

# Energy Changes

Energy comes in many forms and often changes from one form into another. Have some fun converting your own heat energy into motion, and find out what you can do with stored energy.

I've changed the chemical energy in my food into heat energy, which rises up from my hands and warms the air. When the warm air hits the turbine flaps, they move.

## Dr. Zed's Energy Tester

### You'll Need:

- ◆ paper and pencil
- ◆ scissors
- ◆ empty thread spool

### How to Make Your Energy Tester

1. Trace the turbine pattern onto your paper, then cut it out.
2. Stick the eraser end of the pencil into the hole in the spool.
3. Balance your energy tester on the pencil point as shown.

### How to Test Your Energy

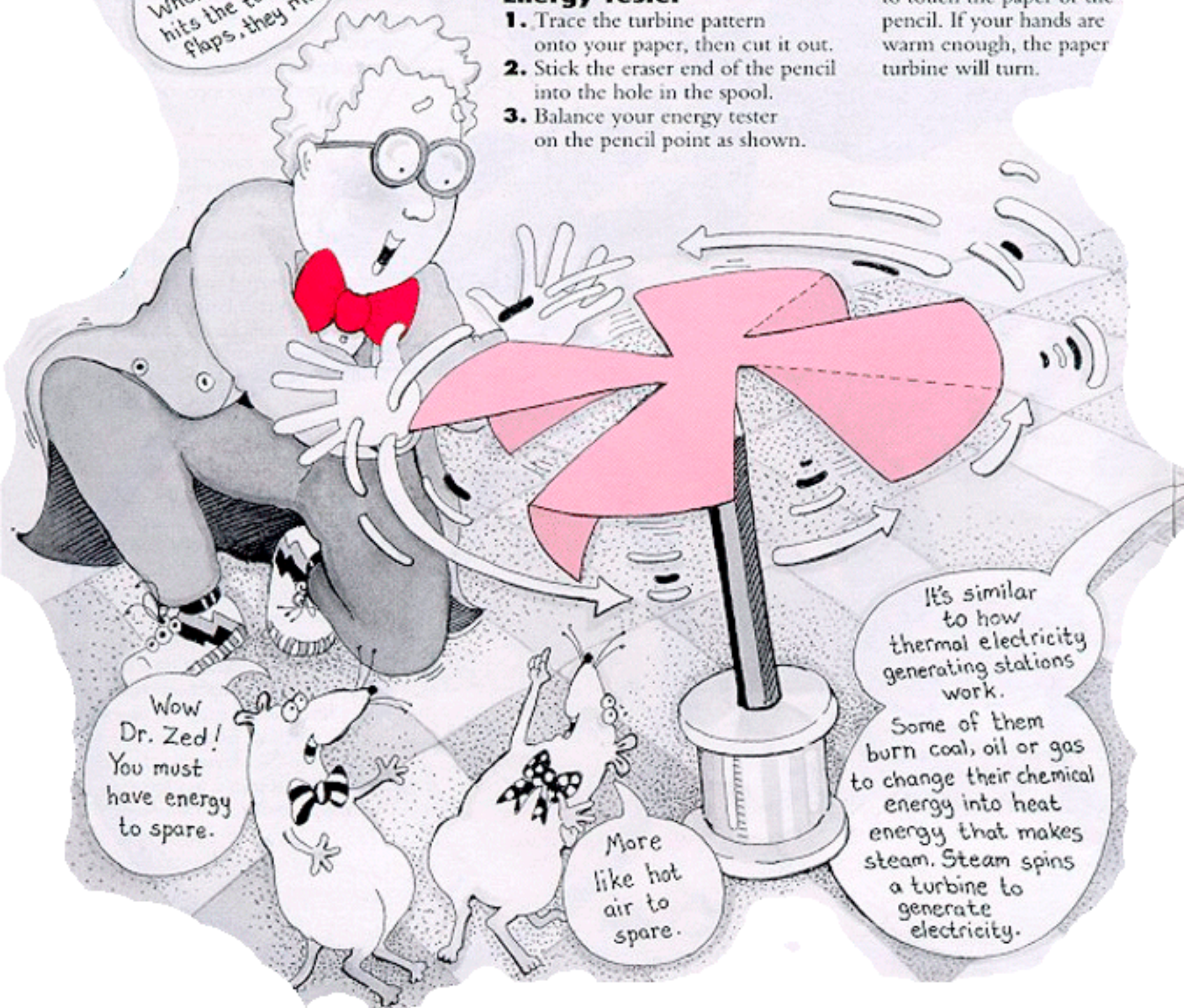
Make sure your hands are warm. Hold them, palms up, beneath the energy tester, being careful not to touch the paper or the pencil. If your hands are warm enough, the paper turbine will turn.

