

**Today you will be taking the NINTH grade QUARTER TWO 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.**

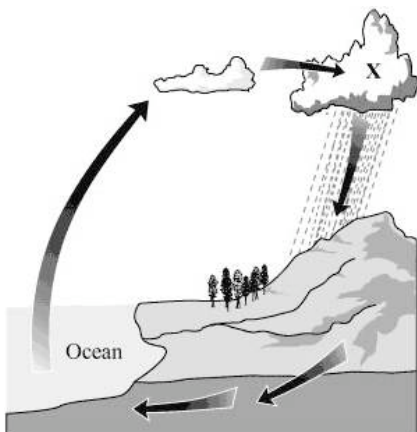
**Make sure the Scantron has your full name, neatly written, and your correct student ID.**

**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. (D20) As ocean water evaporates it  
A) falls as rain  
B) rises  
C) forms a river  
D) moves towards the mountains
  2. (D19) Carbon recycles through major parts of the earth. Which does not absorb large amounts of carbon dioxide?  
A) Plants  
B) Animals  
C) The atmosphere  
D) The oceans
  3. (D19) Which is true about the chemicals that cycle through the major earth reservoirs? (earth, ocean, atmosphere)  
A) There is more of the molecule  $H_2O$  on earth now than in the time of the ice ages.  
B) The amount of the element carbon on earth is less now than in previous years because it is being burned more.  
C) The total amount of the element oxygen on earth is always changing.  
D) The amount of the element nitrogen on the earth has stayed essentially constant.

4. (D21) The energy that causes matter to cycle through the magma and the solid earth comes from:

- A) The light energy from the sun.
- B) The gravitational pull between the Earth and the Moon.
- C) The internal radioactive energy from the Earth's core.
- D) The movement energy of the wind and the water.

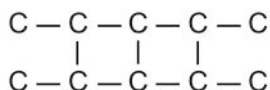


5. (D20) Look at the diagram of the water cycle above. Which is true about the process occurring at X (gas water changing to liquid)?

- A) Energy is being given off during condensation.
- B) Energy is being taken in during condensation.
- C) Energy is being given off during evaporation.
- D) Energy is being absorbed during transpiration.

6. (D15) A company is considering polymers A and B below for the production of plastic shopping bags.

**Branched Polymer  
A**



**Linear Polymer  
B**



Which polymer is more appropriate for the production of shopping bags?

- A. Polymer A, because its branched structure provides greater strength
- B. Polymer A, because its branched structure provides greater flexibility
- C. Polymer B, because its linear structure provides greater strength
- D. Polymer B, because its linear structure provides greater flexibility



7. (D15) Which best explains why polymers such as plastics are usually strong?

- A) They are made out of strong metals.
- B) They are made out of smaller units chained together.
- C) They are man-made, artificial, and are not natural.
- D) They are made out of carbon, hydrogen and oxygen.

8. (D16) Which is a possible RISK to the environment of using plastics, based on scientific evidence?

- A) plastics can last for over 400 years in the environment.
- B) some plastics can be broken down by sunlight.
- C) the use of plastics does not have sufficient government oversight and regulation.
- D) plastics are very chemically active with substances in the environment.

9. (D13) Which is true about polymers?

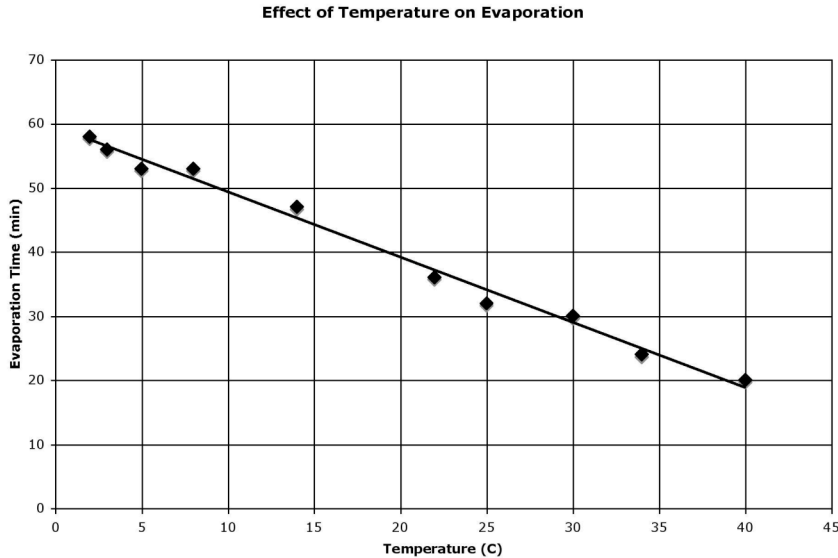
- A) Carbon atoms share four electrons with other atoms.
- B) Carbon atoms give all their electrons to other atoms.
- C) Hydrogen atoms are the main part of the molecule.
- D) There is only one way to arrange the carbon atoms in a polymer.

10. (D17) Which is NOT a usual characteristic of plastics?

- A) Can be heated and molded.
- B) Keep their shape when cooled
- C) Very dense, and usually sink
- D) Resistant to chemicals



11) (DINQ8) The graph below represents data gathered during an experiment on evaporation. Which of the following conclusions is **best** supported by data from this graph?



- A) Evaporation time is independent of temperature.
- B) The evaporation rate is constant for water.
- C) Evaporation only occurs when the temperature is above 100 °C.
- D) The amount of evaporation time increases as temperature decreases.

12. (DINQ5) A class wants to do an experiment to determine how different mineral salts, such as nitrogen, potassium, and phosphorous, affect the rate of evaporation of water. They are using forty cups, in four groups of ten. What is the best control group for their experiment?

