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EXPERIMENT

How is a Pinwheel Like a Turbine?

A power plant generator contains wheels called turbines. To produce electricity, the blades of the turbines must spin. Different kinds of energy can be used to spin turbines. In this experiment, you can use a pinwheel to represent a turbine.

Safety Tip: Only do this experiment with an adult's help.

Materials

- Plastic pinwheel on a stick
- Sink or running water
- Hot plate or stove top burner
- Teakettle
- Oven mitt
- A printed copy of this activity
- A pencil to write your answers

Procedure

Print this page before you start.

1. Place the blades of a pinwheel under a stream of cold running water. What happens?

What kind of energy transfer is taking place? _____

2. Under adult supervision, fill the teakettle about half full of water and place it on the burner. Turn the burner on. What kind of energy transfer takes place as the water heats up?

3. For this step, make sure to use an oven mitt to protect your hand from getting burned. Under adult supervision, use the oven mitt to hold the stick and position the pinwheel blades in the path of the steam when the kettle boils. What happens to the pinwheel?

What kind of energy transfer is taking place? _____

In this experiment, what kind of energy source did you use to create the steam?

In many power plants, steam is used to run generator turbines. What kinds of energy sources could be used to produce steam in a power plant?
