6

Science Standard
6.6.b.

Teacher's Masters

California Education and the Environment Initiative

Energy and Material Resources: Renewable or Not?

California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

The Education and the Environment Initiative Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency

California Natural Resources Agency

California State Board of Education

California Department of Education

Department of Resources Recycling and Recovery (CalRecycle)

Key Partners:

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Office of Education and the Environment

1001 I Street • Sacramento, California 95814 • (916) 341-6769

http://www.CaliforniaEEI.org

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Contents

Lesson 1 What Are Resources?

None required for this lesson.

Lesson 2 What Do Humans Need?

None required for this lesson.

Lesson 3 What Makes a Resource Renewable?

Resources Discussion Questions: Group 1 2
Resources Discussion Questions: Group 2 4
Resources Discussion Questions: Group 3 6
Resources Discussion Questions: Group 4 8
Resources Discussion Questions: Group 5 10
Resources Discussion Questions: Group 6 12
Resources Discussion Questions: Group 7 14

Lesson 4 How Do Our Practices Affect Our Resources?

None required for this lesson.

Lesson 5 How Do We Classify Our Resources?

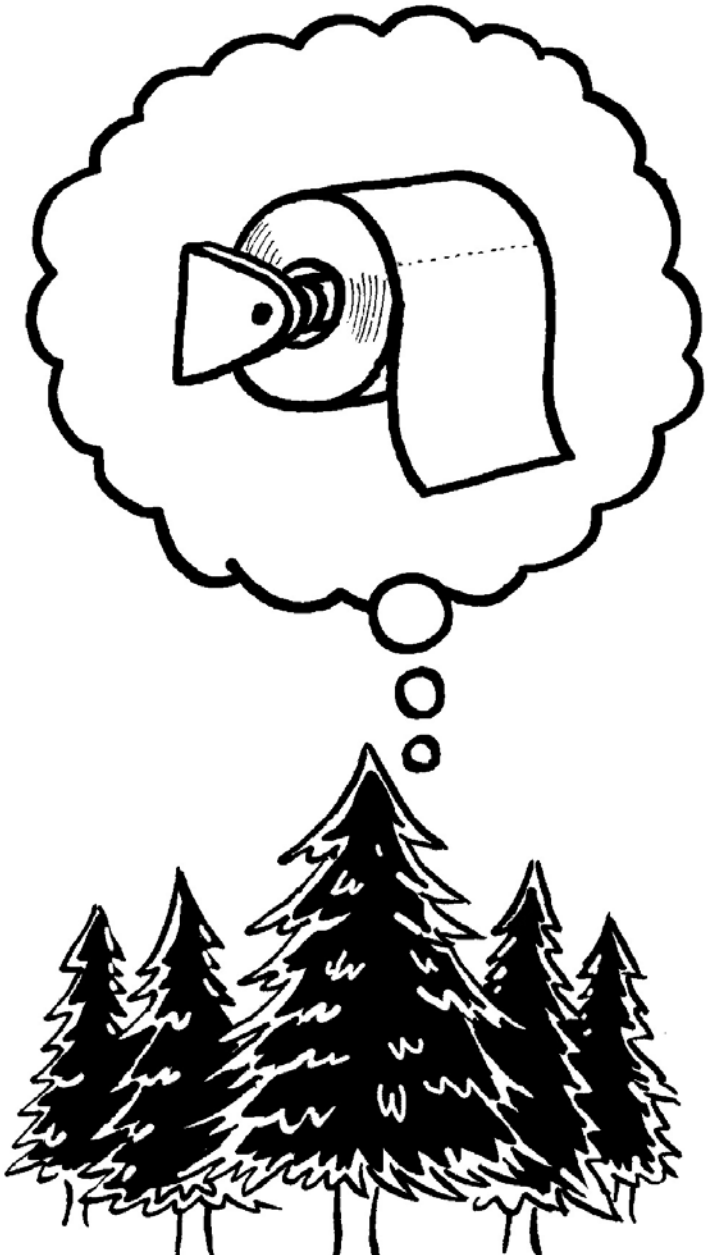
None required for this lesson.

Assessments

Energy and Material Resources—Traditional Unit Assessment Master 16
Resources: Renewable, Nonrenewable, or Inexhaustible?—
Alternative Unit Assessment Master 19

Name: _____

Toilet Paper (Visual Aid #xx)



Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Toilet Paper** (Visual Aid #xx), read the caption and then ask:

- What is the wood going to be used for?

