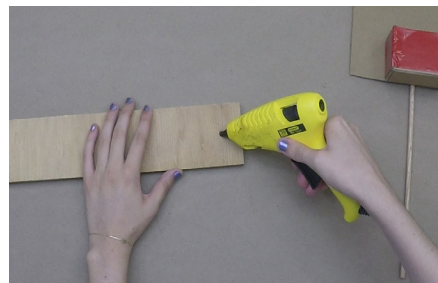
11. Make sure it stays in place by adding a cardboard tab over it.



12. Mark a dot about one inch from the edge of your largest piece of wood. Make sure it is centered!



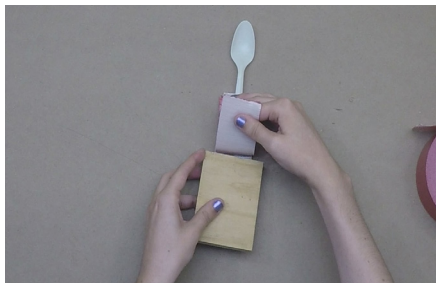
13. Drill a hole over this dot. This will be your "court."



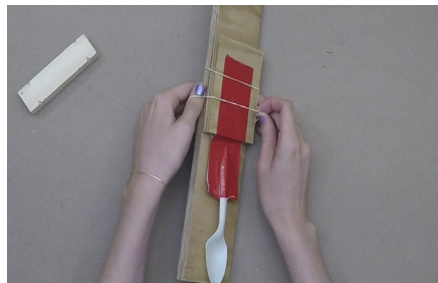
14. Put some hot glue into the hole and push the dowel into it. Make sure your basket faces the right way (towards the other end of the wood!)



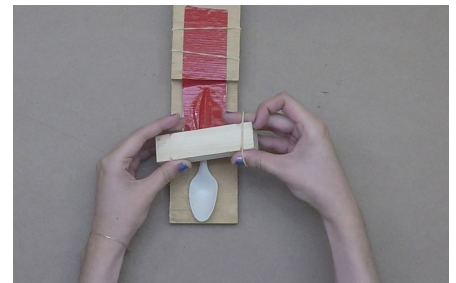
15. Place a 4" strip of tape on your table, sticky side up. Center your spoon's handle on the strip, with the end almost halfway down.



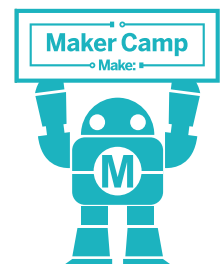
16. Cover the bottom half of the duct tape strip with your medium-sized block of wood, leaving a small gap between the wood and spoon. Lay another 4" strip of tape, sticky-side-down, over the tape, spoon, and wood.



17. Attach your launcher to the court with two rubber bands.

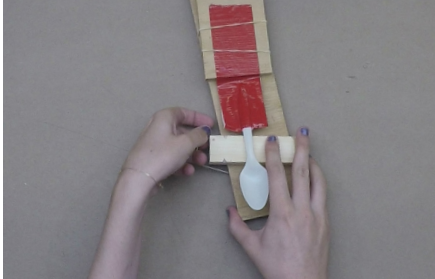


18. Loop a rubber band over one end of the smallest piece of wood.

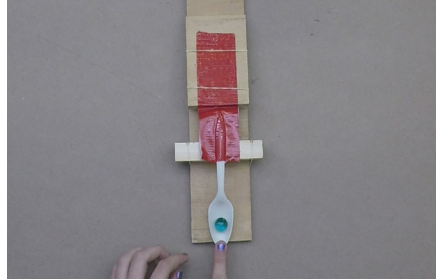




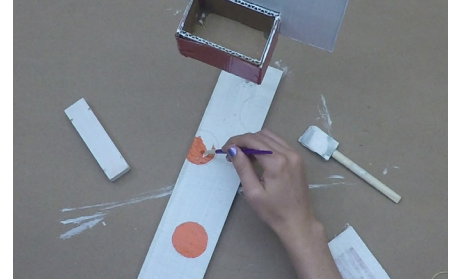
Basketball Catapult Game



19. Pull the other end of the rubber band underneath the largest piece of wood and loop it over the other end of the smallest piece of wood. Make sure the spoon is resting on top of the smallest piece of wood.



20. Load up your ball (aluminum foil, marble, pom pom, pebble, etc) onto the spoon and bend it back to launch! If you miss the basket, slide the blocks around until you find the sweet spot. You can also try turning the wood under the spoon so that it is taller, or using a different object under the spoon altogether.



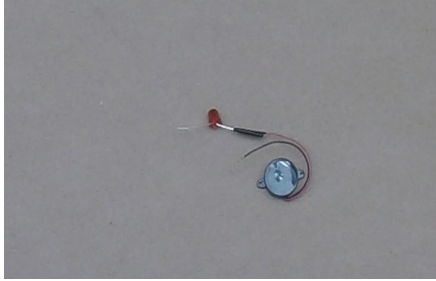
21. Last but not least, decorate your catapult game!