- A) Measuring the rate of evaporation of a single cup with just water added.
- B) Measuring the amount of water evaporated from a single cup over an hour.
- C) Measuring the rate of evaporation of ten cups with just water added.
- D) Measuring the rate of evaporation of ten cups of water with all three salts added.

13. (DINQ3) Another class decides to do an experiment to test their hypothesis that the amount of light affects evaporation rate. Which is true about their hypothesis?

- A) It is a poor hypothesis because it is not a fact.
- B) It is good hypothesis because it is testable.
- C) It is a poor hypothesis because it is not accurate.
- D) It is a good hypothesis because it is true.



# Periodic Table

Use the periodic table of the elements below to help you answer the following questions.

## PERIODIC TABLE OF THE ELEMENTS

January 1994

		Nonmetals													Transition Metals																		Metals																																																																																																																																																																																																																																																																																			
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1	H	1.00794	2	He	4.003	3	Li	6.941	4	Be	9.0122	5	B	10.81	6	C	12.011	7	N	14.007	8	O	15.999	9	F	18.998	10	Ne	20.179	11	Na	22.990	12	Mg	24.305	13	Al	26.98	14	Si	28.086	15	P	30.974	16	S	32.06	17	Cl	35.453	18	Ar	39.948	19	K	39.098	20	Ca	40.08	21	Sc	44.956	22	Ti	47.88	23	V	50.94	24	Cr	51.996	25	Mn	54.938	26	Fe	55.847	27	Co	58.9332	28	Ni	58.69	29	Cu	63.546	30	Zn	65.39	31	Ga	69.72	32	Ge	72.59	33	As	74.922	34	Se	78.96	35	Br	79.904	36	Kr	83.80	37	Rb	85.468	38	Sr	87.62	39	Y	88.9059	40	Zr	91.224	41	Nb	92.91	42	Mo	95.94	43	Tc	(98)	44	Ru	101.07	45	Rh	102.906	46	Pd	106.42	47	Ag	107.868	48	Cd	112.41	49	In	114.82	50	Sn	118.71	51	Sb	121.75	52	Te	127.60	53	I	126.905	54	Xe	131.29	55	Cs	132.91	56	Ba	137.33	57 to 71	La	138.906	58	Ce	140.12	59	Pr	140.908	60	Nd	144.24	61	Pm	(145)	62	Sm	150.36	63	Eu	151.96	64	Gd	157.25	65	Tb	158.925	66	Dy	162.50	67	Ho	164.93	68	Er	167.26	69	Tm	168.934	70	Yb	173.04	71	Lu	174.967	72	Fr	(223)	73	Ra	226.025	74	Ac	227.028	75	Th	232.038	76	Pa	231.036	77	U	238.029	78	Np	237.048	79	Pu	(244)	80	Am	(243)	81	Cm	(247)	82	Bk	(247)	83	Cf	(251)	84	Es	(252)	85	Fm	(257)	86	Md	(258)	87	No	(259)	88	Lr	(260)	89 to 103	Un	(261)	90	Uu	(262)	91	Uu	(263)	92	Uu	(264)	93	Uu	(265)	94	Uu	(266)	95	Uu	(267)	96	Uu	(268)	97	Uu	(269)	98	Uu	(270)	99	Uu	(271)	100	Uu	(272)	101	Uu	(273)	102	Uu	(274)	103	Uu	(275)

**Key**

6 — Atomic number

C — Symbol (The symbols for elements 104-109 have not been agreed upon)

Carbon — Name

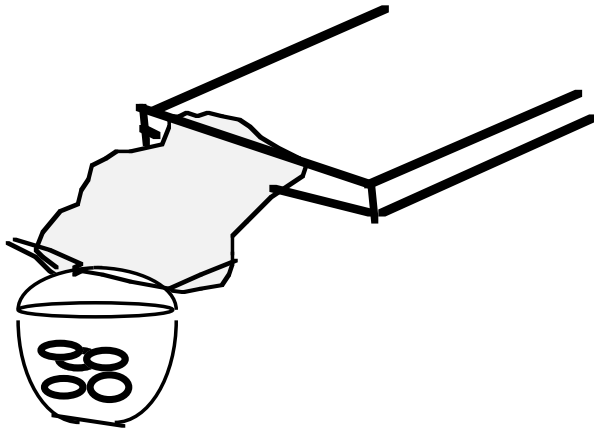
12.011 — Atomic mass (Numbers in parentheses represent the most stable or common isotope)

**Lanthanoid Series**

**Actinoid Series**

Use the information on the next pages to answer the three open-ended experimentation questions. Answer the questions in the space provided. Make sure to write clearly and neatly, while answering the question fully. Remember to answer the question, then WRITE a good explanation. You can always add diagrams or charts if you think it will help explain your answer.

Group B decided to do an experiment to test the strength of different plastic bags. Pieces of the bags were attached to a table. Each piece of plastic had a cup attached to hold the washers. They added washers to the cup causing the plastic to stretch until it broke



Following is a data table with their results:

**GROUP B RESULTS**

Washers added to break each bag	grocery bag 8 cm long, 3 cm wide, 0.2 cm thick	garbage bag 8 cm long, 1 inch wide, 0.1 inch thick	dry cleaning bag 8 cm long, 5 cm wide, 0.01 cm thick	heavy duty trash bag 8 cm long, 2 cm wide, 0.2 cm thick
Trial 1	10	5	8	6
Trial 2	9	5	7	6
Trial 3	10	6	6	6
Average	9.7 washers	5.3 washers	7.0 washers	6 washers

Use these results to answer the following questions:







