State of Michigan Recognized Grade Level Content Expectations (GLCEs)

Timeline

Week 1-3 — Unit 1: Scientific Method/Process

Objective: Understand, Use, and Apply the Scientific Method/Process

		Text Resources (by book ID on book spine)	Vocabulary	Assessment
S.IP.07.11	I can write scientific questions based on my observations, investigations, and research.	K: 128, A 8-13	hypothesis, variable, independent, dependent, control, chart, graph, data, scientific method, metric system, mass, volume, density, temperature, Celsius, gram, liter, meter, weight, trends/pattern in data	Design experiment based on Scientific Method
S.IP.07.12	I can create and run scientific investigations.	K: 131-136		
S.IP.07.13	I can use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lenses, thermometers, models, sieves, microscopes, hot plates, pH meters) needed for scientific investigations.	K: 133-135		Scientific Measurement Tools Quiz
S.IP.07.15	I can make charts and graphs from data and observations.	K: 131, 159-160		
S.IP.07.16	I can identify patterns in data	K: 135-136		Scientific Method skills assessed on each unit's post test
S.IA.07.11	I can make sense of information from data tables and graphs to answer scientific questions.	K: 159-160		
S.IA.07.14	I can use data from several experiments when determining a valid conclusion.	Additional resources in Schoology		Scientific Method Vocabulary Quiz
S.RS.07.11	I can evaluate the strengths & weaknesses of data			
S.RS.07.14	I can evaluate scientific explanations			
S.RS.07.15	I can show scientific concepts through activities			
	I can write a Claim, Evidence and provide Reasoning			

7 Weeks — Unit 2: Waves & Energy

Objective A: Using sound waves, seismic waves, waves in water, and light waves, demonstrate how waves transfer energy.

Objective B: Describe how the sun is the major source of light and heat on Earth.

Objective C: Demonstrate how only a tiny fraction of the light energy from the sun reaches Earth to heat it.

		Text Resources (by book ID on book spine)	Vocabulary	Assessment
P.EN.07.31	I can give examples of waves, including sound, seismic, and water waves.	O: 6-37	waves, wavelength, transverse waves, compressional waves, seismic waves, ligh wave, water wave, sound wave, crests, troughs, amplitude, frequency, wavelength, light energy, sound wave, energy transfer, energy, vibration,	Unit 2 Pre-Post Test
P.EN.07.32	I can show how waves are produced by vibrations in matter.	O: 11, 36-37		Vocab Quizzes
P.EN.07.33	I can show by example how waves transfer energy when they interact with matter (for example tuning fork in water, waves hitting a beach, earthquake knocking over buildings).	O: 8-9, 66		Content Quiz
P.EN.07.61	I can recognize what a nuclear reaction is and that it takes place in the sun, producing heat and light.			
P.EN.07.62	I can talk about how only a tiny fraction of light energy from the sun becomes heat energy on Earth.	O: 74-75		
	* All Resources located in Schoology	Additional resources in Schoology		

8 Weeks — Unit 3: Physical and Chemical Properties and Changes in Matter

Unit 3A: Elements and Compounds

Objective A: Identify elements as the chemical substances that make up all other substances and are composed of one kind of atom.

Objective B: Elements are organized on the Periodic Table in families.

Objective C: Describe examples of physical and chemical properties of elements and compounds.

		Text Resources (by book ID on book spine)	Vocabulary	Assessment
P.PM.07.21	I can explain how an atom as the smallest component making up an element.	K: 8-14	atom, atomic arrangement, chemical change, chemical properties (of elements or compounds), chemical reaction, molecule, nonmetal reactive gases, products, reactants, density, boiling point, conductivity, pH scale (measured with paper/meter), elements, periodic table of the elements, physical change, compound, classification of substances, conservation of mass, graduated cylinder, physical properties (of elements or compounds), phase change, pH	Unit 3 Pre-Post Test
P.PM.07.23	I can draw or make a model showing the structure of molecules (water, carbon dioxide, salt).	L: 16-24, A 70		Vocab Quizzes
P.PM.07.22	I can tell how the elements on the Periodic Table are organized by similar properties into families (highly reactive metals, less reactive metals, highly reactive nonmetals, and some almost completely non-reactive gases).	K: 98-116		Content Quiz
P.PM.07.11	I can group substances by their chemical properties (flammability, pH, acid-base indicators, reactivity).	K: 76		
P.PM.07.24	I can list traits of elements and compounds and tell whether the traits are physical (such as boiling point, density, or color) or chemical (such as conductivity and reactivity).	K: 72-76		
	* All Resources located in Schoology	Additional resources in Schoology		

