

K to 12 BASIC EDUCATION CURRICULUM

GRADE 8

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
Grade 8 – Force, Motion, and Energy FIRST QUARTER/FIRST GRADING PERIOD						
1. Laws of Motion 1.1 Law of Inertia 1.2 Law of Acceleration 1.3 Law of Interaction	<i>The learners demonstrate an understanding of:</i> Newton's three laws of motion and uniform circular motion	<i>The learners shall be able to:</i> develop a written plan and implement a "Newton's Olympics"	<i>The learners should be able to...</i> 1. investigate the relationship between the amount of force applied and the mass of the object to the amount of change in the object's motion;	S8FE-Ia-15	1. EASE Physics. Module 10. Lesson 3. 2. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 292-296. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 12-17. 4. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 75-82. *	NSTIC SciKit Basic and Mechanics: Stand Base; Stopwatch (digital); Cart-Rail System; Spring Balances; Ring and Cylindrical Masses; Meter Stick

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1. Laws of Motion 1.1 Law of Inertia 1.2 Law of Acceleration 1.3 Law of Interaction	<i>The learners demonstrate an understanding of:</i> Newton's three laws of motion and uniform circular motion	<i>The learners shall be able to:</i> develop a written plan and implement a "Newton's Olympics"				
			2. infer that when a body exerts a force on another, an equal amount of force is exerted back on it;	S8FE-Ia-16	1. EASE Physics. Module 10. Lesson 3. 2. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 296-297. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 18-20. 4. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 83-84. *	Spring balances
			3. demonstrate how a body responds to changes in motion;	S8FE-Ib-17	1. EASE Physics. Module 10. Lesson 3. 2. Science and Technology IV: Physics	

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1. Laws of Motion 1.1 Law of Inertia 1.2 Law of Acceleration 1.3 Law of Interaction	<i>The learners demonstrate an understanding of:</i> Newton's three laws of motion and uniform circular motion	<i>The learners shall be able to:</i> develop a written plan and implement a "Newton's Olympics"	3. demonstrate how a body responds to changes in motion;	S8FE-Ib-17	Textbook for Fourth Year. Ragabo, Lilia M., Ph.D., et al. 2001. p. 83. * 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 8-10.	
			4. relate the laws of motion to bodies in uniform circular motion;	S8FE-Ib-18	1. EASE Physics. Module 9. 2. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 58-61. * 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 17-18.	
			5. infer that circular motion requires the application of constant force directed toward the	S8FE-Ib-19	1. EASE Physics. Module 9. 2. Science and Technology	

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1. Laws of Motion 1.1 Law of Inertia 1.2 Law of Acceleration 1.3 Law of Interaction	<i>The learners demonstrate an understanding of:</i> Newton's three laws of motion and uniform circular motion	<i>The learners shall be able to:</i> develop a written plan and implement a "Newton's Olympics"	center of the circle; 5. infer that circular motion requires the application of constant force directed toward the center of the circle;	S8FE-Ib-19	IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. Pp. 106-108. * 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. P. 18.	
2. Work Power and Energy	<i>The learners demonstrate an understanding of:</i> work using constant force, power, gravitational potential energy, kinetic energy, and elastic potential energy		6. identify situations in which work is done and in which no work is done;	S8FE-Ic-20	1. EASE Physics. Module 11. Lesson 2. pp. 5-8. 2. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. Pp. 162-166. * 3. Science and Technology IV: Physics Textbook. NISMED. 2012. Pp. 309-310. 4. Science 8 Learner's Module. Campo, Pia	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
2. Work Power and Energy	<p><i>The learners demonstrate an understanding of:</i></p> <p>work using constant force, power, gravitational potential energy, kinetic energy, and elastic potential energy</p>	<p><i>The learners shall be able to:</i></p> <p>develop a written plan and implement a "Newton's Olympics"</p>			C., et al. 2013. Pp. 21-24.	
			7. describe how work is related to power and energy;	S8FE-Ic-21	<p>1. EASE Physics. Module 11. Lesson 3. pp. 33-34.</p> <p>2. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. Pp. 166-169. *</p> <p>3. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 316-317.</p> <p>4. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 25-26.</p>	
			8. differentiate potential and kinetic energy;	S8FE-Id-22	<p>1. BEAM IV. Unit 1.</p> <p>2. EASE Science 1. Module 8. Lesson 3.</p> <p>3. OHSP Module.</p>	

