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Ethio-Parents' Schools: Addis Ababa (Gerji/Gullele) and Hawassa.
Chemistry centralized lesson guideline for home study

This guideline is designed to help and facilitate students' independent -learning in their stay at home because of state of emergency. Thus, students are expected to follow and apply it strictly in their independent- study.

Date: April 20-24, 2020 **Unit:** Four **Topic:** CHEMICAL EQUATION AND STOICHIOMETRY

We all must prevent and treat ourselves and our community from corona virus, COVID – 19, and stop its spread by following the instruction of the WHO and/or the Ethiopian Health Minister.				
Grade 9	**Lesson 1 (April 21, 2020)**	**Lesson 2 (April 22, 2020)**	**Lesson 3 (April 23, 2020)**	**Lesson 4 (April 24, 2020)**
Subtopics to be covered	4.8.1 ***Factors affecting the rates of chemical reaction*** ☑ *Nature of reactants* ☑ *Temprature*	4.8.1 ***Factors affecting the rates of chemical reaction*** ☑ *Concentration of reactants* ☑ *Surface area* ☑ *Catalyst*	4.8.2 ***Chemical equilibrium*** ☑ *Reversible and irreversible reaction* ☑ *Chemical equilibrium* 1. *Definition* 2. *Characteristics of chemical equilibrium* 3. *Equilibrium constant, Kc*	4.8.2 ***Chemical equilibrium*** ☑ *Factors that affect chemical equilibrium* ☑ *Le Chatelier's principle* 1. *Effect of temperature* 2. *Effect of pressure or volume*
Objectives	***At the end of covering the above lessons, you will be able to:***			
	✓ *List factors that affect rate of chemical reaction* ✓ *Explain the effect nature of reactants and changes in temperature on the rate of a chemical reaction* ✓ *Carry out an activity on how these factors affect the rate of chemical reaction*	✓ *Explain the effect changes in concentration of reactants and surface area on the rate of a chemical reaction* ✓ *Define the term catalyst* ✓ *Explain the effect of addition of a catalyst on the rate of a chemical reaction*	✓ *Define the terms reversible reaction and irreversible reaction.* ✓ *Define chemical equilibrium* ✓ *Write mathematical expression for equilibrium constant of a reversible reaction* ✓ *Solve problems using mathematical equations of equilibrium constant expression*	✓ *State Le Châtelier's principle* ✓ *Use Le Châtelier's principle to explain the effect of changes in Temperature, and pressure on the position of chemical equilibrium*
Text Page range	**148-149**	**1149-153**	154-156	**198-201**
Evaluation	**Activity 4.13**	**Activity 4.15**	Exercise 4.15	**Activity 4.18**

	Activity 4.14	**Activity 4.16** **Reading check**	Activity 4.17	**Exercise 4.16**

Grade 9	**Lesson 5 (April 27, 2020)**	**Lesson 6 (April 28, 2020)**	**Lesson 7 (April 29, 2020)**	**Lesson 8 (May 1, 2020)**
Subtopics to be covered	*4.8.2* ***Chemical equilibrium*** ☑ *Factors that affect chemical equilibrium* *2. Effect of concentration* *3. Effect of catalyst*	*Unit - 5:* ***The physical States of matter*** *5.1* ***Introduction*** ☑ *Solid* ☑ *Liquid* ☑ *Gas* ☑*Plasma*	*B. 5.2* ***Kinetic theory and properties of matter*** *5.2.1* ***Kinetic theory of matter*** *5.2.2* ***Properties*** *of matter*	*5.3* ***The Gaseous state*** *5.3.1* ***The kinetic molecular theory of gases*** ☑ *Real gases vs. Idael gases* ☑ *Assumptions of the kinetic molecular theory of gase*
Objectives	***At the end of covering the above lessons, you will be able to:*** ❖ *Use Le Châtelier's principle to explain the effect of:* *1. Changes in Concentration of reactants or products on the position of chemical equilibrium* *2. Addition of catalyst on the position of chemical equilibrium*	✓ *Name the three physical states of matter.* ✓ *Give examples for each of the three physical states of matter* ✓ *Explain the major differences between each physical states of matter* ✓ *Discuss plasma as the fourth state of matter at very high temperature*	✓ *State kinetic theory of matter* ✓ *Explain the properties of the three physical states of matter in terms of kinetic theory* ✓ *Compare and contrast the three physical states of matter*	✓ *Compare the nature of real and ideal gases* ✓ *Explain the assumptions of kinetic molecular theory of gases* ✓ *Describe the properties of gases using kinetic molecular theory*
Text Page range	**202-204**	**163-166**	166-169	**169**
Evaluation	**Review exercise 160-162**	**Activity 5.1** **Exercise 5.1**	Activity 5.2 Activity 5.3 Activity 5.4 Exercise 5.2	**Activity 5.5** **Centralized self-test**

Note:

- ☑ You are highly recommended to use centralized note uploaded on EPS telegram channel along with your text book.
- ☑ You are kindly requested to use the learning outcomes check list at the end of each unit in your text book. This will help you to evaluate yourself whether you achieved the minimum learning competencies or not.