_____

_____

- If you asked at home (*last night's homework*), about how many rolls of toilet paper does your household use a month?

_____

_____

- If trees could talk, what do you think they would say about using them for toilet paper?

_____

_____

- What can we do to be careful about our use of trees for toilet paper?

_____

_____

- What type of resource is wood: renewable, nonrenewable, or inexhaustible?

_____

_____

- Can the way we use it make it nonrenewable?

_____

_____

Your question and answer:

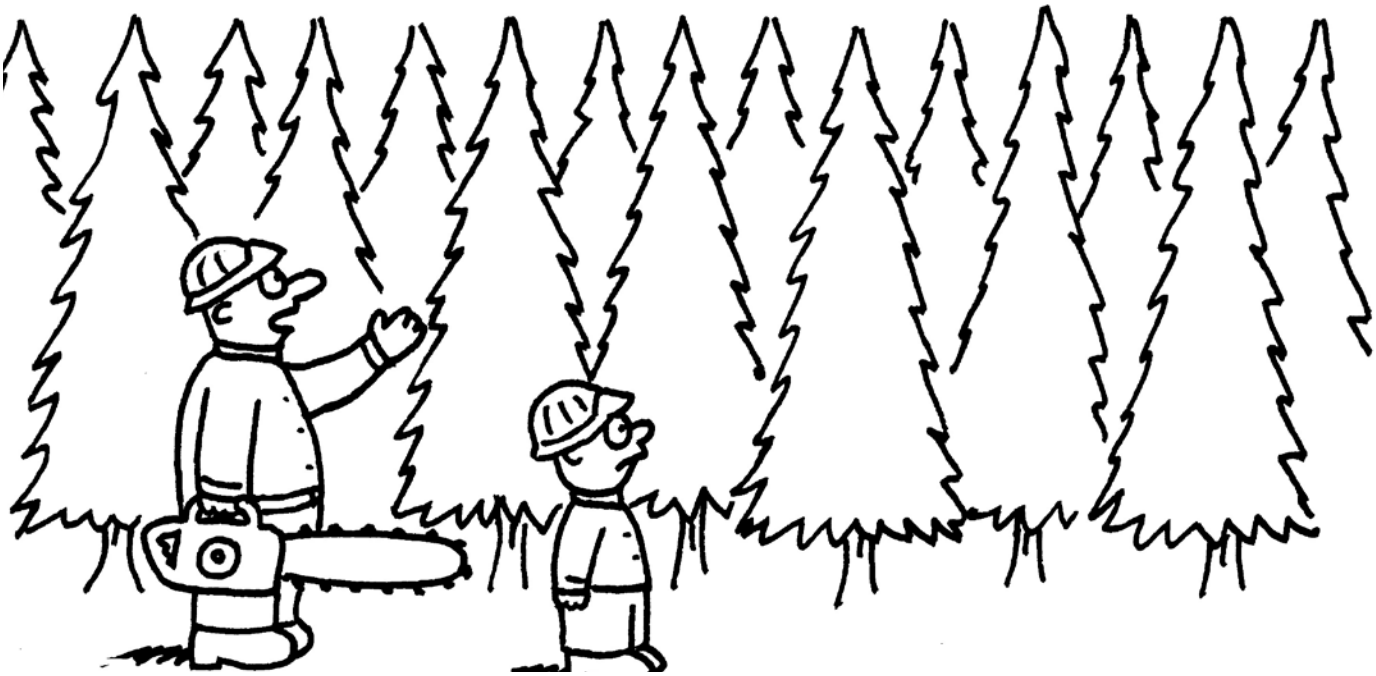
_____

_____

_____

Name: _____

Junk Mail (Visual Aid #xx)



"One day son, all of this junk will be mail!"

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Junk Mail** (Visual Aid #xx), read the caption and then ask:

- What is the wood going to be used for?

_____

_____

- If you asked at home (*last night's homework*), show with your hands how tall a stack of junk mail your house receives each month.

_____

_____

- If trees could talk, what would they say to us about our use of trees for junk mail?

_____

_____

- What can we do to be careful users of trees and junk mail?

