



## **TOPIC: WIND ENERGY** Activity Instructions

Wind farms (or parks) are collections of wind turbines that generate electricity, which can be used locally or placed on the electric grid to power buildings farther away. The components of these turbines are similar to a common fan: propeller-like blades, a rotor, magnets, and a battery. In contrast to a simple motor (which uses electricity and magnetism to transform current into mechanical energy), the purpose of a wind turbine is to harness kinetic energy from the wind and turn it into mechanical power and electricity. It achieves this when wind turns the propeller-like blades around a rotor, which spins a generator, which creates electricity. The purpose of this activity is to see what turbine characteristics create the most efficient wind turbine. Using common household items, you will design a small prototype that will be hooked up to a voltmeter to measure electromotive output.

## THINGS YOU WILL NEED:

- 1 personal mini fan
- 2 alligator clips
- 1 multimeter
- A source of wind (hair dryer, leaf blower, large fan)
- Craft materials to modify your fan (scissors, tape, glue, craft paper, plastic spoons, popsicle sticks, paper cups, etc.)

## **INSTRUCTIONS:**

- 1. Observe your mini fan.
  - What do you notice about its operation?
  - Can you identify its components?
- 2. Remove the front panel of the fan.
  - Make sure you have access to the metal spring clips where the battery would normally be inserted.
- 3. Make sure the power button on the side is in the "ON" position
  - Can you see why this is important?
  - This ensures the negative battery contact Point touches our 'generator'.

