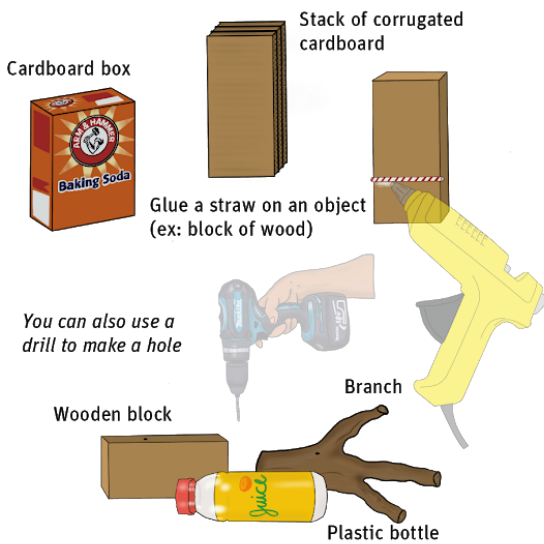


# GATHER YOUR MATERIALS!

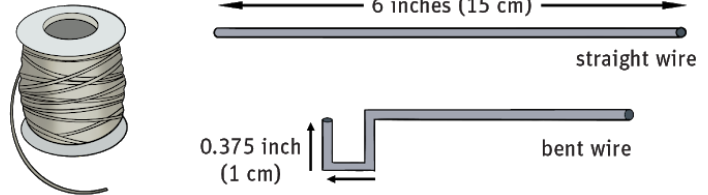
To make a Cranky Contraption, you will need at least one material from each category and substitute as needed with what you have at home.

**A base.** Many materials can be used as a supportive base for a mechanism. Choose a material that is sturdy and has a hole in it.

**Size tip:** To keep our contraptions from being too large or small, we recommend finding a base that's approximately 4 x 2 x 1 inches.

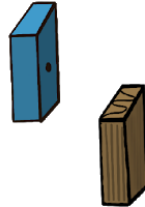


**Wire.** Use wire that's easy to bend with pliers and will hold its shape. We've found that 18 gauge stainless steel wire meets both of these requirements.



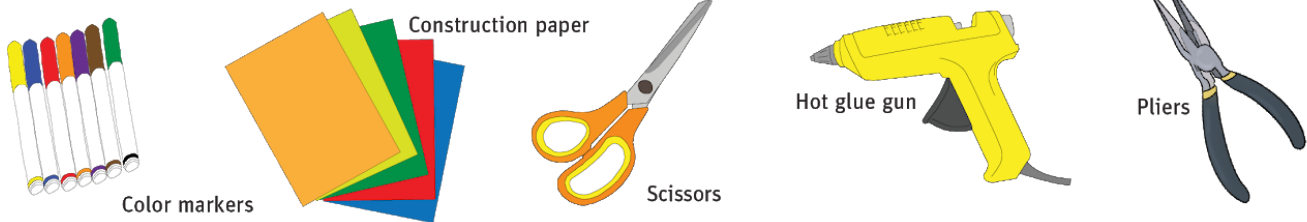
Cut your wire to 6 inches long and make three bends.

**A follower.** The movement from the wire crank is translated into vertical motion using a follower. It's made from a material that's easy to puncture but does not deteriorate easily. We like to use thick (6mm) craft foam, but have also used cardboard since it's more readily accessible.



**Size tip:** The follower can be different sizes. We use 1/2 x 1/2 inch pieces

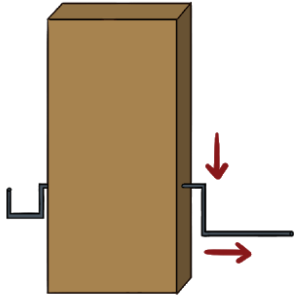
**Additional materials and tools.** Let your imagination run wild for what other materials you would like to use. Here are some of our favorites.



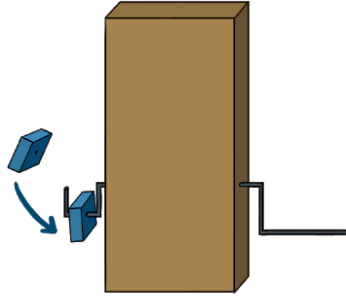
# GETTING STARTED

## Make an up-and-down motion

- 1 Insert the wire axle into the base and push it through so that the bend is close but not touching the base. Make two additional 90 degree bends, forming an L-shape that will become the handle for the contraption.



- 2 Add a follower to the U-shape side of the block. The wire will puncture through the foam on the large flat face, not on the edge.



- 3 Glue a piece of cardboard on top of the base with a hole punched through it. Thread the second piece of wire through the hole and into the edge of the follower.