It's similar to how thermal electricity generating stations work.

Some of them burn coal, oil or gas to change their chemical energy into heat energy that makes steam. Steam spins a turbine to generate electricity.

Wow Dr. Zed! You must have energy to spare.

More like hot air to spare.



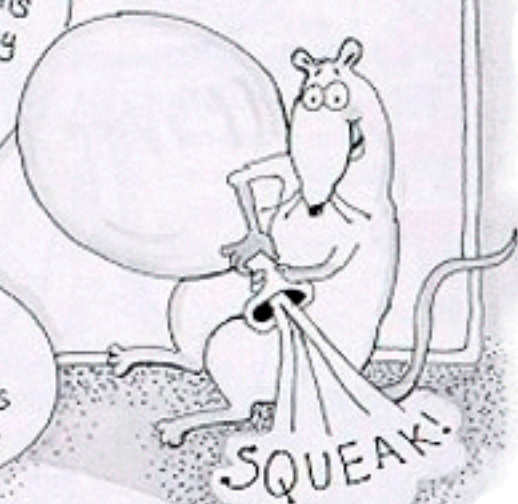
## Dr. Zed's Zoom Balloon

A battery stores energy, and so does a blown-up balloon. What happens when you let go of a balloon before you've tied it off?

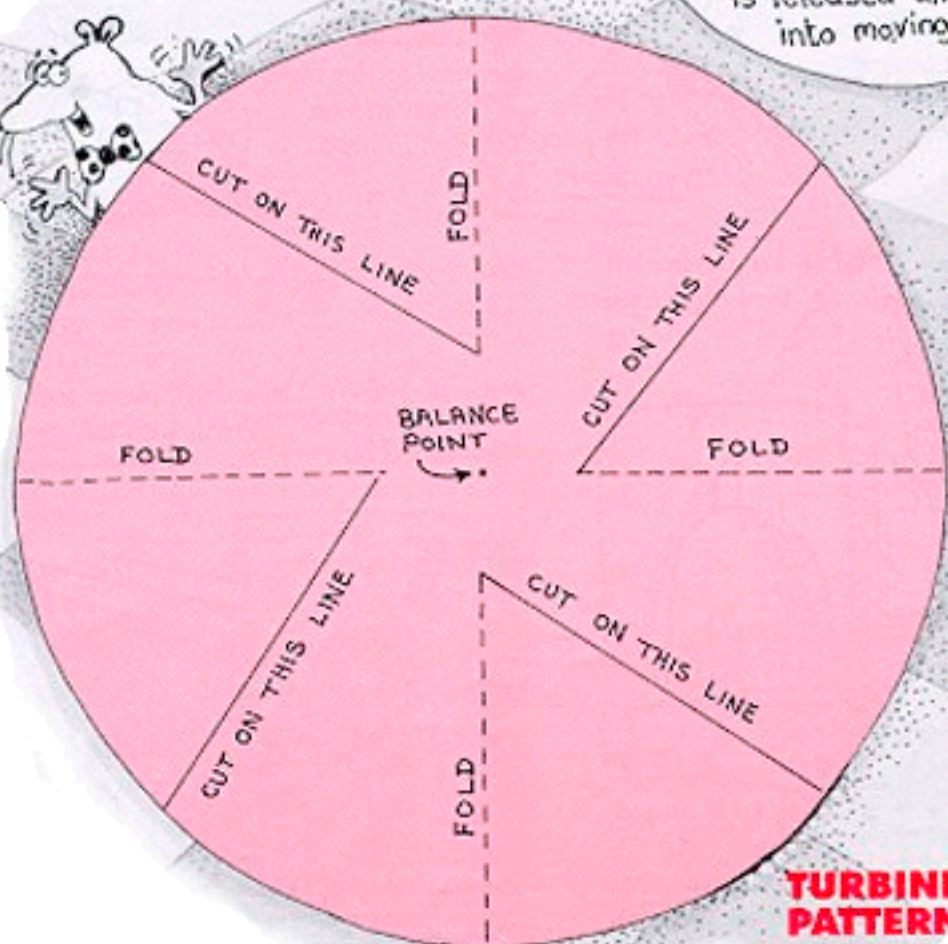


I'm going to change this balloon's stored energy into sound energy. Squeak to me, balloon!

When you let go of the balloon, its stored energy is released and changes into moving energy.



SQUEAK!



**TURBINE  
PATTERN**

Standard incandescent light-bulbs waste most of their energy making heat instead of light. That's why you should never touch a lit bulb.