

TOPIC: Windmills or Wind Turbines

What is a Windmill?

The first windmill was invented over 1,000 years ago. A windmill is a tall structure found on farms. Engineers call them wind turbines. They have large fan type blades on top of the structure which are used to catch wind and turn it into power for farms and towns. Windmills are used for pumping water, grinding grains and in modern times producing electricity. Windmills can also be used to irrigate or water fields and retrieve water for farm animals.



Examples of Historic and Modern Windmills

How A Windmill Works

A windmill is a working engine that turns the wind into energy. When the wind blows it starts spinning the large sails or blades attached to the top. Once these blades start spinning the energy is then sent down a spinning shaft in the base of the windmill which then turns the gears of the motor.



Gears inside windmill
used to grind grains



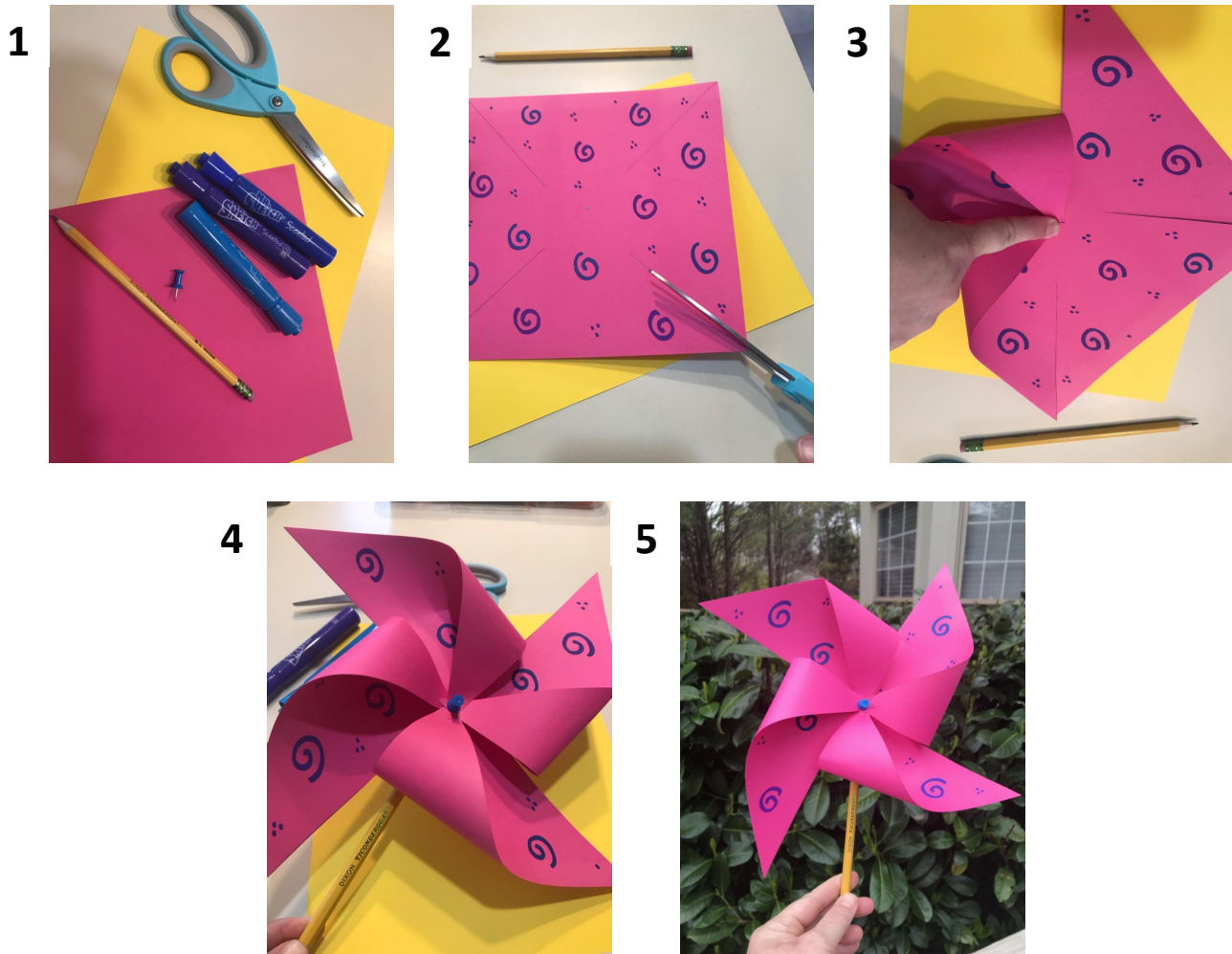
Inside of modern day wind turbine that
produces electricity

Windmill Project

To understand the power of wind and how a windmill can catch it lets due a science project.

Supplies

- Scissors
- Markers or crayons to decorate
- A piece of paper cut in a perfect square
- A pencil with an eraser
- A thumb tack



Once your windmill is finished make it spin by blowing on it. How fast can you make it spins? Take it outside and see if you can catch the wind.



The Loudoun Heritage Farm Museum has two different windmills displayed at the museum. One is located outside that you can walk to.



Inside the Museum



Outside of the Museum
From the parking lot, walk to the left of the museum

The windmill inside the museum was originally part of the estate of Belmont Manor House, which was once home to Patrick Jay Hurley, former Secretary of War, under President Herbert Hoover. This site is the tallest point in eastern Loudoun County, Virginia with views of the surrounding hills and countryside and the approaches to and from the Town of Leesburg. This windmill was originally used to pump water for the farm that was once on the land. The land has been developed into homes and the farm is no longer in existence. The Belmont Manor House is now the club house for Belmont Country Club. Once the windmill was donated to the Loudoun Heritage Farm Museum, it underwent a three-month restoration process.

Family Read A Loud

To learn more about the power of windmills check out the true story of William Kamkwamba. William was a young teenage boy who built a windmill on his family's impoverished farm in Malawi Africa.

The Boy Who Harnessed the Wind by William Kamkwamba: <https://bit.ly/2yQDIBk>

Books

- ***Wind power : sailboats, windmills, and wind turbines*** by Matthew Ziem: <https://bit.ly/2yWGW0B>
- ***Katje, the windmill cat*** by Gretchen Wolfe: <https://bit.ly/2VNROag>