



MHS Science Curriculum & Pacing Guide



EARTH science

	Marking Period 1		Marking Period 2
Semester 1	Unit 1: Space Systems • Earth & the Solar System • The Universe and it's Stars		Unit 2: History of Earth Unit 3: Earth's Systems: Plate Tectonics
	Marking Period 3		Marking Period 4
Semester 2	Unit 4: Earth's Systems: Water & Geology Unit 5: Weather & Climate		Unit 7: Global Climate Unit 8: Human Sustainability



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Content Area: Earth Science	Grade Level: 9	
Title of Unit: Space Systems	Number of Weeks/Days: 9 weeks	
Standards:	Assessment:	Resources:
HS-ESS1-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.	Otus Tests • Earth & the Solar System • Life Cycle & Properties of Stars (including sun) • Known Universe: Big Bang Theory ISD Otus Tests - Space Systems	Biozone: Earth & Space Sciences for NGSS PhET digital models Teacher created/aligned labs
HS-ESS1-2. Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe		
HS-ESS1-3. Communicate scientific ideas about the way stars, over their life cycle, produce elements		
HS-ESS1-4. Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.		



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Content Area: Earth Science		Grade Level: 9	
Title of Unit: History of Earth		Number of Weeks/Days: 3 weeks	
Standards:		Assessment:	Resources:
HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.		Otus Tests	Biozone: Earth & Space Sciences for NGSS PhET digital models Teacher created/aligned labs
HS-ESS1-6. Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.		ISD Otus Tests - Earth's History	
HS-ESS2-1. Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features			



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Content Area: Earth Science	Grade Level: 9	
Title of Unit: Earth's Systems - Plate Tectonics	Number of Weeks/Days: 6 weeks	
Standards:	Assessment:	Resources:
HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	Otus Tests	Biozone: Earth & Space Sciences for NGSS PhET digital models Teacher created/aligned labs
HS-ESS2-3. Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.	ISD Otus Tests - Earth's Systems	



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Content Area: Earth Science		Grade Level: 9	
Title of Unit: Earth's Systems: Water & Geology		Number of Weeks/Days: 3 weeks	
Standards:	Assessment:	Resources:	
HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	Otus Tests	Biozone: Earth & Space Sciences for NGSS PhET digital models Teacher created/aligned labs	
HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes	ISD Otus Tests - Earth's Systems		
HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.			
HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth. [			



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Content Area: Earth Science	Grade Level: 9	
Title of Unit: Weather and Climate	Number of Weeks/Days: 6 weeks	
Standards:	Assessment:	Resources:
HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.	Otus Tests	Biozone: Earth & Space Sciences for NGSS
	ISD Otus Tests - Weather and Climate	PhET digital models
		Teacher created/aligned labs



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Content Area: Earth Science	Grade Level: 9	
Title of Unit: Global Climate	Number of Weeks/Days: 6 weeks	
Standards:	Assessment:	Resources:
HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.	Otus Tests ISD Otus Tests - Weather & Climate	Biozone: Earth & Space Sciences for NGSS PhET digital models Teacher created/aligned labs
HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.		



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Content Area: Earth Science	Grade Level: 9	
Title of Unit: Human Sustainability	Number of Weeks/Days: 3 weeks	
Standards:	Assessment:	Resources:
HS-ESS3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity	Otus Tests ISD Otus Tests - Human Impacts	Biozone: Earth & Space Sciences for NGSS PhET digital models Teacher created/aligned labs
HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.		
HS-ESS3-3. Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.		
HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.		
HS-ESS3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity		