



## **Wind, What Wind?**

Wyoming is known for its abundance of windy days! Large turbines found in wind farms turn wind energy into electricity for our homes. Before building a wind farm, energy companies carefully research locations. They look for places with consistent wind and access to power lines. In this activity, you will explore how the wind behaves in your yard or park and make decisions on where you would or would not place your own wind farm.

### **In this activity, your family will:**

- Test the wind in your area
- Decide on the best location for a wind farm
- Use a pinwheel to model how wind turbines would work in different locations
- Make a sales pitch about the quality of your location

### **Materials needed:**

- Wind detector – *Use a 12-inch long strip of material that will blow in the wind (ribbon, string, fabric, etc.) and attach it to a holder (stick, pencil, ruler, etc.).*
- Notebook
- Pencil or pen
- Pinwheels – *Store-bought works best, or you can make your own using the pinwheel template.*
  - To make your own pinwheel you will need card stock, scissors, pins, tape and/or glue, and un-sharpened pencils or sticks (*feel free to substitute materials with items you have on-hand; i.e. magazine cover, folder, etc.*).

### **Key Words to know:**

**Turbine** - a machine for producing continuous power using a wheel or rotor that is caused to spin by pressure from water, steam, or air

## Preparation:

- Watch this video from Energy.gov to learn how a wind turbine works:  
<https://energy.gov/eere/wind/animation-how-wind-turbine-works>
- Cut your chosen banner material to about 12 inches long and 1 inch wide (*or less*).
- Create your wind detector by attaching your strip of material to your holder.
- Find or make your pinwheel. If you need help making your pinwheel, be sure to watch the pinwheel tutorial video.

## Do the Activity:

1. Head outside with your wind detector and pinwheel.
2. Hold your wind detector up in the air to see how it reacts to the wind.
3. Move around your space, noticing where the wind blows more or where it blows less.
4. If there is something to climb on, test holding your wind detector up high and down lower.
5. If the wind isn't blowing, how can you make your wind detector fly?
6. While exploring the wind in your space, answer the following questions:
  - Describe the area where the wind blows the most.
  - Describe the area where the wind blows the least.
  - What direction does the wind blow?
  - Does it change direction anywhere?
  - Does your wind detector fly more when it's held up high or down low?
7. Now that you've tested the wind in your space, decide where you would put your wind farm.
8. Place your pinwheel in the location you have chosen for your wind farm. You will use this pinwheel to model how a wind turbine might work.
  - Does your pinwheel spin slow or fast?
  - Try turning your pinwheel, does that change how it works?
  - Does this location work, or do you have to find a different one?
  - Move your pinwheel until you find the location it works best.
9. After you have decided where your pinwheel works best; create a sales pitch, ad, or flyer about why you should locate your wind farm there. Share it with your family in order to convince them!

**Learn more about how wind generates electricity in Wyoming with these lessons and resources from the Wyoming Stewardship Project.**

**3<sup>rd</sup> Grade:**

- **Minerals & Energy, Lesson 4** Students learn how wind speeds and direction in Wyoming affect a turbine.
- **Minerals & Energy, Lesson 5** Students will compare and graph the amount of wind in different Wyoming counties.
- **Minerals & Energy, Lesson 6** Students address the issues that are preventing the greater use of wind farms in Wyoming.