

**Fifth Grade Science Alignment Record Science GLCE v.12.07**

GLCE Code	Expectation	District Resources/Alignment	Vocabulary	Additional Resources
<b>Science Processes</b>	<b>Inquiry Process</b>			
<b>Statement [P.M.1]</b>	Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.	“HSP Science” by Harcourt		
P.05.11	Generate scientific questions based on observations, investigations, and research.	Introductory Chapter pp. 2-38		
P.05.12	Design and conduct scientific investigations.	Introductory Chapter pp. 4-7		
P.05.13	Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens) appropriate to scientific investigations.	Lab Experiments – Book & Insta Labs	spring scales, stop watch, meter stick, hands, lens, meter tapes, models	
P.05.14	Use metric measurement devices in an investigation.		syringe, graduated cylinder, beaker, grams, centimeter	
P.05.15	Construct charts and graphs from data and observations.		millimeter, balance, scale, liter, milliter, Celsius	
P.05.16	Identify patterns in data.	▼		
<b>Science Processes</b>	<b>Inquiry Analysis and Communication</b>			
<b>Statement [A.M.1]</b>	Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.			
A.05.11	Analyze information from data tables and graphs to answer scientific questions.	Introductory Chapter Lesson 2, pp. 14-23		
A.05.12	Evaluate data, claims, and personal knowledge through collaborative science discourse.			
A.05.13	Communicate and defend findings of observations and investigations using evidence.	▼		

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A.05.14	Draw conclusions from sets of data from multiple trials of a scientific investigation.	Introductory Chapter Lesson 3, pp. 24-35		
A.05.15	Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data.	↓		
<b>ience ocesses</b>	<b>Reflection and Social Implications</b>			
<b>atement RS.M.1</b>	Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.	Introductory Chapter, pp. 2-38 Lab Experiments		
RS.05.11	Evaluate the strengths and weaknesses of claims, arguments, and data.	People in Science, pp. 386-387		
RS.05.12	Describe limitations in personal and scientific knowledge.	Introductory Chapter #3, Lesson, pp. 24-34		
RS.05.13	Identify the need for evidence in making scientific decisions.	Lab Experiments		
RS.05.15	Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.			Readings from Weekly Readers
RS.05.16	Design solutions to problems using technology.	Pollution/protected species, p. 176 Reusing Resources, pp. 240-241, 280-381		
RS.05.17	Describe the effect humans and other organisms have on the balance in the natural world.			Well known investors – book from library or classroom collection
RS.05.19	Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.			Physical Science resources from “Science Puzzlers”
<b>ysical ience</b>	<b>Force and Motion</b>			

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<b>atement</b> FM.M.2	Force Interactions- Some forces between objects act when the objects are in direct contact (touching), such as friction and air resistance, or when they are not in direct contact (not touching), such as magnetic force, electrical force, and gravitational force.	<b>HSP:</b> Friction, p. 677 Magnetic Force, p. 680 Electrical Force, pp. 618-619 Gravitational Force, p. 678	force, friction, air, resistance, magnetic force, electrical force, gravitational force	“Force of Flight” “Creating Friction”
FM.05.21	Distinguish between contact forces and non-contact forces.		contact force, non-contact force	Sorting activity with own materials ↓
FM.05.22	Demonstrate contact and non-contact forces to change the motion of an object.		motion	
<b>atement</b> FM.M.3	Force- Forces have a magnitude and direction. Forces can be added. The net force on an object is the sum of all of the forces acting on the object. The speed and/or direction of motion of an object changes when a non-zero net force is applied to it. A balanced force on an object does not change the motion of the object (the object either remains at rest or continues to move at a constant speed in a straight line).	Force, p. 676 Net Force, pp. 688, 689 Balanced Force, pp. 686, 687		
FM.05.31	Describe what happens when two forces act on an object in the same or opposing directions.			
FM.05.32	Describe how constant motion is the result of balanced (zero net) forces.		constant motion, balanced force	
FM.05.33	Describe how changes in the motion of objects are caused by a non-zero net (unbalanced) force.		unbalanced force	
FM.05.34	Relate the size of change in motion to the strength of unbalanced forces and the mass of the object.		mass	
<b>atement</b> FM.M.4	Speed- Motion can be described by a change in position relative to a point of reference. The motion of an object can be described by its speed and the direction it is moving. The position and speed of an object can be measured and graphed as a function of time.	Speed, pp. 708-718, 722-730 Chapter #19		

