

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
W2 - Lesson 2	Chemical Reactions
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)

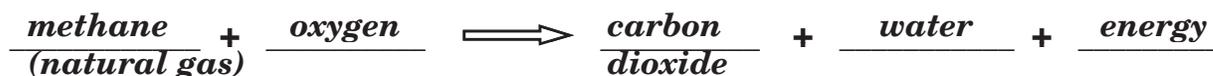
a. tin (II) chloride	<u><i>SnCl_2</i></u>
b. carbon monoxide	<u><i>CO</i></u>
c. potassium iodide	<u><i>KI</i></u>
d. diphosphorus pentoxide	<u><i>P_2O_5</i></u>

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)



Periodic Table

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1 H Hydrogen 1.0	3 Li Lithium 6.9	11 Na Sodium 23.0	19 K Potassium 39.1	37 Rb Rubidium 85.5	55 Cs Cesium 132.9	87 Fr Francium (223)	2 He Helium 4.0	10 Ne Neon 20.2	18 Ar Argon 39.9	36 Kr Krypton 83.8	54 Xe Xenon 131.3	86 Rn Radon 222	<div style="display: flex; justify-content: space-between;"> <div style="width: 20%;"> <p>atomic number — 8</p> <p>symbol — O</p> <p>atomic mass — 16.0</p> </div> <div style="width: 60%;"> <p>ion charge — 2-</p> <p>name — Oxygen</p> </div> </div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Solid S</p> </div> <div style="text-align: center;"> <p>Liquid Br</p> </div> <div style="text-align: center;"> <p>Gas He</p> </div> <div style="text-align: center;"> <p>Metal</p> </div> <div style="text-align: center;"> <p>Metalloid</p> </div> <div style="text-align: center;"> <p>Non-metal</p> </div> </div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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13 B Boron 10.8	14 C Carbon 12.0	15 N Nitrogen 14.0	16 O Oxygen 16.0	17 F Fluorine 19.0	18 Ne Neon 20.2	29 Sc Scandium 45.0	30 Ti Titanium 47.9	31 V Vanadium 50.9	32 Cr Chromium 52.0	33 Mn Manganese 54.9	34 Fe Iron 55.8	35 Co Cobalt 58.6	36 Ni Nickel 58.7	37 Cu Copper 63.5	38 Zn Zinc 65.4	39 Ga Gallium 69.7	40 Ge Germanium 72.6	41 As Arsenic 74.9	42 Se Selenium 79.0	43 Br Bromine 79.9	44 Kr Krypton 83.8	45 Rb Rubidium 85.5	46 Sr Strontium 87.6	47 Y Yttrium 88.9	48 Zr Zirconium 91.2	49 Nb Niobium 92.9	50 Mo Molybdenum 95.9	51 Tc Technetium (98)	52 Ru Ruthenium 101.1	53 Rh Rhodium 102.9	54 Pd Palladium 106.4	55 Ag Silver 107.9	56 Cd Cadmium 112.4	57 In Indium 114.8	58 Sn Tin 118.7	59 Pb Lead 207.2	60 Tl Thallium 204.4	61 Po Polonium 209.0	62 At Astatine 210	63 Rn Radon 222																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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