

# ENERGY SAVERS

Essential Question: How can we save energy?



## Overview

Students learn about conserving versus wasting energy and saving money and energy by playing an addition and subtraction game.

## Assessment

Can students

- Name or draw 3 ways to save energy?
- Name or draw 3 ways to waste energy?

## Vocabulary

- Reuse
- Recycle
- Repair
- Electricity
- Energy



## Teacher Information and Procedure

**Prior knowledge for students:** Adding and subtracting numbers up to 20.

**Source:** New material © 2015 (Graphics from DepositPhotos.com)

### Materials needed

Energy cards, cut out and mixed up in a box or hat (use the ones provided or make your own by asking children to suggest ways of saving energy and wasting energy)

Number Line marked 0-20

Two team “Markers” for the number line.

Play money - \$40 in ones.

### What to do in advance

If you don’t have a number line on the wall, make one with numbers from 0-20 evenly spaced on the floor or whiteboard.

## Teaching the Lesson

### Gear-up

Engage students in a discussion of energy. What happens when you waste lots of energy? What are some ways that you waste energy? Discuss lights, TV, heat, and transportation, introduce the concept of recycling, reusing, and repairing things to save energy.

### Explore

Tell students that you are going to play a game with money and energy. They are going to get a special allowance of

“Energy Bucks” that they can use to pay for energy.

Divide class into two teams and give each team 20 dollars in play money.

Put both team’s markers at the 20 on the number line.

The teams take turns drawing cards, and reading them (with help if needed) to the class. If the card tells them to spend money, they subtract the number of dollars spent from 20 (or whatever position they are at on subsequent turns) and move their marker accordingly. If the card says they save “bucks” they can add it to their position on the number line. If they are already at 20, or if the number of bucks added would put them over 20, they can save it and use it on a later turn.

The object of the game is to avoid getting to zero. When the first team gets to zero the game is over.

Turn off the lights for a minute to show that all the energy is used up!

After each turn, discuss why that activity wastes or saves energy.

## Alaska Standards

### Addressed

#### Science GLEs

AAAS Benchmarks for Science Literacy

By the end of 2nd grade, students should know that people can save money by turning off machines when they are not using them.

#### Math GLEs

Readily give the sums and differences of single-digit numbers in familiar contexts where the operation makes sense to them and they can judge the reasonableness of the answer.

#### Alaska English/Language Arts and Mathematics Standards (2012):

- RI.K-5.4
- SL.K-5.1, SL.K-5.5



## Generalize

Talk about the cost of using energy, and why it is a good idea to save money and resources by using less energy.

## Assess

Ask students to name or draw 3 ways to save energy and 3 ways to waste energy.

## Extensions, adaptations, and more resources

The game can be adapted for older students by using larger numbers, or by asking each student to make 3-5 “saver” cards and 3-5 “waster” cards to use in the game.



<p>Leave the TV on all day</p> <p><b>Spend</b> <b>6 ENERGY BUCKS</b></p>	<p>Have a parent drive you to school</p> <p><b>Spend</b> <b>10 ENERGY BUCKS</b></p>	<p>Ride the bus to school</p> <p><b>Spend</b> <b>2 ENERGY BUCKS</b></p>	<p>Use a wood fire to heat your house</p> <p><b>Save</b> <b>3 ENERGY BUCKS</b></p>
<p>Turn on all the lights and leave them on</p> <p><b>Spend</b> <b>8 ENERGY BUCKS</b></p>	<p>Turn off any lights that you don't need.</p> <p><b>Save</b> <b>5 ENERGY BUCKS</b></p>	<p>Turn down the heat and put on a sweater</p> <p><b>Save</b> <b>3 ENERGY BUCKS</b></p>	<p>Use a solar panel to recharge your phone</p> <p><b>Save</b> <b>3 ENERGY BUCKS</b></p>
<p>Walk to School</p> <p><b>Save</b> <b>4 ENERGY BUCKS</b></p>	<p>Leave the refrigerator door open</p> <p><b>Spend</b> <b>5 ENERGY BUCKS</b></p>	<p>Leave the hot water running</p> <p><b>Spend</b> <b>3 ENERGY BUCKS</b></p>	<p>Use a wind turbine for electricity</p> <p><b>Save</b> <b>7 ENERGY BUCKS</b></p>
<p>Wash clothes in cold water instead of hot.</p> <p><b>Save</b> <b>3 ENERGY BUCKS</b></p>	<p>Take a 1-minute shower</p> <p><b>Save</b> <b>2 ENERGY BUCKS</b></p>	<p>Stay in the shower for 20 minutes</p> <p><b>Spend</b> <b>6 ENERGY BUCKS</b></p>	<p>Use Tupperware instead of plastic bags</p> <p><b>Save</b> <b>4 ENERGY BUCKS</b></p>
<p>Leave the outside door open (in winter)</p> <p><b>Spend</b> <b>7 ENERGY BUCKS</b></p>	<p>Use a blanket to stay warm at night.</p> <p><b>Save</b> <b>4 ENERGY BUCKS</b></p>	<p>Use your paper cup more than once</p> <p><b>Save</b> <b>1 ENERGY BUCK</b></p>	<p>Ride a train just for fun</p> <p><b>Spend</b> <b>4 ENERGY BUCKS</b></p>
<p>Walk to the store.</p> <p><b>Save</b> <b>9 ENERGY BUCKS</b></p>	<p>Drive to the store</p> <p><b>Spend</b> <b>9 ENERGY BUCKS</b></p>	<p>Use both sides of your paper</p> <p><b>Save</b> <b>1 ENERGY BUCK</b></p>	<p>Heat your hot tub with Geothermal steam</p> <p><b>Save</b> <b>5 ENERGY BUCKS</b></p>
<p>Fix your broken bicycle.</p> <p><b>Save</b> <b>3 ENERGY BUCKS</b></p>	<p>Buy a new bicycle; the old one has a flat tire!</p> <p><b>Spend</b> <b>6 ENERGY BUCKS</b></p>	<p>Recycle cans and bottles</p> <p><b>Save</b> <b>2 ENERGY BUCKS</b></p>	<p>Plant new trees in your backyard</p> <p><b>Save</b> <b>3 ENERGY BUCKS</b></p>