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2. Work Power and Energy	<p><i>The learners demonstrate an understanding of:</i></p> <p>work using constant force, power, gravitational potential energy, kinetic energy, and elastic potential energy</p>	<p><i>The learners shall be able to:</i></p> <p>develop a written plan and implement a "Newton's Olympics"</p>	8. differentiate potential and kinetic energy;	S8FE-Id-22	<p>Module 11. Lesson 2.</p> <p>4. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. Pp. 171-174. *</p> <p>5. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 310-314.</p> <p>6. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 26-31.</p>	
			9. relate speed and position of object to the amount of energy possessed by a body;	S8FE-Id-23	<p>1. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 175-181. *</p> <p>2. Science and Technology</p>	

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			9. relate speed and position of object to the amount of energy possessed by a body;	S8FE-Id-23	IV: Physics Textbook. NISMED. 2012. Pp. 314-316. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 25-26.	
3. Sound	<i>The learners demonstrate an understanding of:</i> the propagation of sound through solid, liquid, and gas	<i>The learners shall be able to:</i> develop a written plan and implement a "Newton's Olympics"	10. infer how the movement of particles of an object affects the speed of sound through it;	S8FE-Ie-24	1. OHSP. Module 16. 2. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 216-218. * 3. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 369-370. * 4. Science 8 Learner's Module. Campo, Pia C., et al. 2013. p. 70.	Diffraction Slits & Diffraction grating

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3. Sound	<p><i>The learners demonstrate an understanding of:</i></p> <p>the propagation of sound through solid, liquid, and gas</p>	<p><i>The learners shall be able to:</i></p> <p>develop a written plan and implement a "Newton's Olympics"</p>	11. investigates the effect of temperature to speed of sound through fair testing;	S8FE-Ie-25	<ol style="list-style-type: none"> 1. OHSP. Module 16. 2. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 369-370. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 83-87. 	
4. Light	some properties and characteristics of visible light	discuss phenomena such as blue sky, rainbow, and red sunset using the concept of wavelength and frequency of visible light	12. demonstrate the existence of the color components of visible light using a prism or diffraction grating;	S8FE-If-26	<ol style="list-style-type: none"> 1. EASE Physics. Module 3. Lesson 4. 2. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 266-267. * 3. Science and Technology IV: Physics Textbook. NISMED. 2012. p. 27. 4. Science 8 Learner's Module. Campo, Pia C., et al. 2013. p. 91. 	Prism

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4. Light	<p><i>The learners demonstrate an understanding of:</i></p> <p>some properties and characteristics of visible light</p>	<p><i>The learners shall be able to:</i></p> <p>discuss phenomena such as blue sky, rainbow, and red sunset using the concept of wavelength and frequency of visible light</p>	13. explain the hierarchy of colors in relation to energy;	S8FE-If-27	<ol style="list-style-type: none"> 1. EASE Physics. Module 3. Lesson 4. 2. Science and Technology III: Chemistry Textbook for Third Year. Mapa, Amelia P., Ph.D., et al. 1999. pp. 67-69. * 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 98-105. 4. Chemistry III Textbook. Mapa, Amelia P., Ph.D., et al. 2001. pp. 65-66. * 	
			14. explain that red is the least bent and violet the most bent according to their wavelengths or frequencies;	S8FE-If-28	<ol style="list-style-type: none"> 1. EASE Physics. Module 3. Lesson 4. 2. Chemistry III Textbook. Mapa, Amelia P., Ph.D., et al. 2001. pp. 65-66. * 3. Science and Technology 	

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4. Light	<i>The learners demonstrate an understanding of:</i> some properties and characteristics of visible light	<i>The learners shall be able to:</i> discuss phenomena such as blue sky, rainbow, and red sunset using the concept of wavelength and frequency of visible light	14. explain that red is the least bent and violet the most bent according to their wavelengths or frequencies;	S8FE-If-28	III: Chemistry Textbook for Third Year. Mapa, Amelia P., Ph.D., et al. 1999. pp. 67-69. * 4. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 98-105.	
5. Heat	heat and temperature, and the effects of heat on the body		15. differentiate between heat and temperature at the molecular level;	S8FE-Ig-29	1. EASE Physics. Module 13. 2. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 37-38.	Thermometer
6. Electricity	current- voltage-resistance relationship, electric power, electric energy, and home circuitry		16. infer the relationship between current and charge;	S8FE-Ih-30	1. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 290-293. * 2. Science and Technology IV: Physics Textbook.	1. Dry cell holders 2. Multi-meter resistor 3. Switch 4. Wire connectors

