

Science Year at a Glance 2023 - 2024

Grade 5

Scientific Explanations		
Duration	Big Ideas	Possible Learning Checkpoints
2 Learning Cycles 2 Days 60 minutes	<ul style="list-style-type: none"> <u>Claim</u>: a statement that answers the question <u>Evidence</u>: data, observations and text evidence that support your claim. 2-3 pieces of evidence make a stronger written response. <u>Reasoning</u>: explanation of how your evidence proves your claim is correct. Responses should include science concepts and may include vocabulary. 	<ul style="list-style-type: none"> LC1 – create an explanation using the CER format LC2 – create an explanation using the CER format

Blast Off!					
Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	End of Unit Assessment
5 Learning Cycles 11-12 days 660 – 720 minutes <i>**Note – If you choose to implement the optional Engineering lessons add 3 to 4 60-minute classes</i>	5-PS1-1 5-PS1-2 5-PS1-3 5-PS1-4 3-5 ETS1-2 3-5 ETS1-3	How can matter interact to launch a rocket?	<ul style="list-style-type: none"> Describe that matter is made of particles too small to be seen Explain that total weight of matter is conserved, even after heating, cooling, breaking, or mixing Explain the physical and chemical properties of matter Explain that chemical reactions create new substances 	<ul style="list-style-type: none"> LC1 – Determine which chemical combination to use as a fuel source LC2 – Use evidence about matter to construct an argument LC3 – Use properties of matter to identify mystery substances LC4 – Use graphing and explain physical/chemical changes EDP LC1 – Describe materials to use to build a rocket based on physical properties EDP LC2 – Suggest improvements to rocket design 	<ul style="list-style-type: none"> Determine best chemical combination to use to launch a rocket. Launch rockets. Suggest improvements to improve the altitude of the flight. Complete the digital unit post-assessment.

Schoolyard Sustainability Part 1

Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	End of Unit Assessment
<p>BioBlitz Field Study <i>Pre-trip:</i> 2 Learning Cycles, 2 days, 120 minutes</p> <p><i>Field study:</i> 1 day</p> <p>Part 1 5 Learning Cycles</p> <p>9-11 Days</p> <p>540-600 minutes</p>	<p>5-PS3-1 5-LS1-1 5-LS2-1 5-ESS3-1</p>	<p>How can people effectively manage Baltimore County's ecosystems?</p>	<ul style="list-style-type: none"> • Describe that the energy released from food was once energy from the sun that was captured by plants. • Develop a model to describe how matter moves among plants, animals, decomposers, and the environment. • Describe that plants convert sun's energy and matter that is not food (air, water, etc.) into useable food and energy and that they acquire their material for growth chiefly from air and water. • Research and combine information about how communities protect Earth's resources and environment. 	<ul style="list-style-type: none"> • LC1 – Recommend to improve or maintain the biodiversity on the schoolyard • LC2 – Create a model of the flow of energy and describe • LC3 – Explain how plants get what they need to survive • LC4 – Explain impact on the food web of losing a food source 	<ul style="list-style-type: none"> • Make a recommendation to improve, or maintain, the biodiversity of your schoolyard. • Complete the digital unit post-assessment.

Science Year at a Glance 2023 - 2024

Grade 5

Where's the Water

Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	End of Unit Assessment
6 Learning Cycles 13 days 780 minutes	5-ESS2-1 5-ESS2-2 5-ESS3-1	How can we use the interaction of Earth's systems to solve problems for people?	<ul style="list-style-type: none"> • Describe the ways the geosphere, biosphere, hydrosphere and/or atmosphere interact • Describe the amounts of saltwater and fresh water in various reservoirs to explain distribution of water on Earth. • Evaluate ways that individual communities use science ideas to protect Earth's resources and environment. 	<ul style="list-style-type: none"> • LC2 – Use evidence to explain the amount of usable water on Earth • LC3 – Explain Earth systems that are interacting in Kent Island's water problem • LC4 – Label parts of the water cycle and explain which Earth systems are interacting • LC5 – Evaluate the desalination system as a viable solution to the Kent Island problem 	<ul style="list-style-type: none"> • Explain the problem on Kent Island and propose a solution • Complete the digital unit post-assessment.

Science Year at a Glance 2023 - 2024

Grade 5

Becoming Banneker

Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	End of Unit Assessment
9 Learning Cycles 10-11 days 600 – 660 minutes	5-PS2-1 5-ESS1-1 5-ESS1-2	How can the movement of objects in space help me determine the time?	<ul style="list-style-type: none"> • Explain that gravity pulls objects “down” towards the center of Earth • Explain that the sun appears brighter because it is closer to Earth than other stars • Explain that Earth’s rotation causes days as well as daytime/nighttime • Explain that the length of shadows changes throughout the day due to the apparent movement of the sun • Explain that Earth’s revolution causes years and the appearance of varied constellations throughout the year 	<ul style="list-style-type: none"> • LC2 – Explain how data can reveal patterns and describe relationships • LC3 – Create a diagram of gravitational pull and explain what will happen to objects dropped simultaneously • LC4 – Answer questions to explain patterns in the sky • LC5 – Create a diagram of shadows and explain • LC6 – Explain why the constellations change throughout the year • LC7 – Explain the relationship between distance and apparent brightness • LC9 – Explain what should Benjamin Banneker be remembered for most 	<ul style="list-style-type: none"> • Create a sun dial and user manual • Complete the digital unit post-assessment.

Science Year at a Glance 2023 - 2024

Grade 5

Schoolyard Sustainability Part 2

Duration	Assessed Standards	Essential Question	Big Ideas	Possible Learning Checkpoints	End of Unit Assessment
5 Learning Cycles 11-14 Days 660-840 minutes **Note - This time frame only allots one 60-minute period for putting the plan into action.	MD E-Lit 4.C.1 5.B.1 1.A.3 1.B.1 1.B.2	How can people effectively manage Baltimore County's ecosystems?	<ul style="list-style-type: none"> Research and combine information about how communities protect Earth's resources and environment. 	<ul style="list-style-type: none"> LC6 – Explain if invasive species or deer are having the greatest impact on the schoolyard LC7 – Explain transfer of energy in a food chain LC8 – Explain what should be done about the overpopulation of deer or mute swan (invasive species) 	<ul style="list-style-type: none"> Finalize plan to improve or maintain the biodiversity of your schoolyard and share this information with the public Implement habitat restoration project Complete the digital unit post-assessment.