_____

_____

- How can the amount of junk mail we generate affect whether trees are a renewable, nonrenewable or inexhaustible resource?

_____

_____

Your question and answer:

_____

_____

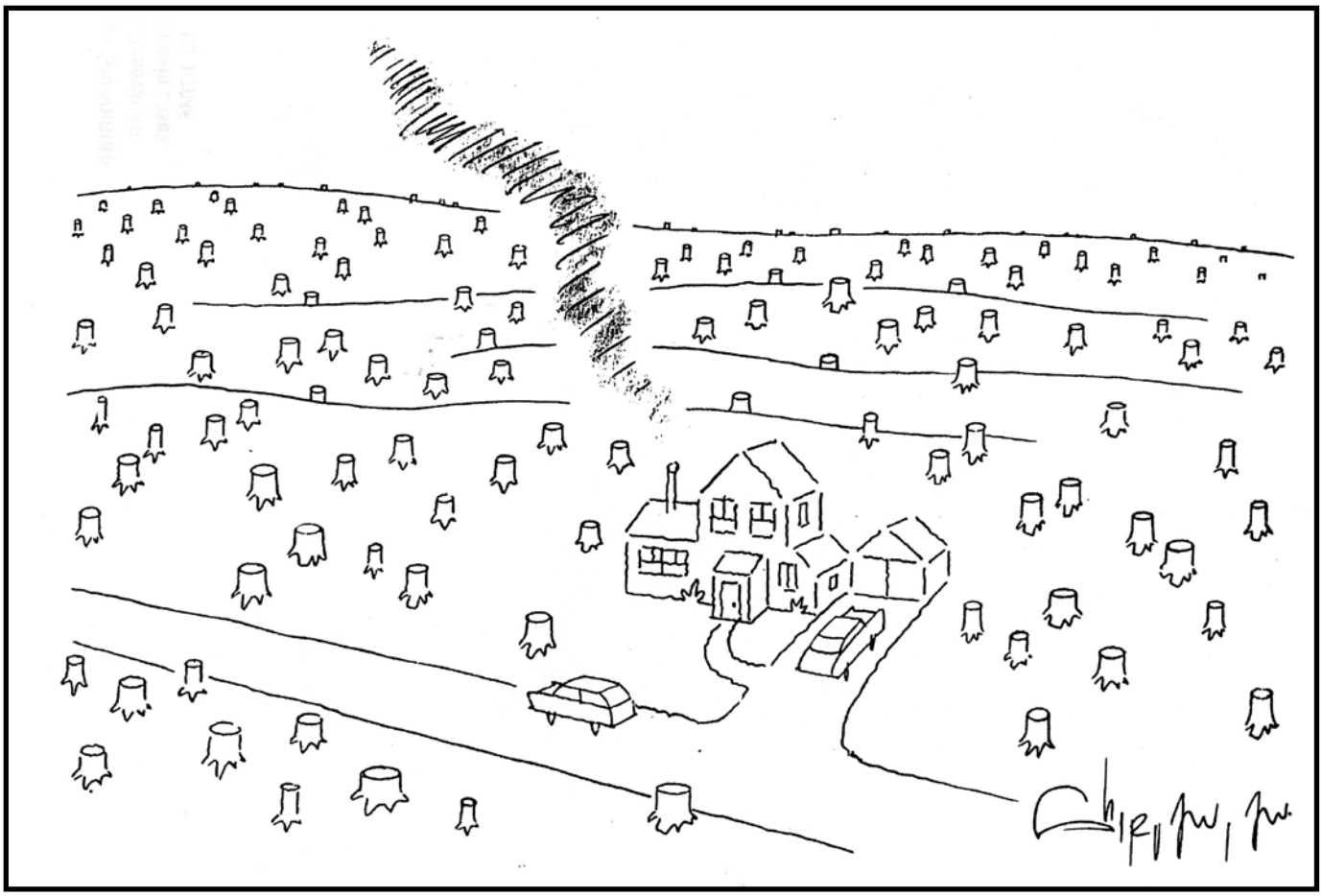
_____

_____

_____

Name: _____

Wood-burning Stove (Visual Aid #x)



"Can you believe it? Since we installed our wood-burning stove,
we've spent next to nothing on heating oil"

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Wood-burning Stove** (Visual Aid #x), read the caption and then ask:

- What is the wood going to be used for?

