

Educator's Guide - January 2019

The Renewables Issue

Academic Standard Focus

ELA-Literacy Standards

- Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate. (CCSS.ELA-Literacy.CCRA.L.4)
- Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression. (CCSS.ELA-Literacy.CCRA.L.6)

Next Generation Science Standards

- Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. [Clarification Statement: Examples of renewable energy resources could include wind energy, water behind dams, and sunlight; non-renewable energy resources are fossil fuels and fissile materials. Examples of environmental effects could include loss of habitat due to dams, loss of habitat due to surface mining, and air pollution from burning of fossil fuels.] (4-ESS3-1.)

National Agriculture Literacy Outcomes

Science, Grades 3-5 - Plants and Animals for Food, Fiber & Energy Outcomes

- Distinguish between renewable and non-renewable resources used in the production of food, feed, fuel, fiber (fabric or clothing) and shelter.

Additional Resources

Power Up Game: www.myamericanfarm.com/games/power_up/

The Energy Story: www.energyquest.ca.gov/story/

EIA Energy Kids: www.eia.gov/kids/

Science Daily: Matter & Energy: www.sciencedaily.com/news/matter_energy/

The following YouTube videos have more information on energy:

Kinetic Energy: www.youtube.com/watch?v=ASZv3tIK56k

Force and Gravity: www.youtube.com/watch?v=LEs9J2IQIZY

Where does energy come from?: www.youtube.com/watch?v=aUa7I7D_myU

Using Energy: www.youtube.com/watch?v=z1xFrYkQwik

Animated Hydropower Slide: <http://energy.gov/eere/water/how-hydropower-works>

Hydropower video: <http://energy.gov/eere/water/hydropower-basics>

Other Links:

- www.need.org
- www.energyquest.ca.gov/games/index.html (online energy games)
- www.epa.gov/students/teachers.html
- www.myenergygateway.org
- www.partselect.com/JustForFun/Electric-Math-Numbers-Behind-Appliances.aspx/

Additional Resources on Renewable and Non-Renewable Energy:

- www.kids.esdb.bg/basic.html
- www.greenmountain.com/resources/enviro-kids/renewable-energy-101

Additional Resource Sites:

- www.alliantenergykids.com/FunandGames/CoolProjects/
- www.eia.gov/kids/index.cfm
- www.evergreenconservancy.org/environmental-education/hydro-power/

- www.dteenergy.com/kids/
- <http://fwee.org/nw-hydro-tours/walk-through-a-hydroelectric-project/>
- www.blackhillscorp.com
- www.energystar.gov/index.cfm?c=kids.kids_index
- <http://www.eschooltoday.com/energy/kinds-of-energy/all-about-energy.html>
- www.tvakids.com
- www.mineralseducationcoalition.org

For more information about the Agriculture in the Classroom program in your state, contact:

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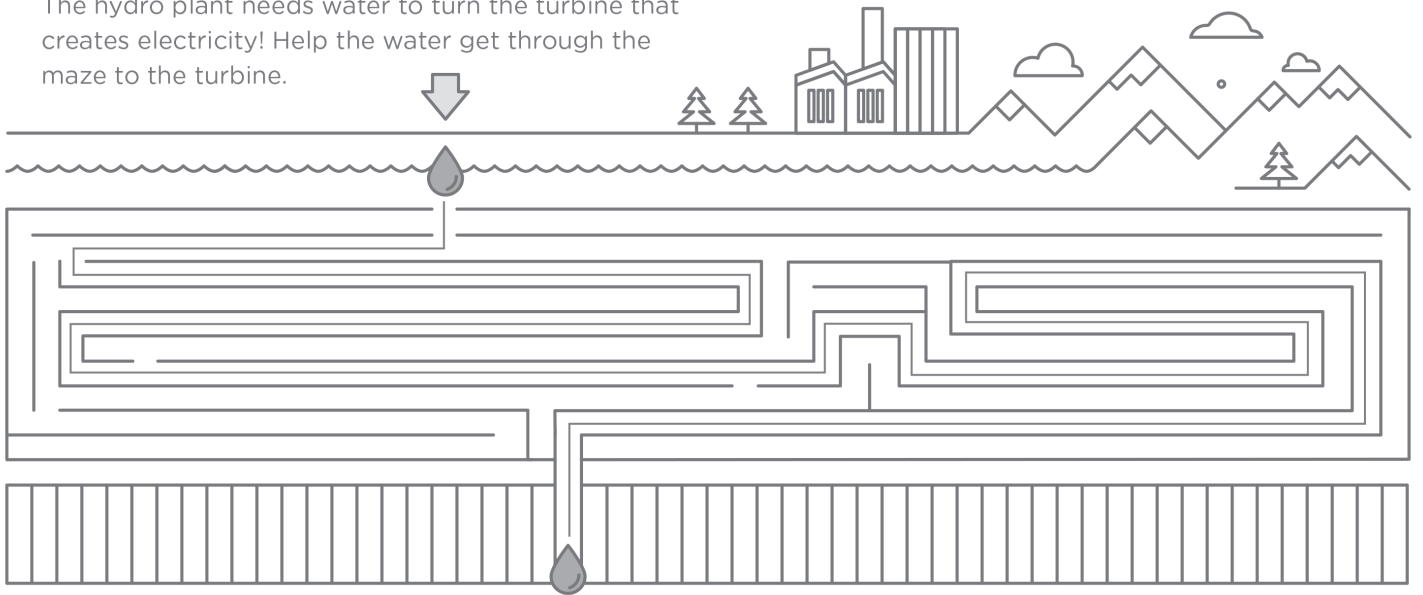
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Or visit www.AgClassroom.org for more programs, resources, and lesson plans.

Help the water through the dam!

The hydro plant needs water to turn the turbine that creates electricity! Help the water get through the maze to the turbine.



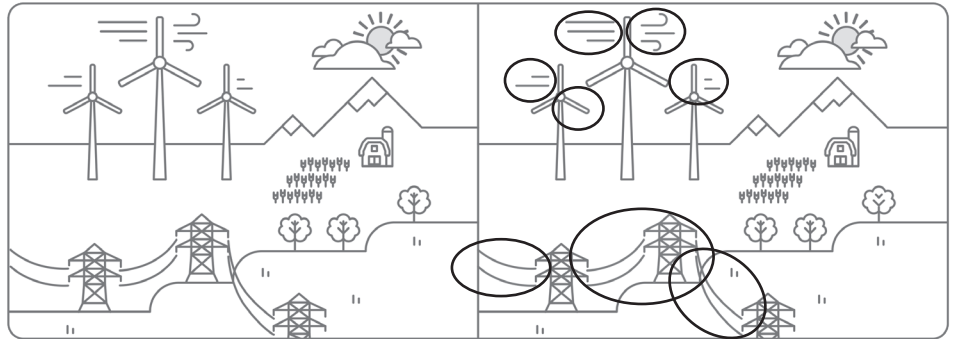
Answers

Page 2

Q. How did Benjamin Franklin feel when he discovered electricity? A: Shocked!

Page 3

- Across 1. Battery
- Across 3. Shining
- Down 2. Photons
- Down 4. Renewable



Page 6

- Q. What is a renewable energy source that is used every day at your school? A. Brain power!
- Q. How are renewable power plants like people who enjoy going to the beach? A. They all like sun, wind and water.

Page 7 - Word Scramble

1. Solar Panel
2. Wind Turbine
3. Biomass
4. Generator
5. Hydropower
6. Geothermal
7. Electricity
8. Power

