

MODULES	MODULE ANCHOR PHENOMENON	STORYLINE	PERFORMANCE EXPECTATIONS (*PEs that integrate traditional science content with engineering through SEPs or DCIs)	 NGSS		CROSS-CURRICULAR CONNECTIONS	
1: Matter Mysteries Hotline NGSS Topic Arrangements: Structure and Properties of Matter; Engineering Design 	What is matter made of?	Got a science mystery you need to solve? Then call the Matter Mysteries Hotline—a one-stop service for people in need of specialist scientific help. As trainee recruits, students use their science skills to answer a series of matter-related queries. They test mystery materials to help a private investigator, choose the best materials to make an explorer's kit bag, investigate chemical reactions when a Fire and Rescue team find an unidentified substance in a school, and help a Hollywood special effects department create the perfect clay. Let's find out why matter matters!	5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. 5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 5-PS1-3 Make observations and measurements to identify materials based on their properties. 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	Crosscutting Concepts CCC-2 Cause and Effect CCC-3 Scale, Proportion, and Quantity CCC-5 Energy and Matter CCC-6 Structure and Function Disciplinary Core Ideas PS1.A Structure and Properties of Matter PS1.B Chemical Reactions Engineering, Technology, and Applications of Science ETS1.B Developing Possible Solutions ETS1.C Optimizing the Design Solution	Science and Engineering Practices SEP-2 Developing and Using Models SEP-3 Planning and Carrying Out Investigations SEP-4 Analyzing and Interpreting Data SEP-5 Using Mathematics and Computational Thinking SEP-6 Constructing Explanations and Designing Solutions SEP-7 Engaging in Argument from Evidence SEP-8 Obtaining, Evaluating, and Communicating Information	Common Core English Language Arts RI.5.1–3 Key Ideas and Details RI.5.8 Integration of Knowledge and Ideas RI.5.10 Range of Reading and Level of Text Complexity SL.5.1–3 Comprehension and Collaboration SL.5.5–6 Presentation of Knowledge and Ideas W.5.1–2 Text Types and Purposes W.5.4–5 Production and Distribution of Writing W.5.7–9 Research to Build and Present Knowledge WIDA English Language Development Standard 1: Social and Instructional Language Standard 2: The Language of Language Arts Standard 3: The Language of Mathematics Standard 4: The Language of Science English Language Proficiency Domains Speaking, Listening, Reading, Writing	Common Core Math 5.MD.A Convert like measurement units within a given measurement system 5.MD.B Represent and interpret data 5.MD.C Geometric measurement: understand concepts of volume 5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths MP5 Use appropriate tools strategically MP6 Attend to precision MP8 Look for and express regularity in repeated reasoning
2: Yellowstone: Uncovered NGSS Topic Arrangements: Matter and Energy in Organisms and Ecosystems 	How do matter and energy move through an ecosystem?	Yellowstone is one of the United States' largest and wildest national parks—and you're about to see a side of it that isn't on the tourist trail! Students become park rangers to investigate how matter and energy move through systems. They observe predators hunting prey, discover the organisms that recycle the dead, and learn how plants create their own food. As students explore the relationships between the plants and animals that live in Yellowstone, they discover how even small changes to an environment can have big impacts.	5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water. 5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. 5-PS3-1 Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.	Crosscutting Concepts CCC-2 Cause and Effect CCC-3 Scale, Proportion, and Quantity CCC-4 System and System Models CCC-5 Energy and Matter CCC-7 Stability and Change Disciplinary Core Ideas LS1.C Organization for Matter and Energy Flow in Organisms LS2.A Interdependent Relationships in Ecosystems LS2.B Cycles of Matter and Energy Transfer in Ecosystems PS3.D Energy in Chemical Processes and Everyday Life	Science and Engineering Practices SEP-1 Asking Questions and Defining Problems SEP-2 Developing and Using Models SEP-3 Planning and Carrying Out Investigations SEP-4 Analyzing and Interpreting Data SEP-5 Using Mathematics and Computational Thinking SEP-6 Constructing Explanations and Designing Solutions SEP-7 Engaging in Argument from Evidence SEP-8 Obtaining, Evaluating, and Communicating Information Environmental Principles and Concepts Principle II People influence natural systems Principle III Natural systems change in ways that people benefit from and can influence	Common Core English Language Arts L.5.6 Vocabulary Acquisition and Use RI.5.1–3 Key Ideas and Details RI.5.4–6 Craft and Structure RI.5.7–8 Integration of Knowledge and Ideas RI.5.10 Range of Reading and Level of Text Complexity SL.5.1–2 Comprehension and Collaboration SL.5.5 Presentation of Knowledge and Ideas W.5.1 Text Types and Purposes W.5.4–5 Production and Distribution of Writing W.5.8–9 Research to Build and Present Knowledge W.5.10 Range of Writing WIDA English Language Development Standard 1: Social and Instructional Language Standard 2: The Language of Language Arts Standard 3: The Language of Mathematics Standard 4: The Language of Science	English Language Proficiency Domains Speaking, Listening, Reading, Writing Common Core Math 5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths 5.MD.B Represent and interpret data MP1 Make sense of problems and persevere in solving them. MP3 Construct viable arguments and critique the reasoning of others MP4 Model with mathematics MP5 Use appropriate tools strategically
