

Important Concepts . . .

Preview Review



Science

Grade 9

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 | |
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| 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

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Preview/Review Concepts for Grade Nine Science



W2 - Quiz

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/ 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)

- _____ 1. The conversion of a gas into a liquid occurs by a process called
- A. sublimation
 - B. condensation
 - C. evaporation
 - D. melting
- _____ 2. The ability of a substance to be stretched into a long thin wire is called
- A. ductility
 - B. malleability
 - C. lustre
 - D. hardness
- _____ 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
- _____ 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
- _____ 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

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

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



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

_____ + _____

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

- c. It is found in Period _____, Group _____. (2 marks)

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

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

- a. The symbol for sodium is _____.

- b. The atomic number for sodium is _____.

- c. The atom of sodium has _____ protons and _____ electrons.

- d. Sodium is found in Group _____, which is also known as the _____.

- e. A common substance that is made with sodium is _____, which has the chemical formula of _____.

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 | _____ | _____ |
| b. CaCl_2 | _____ | _____ |
| c. CBr_4 | _____ | _____ |
| d. FeO | _____ | _____ |

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

- a. tin (II) chloride _____
- b. carbon monoxide _____
- c. potassium iodide _____
- d. diphosphorus pentaoxide _____

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



- b. This reaction releases energy and can also be known as an _____ reaction. (1 mark)
- c. The word equation for this reaction is (2 marks)

_____ + _____ \Rightarrow _____ + _____ + _____

Periodic Table

| | | | | | | | | | | | | | | | | | |
|-------------------------------|-------------------------------|--------------------------------|-------------------------------|-----------------------------------|--------------------------------|---------------------------------|--------------------------------|--------------------------------|---------------------------------|--------------------------------|----------------------------------|----------------------------------|-------------------------------|-----------------------------------|--------------------------------|----------------------------------|--------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 H Hydrogen 1.0 | 2 He Helium 4.0 | 3 Li Lithium 6.9 | 4 Be Beryllium 9.0 | 5 B Boron 10.8 | 6 C Carbon 12.0 | 7 N Nitrogen 14.0 | 8 O Oxygen 16.0 | 9 F Fluorine 19.0 | 10 Ne Neon 20.2 | 11 Na Sodium 23.0 | 12 Mg Magnesium 24.3 | 13 Al Aluminum 27.0 | 14 Si Silicon 28.1 | 15 P Phosphorus 31.0 | 16 S Sulfur 32.1 | 17 Cl Chlorine 35.5 | 18 Ar Argon 39.9 |
| 19 K Potassium 39.1 | 20 Ca Calcium 40.1 | 21 Sc Scandium 45.0 | 22 Ti Titanium 47.9 | 23 V Vanadium 50.9 | 24 Cr Chromium 52.0 | 25 Mn Manganese 54.9 | 26 Fe Iron 55.8 | 27 Co Cobalt 58.6 | 28 Ni Nickel 58.7 | 29 Cu Copper 63.5 | 30 Zn Zinc 65.4 | 31 Ga Gallium 69.7 | 32 Ge Germanium 72.6 | 33 As Arsenic 74.9 | 34 Se Selenium 79.0 | 35 Br Bromine 79.9 | 36 Kr Krypton 83.8 |
| 37 Rb Rubidium 85.5 | 38 Sr Strontium 87.6 | 39 Y Yttrium 88.9 | 40 Zr Zirconium 91.2 | 41 Nb Niobium 92.9 | 42 Mo Molybdenum 95.9 | 43 Tc Technetium (98) | 44 Ru Ruthenium 101.1 | 45 Rh Rhodium 102.9 | 46 Pd Palladium 106.4 | 47 Ag Silver 107.9 | 48 Cd Cadmium 112.4 | 49 In Indium 114.8 | 50 Sn Tin 118.7 | 51 Sb Antimony 121.8 | 52 Te Tellurium 127.6 | 53 I Iodine 126.9 | 54 Xe Xenon 131.3 |
| 55 Cs Cesium 132.9 | 56 Ba Barium 137.3 | 57 La Lanthanum 138.9 | 58 Ce Cerium 140.1 | 59 Pr Praseodymium 140.9 | 60 Nd Neodymium 144.2 | 61 Pm Promethium (145) | 62 Sm Samarium 150.4 | 63 Eu Europium 152.0 | 64 Gd Gadolinium 157.3 | 65 Tb Terbium 158.9 | 66 Dy Dysprosium 162.5 | 67 Ho Holmium 164.9 | 68 Er Erbium 167.3 | 69 Tm Thulium 168.9 | 70 Yb Ytterbium 173.0 | 71 Lu Lutetium 175.0 | 72 Hf Hafnium 178.5 |
| 87 Fr Francium (223) | 88 Ra Radium (226) | 89 Ac Actinium (227) | 90 Th Thorium 232.0 | 91 Pa Protactinium 231.0 | 92 U Uranium 238.0 | 93 Np Neptunium (237) | 94 Pu Plutonium (244) | 95 Am Americium (243) | 96 Cm Curium (247) | 97 Bk Berkelium (247) | 98 Cf Californium (251) | 99 Es Einsteinium (252) | 100 Fm Fermium (257) | 101 Md Mendelevium (258) | 102 No Nobelium (259) | 103 Lr Lawrencium (262) | 104 Ta Tantalum 180.9 |
| 73 Ta Tantalum 180.9 | 74 W Tungsten 183.8 | 75 Re Rhenium 186.2 | 76 Os Osmium 190.2 | 77 Ir Iridium 192.2 | 78 Pt Platinum 195.1 | 79 Au Gold 197.0 | 80 Hg Mercury 200.6 | 81 Tl Thallium 204.4 | 82 Pb Lead 207.2 | 83 Bi Bismuth 209.0 | 84 Po Polonium 209 | 85 At Astatine 210 | 86 Rn Radon 222 | 87 Fr Francium (223) | 88 Ra Radium (226) | 89 Ac Actinium (227) | 90 Th Thorium 232.0 |

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