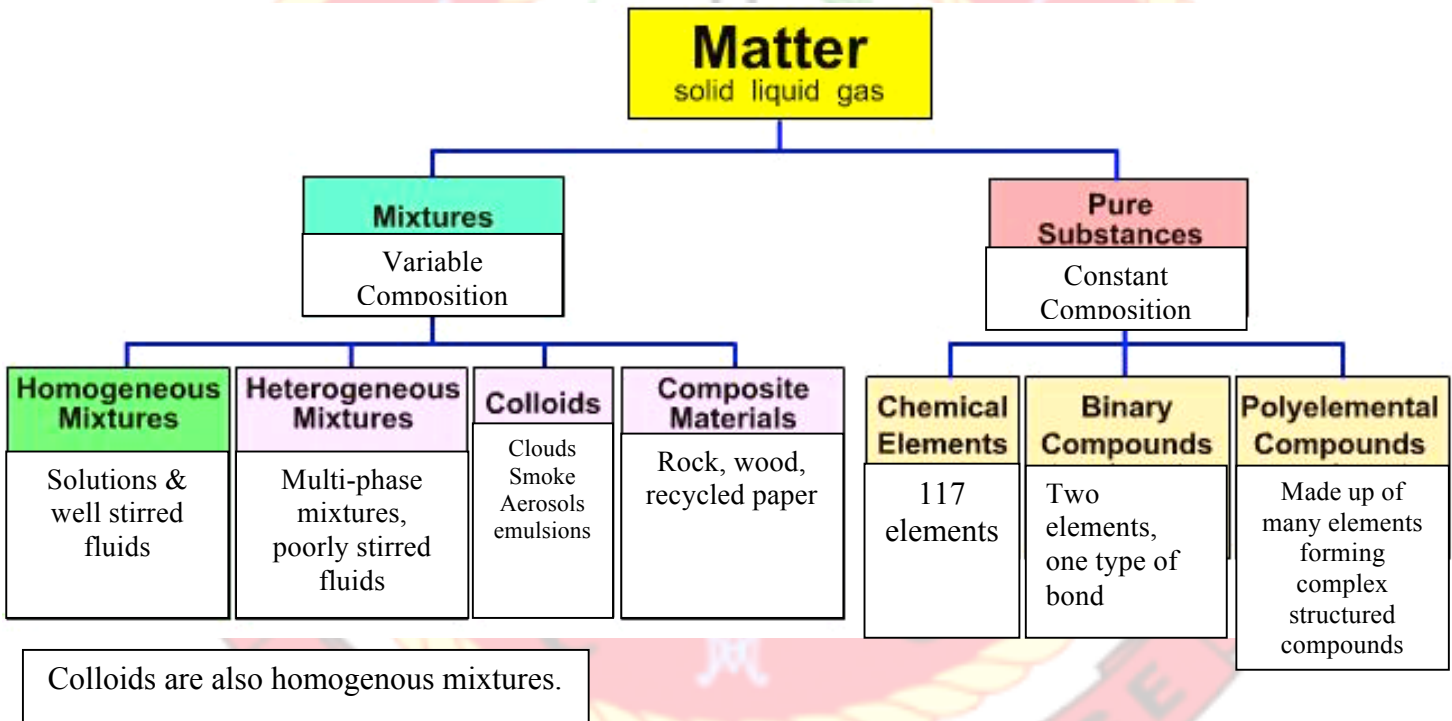


Concept Notes
 Completeness (3 pts.) ____
 Neatness (2 pts.) ____
 Activity No. 1: ____
 Activity No. 2: ____
 Synthesis: ____
 Reflection: ____
 Total : ____

TYPES OF ACTIVITY: Discussion of Concepts

TOPIC : Classification of matter
 LEARNING OBJECTIVES : Classify matter according to their properties.
 Differentiate pure substances from mixtures.
 Choose products objectively.
 Reference : The New Science Links 6; pp. 205
 Author/s : Evelyn C. Padpad
 CONCEPT NOTES : matter can be classified according to their properties as illustrated below:



Activity Sheet No. 2
TYPES OF ACTIVITY: Laboratory Activity

TOPIC	:	Metals and non-metals
LEARNING OBJECTIVES	:	Differentiate metals from non metals. Identify the properties of metals and non-metals Follow the procedures to get accurate results and for safety reasons.
Reference	:	The New Science Links 6; pp. 206-208
Author/s	:	Evelyn C. Padpad
CONCEPT NOTES	:	Elements can be classified into metals and non metals. The following properties define a substance if it is a metal or non-metal. A metalloid has both the abilities of metals and non metals <ol style="list-style-type: none">1. Malleability-is the ability of a substance to be hammered into thin sheets or bent into shapes.2. Ductility-ability of a material to be drawn into wires.3. Conductivity-ability of a material to conduct heat or electricity. A material that conducts heat or electricity is a heat or electric conductor. If it doesn't conduct heat or electricity, it is a heat or electric insulator.4. Brittleness-is a tendency to break if a material is hammered or bent.5. Lustre-refers to ability to reflect light in a shiny manner.6. Strength- ability to withstand stress and strain.

Activity Sheet No. 3
TYPES OF ACTIVITY: Laboratory Activity

TOPIC	:	Elements and compounds
LEARNING OBJECTIVES	:	Differentiate mixtures from compounds. Explain how compounds form from elements through chemical reaction. Follow rules in laboratory safety.
CONCEPT NOTES :	:	Compounds are made up of two or more elements chemically bound to one another forming molecules. Compounds are formed when two or more elements reacts with each other. Mixtures are just collection of different substances not chemically bound to each other.

Activity Sheet No. 4
TYPES OF ACTIVITY: Discussion of Concepts

TOPIC	:	Formation of Compounds
LEARNING OBJECTIVES	:	Identify the different kinds of compounds. Classify materials according to the compounds present in them. Cite ways on how to reduce acid rain formation near the cities.
CONCEPT NOTES	:	Compounds can be classified into inorganic and organic compounds. Inorganic compounds are compounds usually made up of metals and non metals while organic compounds are made up of several atoms of hydrogen and carbon and a few of other elements.

Examples:

NaCl is an inorganic compound, made from a metal and a non metal: Sodium + Chlorine.

CH₄ (methane) is an organic compound since it is made up carbon and hydrogen.

*Carbonates, carbon dioxide, and carbon monoxide are inorganic compounds.

Most inorganic and some organic compounds are further classified into:

1. Acids- compounds that produce hydrogen (H⁺) ions when dissolved in water. The strength of acids depends on how much hydrogen ions will they form in water. Acids are sour and they react with metals.
Example: vinegar (CH₃COOH)-weak acid; hydrochloric or muriatic acid (HCL)-strong acid
2. Bases- compounds that produce hydroxide ions (OH⁻) when dissolved in water. The strength of bases depends on how few H⁺ ions they will produce and how much OH⁻ will they produce. Bases are slippery and taste bitter. They react with dirt and oil.
Example: detergents-weak bases, Sodium hydroxide (NaOH)-strong base
3. Salts- are produced when bases reacted with acids. They are neither basic nor acidic.
Example: Sodium chloride or table salt (NaCl); potassium nitrate KNO₃ used in making gun powder and fertilisers.

Activity Sheet No. 5
TYPES OF ACTIVITY: Laboratory Activity

TOPIC	:	Acid and Bases
LEARNING OBJECTIVES	:	Differentiate acids from bases. Identify the properties of acid and bases. Identify what products are neutral, basic, or acidic. Follow the procedures carefully to avoid mistakes and for safety reasons.
CONCEPT NOTES	:	Blue litmus paper turns red if the substance is acidic while red litmus paper turns blue if the substance being tested is basic.

