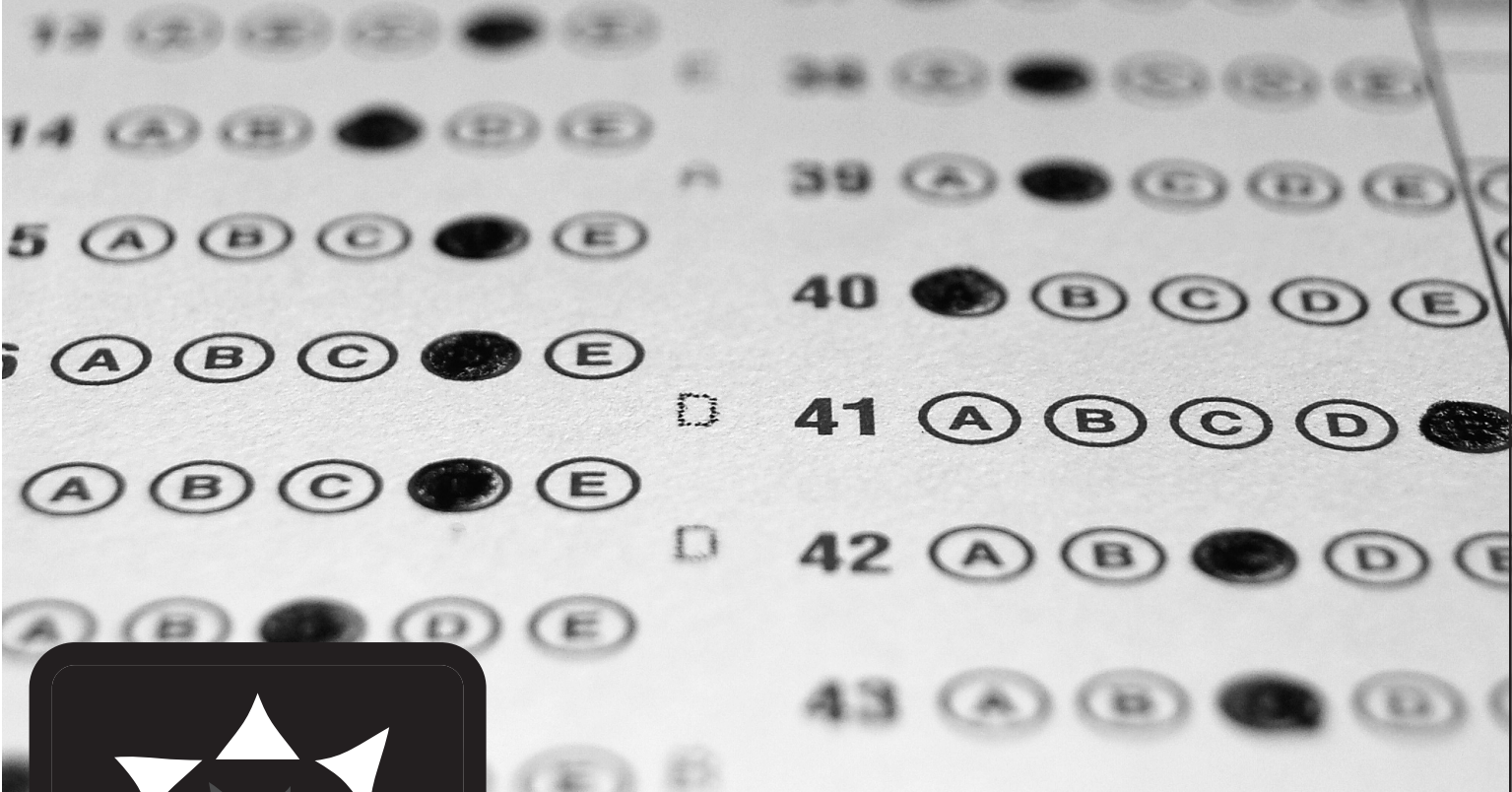




Intermediate Energy Poll



Grade Level: _____

Int Intermediate

Subject Areas: _____

 Science



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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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Intermediate Energy Poll Guide

