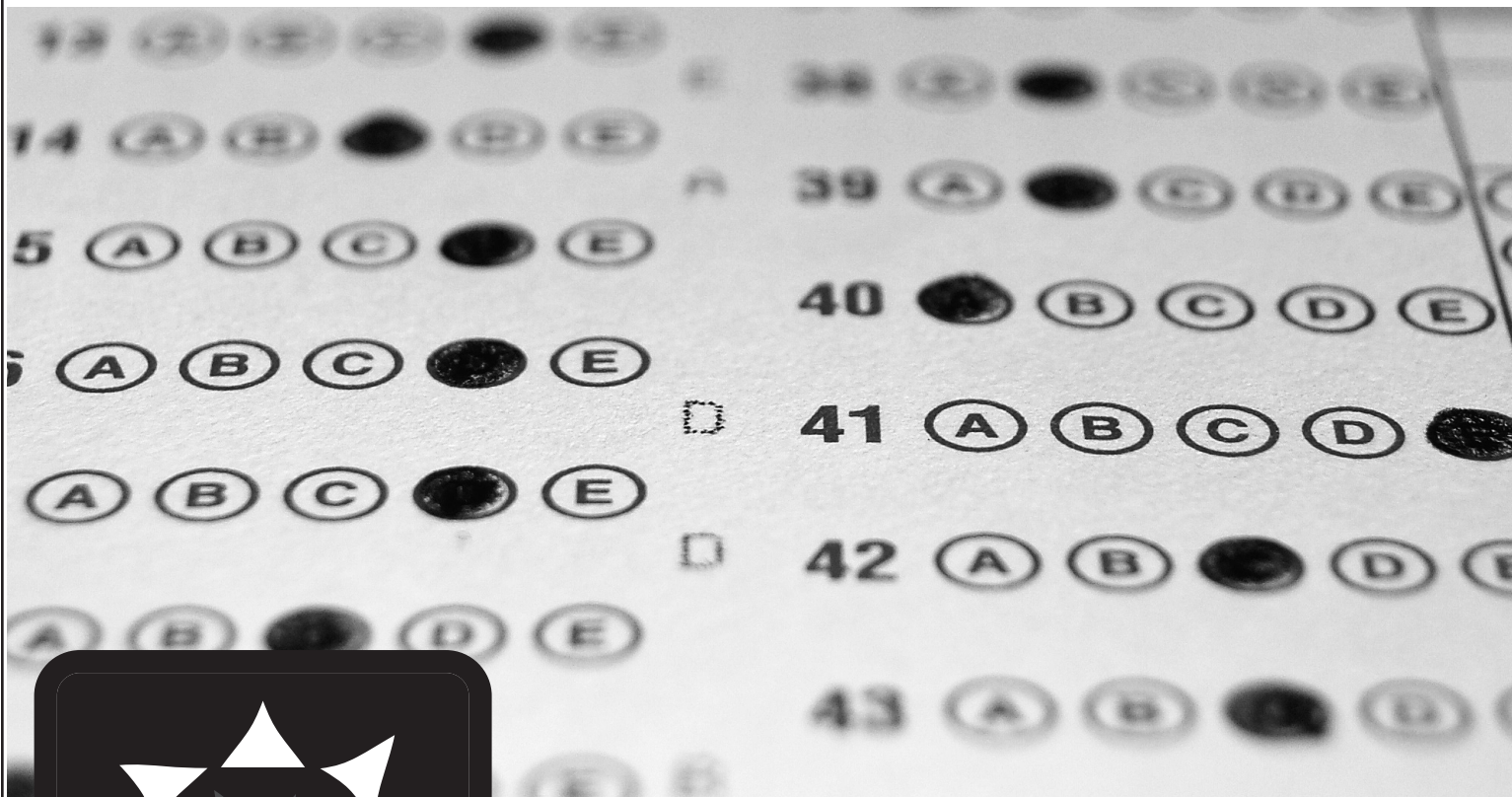




Elementary Energy Poll



Grade Level: _____

Elem Elementary

Subject Areas: _____

Science



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The mission of The NEED Project is to promote an energy conscious and educated society by creating effective networks of students, educators, business, government and community leaders to design and deliver objective, multi-sided energy education programs.

