

# Intermediate Poll

## SCIENCE OF ENERGY

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

- a. sound                      b. light                      c. heat                      d. a, b, and c

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

- a. radiant energy                      b. thermal energy                      c. chemical energy                      d. electrical energy

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

- a. mechanical energy                      b. chemical energy                      c. thermal energy                      d. a, b, and c

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

- a. mechanical energy                      b. chemical energy                      c. nuclear energy                      d. a, b, and c

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

- a. mechanical energy                      b. chemical energy                      c. radiant energy                      d. a, b, and c

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

- a. solid                      b. gas                      c. liquid                      d. fluid

## SOURCES OF ENERGY

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

- a. uranium                      b. petroleum                      c. natural gas                      d. coal

**8. In the United States, we rely mainly on which source of energy for electricity?**

- a. hydropower                      b. natural gas                      c. petroleum                      d. coal

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

- a. less than 1%                      b. 5-10%                      c. 20-25%                      d. 30-35%

**10. Which energy source is NOT a result of solar energy?**

- 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

# ELECTRICITY

13. If a carbon atom with six protons is in balance, how many electrons are in its shells?

- a. 8                      b. 6                      c. 12                      d. 4

14. A transformer changes which measure of electricity?

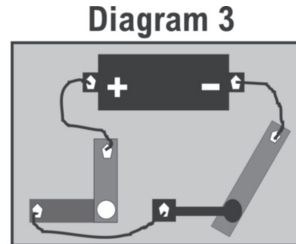
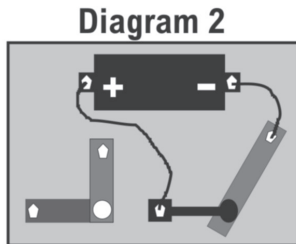
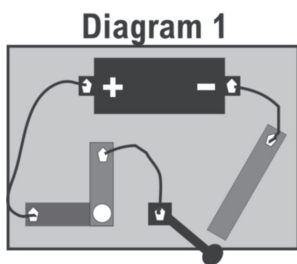
- a. wattage                      b. amperage                      c. voltage                      d. circuitry

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 & 3



# CONSERVATION/EFFICIENCY

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. Looking at the meters below, how much energy was used in January?

- a. 11,155 kWh                      b. 11.55 kWh                      c. 1,155 kWh                      d. 43,185 kWh

On January 1, the electric meter looked like this:



On January 31, the electric meter looked like this:



**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

**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.

Based on standard U.S. Government tests

# ENERGYGUIDE

Clothes Washer  
Capacity: Standard  
Top Loading

ABC Company  
**Appliance A**

**Compare the Energy Use of this Clothes Washer with Others Before You Buy.**

**This Model Uses  
XXX kWh/year**

**Energy Use (kWh/year) range of all similar models**

<b>Uses Least Energy</b>	<b>Uses Most Energy</b>
<b>265</b>	<b>1810</b>

KWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size, top loading clothes washers are used in this scale.

**Clothes washers using more energy cost more to operate. This model's estimated yearly operating cost is:**

**\$**

When used with an electric water heater

**\$**

When used with a natural gas water heater

Based on eight loads of clothes a week and a 1992 U.S. Government national average cost of \$0.0825 per kWh for electricity and \$0.58 per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 6302).

Based on standard U.S. Government tests

# ENERGYGUIDE

Clothes Washer  
Capacity: Standard  
Top Loading

XYZ Company  
**Appliance B**

**Compare the Energy Use of this Clothes Washer with Others Before You Buy.**

**This Model Uses  
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**Energy Use (kWh/year) range of all similar models**

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## OPINION

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Circle the number that represents your opinion of the statement.

	Strongly Disagree			Strongly Agree	
1. There are a lot of ways to save energy -----	1	2	3	4	5
2. I'd consider a career that involves energy -----	1	2	3	4	5
3. Learning about energy can be fun -----	1	2	3	4	5
4. I know a lot about energy -----	1	2	3	4	5
5. Energy is important to our lifestyle -----	1	2	3	4	5
6. I want to learn more about how to save energy -----	1	2	3	4	5
7. Learning about energy is important -----	1	2	3	4	5
8. It's best to use a mix of energy sources -----	1	2	3	4	5

## LEADERSHIP

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

	Not Comfortable			Very Comfortable	
1. Organizing students to conduct a school activity -----	1	2	3	4	5
2. Making a presentation to students in your class -----	1	2	3	4	5
3. Making a presentation to teachers at your school -----	1	2	3	4	5
4. Making a presentation to people in the community ----	1	2	3	4	5
5. Planning a lesson for other students -----	1	2	3	4	5
6. Leading a discussion on a topic such as energy -----	1	2	3	4	5
7. Teaching other students to conduct a learning activity -	1	2	3	4	5
8. Clearly communicating your ideas to other students ---	1	2	3	4	5