_____

_____

- Why are the people in the house happy that they are not using heating oil?

_____

_____

- In what way does this cartoon suggest that using wood for heating might be a problem?

_____

_____

- What does this cartoon suggest about how much or how quickly people can use wood?

_____

_____

- What does this cartoon suggest about making choices to use less of one type of resource by replacing it with another resource?

_____

_____

- Is heating oil a renewable, nonrenewable, or inexhaustible energy resource?

_____

_____

Your question and answer:

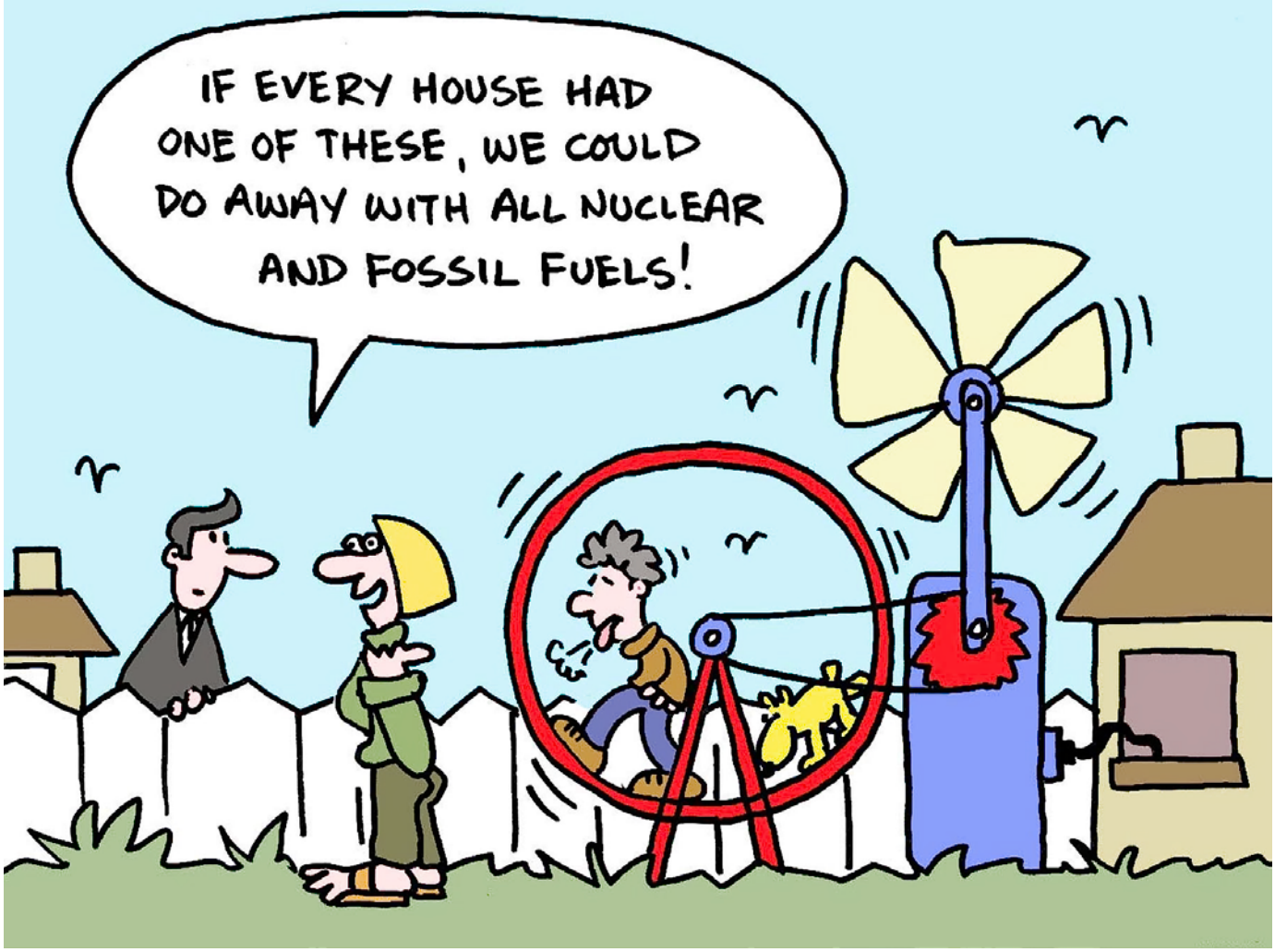
_____

_____

_____

Name: _____

Boy- and Dog-Powered Fan (Visual Aid #x)



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Name: _____

Project **Boy- and Dog-Powered Fan** (Visual Aid #x), read the caption and then ask:

- What are the boy and dog doing?