Activity Sheet No. 4
TYPES OF ACTIVITY: Discussion of Concepts

TOPIC	:	Physical change
LEARNING OBJECTIVES	:	Identify the kinds of physical changes. Explain how temperature changes an object physically. Appreciate the importance of physical changes in our daily lives.
CONCEPT NOTES	:	Matter can be changed physically when the shape, size, texture, and phase of matter are changed. Phase change happens when an object is melted, evaporated or condensed back to its liquid form. Other substances can change from solid to gas (sublimation) or from gas to solid (deposition).

Activity Sheet No. 5
TYPES OF ACTIVITY: Laboratory Activity

TOPIC	:	Chemical change
LEARNING OBJECTIVES	:	Identify the changes in a substance during chemical change. Cite the evidences of chemical change. Explain how substances change chemically. Follow the procedures carefully to avoid mistakes and for safety reasons.
CONCEPT NOTES	:	Matter can be changed chemically. Chemical change is a change in the chemical composition of matter resulting in the formation of a new substance. Evidences for chemical change include colour change, evolution of gases or bubbling, change in composition, production of light and heat or turning cold; and formation of new products.

Activity Sheet No. 8
TYPES OF ACTIVITY: Exercises

TOPIC	:	Changes in Matter
LEARNING OBJECTIVES	:	Differentiate physical from chemical change. Cite evidences of physical and chemical change. Answer the exercises carefully and honestly.
CONCEPT NOTES	:	Matter undergoes change. It may be physical or chemical. A physical change is a change in the substance's appearance without changing its composition. A chemical change is a change in the chemical composition of matter forming a new substance.

Activity Sheet No. 9
TYPES OF ACTIVITY: Discussion of Concepts

TOPIC	:	Effects of Changes in Matter to the Environment
LEARNING OBJECTIVES	:	Identify the changes that can destroy or benefit the ecosystem. Explain how changes can destroy or help the ecosystem. Cite ways on how to help in preserving our environment.
CONCEPT NOTES	:	The changes in materials can have good or bad effects to our ecosystem. Most changes that can have bad effects to the environment are chemical changes. Any interference or excesses in the natural changes in materials in the environment brings potential harm to it.
		Water pollutants-includes materials that can decompose or clog the waterways. Decomposers like bacteria that break down the decomposing materials can use up the oxygen in the water causing the oxygen level to drop and eventually suffocate other aquatic organisms. Excess fertilizers or nutrients causes alga to grow and multiply faster. Alga that is not eaten by fishes and other aquatic animals will decompose in the water.
		Pollutants on the soil- excessive use of inorganic fertilizers can wash off other important nutrients in the soil.
		Air pollutants-all excessive gases especially the compounds formed by two non metal oxides can form acid rain.
		Oil spills coat the soil or water suffocating the organisms below them.

Activity Sheet No. 10
TYPES OF ACTIVITY: Exercises

TOPIC	:	Changes in Matter
LEARNING OBJECTIVES	:	Differentiate physical from chemical change. Explain the effects of the changes in matter to the environment. Answer the exercises carefully and honestly.
CONCEPT NOTES	:	Matter undergoes change. It may be physical or chemical. A physical change is a change in the substance's appearance without changing its composition. A chemical change is a change in the chemical composition of matter forming a new substance. The changes in materials can have good or bad effects to our ecosystem. Most changes that can have bad effects to the environment are chemical changes. Any interference or excesses in the natural changes in materials in the environment brings potential harm to it.

Activity Sheet No. 12
TYPES OF ACTIVITY: Discussion of Concepts

TOPIC	:	Forms of Energy: Potential and Kinetic Energy
LEARNING OBJECTIVES	:	Differentiate potential from kinetic energy. Explain how potential energy becomes kinetic energy and vice versa. Appreciate the two important forms of mechanical energy in our daily lives.
CONCEPT NOTES	:	Energy can be classified under two general types: kinetic and potential energy . Potential energy is the energy stored in an object at rest. For example the stretched rubber band has potential energy. When you release one end of the rubber band, energy is released. The energy released is kinetic energy . The relationship between P.E. and K.E. can be seen using the pendulum.

