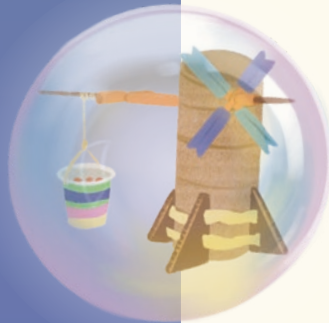


# BUILD YOUR OWN WIND MACHINE

## What you need:

- Cardboard tubes (paper towel or toilet roll tubes will work great)
- Straws
- Skewers
- String
- Scissors
- Cardstock, cardboard or construction paper
- Tape
- Small paper cups
- Paperclip
- Weights for testing (e.g. marbles)
- Fan for testing (optional)



**Step 1:** Start building by creating the tower of your windmill. You want it to be about 12 inches tall so use a paper towel cardboard tube or make one out of stiff paper.

**Step 2:** Secure the base of your tower by taping four right angle triangles made from card to the bottom of your tower (see diagram below)

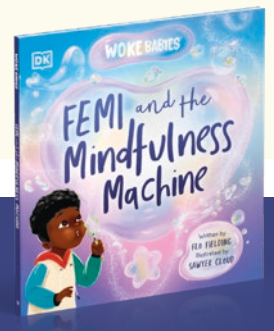
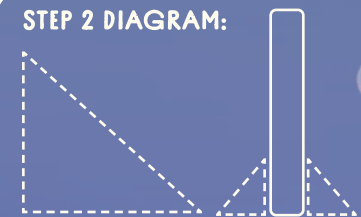
**Step 3:** Now create your turbine. Start by cutting the paper straw in half so you have two equally sized straws. Pierce the skewer through each of the straws to create a cross symbol.

**Step 4:** Next, using stiff paper, cut out four rectangles of equal size to create the blades for the turbine. Fold each of these in half horizontally.

**Step 5:** Open the folded rectangle paper and tape the inside of each blade to the cross on the skewer.



STEP 2 DIAGRAM:



**Step 6:** Now to attach the turbine to the tower. Using scissors, insert a hole through the top of the tower. Always ask a grown-up for help when using scissors.

**Step 7:** Cut another straw in half and insert one half of the straw through the hole you've just created at the top of the tower. Insert the turbine skewer.

**Step 8:** Pierce the remaining half of the straw through the end of the skewer at a vertical angle to hold the turbine in place.

**Step 9:** Next, pierce a hole through the top of the small paper cup and thread a short piece of string through, knotting each end to form a handle. Attach a paperclip to the centre of the string.



**Step 10:** Tie a long piece of string from the top end of the paperclip and connect it tightly to the turbine skewer.

**Step 11:** Add 4 to 5 marbles into the paper cup for weight.

**Step 12:** Now you're ready to test your windmill! Take a deep breath and blow on the turbines to get them spinning. You can always use a fan instead. When the turbine spins this should pull up the cup. You've just converted wind energy into mechanical energy!