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6. Electricity	<p><i>The learners demonstrate an understanding of:</i></p> <p>current- voltage- resistance relationship, electric power, electric energy, and home circuitry</p>	<p><i>The learners shall be able to:</i></p> <p>discuss phenomena such as blue sky, rainbow, and red sunset using the concept of wavelength and frequency of visible light</p>	16. infer the relationship between current and charge;	S8FE-Ih-30	<p>NISMED. 2012. pp. 142-143.</p> <p>3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 54-55.</p>	
			17. explain the advantages and disadvantages of series and parallel connections in homes;	S8FE-Ii-31	<p>1. EASE Physics. Module 7. Lesson 2.</p> <p>2. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 156-160.</p> <p>3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 61-63.</p>	<p>1. DC Ammeter</p> <p>2. DC Voltmeter</p> <p>3. Dry Cell Size D, 1.5 volts</p> <p>4. Dry Cell, 9 volts</p> <p>5. Dry Cell Holder Size D (1set= 4 pcs)</p> <p>6. Miniature Light Bulb (1 set = 3 pcs)</p> <p>7. Miniature Light Bulb Base (1set = 3 pcs)</p> <p>8. Set of Connectors (1 set = 3- red, 3- black, 2- white, 2- blue)</p> <p>9. Switches, Knife Type</p>

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6. Electricity	<p><i>The learners demonstrate an understanding of:</i></p> <p>current- voltage- resistance relationship, electric power, electric energy, and home circuitry</p>	<p><i>The learners shall be able to:</i></p> <p>discuss phenomena such as blue sky, rainbow, and red sunset using the concept of wavelength and frequency of visible light</p>	18. differentiate electrical power and electrical energy; and	S9FE-li-32	<p>1. Science and Technology IV: Physics Textbook for Fourth Year. Rabago, Lilia M., Ph.D., et al. 2001. pp. 294-296 and 315. *</p> <p>2. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 166-168 and 177-178.</p>	<p>1. DC Ammeter</p> <p>2. DC Voltmeter</p> <p>3. Dry Cell Size D, 1.5 volts</p> <p>4. Dry Cell, 9 volts</p>
			19. explain the functions of circuit breakers, fuses, earthing, double insulation, and other safety devices in the home.	S8FE-li-33	<p>1. EASE Physics. Module 7. Lessons 3 and 4.</p> <p>2. Science and Technology IV: Physics Textbook. NISMED. 2012. pp. 174-177.</p>	<p>1. Galvanometer</p> <p>2. Fuse Holder w/ Fuse</p>

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
Grade 8 – Earth and Space SECOND QUARTER/ SECOND GRADING PERIOD						
1. Earthquakes and Faults 1.1 Active and inactive faults 1.2 How movements along faults generate earthquakes 1.3 How earthquakes generate tsunamis 1.4 Earthquake focus and epicenter 1.5 Earthquake intensity and magnitude 1.6 Earthquake preparedness 1.7 How earthquake waves provide information about the interior of the Earth	<i>The learners demonstrate an understanding of:</i> the relationship between faults and earthquakes	<i>The learners shall be able to:</i> 1. participate in decision making on where to build structures based on knowledge of the location of active faults in the community 2. make an emergency plan and prepare an emergency kit for use at home and in school	<i>The learners should be able to...</i> 1. using models or illustrations, explain how movements along faults generate earthquakes;	S8ES-IIa-14	1. MISOSA 6. Module 26. 2. Science and Technology I: Integrated Science Textbook. NISMED. 2012. pp. 192-193. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 116-127.	
			2. differentiate the 2.1 epicenter of an earthquake from its focus; 2.2 intensity of an earthquake from its magnitude; 2.3 active and inactive faults;	S8ES-IIa-15	1. MISOSA 6. Module 28. 2. Science and Technology I: Integrated Science Textbook. NISMED. 2012. pp. 193-196. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 125-132.	Seismograph model