_____

_____

- Do you think the house will continue getting electricity if they stop moving?

_____

_____

- How is this a problem for generating electricity without using nuclear and fossil fuels?

_____

_____

- Why are people concerned about using nuclear and fossil fuels?

_____

_____

- Do you think having one of these in every home would make a difference in how much energy was used from fossil fuels?

_____

_____

Your question and answer:

_____

_____

_____

_____

_____

Name: _____

Fossil Fuels (Visual Aid #x)

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Fossil Fuels** (Visual Aid #x), read the caption and then ask:

- Where do fossil fuels come from?

_____

_____

- What are some examples of fossil fuels?

_____

_____

- What do people use fossil fuels for?

_____

_____

- Why do you think the aliens ran out of fossil fuels?

_____

_____

- Could people on Earth run out of fossil fuels?

_____

_____

- What can people do to prevent running out of fossil fuels?

_____

_____

Your question and answer:

_____

_____

Name: _____

Sunshine Going to Waste (Visual Aid #x)

"When I think of all sunshine going to waste…"

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Sunshine Going to Waste** (Visual Aid #x), read the caption and then ask:

- Is the world likely to run out of sunshine?

_____

_____

- How can people use the energy of sunlight to get energy for their homes?

_____

_____

- How else can we use the Sun's energy?

_____

_____

- Why don't people use solar power for all our energy needs?

_____

_____

- Is the Sun a renewable, nonrenewable, or inexhaustible resource?

_____

_____

Your question and answer:

