



6th Grade Science Curriculum & Pacing Guide

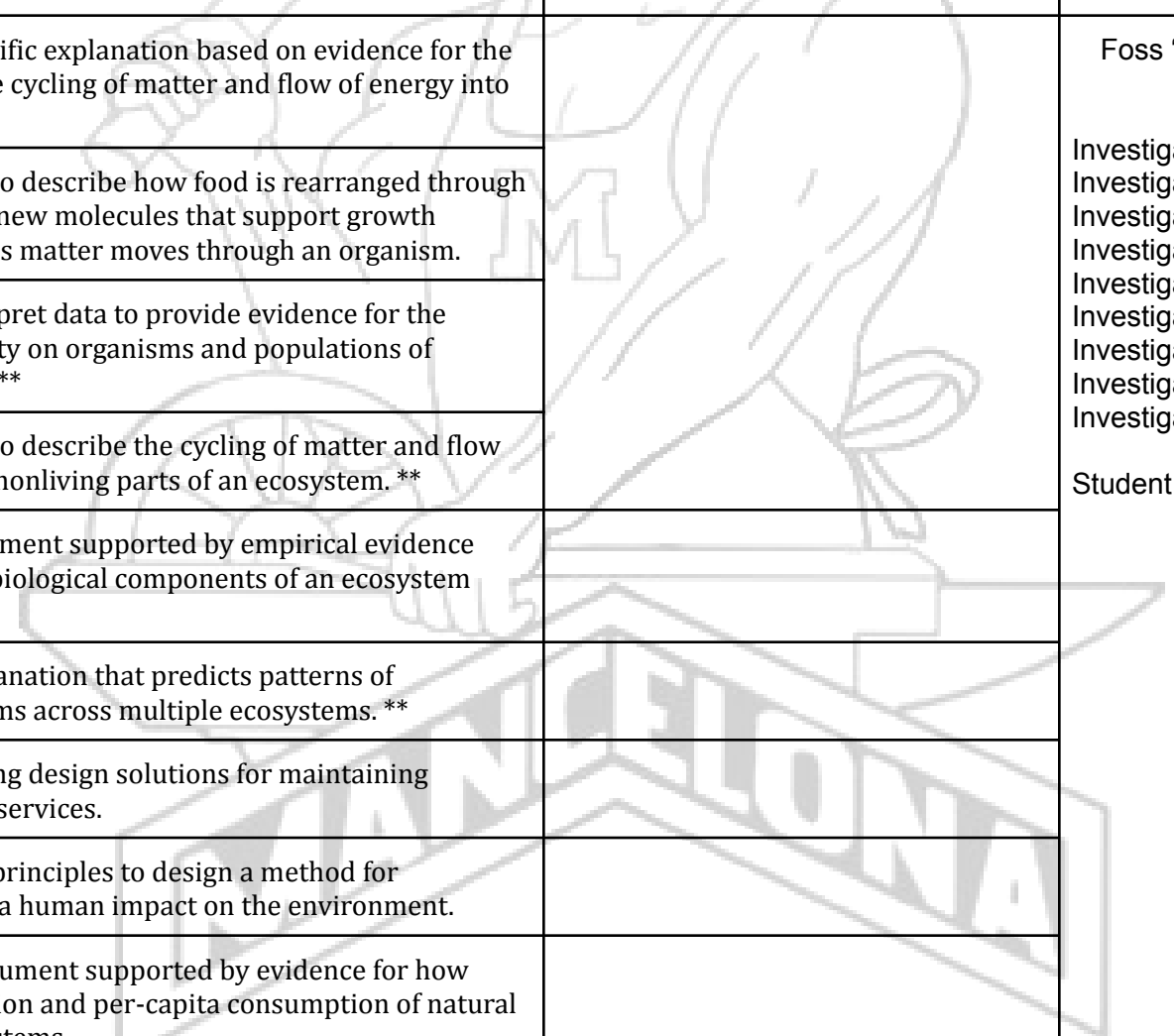


Content Area: Science		Grade Level: 6 th	
Title of Unit: All Units		Number of Weeks/Days: 36 Weeks	
Standards: Engineering Design Standards		Assessment:	Resources:
MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.			FOSS Curriculum Guides: ✓ “Populations & Ecosystems” ✓ “Gravity & Kinetic Energy” ✓ “Earth History”
MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.			
MS-ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.			
MS-ETS1-4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.			



