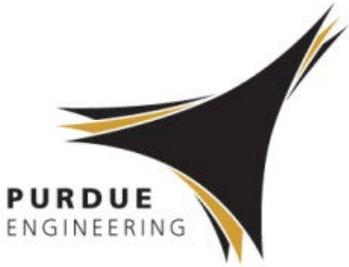


Today, you (or your student) interacted with Purdue University engineering students as a part of a community outreach program sponsored by the Purdue University Women in Engineering Program (WIEP). For more information about other **FREE WIEP programs for students**, please join our listserv at the following website: <https://engineering.purdue.edu/WIEP/Programs/K-12/Wiepk-12>

KITE CARS

FUN QUIZ! (Answers on back)



- 1) Which of following is not a renewable energy source?
a) Hydroelectric b) Wind c) Coal d) Solar
- 2) What shapes work best to make the kite car go the fastest?
- 3) How does the weight of the car and friction affect the movement of the kite car?
- 4) What do engineers do? What kinds of engineers work to develop alternative energy sources?

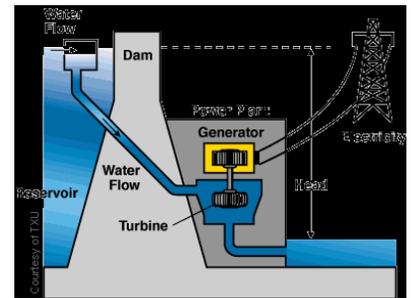


WATCH THESE VIDEOS!

Search for these videos on YouTube about alternative energy:

- ~Wind Turbines – How does it actually work?
- ~Solar Power 101 - How does sunlight turn into electricity?
- ~How hydroelectricity works
- ~How nuclear energy works
- ~Check out this engineer who helps communities expand renewable energy resources:

<http://www.engineeryourlife.org/cms/6207.aspx>



TRY THIS OTHER ALTERNATIVE ENERGY ACTIVITY AT HOME!

To make Solar Collectors you will need:

- ✓ 4 plastic containers
- ✓ Black & white construction paper
- ✓ Water
- ✓ Thermometer
- ✓ Plastic wrap
- ✓ Rubber bands

Here's what you have to do:
(Record all data on table on back of this sheet)

1. Cut two circles each of white and black construction paper to fit the bottom of the containers. Place the circles on the bottom of the containers and cover with 100 ml ($\sim 1/2$ cups) of cold water. Record the temperature of the water.
2. Cover one black and one white container with clear plastic wrap held in place with rubber bands.
3. Place the containers in a sunny place so that the sun is directly over the containers. Record the temperature of the water after ten minutes.
4. Calculate the temperature and record the changes in temperature.
5. Look at trends in your data. How does black/white or cover/no cover affect the temperature of the water? Why?



	White No Color	Black No Color	White With Cover	Black With Cover
Original Temperature				
Temperature after 10 min				
Change in Temperature				

Answers to Quiz on front:

- 1) c) Coal
- 2) Answers may vary—increasing surface area helps!
- 3) More mass is harder to get started but also harder to stop. Friction is the force acting on the wheels that causes the car to stop. Different surfaces have different levels of friction. For example there is a lot of friction on a carpet and very little on the ice. The surface on which the vehicle is traveling will affect the way it moves based on the friction. The vehicle will stop faster on a surface with high friction.
- 4) Engineers are creative, problem solvers who work in teams to make a difference in the world and to improve the quality of life for everyone. Engineers work on problems related to human and animal health, the environment, food, fashion, safety, entertainment (e.g., amusement park rides, electronic games, music), sports, transportation, communication, arts & crafts, space travel ...and the list goes on. All kinds of engineers work on developing alternative energy sources, including but not limited to Aeronautical Engineers, Agricultural Engineers, Biological Engineers, Chemical Engineers, Civil Engineers, Computer Engineers, Electrical Engineers, Environmental Engineers, Industrial Engineers, Materials Engineers, Mechanical Engineers, and Nuclear Engineers.

WANT TO LEARN MORE ABOUT WHAT ENGINEERS DO?

To learn more about what engineers do, visit these websites AND sign up for other FREE WIEP events on the Purdue (West Lafayette) campus at <https://engineering.purdue.edu/WIEP>.

- <http://www.egfi-k12.org/>
- <http://www.discoverengineering.org/>
- <http://www.tryengineering.org/>
- <http://pbskids.org/designsquad/>
- <http://www.engineergirl.org/>
- <http://www.braincake.org/>
- <http://www.talent2030.org/>