

WODSS SCIENCE

SCH 3UI

Name: _____

Date: _____

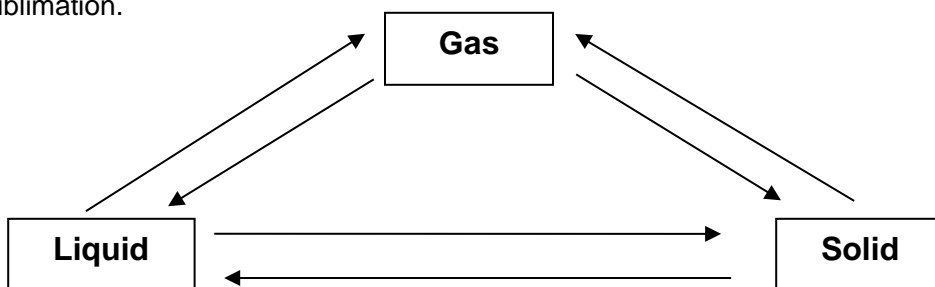
GRADE 10 CHEMISTRY REVIEW

Chemistry & Matter

1. What is chemistry? _____

2. **Matter** is anything that _____ and _____. Matter can exist in any one of three states: _____, _____ and _____.

Add the following labels in the appropriate places: evaporation, condensation, melting, freezing, sublimation.



Particle Theory of Matter – Fill in the blanks using the correct word in brackets at the end of each statement.

- All matter is made up of _____ particles. (*tiny, large*)
- All particles of a pure substance are _____. (*identical, different*)
- The space between particles is _____ compared to the sizes of the particles themselves. (*small, large*)
- Particles of matter are always _____. (*still, moving*)
- There are forces of _____ that exist between particles. (*attraction, repulsion*)

Describing and Classifying Matter

1. Distinguish between a physical change and chemical change.

- Classify each situation as either a **physical change** (P) or a **chemical change** (C).
 - _____ A rose bush grows from a seed that you have planted and nourished.
 - _____ A green coating forms on a copper statue when the statue is exposed to air.
 - _____ Your sweat evaporates to help maintain your body temperature.
 - _____ Frost forms on the inside of a freezer.
 - _____ Salt is added to clear chicken broth.
 - _____ Your body breaks down food you eat to provide energy for your body's cells.
 - _____ Juice crystals dissolve in water.
 - _____ An ice-cream cone melts on a hot day.

3. What **physical property** is described by each of the following statements?

(Use one of the following words: malleability, boiling point, melting point, hardness, conductivity, ductility, density, viscosity)

- _____ Ice melts at 0°C.
- _____ Diamond can scratch glass.
- _____ Aluminum can be hammered into thin sheets.
- _____ Copper wire is used for electrical circuitry in homes.
- _____ Copper metal can be stretched into wires.
- _____ One millilitre of water has a mass of one gram.
- _____ Pancake syrup flows slower than water.

4. Identify each property as either **physical (P)** or **chemical (C)**.

- _____ Hydrogen gas is extremely flammable.
- _____ The boiling point of ethanol is 78.5°C.
- _____ Chlorine gas is pale green in colour.
- _____ Sodium metal reacts violently with water.

5. Match the words in the word bank to their proper definition below.

Word Bank:

Metal	Solvent	Heterogeneous mixture	Mass number	Compound	Qualitative
Nonmetal	Solute	Homogeneous mixture	Atomic number	Element	Quantitative

Word	Definition
	Number of protons in one atom of an element.
	Number of protons plus the number of neutrons in one atom of an element.
	Good conductor, shiny, malleable, usually solid, and usually grey.
	Good insulator, dull, and brittle. These come in various states and colours.
	Described using words, not numbers.
	Described using numbers.
	A pure substance with only one type of atom.
	A pure substance with more than one type of atom. The atoms are chemically bonded together to form one particle called a molecule.
	More than one phase is visible (eg: oil and water)
	Only one phase is visible, so it looks the same throughout (eg: coffee)
	The substance found in a lesser quantity in a solution (it is what's being dissolved)
	The substance found in greater quantity in a solution (it is what's doing the dissolving)