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1. Earthquakes and Faults 1.1 Active and inactive faults 1.2 How movements along faults generate earthquakes 1.3 How earthquakes generate tsunamis 1.4 Earthquake focus and epicenter 1.5 Earthquake intensity and magnitude 1.6 Earthquake preparedness 1.7 How earthquake waves provide information about the interior of the Earth	<i>The learners demonstrate an understanding of:</i> the relationship between faults and earthquakes	<i>The learners shall be able to:</i> 1. participate in decision making on where to build structures based on knowledge of the location of active faults in the community 2. make an emergency plan and prepare an emergency kit for use at home and in school	3. demonstrate how underwater earthquakes generate tsunamis;	S8ES-IIb-16	1. MISOSA 6. Module 27. 2. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 133-136.	
			4. explain how earthquake waves provide information about the interior of the earth	S8ES-IIc-17	Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 135-136.	
2. Understanding Typhoons 2.1 How typhoons develop 2.2 Why the Philippines is prone to typhoons 2.3 How landforms and bodies of water affect typhoons within the Philippine Area of Responsibility (PAR)	the formation of typhoons and their movement within the PAR	1. demonstrate precautionary measures before, during, and after a typhoon, including following advisories, storm signals, and calls for evacuation given by government agencies in charge	5. explain how typhoons develop;	S8ES-IIId-18	1. BEAM 5. Unit 6. 18 Tropical Cyclones. Learning Guides. Tropical Cyclones. September 2008. 2. Science and Technology I: Integrated Science Textbook. NISMED. 2012. pp.	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
2. Understanding Typhoons 2.1 How typhoons develop 2.2 Why the Philippines is prone to typhoons 2.3 How landforms and bodies of water affect typhoons within the Philippine Area of Responsibility (PAR)	<i>The learners demonstrate an understanding of:</i> the formation of typhoons and their movement within the PAR	1. demonstrate precautionary measures before, during, and after a typhoon, including following advisories, storm signals, and calls for evacuation given by government agencies in charge		S8ES-IIId-18	285-287. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 138-139. 4. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. pp. 207-208.	
			6. infer why the Philippines is prone to typhoons;	S8ES-IIId-19	1. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. p. 207. * 2. Science and Technology I: Integrated Science Textbook. NISMED. 2012. pp.	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
2. Understanding Typhoons 2.1 How typhoons develop 2.2 Why the Philippines is prone to typhoons 2.3 How landforms and bodies of water affect typhoons within the Philippine Area of Responsibility (PAR)	<i>The learners demonstrate an understanding of:</i> the formation of typhoons and their movement within the PAR	1. demonstrate precautionary measures before, during, and after a typhoon, including following advisories, storm signals, and calls for evacuation given by government agencies in charge	6. infer why the Philippines is prone to typhoons;	S8ES-IIId-19	286-287. 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 143-144.	
		2. participate in activities that lessen the risks brought by typhoons	7. explain how landmasses and bodies of water affect typhoons;	S8ES-IIe-20	Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 142-144.	
			8. trace the path of typhoons that enter the Philippine Area of Responsibility (PAR) using a map and tracking data;	S8ES-IIIf-21	Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 139-142.	
3. Other members of the Solar System 3.1 Comets 3.2 Meteors 3.3 Asteroids	characteristics of comets, meteors, and asteroids	discuss whether or not beliefs and practices about comets and meteors have scientific basis	9. compare and contrast comets, meteors, and asteroids;	S8ES-IIg-22	1. BEAM 3. Unit 6. DLP 54. 2. MISOSA 5, Module 27. 3. Science and Technology I: Integrated Science Textbook for	

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3. Other members of the Solar System 3.1 Comets 3.2 Meteors 3.3 Asteroids	<i>The learners demonstrate an understanding of:</i> characteristics of comets, meteors, and asteroids	discuss whether or not beliefs and practices about comets and meteors have scientific basis		S8ES-IIg-22	First Year. Villamil, Aurora M., Ed.D. 1998. pp. 281-283. * 4. Science and Technology I: Integrated Science Textbook. NISMED. 2012. pp. 339-340. 5. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp.156-164.	
			10. predict the appearance of comets based on recorded data of previous appearances; and	S8ES-IIh-23	1. BEAM 3. Unit 6. DLP 54. 2. MISOSA 5. Module 27. 3. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. pp. 282-283. 4. Science and	

