

Name:

Class:

Date:

Activity 7.1A: Renewable Energy Lab

Materials Needed

- Two different colors of beads, beans, or candy for each group (87 of one color, 13 of the other)
- Two bowls for each group

Instructions

This lab will help you understand the need for renewable energy sources. Follow each of the steps with your partner(s) and answer the questions.

Section 1: Constant Usage

Create an Energy Usage Ratio

1. Place 87 items (beads/beans/candy) of one color and 13 of another color in one of your bowls. The 87 items represent the 87% of US energy usage that comes from nonrenewable sources. The 13 items represent the 13% of US energy usage that comes from renewable energy sources.
2. Have one partner close his or her eyes and randomly draw 10 items from the first bowl and place them in the empty bowl. Write down (in the row for round one on the chart) the number of renewable and nonrenewable items that your partner drew.
3. Sort through the items and return all the renewable items to the original bowl. Leave the nonrenewable items picked in the first round in the second bowl.
4. Repeat the process for an additional 10 rounds. Record the numbers of each color drawn and replace the renewable items after each drawing. The number of nonrenewable items in the original bowl will decrease with each round. Record the information in the table below.

Round	Number to Draw (10)	Number of Renewable Items	Number of Nonrenewable Items
Round #1	10	Answer:	Answer:
Round #2	10	Answer:	Answer:
Round #3	10	Answer:	Answer:
Round #4	10	Answer:	Answer:
Round #5	10	Answer:	Answer:

Round	Number to Draw (10)	Number of Renewable Items	Number of Nonrenewable Items
Round #6	10	Answer:	Answer:
Round #7	10	Answer:	Answer:
Round #8	10	Answer:	Answer:
Round #9	10	Answer:	Answer:
Round #10	10	Answer:	Answer:
Round #11	10	Answer:	Answer:

Totals:

5. How many of each type of item are left in the original bowl after the final round?

Renewable items

Answer:

Nonrenewable items

Answer:

6. How many rounds do you think it would take before all of the nonrenewable items were gone?

Answer:

7. How does this section of the lab relate to the use of renewable versus nonrenewable resources in the United States?

Answer:

Section 2: Increasing Use

Create an Energy Usage Ratio

- Place 87 items (beads/beans/candy) of one color and 13 of another color in one of your bowls. The 87 items represent the 87% of US energy usage that comes from nonrenewable sources. The 13 items represent the 13% of US energy usage that comes from renewable energy sources.

2. Have one partner close his or her eyes and randomly draw 10 items from the first bowl and place them in the empty bowl. Write down (in the row for round one on the chart) the number of renewable and nonrenewable items that your partner drew.
3. Sort through the items and return all the renewable items to the original bowl. Leave the nonrenewable items picked in the first round in the second bowl.
4. Repeat the process for an additional 10 rounds, but this time, draw an additional item each round (i.e., draw 11 items in round 2, 12 in round 3, etc.). Record the numbers of each color drawn and replace the renewable items after each drawing. The number of nonrenewable items in the original bowl will decrease with each round. Record the information on the table below.

Round	Number to Draw (10)	Number of Renewable Items	Number of Nonrenewable Items
Round #1	10	Answer:	Answer:
Round #2	11	Answer:	Answer:
Round #3	12	Answer:	Answer:
Round #4	13	Answer:	Answer:
Round #5	14	Answer:	Answer:
Round #6	15	Answer:	Answer:
Round #7	16	Answer:	Answer:
Round #8	17	Answer:	Answer:
Round #9	18	Answer:	Answer:
Round #10	19	Answer:	Answer:
Round #11	20	Answer:	Answer:

Totals:

5. How many of each type of item is left in the original bowl after the final round?

Renewable items

Answer:

Nonrenewable items

Answer:

6. How many rounds do you think it would take before all of the nonrenewable items were gone?

Answer:

7. How does this section of the lab relate to the use of renewable versus nonrenewable resources in the United States?

Answer:

8. What does the difference between the two rounds indicate about the need for both increasing renewable energy sources and conserving energy sources to prevent increased usage?

Answer: