

Make a Pinwheel Turbine

WHAT GOES AROUND TO MAKE ELECTRICITY?

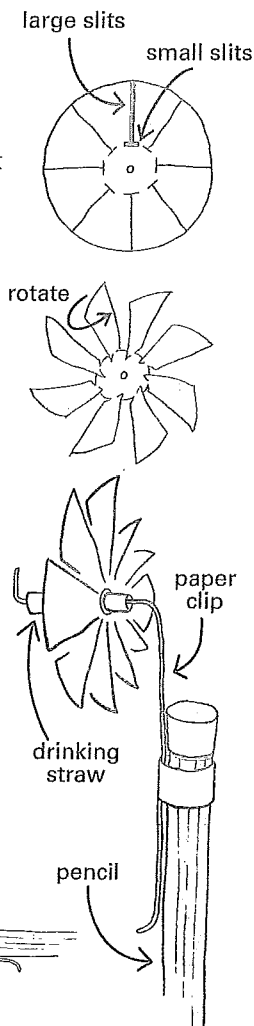
Turbines are used to generate electricity from rushing water, blowing wind, or steam created by burning coal or splitting atoms in a nuclear reactor.

Build your own pinwheel turbine to see how it works.

TRY THIS

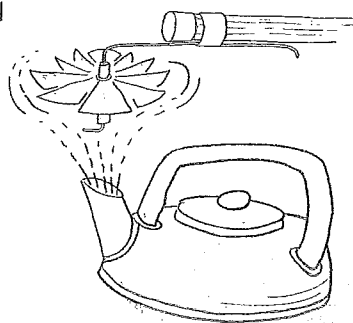
Construct a pinwheel.

1. Cut away the outer rim of the aluminum pie plate, leaving only the flat center section.
2. Punch a hole in the middle with the nail.
3. Make 8 evenly-spaced slits from the outer rim towards the center. Leave an uncut circle about 2 ½ inches across in the center, as shown.
4. Make small slits at the base of each larger slit, to allow the blades to turn without tearing.
5. Now carefully rotate each blade so the one side angles towards you and one away, like a pinwheel.
6. Cut a piece of drinking straw about ½ inch long. After using your pencil to enlarge the hole you made earlier with the nail, insert your straw "shaft" into the center of the wheel.
7. Bend the paper clip into a long "L" shape. Slide the long end through the shaft, then bend it down as shown. Tape the long end to the pencil.



Demonstrate your turbine.

1. Fill your tea kettle with a small amount of water and set it to boil on the heating plate.
2. Meanwhile, blow on your pinwheel turbine from different directions.
3. Now hold your pinwheel turbine under a dripping faucet. Increase the flow of water.
4. When the water is boiling, hold the pinwheel turbine in the steam.



THINGS YOU NEED

- Aluminum foil pie plate
- Scissors
- Metal nail
- Pencil
- Plastic drinking straw
- Paper clip
- Masking tape
- Tea kettle
- Heating plate
- Water faucet

POWER WORD

Turbine is a machine with fan-like blades that runs the generator inside a power plant when its blades are pushed around by steam or moving water.



WHAT DO YOU THINK?

What if you bent the blades in the opposite direction. What happens?

What happens when you blow harder or increase the amount of water?

What kinds of power plants use turbines?