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3. Other members of the Solar System 3.1 Comets 3.2 Meteors 3.3 Asteroids	<i>The learners demonstrate an understanding of:</i> characteristics of comets, meteors, and asteroids	discuss whether or not beliefs and practices about comets and meteors have scientific basis	10. predict the appearance of comets based on recorded data of previous appearances; and	S8ES-IIh-23	Technology I: Integrated Science Textbook. NISMED. 2012. p. 340. 5. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 156-158.	
			11. explain the regular occurrence of meteor showers	S8ES-III-j-24	1. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. p. 281. * 2. Science 8 Learner's Module. Campo, Pia C., et al. 2013. p. 163.	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
Grade 8 – Matter THIRD QUARTER/THIRD GRADING PERIOD						
1. The Particle Nature of Matter 1.1 Elements, Compounds, and Mixtures 1.2 Atoms and Molecules	<i>The learners demonstrate an understanding of:</i> the particle nature of matter as basis for explaining properties, physical changes, and structure of substances and mixtures	<i>The learners shall be able to:</i> present how water behaves in its different states within the water cycle	<i>The learners should be able to...</i> 1. explain the properties of solids, liquids, and gases based on the particle nature of matter;	S8MT-IIIa-b-8	1. EASE Science I. Module 5. Lesson 2. 2. Science and Technology III. NISMED. 1997. pp. 55-64. 3. Chemistry III Textbook. Mapa, Amelia P., Ph.D., et al. 2001. pp. 32-33. 4. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. pp. 46-47. * 5. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 179-182. 6. Science and Technology I: Integrated	

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1. The Particle Nature of Matter 1.1 Elements, Compounds, and Mixtures 1.2 Atoms and Molecules	<i>The learners demonstrate an understanding of:</i> the particle nature of matter as basis for explaining properties, physical changes, and structure of substances and mixtures	<i>The learners shall be able to:</i> present how water behaves in its different states within the water cycle	<i>The learners should be able to...</i> 1. explain the properties of solids, liquids, and gases based on the particle nature of matter;	S8MT-IIIa-b-8	Science Textbook. NISMED. 2012. pp. 80-81.	
			2. explain physical changes in terms of the arrangement and motion of atoms and molecules;	S8MT-IIIc-d-9	1. Chemistry III Textbook. Mapa, Amelia P., Ph.D., et al. 2001. p. 137. * 2. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. *	
2. Atomic Structure 2.1 Protons 2.2 Neutrons 2.3 Electrons	the identity of a substance according to its atomic structure		3. determine the number of protons, neutrons, and electrons in a particular atom;	S8MT-IIIe-f-10	1. EASE Science II. Module 10. Lesson 2. 2. BEAM III. Unit 1. 4 Demonstrate Understanding of Mathematical. Number	1. Improvised Bohr-Sommerfield Atomic Model 2. Improvised Energy Levels Model 3. Improvised Isotopes of Carbon

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2. Atomic Structure 2.1 Protons 2.2 Neutrons 2.3 Electrons	<i>The learners demonstrate an understanding of:</i> the identity of a substance according to its atomic structure		3. determine the number of protons, neutrons, and electrons in a particular atom;	S8MT-IIIe-f-10	Makeover. Intro to Chemistry. August 2009. 3. Science and Technology III. NISMED. 1997. pp. 220-221. 4. Chemistry III Textbook. Mapa, Amelia P., Ph.D., et al. 2001. pp. 58-64. * 5. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 203-205.	4. Improvised Subshells Model
3. Periodic Table (PT) of Elements 3.1 Development of the PT 3.2 Arrangement of elements 3.3 Reactive and nonreactive metals	the periodic table of elements as an organizing tool to determine the chemical properties of elements		4. trace the development of the periodic table from observations based on similarities in properties of elements; and	S8MT-IIIg-h-11	1. EASE Science II. Module 11. Lesson 1. 2. Chemistry III Textbook. Mapa, Amelia P., Ph.D., et al. 2001. pp. 86-88. * 3. Science and Technology III. NISMED.	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
3. Periodic Table (PT) of Elements 3.1 Development of the PT 3.2 Arrangement of elements 3.3 Reactive and nonreactive metals	<i>The learners demonstrate an understanding of:</i> the periodic table of elements as an organizing tool to determine the chemical properties of elements		4. trace the development of the periodic table from observations based on similarities in properties of elements; and	S8MT-IIIg-h-11	1997. pp. 237-245. 4. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. pp. 52-53. * 5. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 211-212.	
			5. use the periodic table to predict the chemical behaviour of an element.	S8MT-IIIi-j-12	1. EASE Science II. Module 11. Lesson 2. 2. Chemistry III Textbook. Mapa, Amelia P., Ph.D., et al. 2001. pp. 90-91. 3. Science and Technology III. NISMED.	Periodic Table of Elements Improvised Periodic Table Blocks

