

Ames Public Library @HOME Activities

Wind Power!

Wind power is energy that is generated directly from the wind.

This energy can be turned into other forms of energy like electricity. Wind energy can be created without pollution and is renewable, as we will never run out of wind!

See a related video on the Library's YouTube Channel at <http://bit.ly/APLvideos>.

Books and Video:

Title	Author / Performer	Call no:
<i>Wind, Solar, and Geothermal Power</i>	Offinoski, Steven	J 333.79 OTF
<i>The Boy Who Harnessed the Wind</i>	Kamkwamba, W and Mealer, B	J 333.79 KAM
<i>Power Up!</i>	Paleja, S	J 333.79 PAL
<i>Energy Alternatives</i>	Snedden, Robert	J 333.79 SNE
<i>Power for the Planet</i>	Flounders, Anne	J 333.791 FLO
<i>Wind Power</i>	Allen, Kathy	J 333.9 ALL
<i>Wind Power: Sailboats, Windmills, and Wind Turbines</i>	Ziem, Matthew	J 333.9 ZIE
<i>Energy Island</i>	Drummond, Allan	J 333.92 DRU
<i>Wind Power</i>	Petersen, Christine	J 621.312 PET
<i>Let's Learn S.T.E.M Vol. 2 (DVD)</i>	(DVD)	J 500 (DVD) STE

Websites:

URL	Notes
https://kids.britannica.com/kids/article/wind-power/574607	Contains link to related articles
https://www.energy.gov/maps/how-does-wind-turbine-work	

Vocabulary

Wind Turbine – Wind turbines are tall towers topped with blades. The blades are connected to a shaft, or a rod. A group of wind turbines is called a wind farm.

Energy – Energy makes things happen. Energy is found everywhere and it comes in many forms: solar, wind, light, mechanical, sound, heat etc. Our body produces energy from the food we eat.

Renewable Energy – This is an energy source that will not be depleted or reduced when used. Energy sources like wind and solar power are examples of renewable energy.



Wind Turbines

Wind power has been used by people for many thousands of years. Ancient people used it to power their sail boats. Wind powered machines have been used to pump water and to grind flour. Today wind turbines are used to convert energy from the moving wind into electricity. A large group of turbines is called a wind farm. Because there is wind everywhere, these farms can be set up in remote places where there are not many people. Wind farms are even set up in the ocean.

In Iowa, 42 percent of electricity is produced by wind energy

(<https://www.iaenvironment.org/webres/File/Iowa%20Wind%20Energy%20Fact%20Sheet.pdf>).

Iowa is a national leader in harnessing wind energy.

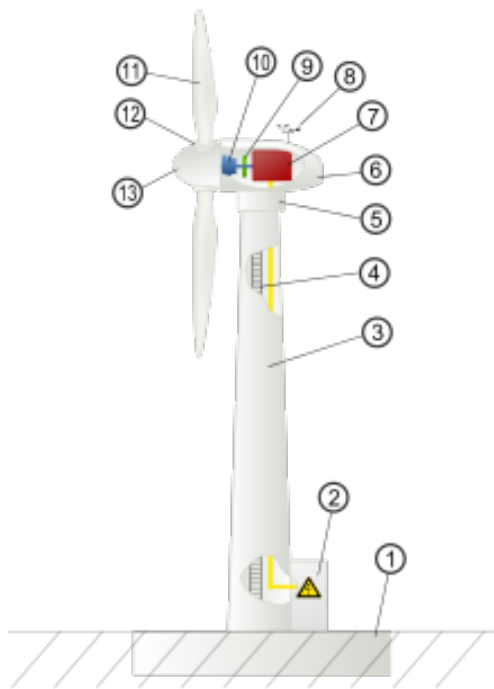


Image source: [wikipedia.org/wiki/Wind_turbine_design](https://en.wikipedia.org/wiki/Wind_turbine_design)

Parts of a Wind Turbine:

1. Foundation
2. Connection to the electric grid
3. Tower
4. Access ladder
5. Wind orientation
6. Nacelle
7. Generator
8. Anemometer
9. Electric or mechanical brake
10. Gearbox
11. Rotor blade
12. Blade pitch control
13. Rotor hub

Pinwheel!

To make a pinwheels, you need:

- Square paper (you can start with a rectangular paper and cut a square out of it).
- Straw
- Paper pin
- Scissors

Fold the square paper along the diagonal or use a pencil and ruler to draw the diagonal lines.

Mark the center point.

Using scissors cut the diagonal fold line or pencil line. Stop about an inch from the center point.

Bring every other corner point to the middle and hold it there.

Pierce the paper pin through all the points in the center and to the back and through the straw.

Make your pinwheel rotate by holding it to the wind, bowing on it, or running with it.

You can experiment by making modifications to the pinwheel—such as using different types of paper, different types of pins, and different straw lengths—to see how it affects the way the pinwheel works.