6. Choose one item in your pencil case and describe its qualitative and quantitative properties.

For example: **Substance:** green pen

Qualitative: green, cylindrical, smooth surface, opaque

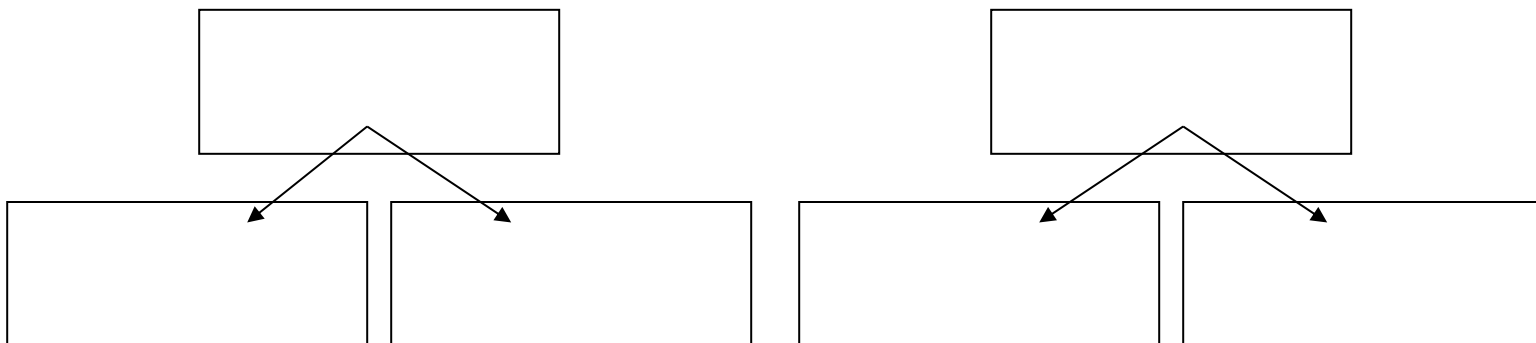
Quantitative: 14 cm long, 2 mm wide,

Substance:

Qualitative:

Quantitative:

7. There are four main ways to **classify matter** (compound, solution, pure substance, ect.). What are they and give an example of each.



8. Identify the following as an element, compound, homogeneous mixture (solution), or heterogeneous mixture:

- a. _____ A bowl of fruit loops with milk
 b. _____ A glass of Kool-aid
 c. _____ A glass of water
 d. _____ A sheet of aluminum foil

9. a. List one mixture that you use frequently. _____
 b. Is it a heterogeneous or homogeneous mixture? _____
10. a. List one pure substance that you use frequently. _____
 b. Is it an element or compound? _____

11. Complete the following table.

Subatomic Particles

Particle	Relative mass	Relative charge	Location within atom
proton			
electron			
neutron			

12. Using the periodic table at the back of your textbook, list the elements that **belong to each of the following groups in the periodic table**:

- a. halogens (Group VIIA or 17) _____
- b. alkali metals (Group IA or 1) _____
- c. noble gases (Group VIIIA or 18) _____
- d. alkaline earth metals (Group IIA or 2) _____

13. Use the periodic table to answer the following questions regarding the element **potassium**.

- a. What is its symbol? _____
- b. In what period is it located? _____
- c. In what group is it located? _____
- d. What is its atomic number? _____
- e. What is its atomic mass? _____
- f. What state would it be found at room temperature? _____

14. Each of the following chemical formulae represents a compound. Describe the composition of each molecule. (i.e., name the element and state the number of atoms found in each).

(a) $\text{HNO}_{3(\text{aq})}$

e.g. Nitric acid

Type of Atom	# of atoms
Hydrogen	1
Nitrogen	1
Oxygen	3
Total # of atoms	5

(b) $\text{C}_6\text{H}_{12}\text{O}_6$

Atom	
Total # of atoms	

(c) $(\text{NH}_4)_3\text{PO}_4$

Atom	
Total # of atoms	

(d) 4NH_3

Atom	
Total # of atoms	