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
3. Periodic Table (PT) of Elements 3.1 Development of the PT 3.2 Arrangement of elements 3.3 Reactive and nonreactive metals	<i>The learners demonstrate an understanding of:</i> the periodic table of elements as an organizing tool to determine the chemical properties of elements		5. use the periodic table to predict the chemical behaviour of an element.	S8MT-IIIi-j-12	1997. pp. 253-259. 4. Science and Technology I: Integrated Science Textbook. NISMED. 2012. pp. 60-61. 5. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 212-217.	
Grade 8 – Living Things and Their Environment FOURTH QUARTER/ FOURTH GRADING PERIOD						
1. Structures and Functions: Focus on the Digestive System 1.1 Organs of the digestive system and their interaction with organs of the respiratory, circulatory, and excretory systems 1.2 Changes in food as it undergoes physical and	<i>The learners demonstrate an understanding of:</i> 1. the digestive system and its interaction with the circulatory, respiratory, and excretory systems in providing the body with nutrients for energy	<i>The learners should be able to:</i> present an analysis of the data gathered on diseases resulting from nutrient deficiency	<i>The learners should be able to...</i> 1. explain ingestion, absorption, assimilation, and excretion;	S8LT-IVa-13	1. EASE Biology. Module 1. Lesson 1. 2. Science and Technology II: Biology Textbook. NISMED. 2012. pp. 99; 109-110.	Human Torso Model

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
chemical digestion 1.3 Diseases resulting from nutrient deficiency and ingestion of harmful substances 1.4 Prevention, detection, and treatment of diseases of the digestive system	2. diseases that result from nutrient deficiency and ingestion of harmful substances, and their prevention and treatment	<i>The learners should be able to:</i> present an analysis of the data gathered on diseases resulting from nutrient deficiency	2. explain how diseases of the digestive system are prevented, detected, and treated;	S8LT-IVb-14	3. BEAM 4. Unit 2. Distance Learning Modules. DLP 16. 4. Science for Daily Use 4. Lozada, Buena A., et al. 2011. pp. 35-36. *	
			3. identify healthful practices that affect the digestive system;	S8LT-IVc-15	1. Science for Daily Use 4. Lozada, Buena A., et al. 2011. p. 34. * 2. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 308-313.	
2. Heredity: Inheritance and Variation of Traits 2.1 Stages of mitosis 2.2 Stages of meiosis 2.3 Mendelian Genetics	<i>The learners demonstrate an understanding of:</i> 1. how cells divide to produce new cells 2. meiosis as one of the processes producing genetic variations of the Mendelian Pattern of Inheritance	<i>The learners should be able to:</i> present an analysis of the data gathered on diseases resulting from nutrient deficiency report on the importance of variation in plant and animal breeding	4. compare mitosis and meiosis, and their role in the cell-division cycle;	S8LT-IVd-16	1. EASE Biology. Module 12. Lessons 1 and 2. 2. BEAM II. Unit 5. Learning Guide. Reproduction. Cell Growth and	1. Meiosis model 2. Mitosis model

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
2. Heredity: Inheritance and Variation of Traits 2.1 Stages of mitosis 2.2 Stages of meiosis 2.3 Mendelian Genetics	<i>The learners demonstrate an understanding of:</i> 1. how cells divide to produce new cells 2. meiosis as one of the processes producing genetic variations of the Mendelian Pattern of Inheritance	<i>The learners should be able to:</i> report on the importance of variation in plant and animal breeding	4. compare mitosis and meiosis, and their role in the cell-division cycle;	S8LT-IVd-16	Reproduction. April 2009. 3. Science and Technology II: Biology Textbook. NISMED. 2012. pp. 132-133. 4. Science and Technology II: Biology Textbook. NISMED. 2004. pp. 132-133. 5. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 321-326.	
			5. explain the significance of meiosis in maintaining the chromosome number;	S8LT-IVe-17	1. EASE Biology. Module 12. Lesson 2. 2. Science and Technology II: Biology Textbook. NISMED. 2012. pp. 133-134. 3. Science and	Meiosis Model