Unit 3B: Chemical Properties

Objective A: Identify evidence of a chemical change through color, gas formation, solid formation, and temperature change

Objective B: Compare and contrast the properties of reactants and products in a chemical change, using changes in properties as evidence of the change. (implied: define chemical properties)

Objective C: Illustrate the structure of molecules using models or drawings.

Objective D: Demonstrate that in a chemical change mass is conserved.

		Text Resources (by book ID on book spine)	Vocabulary	Assessment
P.CM.07.21	I can recognize a chemical change from change in color, formation of a gas, formation of a solid, and change in temperature.	K: 78-87	reactants, products, conservation of matter/mass, products, reactants,	Unit 3 Pre-Post Test

P.PM.07.11	I can group substances by their chemical properties (flammability, pH, acid-base indicators, reactivity).	K: 76	Vocab Quizzes
P.CM.07.22	I can list the similarities and differences in the chemical properties of a substance after it has gone through a chemical change.	K: 76	Content Quiz
P.CM.07.23	I can write the physical properties of the products and reactants in a chemical change. I can write the chemical properties of the products and reactants in a chemical change.	K: 72-87	
	* All Resources located in Schoology	Additional resources in Schoology	

8 Weeks — *Unit 4: Processes of Energy Transfer in Living Organisms*

Unit 4A: Cell Functions

Objective A: Visualize different types of cells in a variety of organisms.

Objective B: Focus on the variety of cell organization and specialization in various organims.

Objective C: Identify and apply the key components of the Cell Theory

		HRW Text (online) Resources book C	Vocabulary	Assessment
L.OL.07.21	I have learned that all organisms are made of cells (both single cell and multicellular organisms).	8-Apr	unicellular, multicellular, prokaryotic, eukaryotic, cell growth, cell, organ, tissue, organ system, cell specialization, cell theory	Life Science Pre & Post Test
L.OL.07.24	I have learned that cells work in a similar way in all organisms.	13-Nov		Life Science Vocabulary Quiz
L.OL.07.22	I can explain that different body tissues, organs, and organ systems are all made of cells .	8-Apr		Cells Cells Cells Quiz
L.OL.07.23	I can tell how cells in multicellular organisms are specialized to take in nutrients to suppy energy for the work that they do. I can tell how the nutrients also provide materials for cell structures and organisms' other needs.	38-41		
L.OL.07.32	I can tell how cells may become specialized for specific jobs through cell division.	Additional resources in Schoology		

Unit 4B: Photosynthesis

Objective A: Explain how the sun supplies living things with the energy they need.

Objective B: Describe how plants use light to provide energy for the production of food.

Objective C: Describe what happens during the process of photosynthesis.

Objective D: Design an investigation to grow plants under different conditions and draw conclusions on plant health, growth, and food production.

		HRW Text (online) Resources book C	Vocabulary
P.EN.07.43	I can tell how photosynthesis takes light energy and captures it in chemical bonds.	A: 83-84	cell transport, diffusion, osmosis, passive transport, active transport, photosynthesis, cellular respiration, fermentation, carbohydrates, proteins, fats
L.OL.07.61	I have learned that light provides the energy for production of carbohydrates, proteins and fats.	A: 84	
L.OL.07.62	I have learned that carbon dioxide and water are used to produce carbohydrates, proteins, and fats.	A: 83-84	
L.OL.07.63	I can give examples showing that plants make, use and store food.	Additional resources in Schoology	

Unit 4C: Heredity

Objective A: Observe and distinguish between patterns of trait inheritance in asexually and sexually reproducing organisms.