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Teacher Advisory Board

In support of NEED, the national Teacher Advisory Board (TAB) is dedicated to developing and promoting standards-based energy curriculum and training.

Energy Data Used in NEED Materials

NEED believes in providing teachers and students with the most recently reported, available, and accurate energy data. Most statistics and data contained within this guide are derived from the U.S. Energy Information Administration. Data is compiled and updated annually where available. Where annual updates are not available, the most current, complete data year available at the time of updates is accessed and printed in NEED materials. To further research energy data, visit the EIA website at www.eia.gov.



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Elementary Energy Poll Guide

Grades: 3-5

Time: 20 Minutes

A Quick Look At The Energy Poll

The *Elementary Energy Poll* can be used to assess students' basic energy knowledge, as well as their opinions about energy before and after your classroom energy unit.

Make one copy of the poll for each student. If you prefer, you can project the poll and have students answer the questions on a piece of paper. In either case, keep the results of the pre-poll so that students can compare their answers after your energy unit is completed.

✓Procedure

- Direct students to take the poll as honestly as possible and not to make wild guesses. Explain that the poll will be an important assessment tool to show what they have learned and how their attitudes have changed.
- Once you have administered the poll, go over the answers with the class. As a supplemental activity, discuss and chart the answers to the opinion questions. Collect the answers and save them to use after your energy unit is completed.
- Polls can be sent to NEED for analysis. We would love to see what your students are learning.
- If you are able, share your students' poll results with us at NEED by sending them to the address below via mail, fax, or email:

The NEED Project
8408 Kao Circle
Manassas, VA 20110
info@need.org
Fax: 1-800-847-1820

Elementary Energy Poll Answer Key

- | | | | |
|-----|---|-----|---|
| 1. | D | 11. | A |
| 2. | C | 12. | C |
| 3. | B | 13. | B |
| 4. | D | 14. | C |
| 5. | A | 15. | C |
| 6. | A | 16. | B |
| 7. | D | 17. | A |
| 8. | D | 18. | D |
| 9. | B | 19. | B |
| 10. | B | 20. | B |

Elementary Energy Poll

Science of Energy

1. Energy is needed to do which of the following?

- (A) Make things move
- (B) Make things grow
- (C) Make heat and light
- (D) All of the above

2. Newton's First Law of Motion states that an object in motion stays in motion unless an outside force changes its motion. If you kick a ball, what force makes the ball stop?

- (A) Gravity
- (B) Friction
- (C) Both gravity and friction
- (D) Neither gravity nor friction

3. Why do most apples appear red to us?

- (A) Red apples absorb the color red and reflect other colors.
- (B) Red apples reflect the color red and absorb the other colors.
- (C) Red apples reflect ultraviolet radiation.
- (D) Red apples absorb infrared radiation.

4. Which of the following increases friction?

- (A) Freezing rain on a road
- (B) Wax on skis
- (C) Air blowing up on an air hockey table
- (D) Rubber soles on shoes

5. When you turn on a lamp, the electricity changes into what forms of energy?

- (A) Light and heat
- (B) Sound and light
- (C) Electrical and light
- (D) Heat and electrical

6. When you place a metal spoon in a pot of boiling water, the handle of the spoon becomes very hot even though it isn't touching the heat source. What kind of heat transfer is taking place?

- (A) Conduction
- (B) Convection
- (C) Radiation
- (D) All of the above

Elementary Energy Poll

Sources of Energy

7. Why are some energy sources called renewable?

- (A) They are clean and free to use.
- (B) They take a long time to be replenished by nature.
- (C) They do not produce pollution.
- (D) They can be replenished by nature in a short time.

