

#### APPLICABLE TO:

- AIR
- ENERGY
- WATER
- WASTE
- TOXINS

#### RECOMMENDED AGE:

- ELEMENTARY SCHOOL
- MIDDLE SCHOOL
- HIGH SCHOOL
- COLLEGE

#### COST:

- FREE
- \$1 - \$15
- \$16 - \$50
- \$50 and more

#### REINFORCES:

- CRITICAL THINKING
- COMMUNICATION
- CREATIVITY
- COLLABORATION

## 20 MINUTE ACTIVITY: ENERGY Pictionary

### OVERVIEW:

Conserving energy is important because it protects natural resources in our environment and saves money. Much of the world's energy is made by burning non-renewable resources like fossil fuels. Fossil fuels are often found beneath the habitats of great biodiversity. By saving energy and reducing the need for the burning of fossil fuels, you can help protect animal and plant habitats, while decreasing air pollution and greenhouse gas emission!

This Energy Pictionary Activity is a fun way to learn more about the different types of energy resources and actions we can take to conserve energy! The objective of this Energy Pictionary Activity is to correctly identify the energy related term/phrase from clues drawn on a piece of paper.

### MATERIAL CHECKLIST

- Whiteboard/Chalkboard
- Markers
- Scrap papers
- Container
- Timer or Clock to keep time

### ACTIVITY STEPS:

1. Cut recycled scrap paper into pieces and write down the energy terms/phrases. (See page 2 for terms/phrases). Fold the pieces in half and place them into a bowl or container.
2. Assign a scorekeeper, a time manager, and a dictionary aid. The scorekeeper will make sure each group is given one point for each correct answer. The time manager will keep track of time and allow only up to 1 minute per drawing. The dictionary aid will hold the list of definitions (page 4) and provide hints and information throughout the game as needed.
3. Split the remaining students into two groups and have them pick a team name.
4. Have the teams play rock/paper/scissors to see who will go first.
5. Choose one person from the first team (called the picturist) to pick a piece of paper from the container. The picturist only has ten seconds to look at the card and plan their drawing strategy. The picturist's task is to draw their chosen energy term/phrase as their team guesses what the term is (See page 3 for

- complete rules). Have the time manager let the picturist know when their ten seconds are finished.
6. The picturist's team has up to one minute to guess the correct energy term/phrase. Note, the drawing and guessing processes begin at the same time. If the team guesses correctly before their time is up, they earn the point(s). If they do not guess correctly after one minute, the other team has 10 seconds to make a guess. If the second team guesses correctly, they earn the point(s).
  7. Choose a person from the other team be the picturist and have their team guess the energy term.
  8. If the students drawing and/or their team are having trouble because they do not know the meaning of a word, the dictionary aid can help provide hints like the category, definition, or letters of a term/phrase. Ensure both teams receive the same amount of hints, such as 5 per game. If time allows, let the dictionary aid share the definition of the term after each round with the entire class.
  9. Continue until all terms/phrases are selected and all students have had the opportunity to be the drawer on each team.
  10. Once finished, the scorekeeper can tally up the points and announce the winning team.
  11. Bonus: Brainstorm with your Grades of Green Team students on other ways to reduce the use of energy. Have the dictionary aid add these ideas to the energy definitions!

#### TAKE ACTION:

What can you do to conserve energy? Simple actions add up to save lots of energy:

- Unplug idle electronics
- Use a power strip
- Wash clothes using cold water
- Turn off the lights
- Use energy saving light bulbs
- Turn off computers when not in use

#### RECOMMENDED GRADES OF GREEN ACTIVITIES:

- ⇒ Energy Audit
- ⇒ Energy Earth Tips
- ⇒ Earth Hour

You can also visit our In-Class Energy Activity for more information about energy use and the different types of energy sources.

#### EXTERNAL RESOURCES:

If you want to review or provide background information about renewable and non-renewable energy sources, check out these videos:

- ⇒ Renewable Energy: <https://www.youtube.com/watch?v=T4xKThjcKaE>
- ⇒ Fossil Fuels 101: <https://www.youtube.com/watch?v=zaXBVYr9lj0>

The following energy terms and phrases are “level 2”. If you would like to provide students with a review or background information, check out the videos and resources on the page 2.

Renewable Resources	Coal
Solar Energy	Oil
Wind Power	Natural Gas
Wind Farm	Nuclear Energy
Hydropower Energy	<b>Actions to reduce energy use (2 points each):</b>
Geothermal Energy	Unplug idle electronics
Biomass Energy	Use a power strip
Tidal Energy	Wash clothes using cold water
Non-renewable Resources	
Fossil Fuels	

Energy Pictionary Rules:

1. The picturist only has 10 seconds to look at the card and plan their drawing strategy.
2. The picturist’s team gets up to 1 minute to guess the term.
3. If the chosen team does not guess the term after 1 minute, the opposing team has 10 seconds to answer correctly and earn the point.
4. The picturist cannot talk, they can only gesture to their team members.
5. No letters or numbers can be written as part of the drawing.
6. Hints can only be provided by the Dictionary Aid. Each team gets the same amount of hints.

Level 2:

**Solar energy** is a renewable energy source created by the power of the sun. Solar energy is collected using solar panels and turned into electricity.

**Wind power** is a renewable energy source created when large turbines are turned by the wind. As the blades on the turbine rotate they turn a machine called a generator that makes electricity.

**Wind farm** is a group of wind turbines in the same location.

**Hydropower** is a renewable energy source produced using the power of water. A dam is built across flowing water like a river, which stops the flowing water. This allows people to control when the water flows, and when the water is released to go down the long pipes it turns a big machine that generates electricity.

**Geothermal energy** is renewable energy under the earth that releases heat which can be captured and turned into electricity.

**Biomass energy** is a renewable energy source created using plant and animal material, such as corn. The energy from these organic materials is burned to create heat or be turned into electricity.

**Tidal energy** is renewable energy produced by ocean waters. Turbines are placed on the sea bed where there is strong tidal flow and special generators are used to convert tidal energy into electricity.

**Nonrenewable** means resources that take billions of years to create on earth so once we use them up, we cannot make more. Examples are coal, natural gas, oil, and other fossil fuels.

**Fossil Fuels** are non-renewable resources that formed when prehistoric plants and animals died and were buried by layers of sand, clay, and rock. Over millions of years, different types of fossil fuels were formed depending on the combination of organic material, temperature and pressure conditions and how long it was buried. The three main types of fossil fuels are coal, oil, and natural gas.

**Coal** is a non-renewable resource and type of fossil fuel formed from plant organisms like ferns, plants, and trees that died and fell into swamps over millions of years ago. Coal exists in black or brownish black sedimentary rock forms. Coal is taken from the Earth through underground mining or surface mining and can be burned for heating or to produce electricity.

**Oil** is a non-renewable resource and type of fossil fuel formed from small animal and plant organisms like zoo plankton and algae that lived millions of years ago. Crude oil exists in liquid form in underground pools or reservoir. Oil is taken most commonly by drilling a well and used to make gasoline, diesel, and plastics.

**Natural Gas** is a non-renewable resource and type of fossil fuel formed from plant and animal organisms that lived over millions of years ago. Natural gas is found in underground rocks called reservoirs. Natural gas is usually taken through drilling a well and used for heating, electricity, and to fuel vehicles.

**Nuclear energy** is non-renewable resource made by an element called Uranium. Uranium is a metal that is found in rocks. Nuclear energy means that we take the uranium out of rocks, turn it into steam, and then turn it into electricity.