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
2. Heredity: Inheritance and Variation of Traits 2.1 Stages of mitosis 2.2 Stages of meiosis 2.3 Mendelian Genetics	<i>The learners demonstrate an understanding of:</i> 1. how cells divide to produce new cells 2. meiosis as one of the processes producing genetic variations of the Mendelian Pattern of Inheritance	<i>The learners should be able to:</i> report on the importance of variation in plant and animal breeding	5. explain the significance of meiosis in maintaining the chromosome number;	S8LT-IVe-17	Technology II: Biology Textbook. NISMED. 2004. pp. 133-134. 4. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 327-328.	
			6. predict phenotypic expressions of traits following simple patterns of inheritance;	S8LT-IVf-18	1. EASE Biology. Module 14. 2. Science and Technology II: Biology Textbook. NISMED. 2012. Pp. 188-189. 3. Science and Technology II: Biology Textbook. NISMED. 2004. Pp. 188-189. 4. Science 8 Learner's Module. Campo, Pia C., et al. 2013. P. 334.	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
3. Biodiversity 3.1 Species diversity 3.2 Hierarchical taxonomic system of classification 3.3 Protection and conservation of endangered and economically important species	<i>The learners demonstrate an understanding of:</i> 1. the concept of a species 2. the species as being further classified into a hierarchical taxonomic system	<i>The learners should be able to:</i> report (e.g., through a travelogue) on the activities that communities engage in to protect and conserve endangered and economically important species	7. explain the concept of a species;	S8LT-IVg-19	Science 8 Learner's Module. Campo, Pia, et al. 2013. P. 224.	
			8. classify organisms using the hierarchical taxonomic system;	S8LT-IVh-20	Science 8 Learner's Module. Campo, Pia C., et al. 2013. Pp. 226-227.	
			9. explain the advantage of high biodiversity in maintaining the stability of an ecosystem;	S8LT-IVh-21	1. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. P. 231. * 2. Science and Technology II: Biology Textbook. NISMED. 2012. pp. 330-333. 3. Science and Technology II: Biology Textbook. NISMED. 2004. pp. 330-333. 4. Science 8 Learner's Module. Campo, Pia C.,	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
					et al. 2013. p. 266.	
4. Ecosystems 4.1 Transfer of Energy in Trophic Levels 4.2 Cycling of materials in the ecosystem 4.2.1Water cycle 4.2.2Oxygen-carbon cycle 4.2.3Nitrogen cycle 4.3 Impact of human activities in an ecosystem	<i>The learners demonstrate an understanding of:</i> the one-way flow of energy and the cycling of materials in an ecosystem	<i>The learners should be able to:</i> make a poster comparing food choices based on the trophic levels'	10. describe the transfer of energy through the trophic levels;	S8LT-IVI-22	1. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. P. 228. * 2. Science 8 Learner's Module. Campo, Pia C., et al. 2013. Pp. 273-274.	
			11. analyze the roles of organisms in the cycling of materials;	S8LT-IVI-23	EASE Science I. Module 10. Lesson 3.	
			12. explain how materials cycle in an ecosystem; and	S8LT-IVI-24	1. EASE Science I. Module 10. Lesson 3. 2. Science and Technology I: Integrated Science Textbook for First Year. 1998. pp. 150-151 and pp. 228-231.	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS	SCIENCE EQUIPMENT
4. Ecosystems 4.1 Transfer of Energy in Trophic Levels 4.2 Cycling of materials in the ecosystem 4.2.1Water cycle 4.2.2Oxygen-carbon cycle 4.2.3Nitrogen cycle 4.3 Impact of human activities in an ecosystem	<i>The learners demonstrate an understanding of:</i> the one-way flow of energy and the cycling of materials in an ecosystem	<i>The learners should be able to:</i> make a poster comparing food choices based on the trophic levels	12. explain how materials cycle in an ecosystem; and	S8LT-IVi-24	* 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 284-287.	
			13. suggest ways to minimize human impact on the environment.	S8LT-IVj-25	1. EASE Biology. Module 19. 2. Science and Technology I: Integrated Science Textbook for First Year. Villamil, Aurora M., Ed.D. 1998. p. 231. * 3. Science 8 Learner's Module. Campo, Pia C., et al. 2013. pp. 288-289.	