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EM.05.41	Explain the motion of an object relative to its point of reference.	Chapter 19, p. 712	motion	
EM.05.42	Describe the motion of an object in terms of distance, time and direction, as the object moves, and in relationship to other objects.	Chapter 19 Speed, p. 714 Velocity, p. 714 Acceleration, p. 716	momentum, acceleration, velocity	“The Notion of Motion” “Cars of the Future”
EM.05.43	Illustrate how motion can be measured and represented on a graph.			
<b>Life Science</b>	<b>Organization of Living Things</b>			
<b>Content Standard OL.M.4</b>	Animal Systems- Multicellular organisms may have specialized systems that perform functions which serve the needs of the organism.	Chapter 1 Cells and Introduction, pp. 74-85		Own resources for multicellular organisms “Mammal Match-Up:
OL.05.41	Identify the general purpose of selected animal systems (digestive, circulatory, respiratory, skeletal, muscular, nervous, excretory, and reproductive).	Chapter 1, pp. 66-85	digestive system, respiratory system, skeletal system, circulatory system, muscular system,	“You Gotta Have Heart – and Lungs” “Control Center” “The Brain Knows” “Weigh Those Brains” “Your Heart, Your Pump”
OL.05.42	Explain how animal systems (digestive, circulatory, respiratory, skeletal, muscular, nervous, excretory, and reproductive) work together to perform selected activities.	Chapter 1, Lessons 3, pp. 70-85	nervous system, excretory system, reproductive system	FOSS Human Body Human Body resources from “Science Puzzlers” and “Instructional Fair”
<b>Life Science</b>	<b>Heredity</b>			
<b>Content Standard HE.M.1</b>	Inherited and Acquired Traits - The characteristics of organisms are influenced by heredity and environment. For some characteristics, inheritance is more important; for other characteristics, interactions with the environment are more important.	Acquired (Learned) Traits Chapter 4, Lesson 3, pp. 169, 174-175 Inherited Traits, Chapter 4, Lesson 2, pp. 158-166 Environment, Chapter 4, p. 176	heredity environment	“Which birds would rather run than walk?” Life Science resources from “Science Puzzlers” and “Instructional Fair”
HE.05.11	Explain that the traits of an individual are influenced by both the environment and the genetics of the individual.	Chapter 4		
HE.05.12	Distinguish between inherited and acquired traits.	Chapter 4	inherited traits	