Objective B: Identify and describe advantages/disadvantages of asexual and sexual reproduction

Objective C: Recognize that organisms produced through asexual reproduction are generally genetically identical.

Objective D: Recognize that sexual reproduction introduces genetic variety into the offspring produced.

		HRW Text (online) Resources book C	Vocabulary
L.HE.07.21	I can describe how characteristics of living things are passed on through generations, both asexually and sexually.	56-63	genetics, chromosome, DNA, gene, sexual reproduction, asexual reproduction, acquired vs. inherited, cell division
L.HE.07.22	I can list the advantages and disadvantages of sexual and asexual reproduction.	56-57	
L.HE.05.11	I can explain how traits of individuals are influenced by nature and nurture (5th grade loop topic).	Additional resources in Schoology	

7 Weeks — *Unit 5: Human Activities and Its Impact on Weather & Climate*

Unit 5A: Composition of atmosphere

Text Resources (by

Objective C: Describe the atmosphere as a mixture of gases.

			Vocabulary	Assessments
E.FE.07.11	I can list the main gases in the Earth's atmosphere.	I: 8-9	altitude, atmosphere, troposphere, stratosphere, mesosphere, thermosphere, exosphere, ozone layer	Weather/Climate Vocabulary Quiz
E.FE.07.12	I can describe the make-up of the different layers of the atmosphere.	I: 10-15		Weather Quiz
		Additional resources in Schoology		Weather, Climate, and Atmosphere Unit Test

Unit 5B: Weather

Objective A: Explain how the sun's warming of the Earth creates movement of air and water and affects weather and climate.

		Text Resources (by book ID on book spine)	Vocabulary	Assessment
E.ES.07.11	I can create a model or drawing showing how the sun warms the Earth and how that drives the water cycle in the atmosphere (evaporation, water vapor, warm air rising, cooling, condensation, clouds).		conduction, convection, radiation, water cycle, evaporation, transpiration, condensation, precipitation, surface runoff, water vapor, clouds, dew point, absorption, infiltration, ground water, ocean currents, wind, frontal boundaries (cold, warm, stationary, occluded), jet stream, fog, cloud formation, watershed, air/barometric pressure	
E.ES.07.12	I can explain how the sun's warming of the Earth causes convection in the atmosphere and oceans.	I: 21-25		Atmosphere Project
E.ES.07.13	I can show how the sun's warming of the Earth produces winds and ocean currents.	I: 21-25		Human Pollution Project
E.ES.07.71	I can explain the difference and relationship between climate and weather.	I: 66		Predicting Weather Forecast Project
E.ES.07.72	I can tell how different weather occurs due to the constant motion of the atmosphere caused by sun energy.	I: 36-51		
E.ES.07.74	I can use a weather map to tell about weather conditions that occur at frontal boundaries (cold, warm, stationary, and occluded). I can also tell about the movement of major air masses and the jet stream across North America using a weather map.	I: 52-55		
E.ES.07.81	I can draw the water cycle showing how evaporation, transpiration, condensation, cloud formation, precipitation, infiltration, surface runoff, ground water, and absorption occur within the cycle.	I: 17-20		
		Additional resources in Schoology		

Unit 5C Human Interactions with the Environment

		Text Resources (by book ID on book spine)	Vocabulary
Objective B: Describe the affects of human activity on the atmosphere, water cycle, and the earth			
E.ES.07.82	I can observe and tell about the flow of water through a watershed, including surface features (such as lakes, streams, rivers, wetlands) and groundwater (below surface).		
E.ES.07.41	I can tell how humans changing the surface of the Earth (surface mining, deforestation, overpopulation, construction and urban development, farming, dams, landfills, and restoring natural areas) can affect the survival of organisms.	Additional resources in Schoology	surface mining, deforestation, overpopulation, urban development, farming, dams, landfills, acid rain, pollution, habitat destruction, global warming
E.ES.07.42	I can explain the origins of pollution in the atmosphere, geosphere, and hydrosphere, (like car exhaust, industrial emissions, acid rain, and natural sources), and can tell how pollution impacts habitats, climate change, and endangers species.	I: 174-114	