



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences --particularly students of color and girls -- by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

Learn how energy is created by water flowing over a wheel.



Supplies Required:

- 2 paper plates
- 4 small paper cups
- 1 straw
- Masking tape
- Scissors
- Pencil

Video

What is hydropower? <https://tinyurl.com/7ckyy39t>

Overview

A water wheel is a machine that uses the energy of flowing water to turn a wheel. The force of the moving water is exerted against the paddles, and the rotation of the wheel is flowing to the machinery, then to the shaft of the wheel. Water wheels can be made out of metal or wood. Water wheels are used for milling flour in gristmills, grinding wood into pulp for papermaking, hammering wrought iron, machining, ore crushing and pounding fibre for use in the manufacture of cloth.



Instructions

1. Poke a hole in the middle of both paper plates the size of the straw hole
2. You can trace the straw hole onto the paper plate to make the hole
3. Tape one paper cup to the top of the paper plate, tape the second cup opposite of the first cup; repeat for cups 3 & 4
4. Tape the second plate to the other side of the cups
5. Push the straw through the hole of one of the plates all the way through to the other plate
6. Check to see if the cups will spin, if they are not able to spin, adjust the straw until the cups are moveable
7. Hold the water wheel by the straws firmly under a slow stream of water from the sink

Additional Resources

1. What are water mills? <https://tinyurl.com/yzm9erjs>

Share It Out

Share on social media: Record a video or take a picture of your activity and post the results online using the hashtags:

#WaterWheel
#ProjectExploration
#StemAtHome

Tag a friend and challenge them to do it, too!

For more activities like this one, go to www.projectexploration.org/stemhome. If you're interested in learning more about Project Exploration and our free events, programs, and activities, please find us on social media and be sure to follow!



Call or text us for help: 312-772-6634

www.projectexploration.org