Activity Sheet No. 13
TYPES OF ACTIVITY: Discussion of Concepts

TOPIC	:	Forms of Energy
LEARNING OBJECTIVES	:	Identify the different forms of energy. Infer the sources and uses of energy. Appreciate the importance of the God given gift of different forms of energy.
CONCEPT NOTES	:	Here are the different forms of energy: <ol style="list-style-type: none">1. Mechanical energy- is the energy of moving objects. Examples are wind, vibration (sound), and flowing water.2. Radiant energy (light energy/electromagnetic energy)-is the energy that can travel through empty space. Examples are visible light, radio waves, and microwaves.3. Electrical energy-energy produced by moving electrons. Static electricity is produced when two materials are rubbed against each other, producing negatively charged and positively charged particles. Current electricity is electricity moving in conductors such as copper wires.4. Chemical energy- is the type of energy stored in molecules. Chemical reactions release chemical energy.5. Nuclear energy- is energy released when heavy atoms were split (nuclear fission) or when two lightweight atoms are fused together (nuclear fusion). The sun's energy comes from fusion of hydrogen atoms. Nuclear fission is used in nuclear power plants and nuclear weapons.6. Thermal energy- is energy present in everything due to the motion of molecules. It is also known as heat energy. This form of energy is also produced as a result of energy transfer.

Activity Sheet No. 14
TYPES OF ACTIVITY: Laboratory Activity

- TOPIC : Energy Conversion
LEARNING OBJECTIVES : Explain how energy is converted from one form to another.
Identify the input and output energy.
Follow the procedures carefully to avoid mistakes and for safety reasons.
CONCEPT NOTES : Energy can be converted from one form to another.

Activity Sheet No. 15
TYPES OF ACTIVITY: Discussion of Concepts

- TOPIC : Conversion of Energy
LEARNING OBJECTIVES : Identify some devices that convert energy.
Explain the law of Conservation of Energy by James Clerk Maxwell.
Suggest ways on how to conserve energy.
CONCEPT NOTES : Law of Conservation of energy states that energy can neither be created nor destroyed. This means that one form of energy was simply converted into another form of energy that can escape into the environment like heat and light.

Activity Sheet No. 16
TYPES OF ACTIVITY: Exercise

- TOPIC : Conversion of Energy
LEARNING OBJECTIVES : Identify the energy transformations in different devices or machines.
Explain how energy is converted from one form to another.
Differentiate renewable from non-renewable energy sources.
Answer the exercises carefully and honestly.
CONCEPT NOTES : Law of Conservation of energy states that energy can neither be created nor destroyed. This means that one form of energy was simply converted into another form of energy that can escape into the environment like heat and light.
Renewable energy resources are resources that can be easily replaced or recycled. It has also unlimited sources like sunlight or solar energy. Other resources that are hard to replace or has limited source are considered non renewable.

Activity Sheet No. 17
TYPES OF ACTIVITY: Laboratory Activity

- TOPIC : Heat Transfer
- LEARNING OBJECTIVES : Identify the different modes of heat transfer.
Explain how heat is transferred from heat sources to another object or to the environment.
Follow the procedures carefully to avoid mistakes and for safety reasons.
- CONCEPT NOTES : Heat can be transferred in three ways:
- 1) Conduction-heat is transferred from the source through direct contact with an object.
 - 2) Convection-heat is transferred through fluids(gas or liquid) by way of convection current where hot fluids rise while cold fluids sink.
 - 3) Radiation- heat travels in through space in form of radiation.
- Heat flows from high temperature to low temperature and spreads evenly. This is what we call entropy.

Activity Sheet No. 18
TYPES OF ACTIVITY: Laboratory Activity

- TOPIC : Radiation
- LEARNING OBJECTIVES : Identify which colour absorbs or lose heat faster.
Explain why some materials tend to absorb or lose heat faster than other materials.
Follow the procedures carefully to avoid mistakes and for safety reasons.
- CONCEPT NOTES : Heat can be transferred to the surroundings through radiation. Some materials absorb heat through radiation faster than other materials because of their colour which you are going to find out in this experiment.