

Knowing Energy: Race to a kWh



Energy Revealed

Learner Worksheet Answer Key

Level 1-2: Grades 3-8

Level 3-4: Grades 9-12

Assumed Watts:

- Biking: 100
- Running: 150
- Cross country skiing, rollerblading, skateboarding: 125
- Hiking/walking: 75

Reminder:

- Time is everything
- 1 kW = 1000 Watts
- Energy (kWh) = Power (kW) multiplied by Time (hours)

1. Complete any of the listed activities above in order to consume 1kWh of energy (Tip: the more time you spend doing each activity, the faster you will complete the task). If your activity is not listed don't worry, use 100 Watts per hour. Remember how to calculate Watts from the first worksheet!

2. Record your time on each activity and snap a photo as proof and to show off.

3. Calculate the kWh for each activity on your own and keep a running tally of your progress. Example calculation below:

If you walk for 30 minutes (0.5 hours) and the power is 75 Watts then the kW is (75 W/1000 W) 0.075.

Energy produced = power x time (hours) = 0.075 kW x 0.5 hours = 0.375 kWh

Repeat this calculation for all activities and total them up until you reach 1 kWh!

For each activity be sure to use the reminders above to calculate your kWh and sum them up, or if they are all the same activity, you can do it in one calculation with the total hours.

Example: If a learner were to do 2 hours of biking, then they would have required 100 Watts of power, which is 0.1 kW. To see how much energy they produced, you would multiple 0.1 kW by time or 2 hours, which equals 0.2 kWh.