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			acquired traits, learned behavior	
<b>Science</b>	<b>Evolution</b>			
<b>Item</b> <b>EV.M.1</b>	Species Adaptation and Survival- Species with certain traits are more likely than others to survive and have offspring in particular environments. When an environment changes, the advantage or disadvantage of the species' characteristics can change. Extinction of a species occurs when the environment changes and the characteristics of a species are insufficient to allow survival.	Adaptations and Survival, Chapter 4, pp. 162-165, 219		“Save My Home” “Habitats & Ecosystems” “The Coral Reef” “Too Much Trash”
EV.05.11	Explain how behavioral characteristics (adaptation, instinct, learning, habit) of animals help them to survive in their environment.	Chapter 4	behavioral characteristics, adaptations, instinct	
EV.05.12	Describe the physical characteristics (traits) of organisms that help them survive in their environment.	Chapter 4	physical characteristics, survival	“Ocean Food Chains”
EV.05.13	Describe how fossils provide evidence about how living things and environmental conditions have changed.	Chapter 8, pp. 298-318	fossils	
EV.05.14	Analyze the relationship of environmental change and catastrophic events (for example: volcanic eruption, floods, asteroid impacts, tsunami) to species extinction.	Extinction, p. 232	extinction	“Tsunami Trivia” “Thunder and Lightning” “Wild Weather” “How Lightning Strikes” “Natural Phenomena” from Remedia Publication
<b>Item</b> <b>EV.M.2</b>	Relationships Among Organisms- Similarities among organisms are found in anatomical features, which can be used to infer the degree of relatedness among organisms. In classifying organisms, biologists consider details of internal and external structures to be more important than behavior or general appearance.	Classification, Chapter 2, pp. 94-98, 104-109	decomposers, composers, vertebrae, invertebrate	
EV.05.21	Relate degree of similarity in anatomical features to the classification of contemporary organisms.	Vertebrate and Invertebrate, Chapter 2, 102-109	classification	

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<b>Earth Science</b>	<b>Earth Systems</b>			Earth Science resources from “Science Puzzlers” and “Instructional Fair”
<b>Statement ES.M.6</b>	Seasons- Seasons result from annual variations in the intensity of sunlight and length of day due to the tilt of the axis of the Earth relative to the plane of its yearly orbit around the sun.	Chapter 13, pp. 468-477	seasons, orbit, axis	
ES.05.61	Demonstrate using a model, seasons as the result of variations in the intensity of sunlight caused by the tilt of the Earth on its axis, and revolution around the sun.	Chapter 13, pp. 470-471	revolution, rotation	
ES.05.62	Explain how the revolution of the Earth around the sun defines a year.	Chapter 13, Lesson 1, 474-477		
<b>Earth Science</b>	<b>Earth in Space and Time</b>			Solar System 5 <sup>th</sup> Grade Resources
<b>Statement ST.M.1</b>	Solar System- The sun is the central and largest body in our solar system. Earth is the third planet from the sun in a system that includes other planets and their moons, as well as smaller objects, such as asteroids and comets.	Chapter 13, Lesson 3, pp. 488-503	asteroids, comets	“Magic School Bus Lost in the Solar System: book/video “How did the first clock work?” “Space Pioneers” “Extraterrestrial Explorers” “Weigh Off in Space!”
ST.05.11	Design a model that describes the position and relationship of the planets and other objects (comets and asteroids) to the sun.	Chapter 13	gravity, solar system	“What is a Meteor?” The Sun: “Solar Crossword” “By the Numbers” “Planet Orbits”
<b>Statement ST.M.2</b>	Solar System Motion- Gravity is the force that keeps most objects in the solar system in regular and predictable motion.	pp. 678-679	planet, moon	
ST.05.21	Describe the motion of planets and moons in terms of rotation on axis and orbits due to gravity.	Chapter 13	moon phases	“What is Gravity” “The Gravity of History”
ST.05.22	Explain moon phases as they relate to the position of the moon in its orbit around the Earth, resulting in the amount of observable reflected light.	Chapter 13, 482-486	star, constellation, sun	
ST.05.23	Recognize that nighttime objects (stars and	Chapter 13, 472-489	seasons	“Sky Lights”

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	constellations) and the sun appear to move because the Earth rotates on its axis and orbits the sun.			“What causes Auroras?”
ST.05.24	Explain lunar and solar eclipses based on the relative positions of the Earth, moon, and sun, and the orbit of the moon.	Chapter 13, p. 486	Lunar eclipse, Solar eclipse	“Build an Eclipse” “What is an Eclipse?” “Using your head to show an Eclipse” “Solar Eclipse” “Which Eclipse is that Again?”
ST.05.25	Explain the tides of the oceans as they relate to the gravitational pull and orbit of the moon.	Chapter 13, p. 450	tides	