_____

_____

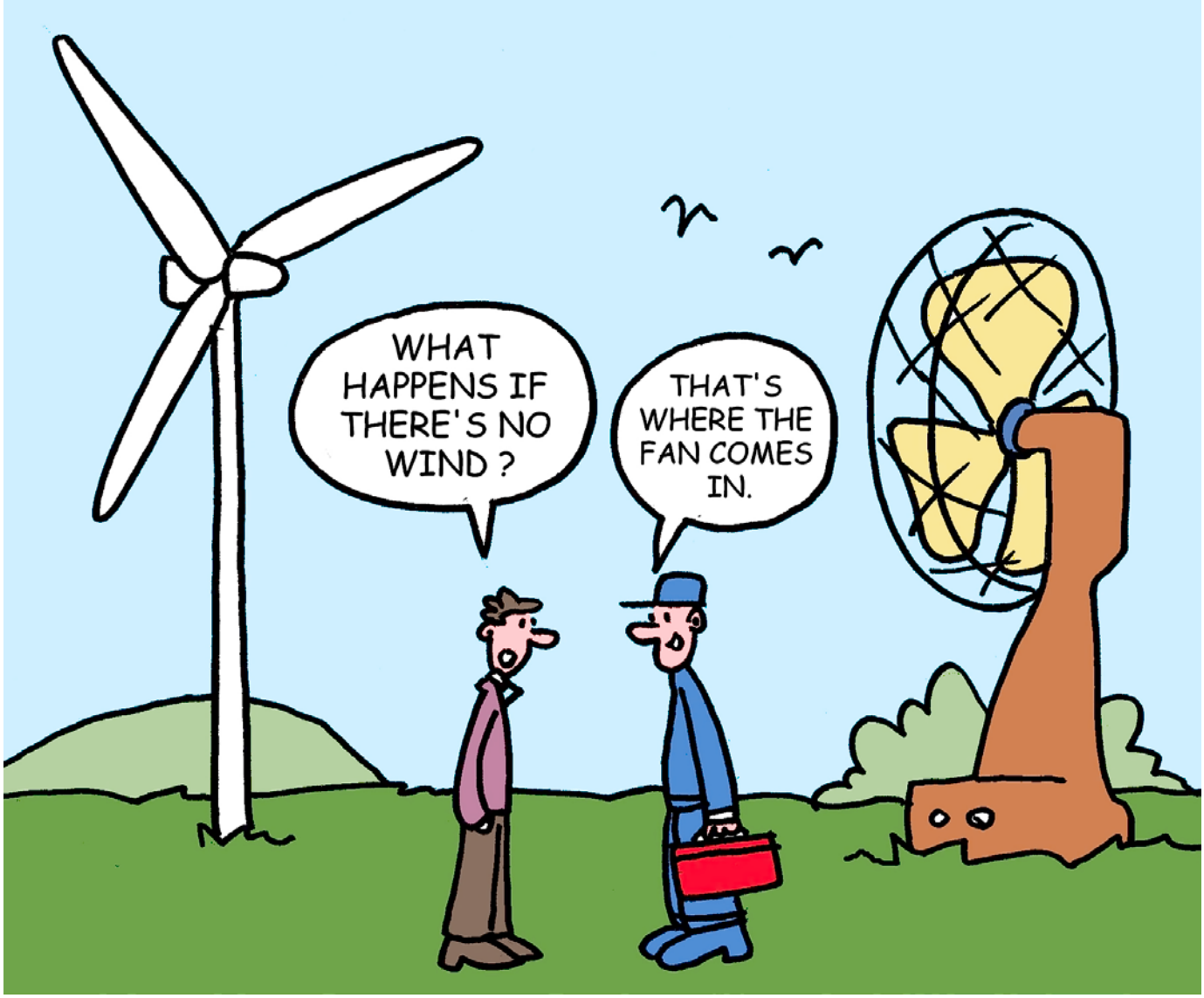
_____

_____

_____

Name: _____

Fans (Visual Aid #xx)



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Name: _____

Project **Fans** (Visual Aid #xx). Point to the turbine and explain that turbines, such as these, use wind energy to generate electricity. Read the caption and then ask:

- Which one, the turbine or the fan, gets its power from the wind?

_____

_____

- Which one, the turbine or the fan, gets its power from electricity that may be produced from some other energy source?

_____

_____

- What might be the other possible source of energy?

_____

_____

- Which one, the turbine or the fan, is taking advantage of an inexhaustible resource?

_____

_____

- What are some advantages of using wind turbines?

_____

_____

- What are some disadvantages of using wind turbines?

_____

_____

Your question and answer:

_____

_____

Name: _____

Instructions: Read the sentences and provide answers in the spaces provided.
(1 point each, 5 points total)

1. List five energy resources.

_____

_____

2. List five material resources.

_____

_____

Instructions: Select the best answer and circle the best answers. (1 point each, 5 points total)

3. Which five resources are essential for human survival?

roads	plants	stores	energy for cooking and heating
lights	vehicles (cars and trucks)	water	computers
air	cell phones	animals	

Instructions: Read the sentences and provide answers in the spaces provided.

4. What are renewable resources? (3 points) Provide two examples. (2 points)

_____

_____

_____

5. What are nonrenewable resources? (3 points) Provide two examples. (2 points)

_____

_____

_____

Name: _____

6. What are inexhaustible resources? (3 points) Provide two examples. (2 points)

_____

_____

_____

Instructions: Complete the task below.

7. Draw lines to match each resource to its correct category or categories. (10 points, 1 point each)

Iron

Petroleum

Wind

Fish

Rocks

Sun

Trees

Salt water

Fresh water

Gold

Renewable Resources

Nonrenewable Resources

Inexhaustible Resources

Name: _____

Instructions: Read the following question and provide the answer in the space provided. (5 points)

8. If you drew more than one line from a resource in Question 7, explain how the resource might belong to multiple categories.

_____

_____

_____

_____

_____

Name: _____

Instructions: Create a poster called "Resources: Renewable, Nonrenewable or Inexhaustible?" Divide the poster into three parts, and follow the instructions below for each part.

Part 1: Energy and Material Resources (10 points)

- Draw a picture of an energy resource and explain why it is important to human life.
- Draw a picture of a material resource and explain why it is important to human life.

Part 2: Renewable, Nonrenewable, or Inexhaustible? (10 points)

- Define the following terms: "renewable resource," "nonrenewable resource," and "inexhaustible resource."
- Draw and label one example for each term.

Part 3: Resource Classification Can Change (10 points)

- Describe a natural resource that might change classifications because of human practices.

Put your name on the poster.

Due date: _____

California Education and the Environment Initiative

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