Grades: 6-8

Time: 20 Minutes

A Quick Look At The Energy Poll

The *Intermediate 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

Intermediate Energy Poll Answer Key

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

Intermediate Energy Poll

Science of Energy

1. When you turn on a television, the electricity changes into which form(s) of energy?

- (A) Sound
- (B) Light
- (C) Heat
- (D) All of the Above

2. An increase in the motion of molecules indicates an increase in which form of energy?

- (A) Radiant
- (B) Thermal
- (C) Chemical
- (D) Electrical

3. The human body uses the chemical energy in food to produce which form(s) of energy?

- (A) Motion
- (B) Sound
- (C) Thermal
- (D) All of the Above

4. All natural energy transformations can be traced back to which form of energy?

- (A) Motion
- (B) Chemical
- (C) Nuclear
- (D) All of the Above

5. Electrical energy can be produced from which form(s) of energy?

- (A) Motion
- (B) Chemical
- (C) Radiant
- (D) All of the Above

6. Molecules are farthest apart in which state of matter?

- (A) Gas
- (B) Solid
- (C) Liquid
- (D) Fluid

Intermediate Energy Poll

Sources of Energy

7. Which of the following is NOT a fossil fuel?

- (A) Natural Gas
- (B) Petroleum
- (C) Uranium
- (D) Coal

8. In the United States, what source of energy do we use the most for electricity?

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

9. Renewable energy sources provide what percentage of total U.S. energy consumption?

- (A) Less than 1%
- (B) 5-15%
- (C) 20-25%
- (D) 30-35%

10. Which energy source is NOT a result of radiant energy from the sun?

- (A) Uranium
- (B) Wind
- (C) Hydropower
- (D) Biomass

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

- (A) Electricity
- (B) Natural gas
- (C) Petroleum
- (D) Coal

12. Which energy source is produced by uneven heating of the Earth's surface?

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

Intermediate Energy Poll

Electricity

13. If a carbon atom with six protons is in balance (neutral), how many electrons are in its energy levels?

- (A) 8
- (B) 6
- (C) 12
- (D) 4

14. A transformer is meant to adjust which measure of electricity for transport and safe use?

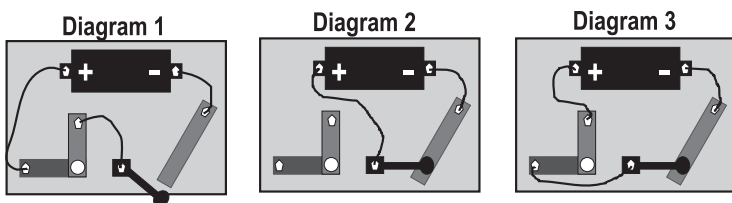
- (A) Wattage
- (B) Amperage
- (C) Voltage
- (D) Circuitry

15. What do most power plants use to produce electricity?

- (A) Photovoltaics
- (B) Transformers
- (C) Turbine generators
- (D) Batteries

16. Which of the circuits pictured below will produce an electric current?

- (A) Diagram 1
- (B) Diagram 2
- (C) Diagram 3
- (D) Diagrams 2 and 3



Efficiency / Conservation

17. An incandescent bulb converts 10% of the energy it uses into light and 90% into which form of energy?

- (A) Radiant
- (B) Potential
- (C) Thermal
- (D) Chemical

18. Which term describes using energy in a way in which we meet our needs for the present and future generations?

- (A) Energy efficiency
- (B) Energy sustainability
- (C) Energy conservation
- (D) Energy consumption

19. Which task in a typical home uses the most energy?

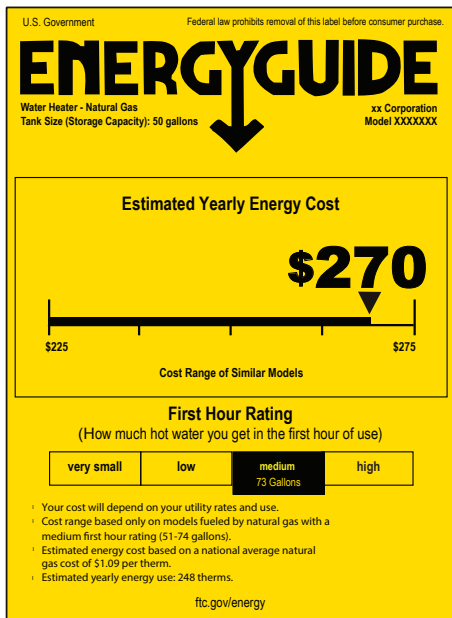
- (A) Operating appliances
- (B) Heating water
- (C) Refrigerating food
- (D) Heating and cooling rooms

Intermediate Energy Poll

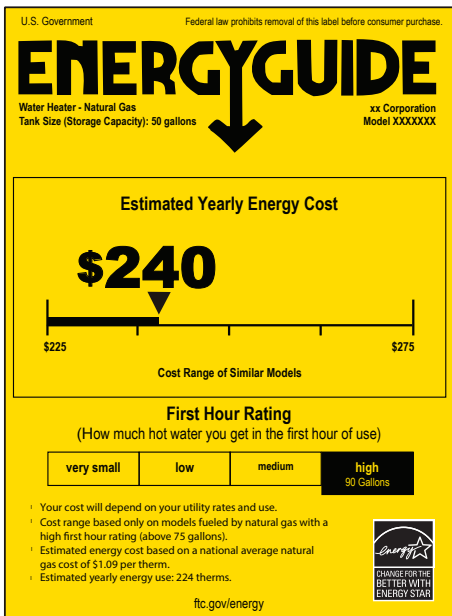
20. Look at the EnergyGuide labels below. Which is the correct statement?

- (A) Appliance A uses more energy than Appliance B.
- (B) Appliance A uses less energy than Appliance B.
- (C) Appliance A uses more water than Appliance B.
- (D) Appliance A uses less water than Appliance B.

Appliance A



Appliance B



Intermediate Energy Poll

Opinion

Fill in the number that represents your opinion of the statement.

1. There are a lot of ways to save energy.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

2. I would consider a career that involves energy.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

3. I know a lot about energy.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

4. Energy is important to our lifestyle.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

5. Learning about energy can be fun.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

6. I want to learn more about how to save energy.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

7. Learning about energy is important.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

8. It is best to use a mix of energy sources.

Strongly
Disagree

Strongly
Agree

① ② ③ ④ ⑤

Intermediate 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. Organizing students to conduct a school activity.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤

2. Making a presentation to students in your class.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤

3. Making a presentation to teachers at your school.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤

4. Making a presentation to people in the community.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤

5. Planning a lesson for other students.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤

6. Leading a discussion on a topic such as energy.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤

7. Teaching other students to conduct a learning activity.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤

8. Clearly communicating your ideas to other students.

Not Comfortable Very Comfortable

① ② ③ ④ ⑤



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Kentucky Office of Energy Policy
Kentucky Environmental Education Council
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Leidos
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Louisiana State University – Agricultural Center
Louisville Gas and Electric Company
Midwest Wind and Solar
Minneapolis Public Schools
Mississippi Development Authority–Energy Division
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
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