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| **SEMESTER 2 OUTCOMES GRADE 4 SCIENCE 2018-2019** | | | | |
| **WEEK** | **CHAPTER** | **DRAFT TBD MOE  learning outcomes/ نواتج تعليم** | **Disciplinary Core Ideas/"Big Idea"/**  **Essential Question EQ** | **MHE- Text book Objective(s)** |
| **13/01** | Chapter 6: - Matter | * G4.4.1.1.1 Compares and classifies objects and materials based on the physical  properties (weight / mass, size, state of the matter, conductivity to heat or  electricity and whether the object floats on the surface of the water or sink. | What are the properties of matter? | * Define and describe the three states of matter. * Compare and contrast properties of matter. |
| **20/01** | Chapter 6: - Matter  Measurement | * G4.4.1.1.2 Conducts simple experiments involving observations and  measurements to determine the unknown substances based on their chemical  and physical properties. | EQ- What tools can you use to study matter? | * Describe some properties of matter that can be measured. * Measure properties of matter using correct units. |
| **27/01** | Chapter 6: - Matter  Properties of water | * G4.4.1.1.5 Explains how the processes of change in the state of the substance  includes emission of heat (e.g. when water freezes, it releases heat)  or heat absorption (e.g. when water evaporates, it absorbs heat). * G4.4.1.1.4 Concludes that physical changes of the substances have reversible changes  (e.g. the melted ice cube can be refrozen; the frozen water in the bottle can be melted  to return to its liquid state again; the water vapor condensed on the cold glass can  evaporate and return as water vapor again; water that evaporated from the ocean  may return to fall on earth as rain) | EQ- How can you describe the properties of water? | * Explain the physical properties of water. * Compare and contrast the three states of water. |
| **03/02** | Chapter 7: - Matter and Its Changes  How can matter change? | * G4.4.1.1.3 Explains the change in the state of the substance (e.g. evaporation, condensation,  freezing, melting, sublimation, deposition) and gives examples for each (e.g. the evaporation  of water from wet clothes; steam rising from a container of boiling water condenses on the cold window surface; water freezes in the winter in pools and lakes; snow melts on a hot summer day and dry ice transcends (solid CO2), soot deposits on the surfaces and ice deposit on the cold surfaces). * G4.4.1.1.4 Concludes that physical changes of the substances have reversible changes (e.g. the  melted ice cube can be refrozen; the frozen water in the bottle can be melted to return to its liquid state again; the water vapor condensed on the cold glass can evaporate and return as water vapor again; water that evaporated from the ocean may return to fall on earth as rain) * G4.4.1.1.5 Explains how the processes of change in the state of the substance includes emission of heat  (e.g. when water freezes, it releases heat) or heat absorption (e.g. when water evaporates, it absorbs heat). | How can matter change? | * Comprehend that a change of state is a physical change. * Differentiate between physical change and chemical change. |
| **10/02** | Chapter 7: - Matter and Its Changes  Mixtures | * G5.4.1.1.3 Classifies substances into elements, compounds and mixtures. | EQ- How can mixtures be separated? | * Explain that mixtures are combinations of matter. * Describe ways of separating mixtures. |
| **17/02** | Chapter 8: - Energy | * G4.4.1.1.5 Explains how the processes of change in the state of the substance includes  emission of heat (e.g. when water freezes, it releases heat) or heat absorption  (e.g. when water evaporates, it absorbs heat). | How do we use energy?  EQ- What is heat? | * Explain that heat flows from warmer materials to cooler materials. * Describe and define conduction, convection, and radiation. |
| **24/02** | Chapter 8: - Energy  Sound | * G5.4.3.2.1 Concludes that sound is waves that transfer energy from one place to another. | EQ How can you make new sounds? | * Explain how sound is produced and how it travels through a medium. * Identify the characteristics of sound, including frequency, pitch, volume, and echoes. |
| **03/03** | Chapter 8: - Energy  Light | * G4.4.4.2.2 Distinguishes between luminous objects (e.g. stars, candles, electric lamps)  and objects that reflect light (such as moon, traffic signs and metals). * G4.4.4.2.1Conducts simple experiments to show that light travels in straight lines, reflects on slick surfaces, refracts when traveling from one medium to another, of different densities, and diffracts when traveling through tight slots, and that white light is comprised of 7 colors. | EQ How does light behave? | * Demonstrate that light travels in a straight line. * Describe ways light can be absorbed, reflected, or refracted by objects |
| **10/03** | Chapter 8: - Energy  Electricity | * G4.4.3.2.2 Designs a simple working electrical circuit | EQ- How does electricity affect your life? | * Describe the characteristics of electrically charged objects. * Explain the difference between static and current electricity. |
|  | Chapter 8: - Energy  Using electrical energy | * G4.4.3.2.3 Investigates the properties of connecting lamps in- series and in- parallel,  in terms of available paths for the current, lamps' brightness and the amount of electrical energy generated from the power supply * G4.4.3.2.4 Searches for methods of conserving electrical energy,  and how leakages impact on sustainable development | EQ- How is electricity helpful to people? | * Explain that electrical energy is converted to heat, light, and motion. * Illustrate how electricity travels from generator to consumer. |
| **17/03** | Chapter 8: - Energy  magnetism and Electricity | * G4.4.3.1.6 Describes how strong an effect a magnet has on other magnets or any  other magnetic material, and the causes of energy transfer between them  (e.g. to effect a change in the motion) even if the objects are not contiguous. | EQ- How are energy and magnetism related? | * Describe a magnetic field and the effect of distance on magnetic force. * Understand how an electromagnet, an electric motor, and a generator work. |
| ADDITIONAL NOTES   * Please fast track lessons when you can. | | | | |
| **24/03** | EXAM WEEK TBC | | | |