

Knowing Energy: Race to a kWh

Energy Revealed

Activity

Level 1-2: Grades 3-8

Level 3-4: Grades 9-12



Main Objective

This activity and the associated video get learners to produce one kWh individually, in pairs, or in teams by generating energy doing various physical activities.

Learning Outcomes

By the end of this activity, learners will:

- Attempt to race over a week to generate one kWh by doing various physical activities
- Keep track of all their energy produced

Length of Activity: 1 week

Step 1: Look over the General Overview Guide (10 minutes)

Step 2: Watch the Knowing Energy video and complete worksheet (Variable)

Step 3: Answer questions regarding worksheet (Variable)

Materials Required

- General Overview Guide
- Race to a kWh Learner Worksheet
- Race to a kWh Worksheet Answer Key

Activity

Step 1: General Overview Guide

Review the General Overview Guide to understand how the Knowing Energy Video Series works with its associated activities.

Step 2: Watch Know Energy Video and Complete Learner Worksheet

- Allow learners to watch the video below and hand out the Race to a kWh Learner Worksheet. *This activity does not have levels 1-4.*



[Race to a kWh Experiment Video \(1:09 minutes\)](#)

- The video itself will direct learners on what to do, so allowing them to re-watch, or to go over their task as a class is vital for their understanding. The experiment itself can be done individually, in pairs or in teams.
- Be sure to remind learners of the equations, and conversions that were introduced to them in the Energy Basics, and activity videos. These concepts can be further discussed as a class before learners tackle this worksheet.

Step 3: Review Learner Worksheet

Be sure to go over as a class the answers to the worksheet and refer to the Race to a kWh Learner Worksheet Answer Key for any confusion.

Teaching Tips

- For reference, if a learner was to only bike to their 1 kWh, then it would require 10 hours of biking (assumed watts for biking is 100). This activity should take a bit of time to complete. If a learner has another activity they would like to do, assume 100 Watts if you are unsure what to use. Learners can continue recording once 1 kWh is reached. It could be fun to see who can get the highest. This activity may require the educator to keep track of the class in a simple spreadsheet.