

Important Concepts . . .

Preview Review



Science

Grade 9 TEACHER KEY

W2 - Quiz

Important Concepts of Grade 9 Science

W1 - Lesson 1	Electrical Principles
W1 - Lesson 2	Electrical Circuits
W1 - Lesson 3A	Energy Consumption
W1 - Lesson 3B	The Distribution of Matter in Space
W1 - Lesson 4	Objects in Space
W1 - Lesson 5	Optical and Radio Telescopes
W1- Quiz	
W2 - Lesson 1	Physical and Chemical Properties of Materials
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W2 - Lesson 3	Using the Periodic Table
W2 - Lesson 4	Naming Chemical Compounds
W2 - Lesson 5	Writing Chemical Equations
W2 - Quiz	
W3 - Lesson 1	Variation
W3 - Lesson 2	Reproduction and Patterns of Inheritance
W3 - Lesson 3A	Genes and Cell Division
W3 - Lesson 3B	Organisms and Matter in their Environment
W3 - Lesson 4	Biological and Chemical Monitoring/Acids and Bases
W3 - Lesson 5	Transfer of Materials through the Air, Ground, and Water/Biological Impacts of Hazardous Chemicals
W3 - Quiz	

Materials Required

Textbook:

Science in Action 9

Science Grade 9

Version 5

Preview/Review W2 - Quiz TEACHER KEY

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Preview/Review Concepts for Grade Nine Science

TEACHER KEY



W2 - Quiz

W2 - Quiz

/ 45 marks

This quiz should take approximately 20 minutes to complete. There is a periodic table at the back of this quiz for your use.

Part I: Multiple Choice

Place the letter of the best answer in the blank before each question. (5 marks)

- B** 1. The conversion of a gas into a liquid occurs by a process called
- A. sublimation
 - B. condensation
 - C. evaporation
 - D. melting
- A** 2. The ability of a substance to be stretched into a long thin wire is called
- A. ductility
 - B. malleability
 - C. lustre
 - D. hardness
- D** 3. Which of the following is **not** a chemical property of matter?
- A. ability to burn
 - B. reaction with water
 - C. reaction with acids
 - D. conductivity
- B** 4. What caution is associated with the following WHMIS symbol?
- A. oxidizing material
 - B. flammable and combustible material
 - C. corrosive material
 - D. biohazardous infectious material
- C** 5. A substance that is made of two or more elements is called a
- A. mechanical mixture
 - B. element
 - C. compound
 - D. colloid



Part II: Matching

Match the following words to their definitions. (8 marks)

Words

- A. compound
- B. element
- C. solution
- D. exothermic reaction
- E. endothermic reaction
- F. metal
- G. atom
- H. catalyst
- I. corrosion
- J. noble gas
- K. halogen
- L. non-metal

Definitions

- J** the most stable unreactive group found on the periodic table
- H** a substance that participates in a chemical reaction to speed it up
- C** a *homogeneous* mixture made of different substances that are not all visible
- I** a slow chemical change that occurs when oxygen in the air reacts with a metal
- F** shiny, ductile, and malleable solids that conduct electricity
- G** the smallest part of an element
- B** a substance that is made of only one type of atom
- E** a chemical reaction that absorbs energy

Part III: Written Response

1. In a chemical reaction, a chemical change causes the formation of a new substance or substances. Identify two ways you can tell that a chemical change has occurred. (2 marks)

a colour change, the formation of an odour, the formation of a solid or a gas, the release or absorption of heat

2. A chemist wants to produce silver metal by completing the following reaction.



- a. The reactants of the chemical reaction are (1 mark)

copper metal + *silver nitrate*

- b. The chemical symbol for silver is *Ag*. (1 mark)

- c. It is found in Period *5*, Group *11*. (2 marks)

- d. Two ways that the chemist could speed up the reaction are (2 marks)

Add heat to the solution, add a catalyst, stir the solution, increase the concentration of the reactants

3. Sodium is an element found on the periodic table. (1 mark each = 8 marks)

- a. The symbol for sodium is *Na*.

- b. The atomic number for sodium is *11*.

- c. The atom of sodium has *11* protons and *11* electrons.

- d. Sodium is found in Group *1*, which is also known as the *alkali metals*.

- e. A common substance that is made with sodium is *salt*, which has the chemical formula of *NaCl*.
(sodium chloride)

4. Name the following chemical compounds and identify them as ionic or molecular.
(1 mark each = 8 marks)

	Name	Ionic or Molecular?
a. SO_2	<u><i>sulfur dioxide</i></u>	<u><i>Molecular</i></u>
b. CaCl_2	<u><i>calcium chloride</i></u>	<u><i>Ionic</i></u>
c. CBr_4	<u><i>carbon tetrabromide</i></u>	<u><i>Molecular</i></u>
d. FeO	<u><i>iron (II) oxide</i></u>	<u><i>Ionic</i></u>

5. Write the following chemical formulas. (4 marks)

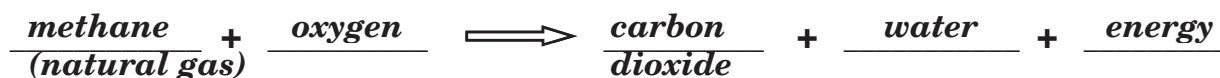
a. tin (II) chloride	<u><i>SnCl_2</i></u>
b. carbon monoxide	<u><i>CO</i></u>
c. potassium iodide	<u><i>KI</i></u>
d. diphosphorus pentaoxide	<u><i>P_2O_5</i></u>

6. a. The reaction to produce heat (by burning natural gas) in your furnace is known as a *combustion* reaction. (1 mark)



- b. This reaction releases energy and can also be known as an *exothermic* reaction. (1 mark)

- c. The word equation for this reaction is (2 marks)



atomic number	8	2-	ion charge
symbol	O		
atomic mass	16.0	Oxygen	name
		18	
			He

[illegible]

58	Ce	3+	59	Pr	4+	60	Nd	3+	61	Pm	3+	62	Sm	3+	63	Eu	3+	64	Gd	3+	65	Tb	3+	66	Dy	3+	67	Ho	3+	68	Er	3+	69	Tm	2+	70	Yb	3-	71	Lu	3-						
	Cerium		Praseodymium		Neodymium		140.9		Promethium		(145)		Samarium		150.4		Eurprium		Gadolinium		157.3		Terbium		158.9		Dysprosium		164.9		Erbium		167.3		Thulium		168.9		Ytterbium		173.0		Lutetium		175.0		
90	Th	4+	91	Pa	5+	92	U	4+	93	Np	5+	94	Pu	6+	95	Am	6+	96	Cm	3+	97	Bk	4+	98	Cf	3+	99	Es	3+	100	Fm	3+	101	Md	3+	102	No	2+	103	Lr	3-						
	Thorium		Protactinium		Uranium		238.0		Neptunium		(237)		Plutonium		(244)		Americium		Curium		(247)		Berkelium		(247)		Californium		Einsteinium		252		Fermium		257		Mendelevium		258		Nobelium		259		Lawrencium		262