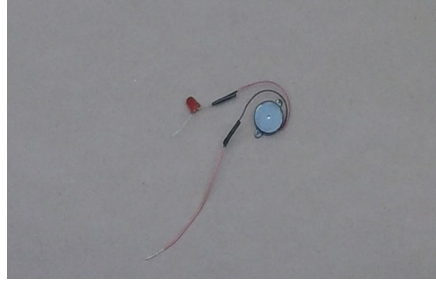


Basketball Catapult Game

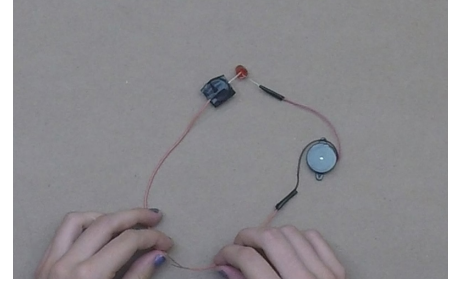
Optional: Adding a Light and Buzzer



28. Tape the positive end of the piezo to the negative pin on the LED.



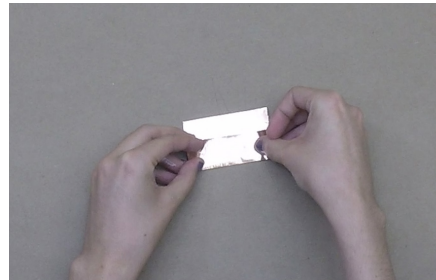
29. Tape a small piece of hookup wire, approximately 4", to the negative end of the piezo.



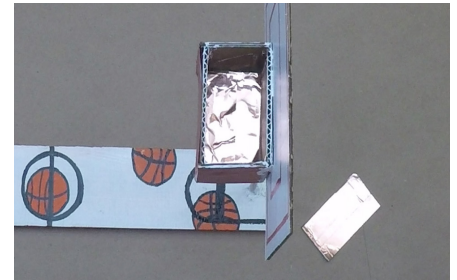
30. Tape the positive side of the coin cell to the positive pin on the LED. Tape a slightly larger piece of hookup wire, approximately 6", to the negative side of the coin cell.



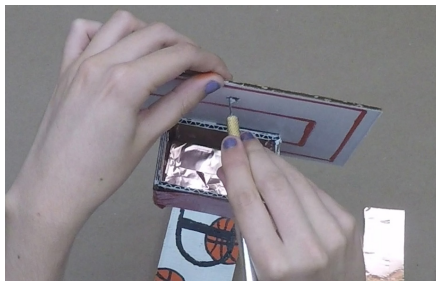
31. Cut your index card to cover most of the inside bottom of your basket, without getting wedged in.



32. Cover one side of the card with copper tape.



33. Cover the bottom of the basket with copper tape, too.



34. Cut an LED-sized hole near the top of your backboard.



35. Poke two wire-sized holes through the backboard and into the left side and the right side of the basket, near the bottom of the basket.



36. Push the LED through the hole that you made at the top.



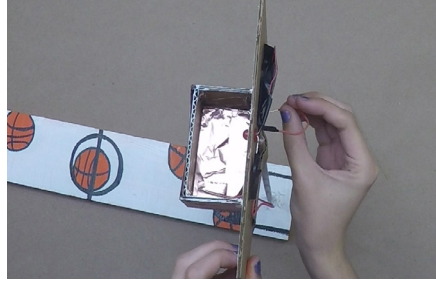


Basketball Catapult Game

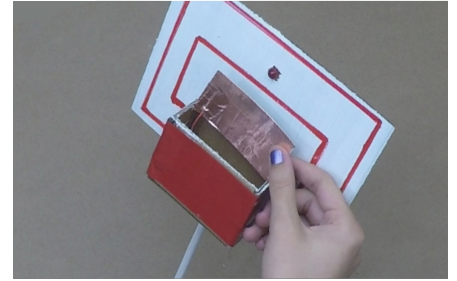
Optional: Adding a Light and Buzzer



37. Tape the battery and piezo to the back of the backboard.



38. Push the two pieces of hookup wire through the two wire-sized holes.



39. Using the copper tape, attach one hookup wire to the copper side of the index card and the other hookup wire to the copper on the bottom of the basket



40. Tape the index card just above the bottom of the basket on just one of its long sides, inside of the basket. The hookup wire will act as a spacer between the two plates of copper.



41. Drop something heavy, like a marble, into the basket to hear the buzzer go off! If your ball isn't heavy enough to push the copper pieces together, maybe 3 will do the job. Then it's a game like "Get 3 in to win!" or however many marbles it takes to set off the LED and buzzer.

