

Wind Energy - Pinwheel

Make a windmill model to demonstrate how wind can create energy to lift something!

Video tutorial available: <https://www.youtube.com/watch?v=JWhq0epdFps>

Materials:

- Cardstock or other thick paper
- String
- Scissors
- Tape
- Large disposable cups (16 oz)
- Small disposable cups (6 oz)
- Large straws
- Skewers or dowels
- Hole punch (optional)
- Box fan or hair dryer (optional)
- Crayons or markers (optional)
- Stopwatch or timing device (optional)
- Pennies (optional)

Instructions:

1. Cut out a 6.5" by 6.5" square
2. Mark the center of your square and cut from the corners diagonally towards the center of the square, stopping about 1.5" from the center point
3. Use scissors or a hole punch to make a hole in the center and at the end of every other one of your 8 corners. Hole needs to be large enough for pencil to fit through.
4. Push the pencil through the center of your square and then bend (don't fold) each of the corners that have a hole onto the straw.



5. Secure the front and back of the pinwheel with tape (paperclip or rubberband could work too) to keep the pinwheel together. There should be about an inch of space between the front and back of the pinwheel.



6. Place large cup upside down on table or hard surface. Cut the large straw so that it is equal in length to the bottom of your large cup and secure it on bottom of cup using tape.



7. Slide the end of your pencil through the large straw on your base. There should be about 1.5" of the pencil that extends past the base.



8. Take your small cup and cut two holes on opposite sides and tie a small piece of string between the holes, creating a sort of bucket handle.



9. Cut a piece of string about 6" long. Secure one end of the string to the end of the pencil and tie the other end to the small cup handle.

10. Tape down end of string tied to pencil.



11. Now blow on your pinwheel and watch it lift the small cup. The string should wrap around the pencil until the cup has lifted up.

12. Optional: Place pennies or other small object in cup and see if you can get wind through pinwheel to lift cup with added weight.