

Today you will be taking the NINTH grade QUARTER FOUR assessment. This test is designed to test your skills and knowledge in science. It has questions taken from science classes, as well as about experiments. You should make sure to read each question carefully, including the information given at the beginning of each section. Examine the diagrams to help you understand the questions as well. Some questions may refer to diagrams or information from the previous page.

For the multiple choice sections, make sure to place your answers on your Scantron sheet.

Make sure the Scantron has your full name, neatly written, as well as your student ID number on the right hand side of the box.

For the open ended questions, make sure to read all the information, and write your answer clearly in the space provided

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1. When fossil fuels are burned to produce energy, they _____.
A. produce air pollutants that can affect the quality of air
B. release excess carbon dioxide that decreases the rate of photosynthesis
C. form heavy fog from heat collecting over the oceans
D. form radioactive particles in the atmosphere
 2. Which of the following statements best describes the energy transformation that occurs when a log burns?
A. Mechanical energy changes to chemical energy.
B. Chemical energy changes to heat and light energy.
C. Heat and light energy changes to chemical energy.
D. Mechanical energy changes to heat and light energy.
 3. Which environmental problem is NOT caused by burning garbage, coal, or oil?
A) OZONE DEPLETION C) ACID RAIN
B) GREENHOUSE EFFECT D) AIR POLLUTION
 4. Which IS a possible effect of global warming?
A. The sea level will go down because of ocean water boiling away
B. There may be more extremes in weather, such as more storms, in North America.
C. Plants will die because of less carbon dioxide
D. More ultraviolet rays will cause more skin cancer
 5. Which is the BEST explanation for why fuels are burned to make electricity?
A. Smoke and dust from a fire turns a coil of wire, making electrons move
B. A chemical reaction in the fire makes electricity in a coil of wire
C. Water is heated to steam to turn a coil of wire in a magnet
D. The heat from the fire causes electrons to move faster in the wire
 6. Which energy source does not involve turning a turbine in a generator to make electricity?
A) Water B) Solar photovoltaic cells C) Nuclear D) Wind

7. Which one of these phase changes is a cooling process for the surroundings?
 A) Liquid to gas C) Gas to Solid
 B) Liquid to Solid D) Gas to Liquid
8. A true description of the difference between heat and temperature:
 A. only temperature can be measured, not heat
 B. temperature is an average, heat is a total
 C. Heat only comes from liquids or gases, not solids
 D. temperature is how hot or cold something is, heat is how fast the highest molecule moves

A lab group performed and wrote the following report and data table on their experiment:
 A group of students prepared a vinegar-and-water solution to simulate acid rain. After determining its pH, they poured the solution through cups that contained various earth materials (sand, potting soil and crushed limestone). The students measured the amount of solution that percolated (passed) through a hole in the bottom of each cup in a set amount of time, and they tested the pH of the drippings.

Earth Materials	pH of "acid rain" before percolation	Amount of "acid rain" percolated in 3 minutes	pH of percolated "acid rain"
Sand	3.0	30ml	3.5
potting soil	3.0	20ml	3.5
crushed limestone	3.0	90ml	5.0
all three Earth materials	3.0	50ml	5.5

9. What variables need to be controlled in this experiment?
 A. Sand and Water
 B. pH of pure water through each earth material
 C. pH of limestone
 D. The pH of the vinegar & water solution before they are poured through the various earth materials
10. In order to replicate this experiment you would need
 A. Nothing more, everything is listed above
 B. pH paper and the amount of earth materials placed in each cup
 C. amount of vinegar & water solution used
 D. The store where the vinegar was purchased



62-64 A student took a sample of soil from a yard and examined it. She identified two different types of soil. The student decided to examine the rate of percolation by pouring a 200 ml mixture of water and vinegar through each soil, and measuring the amount produced each minute in ml. Her findings are summarized in the table below.

AMOUNT OF ACID RAIN PRODUCED

Minute	Soil S	Soil T
1	50	20
2	60	20
3	100	50
4	150	60
5	160	70
6	160	70
7	160	80

62.(3 pts) Using the axes below, construct a graph showing the amount of solution the student found each minute. Be sure to label the axes