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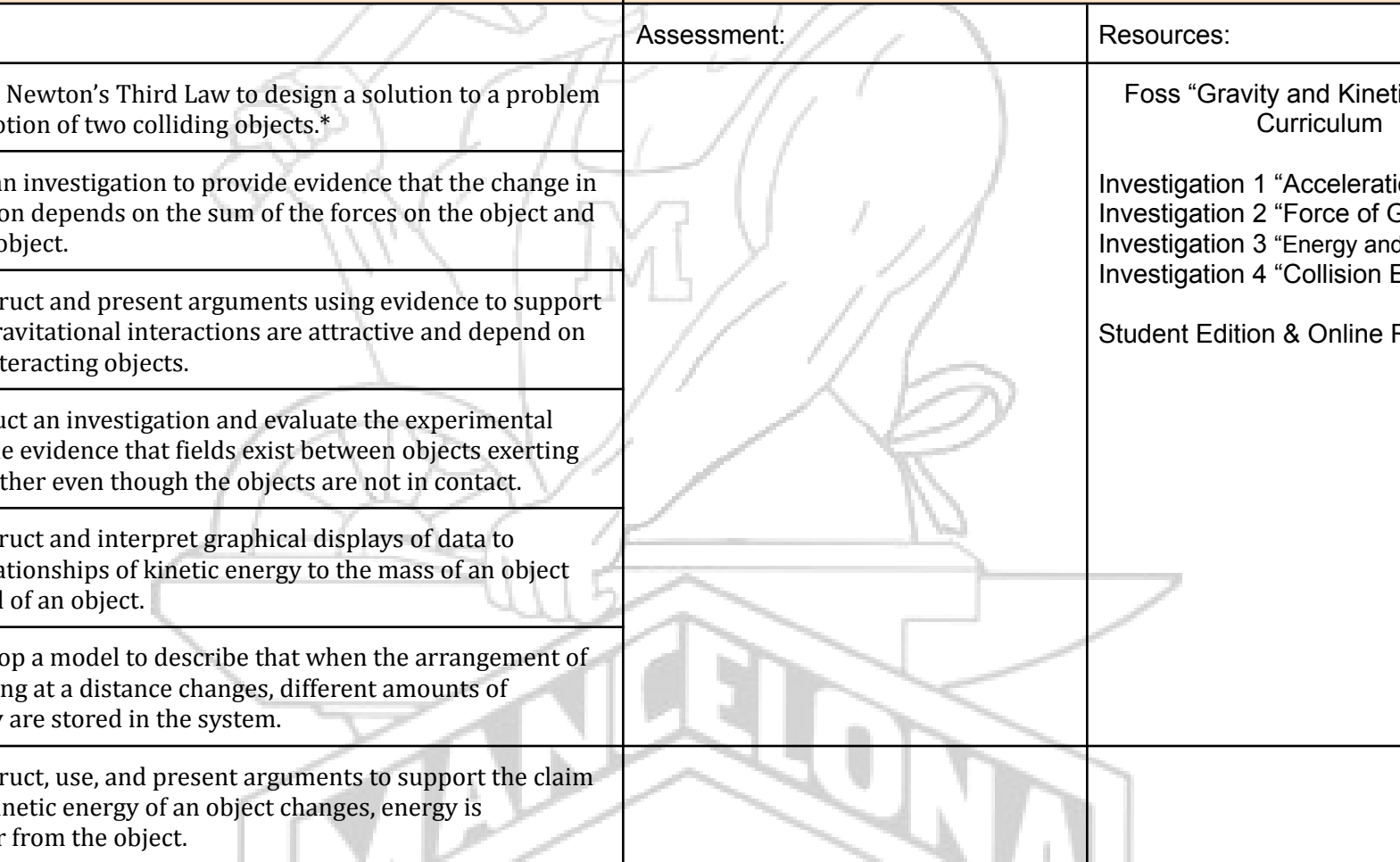


Content Area: Science		Grade Level: 6 th	
Title of Unit: Populations and Ecosystems		Number of Weeks/Days: 12 Weeks	
Standards:		Assessment:	Resources:
MS-LS1-6 Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.			Foss "Populations & Ecosystems" Curriculum
MS-LS1-7 Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.			Investigation 1 "Milkweed Bugs" Investigation 2 "Sorting Out Life" Investigation 3 "Mono Lake" Investigation 4 "Minihabitats" Investigation 5 "Producers" Investigation 6 "Following the Energy" Investigation 7 "Population Size" Investigation 8 "Human Impact" Investigation 9 "Ecoscenarios"
MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. **			Student Edition & Online Resources
MS-LS2-3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. **			
MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.			
MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. **			
MS-LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.			
MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.			
MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.			