8. In the United States, which energy source produces the most electricity?

- (A) Solar
- (B) Wind
- (C) Petroleum
- (D) Natural Gas

9. Which energy source provides most of our transportation needs?

- (A) Solar
- (B) Petroleum
- (C) Biomass
- (D) Coal

10. Which energy source means heat from inside the Earth?

- (A) Hydropower
- (B) Geothermal
- (C) Coal
- (D) Natural gas

11. Which energy source is made by the uneven heating of the Earth's surface?

- (A) Wind
- (B) Hydropower
- (C) Geothermal
- (D) Solar

12. Which energy source is used in nuclear power plants?

- (A) Petroleum
- (B) Propane
- (C) Uranium
- (D) Biomass

Elementary Energy Poll

Electricity

13. Electricity travels in closed loops called _____.

- (A) Transformers
- (B) Circuits
- (C) Shells
- (D) Generators

14. Electricity is the movement of _____.

- (A) Neutrons
- (B) Protons
- (C) Electrons
- (D) Molecules

15. How is the amount of electricity you use at home measured?

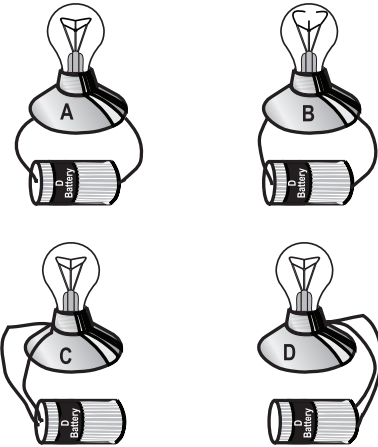
- (A) Ampere
- (B) Volt
- (C) Kilowatt-hour
- (D) Watt

16. Generators have which of the following parts?

- (A) Magnets and transformers
- (B) Magnets and coils of wire
- (C) Transformers and coils of wire
- (D) Transformers and reactors

17. In which picture will the light bulb light?

- (A) A
- (B) B
- (C) C
- (D) D



Elementary Energy Poll

Efficiency /Conservation

18. Which task in the average home uses the most energy?

- (A) Lighting
- (B) Keeping food cold
- (C) Washing and drying clothes
- (D) Heating and cooling rooms

19. Which type of light bulb is the most energy efficient?

- (A) Incandescent
- (B) Light emitting diode (LED)
- (C) Halogen
- (D) All light bulbs are the same

20. Which term is defined as a behavior that can result in less energy use?

- (A) Energy efficiency
- (B) Energy conservation
- (C) Energy carrying
- (D) Potential energy

Opinion

Fill in the number that best represents how strongly you agree or disagree with the statement.

1. There are things I can do to save energy.

Strongly Disagree Strongly Agree

(1) (2) (3) (4) (5)

2. Learning about energy can be fun.

Strongly Disagree Strongly Agree

(1) (2) (3) (4) (5)

3. I want to learn more about energy.

Strongly Disagree Strongly Agree

(1) (2) (3) (4) (5)

4. Energy is important for our future.

Strongly Disagree Strongly Agree

(1) (2) (3) (4) (5)

5. It's best to use a mix of energy sources.

Strongly Disagree Strongly Agree

(1) (2) (3) (4) (5)

Elementary Energy Poll

Leadership

Below are some activities you may do at school. Fill in the number that represents how comfortable you are doing them.

1. Talking in front of students in my class.

Not
Comfortable

Very
Comfortable

① ② ③ ④ ⑤

2. Making a presentation to teachers.

Not
Comfortable

Very
Comfortable

① ② ③ ④ ⑤

3. Planning an activity with other students.

Not
Comfortable

Very
Comfortable

① ② ③ ④ ⑤

4. Showing other students how to do an activity.

Not
Comfortable

Very
Comfortable

① ② ③ ④ ⑤

5. Expressing my ideas to other students.

Not
Comfortable

Very
Comfortable

① ② ③ ④ ⑤



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Mississippi Gulf Coast Community Foundation
National Fuel
National Grid
National Hydropower Association
National Ocean Industries Association
National Renewable Energy Laboratory
NC Green Power
Nebraskans for Solar
New Mexico Oil Corporation
New Mexico Landman’s Association
NextEra Energy Resources
NEXTracker
Nicor Gas
Nisource Charitable Foundation
Noble Energy
North Carolina Department of Environmental Quality
North Shore Gas
Offshore Technology Conference
Ohio Energy Project
Oklahoma Gas and Electric Energy Corporation
Opterra Energy
Oxnard Union High School District
Pacific Gas and Electric Company
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Peoples Gas
Pepco
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Petroleum Equipment and Services Association
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