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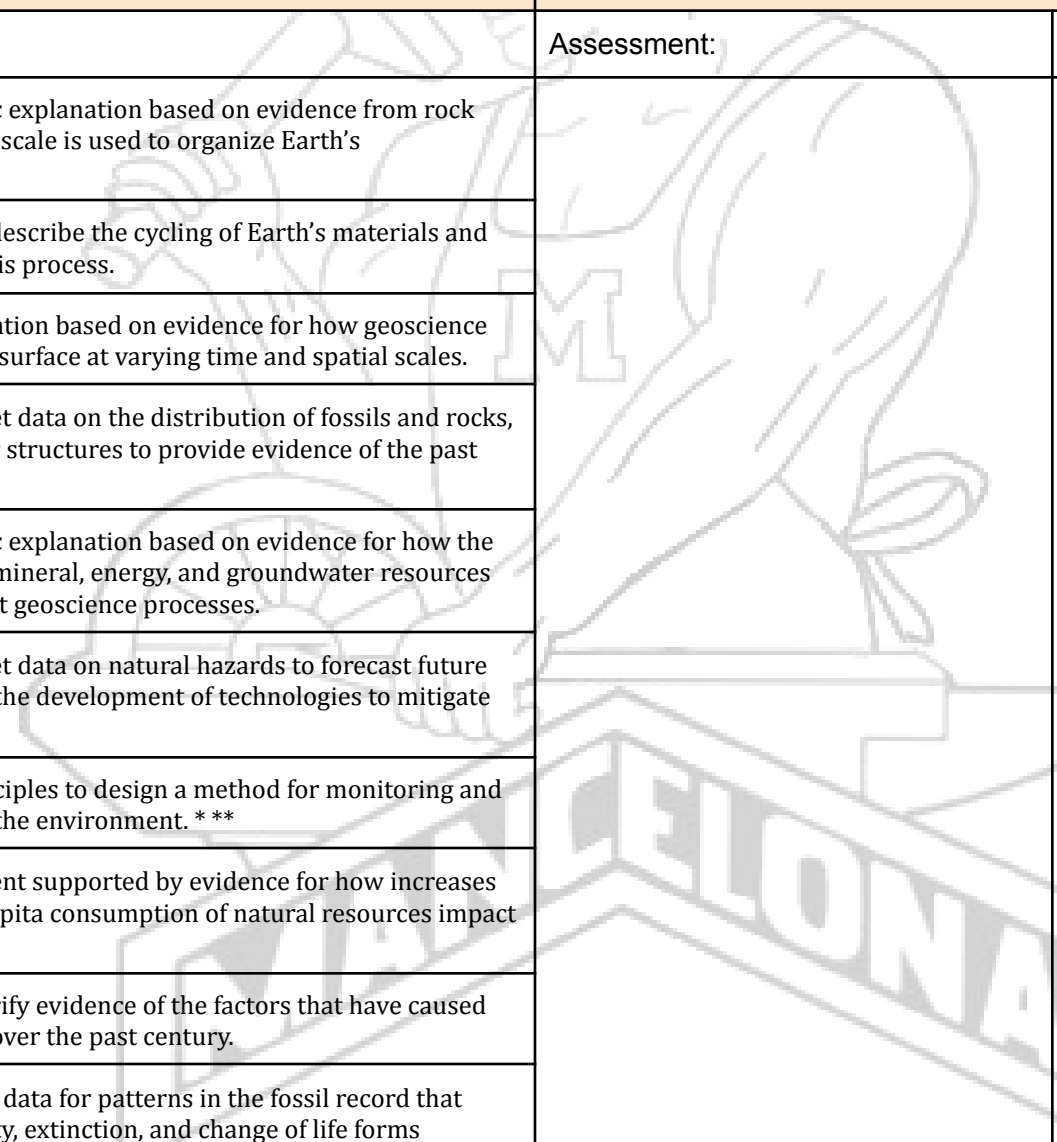


Content Area: Science		Grade Level: 6 th	
Title of Unit: Gravity and Kinetic Energy		Number of Weeks/Days: 12 Weeks	
Standards:		Assessment:	Resources:
MS-PS2-1 Apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects.*			Foss “Gravity and Kinetic Energy” Curriculum
MS-PS2-2 Plan an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.			Investigation 1 “Acceleration” Investigation 2 “Force of Gravity” Investigation 3 “Energy and Collisions” Investigation 4 “Collision Engineering”
MS-PS2-4 Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.			Student Edition & Online Resources
MS-PS2-5 Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.			
MS-PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.			
MS-PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.			
MS-PS3-5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.			
MS-ESS1-2 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.			



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Content Area: Science		Grade Level: 6 th	
Title of Unit: Earth History		Number of Weeks/Days: 12 Weeks	
Standards:		Assessment:	Resources:
MS-ESS1-4 Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth’s 4.6-billion-year-old history.			✓ Foss “Earth History” Curriculum
MS-ESS2-1 Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process.			✓
MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.			✓ Investigation 1 “Earth is Rock”
MS-ESS2-3 Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.			✓ Investigation 2 “Weathering & Erosion”
MS-ESS3-1 Construct a scientific explanation based on evidence for how the uneven distributions of Earth’s mineral, energy, and groundwater resources are the result of past and current geoscience processes.			✓ Investigation 3 “Deposition”
MS-ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.			✓ Investigation 4 “Fossils & Past Environments”
MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. * **			✓ Investigation 5 “Igneous Rocks”
MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems.			✓ Investigation 6 “Volcanoes & Earthquakes”
MS-ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.			✓ Investigation 7 “Mountains & Metamorphic Rocks”
MS-LS4-1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms			✓ Investigation 8 “Geoscenarios”
		✓ Investigation 9 “What Is Earth’s Story”	
		✓	
		✓ Student Edition & Online Resources	



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throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

MS-PS1-3 Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