3: H2O Response Team NGSS Topic Arrangements: Earth's Systems; Engineering Design 	What can we do to protect Earth's systems?	Welcome to the H2O Response Team! Students become hydrologists, tasked with investigating the growing issue of water scarcity. Students explore where water is found around the world, and discover just how little of it is drinkable. They investigate the many ways we use water, and consider the threat posed by water shortages—including droughts in California. Students then use what they've learned about sustainability to devise and implement a water campaign. Remember: every drop counts!	5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-2 Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. 5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	Crosscutting Concepts CCC-1 Patterns CCC-2 Cause and Effect CCC-3 Scale, Proportion, and Quantity CCC-4 System and System Models Disciplinary Core Ideas ESS2.A Earth Materials and Systems ESS2.C The Roles of Water in Earth's Surface Processes ESS3.C Human Impacts on Earth Systems Engineering, Technology, and Applications of Science ETS1.A Defining and Delimiting Engineering Problems ETS1.B Developing Possible Solutions ETS1.C Optimizing the Design Solution	Science and Engineering Practices SEP-1 Asking Questions and Defining Problems SEP-2 Developing and Using Models SEP-3 Planning and Carrying Out Investigations SEP-4 Analyzing and Interpreting Data SEP-5 Using Mathematics and Computational Thinking SEP-6 Constructing Explanations and Designing Solutions SEP-8 Obtaining, Evaluating, and Communicating Information Environmental Principles and Concepts Principle I People depend on natural systems Principle II People influence natural systems Principle IV There are no permanent or impermeable boundaries that prevent matter from flowing between systems Principle V Decisions affecting resources and natural systems are complex and involve many factors	Common Core English Language Arts L.5.6 Vocabulary Acquisition and Use RI.5.1–3 Key Ideas and Details RI.5.4 Craft and Structure RI.5.7–9 Integration of Knowledge and Ideas RI.5.10 Range of Reading and Level of Text Complexity SL.5.1–2 Comprehension and Collaboration SL.5.4 Presentation of Knowledge and Ideas W.5.2 Text Types and Purposes W.5.5 Production and Distribution of Writing W.5.7–9 Research to Build and Present Knowledge W.5.10 Range of Writing WIDA English Language Development Standard 1: Social and Instructional Language Standard 2: The Language of Language Arts Standard 3: The Language of Mathematics Standard 4: The Language of Science	English Language Proficiency Domains Speaking, Listening, Reading, Writing Common Core Math 5.NBT.A Understand the place value system 5.MD.A Convert like measurement units within a given measurement system. MP2 Reason abstractly and quantitatively MP4 Model with mathematics MP5 Use appropriate tools strategically MP6 Attend to precision
4: Galactic Guidebook NGSS Topic Arrangements: Space Systems 	What patterns do we notice when we observe the stars?	Students join a community of international star-spotters, and report on the patterns they see in the night sky. They investigate why some stars are brighter than others, why we only see them at night, and how stars seem to move across the sky. They discover how the night sky can be used for navigation, explore the constellations, and investigate why we don't fall off the Earth! Using these explorations and observations, students create their own Galactic Guidebook—a record of patterns in the sky and in their own lives. It'll be out of this world!	5-PS2-1 Support an argument that the gravitational force exerted by Earth on objects is directed down. 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. 5-ESS1-1 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distance from Earth.	Crosscutting Concepts CCC-1 Patterns CCC-2 Cause and Effect CCC-3 Scale, Proportion, and Quantity CCC-4 System and System Models CCC-7 Stability and Change Disciplinary Core Ideas PS2.B Types of Interactions ESS1.A The Universe and Its Stars ESS1.B Earth and the Solar System	Science and Engineering Practices SEP-2 Developing and Using Models SEP-3 Planning and Carrying Out Investigations SEP-4 Analyzing and Interpreting Data SEP-5 Using Mathematics and Computational Thinking SEP-6 Constructing Explanations and Designing Solutions SEP-7 Engaging in Argument from Evidence SEP-8 Obtaining, Evaluating, and Communicating Information Environmental Principles and Concepts Principle I People depend on natural systems	Common Core English Language Arts L.5.4, 6 Vocabulary Acquisition and Use RI.5.1–3 Key Ideas and Details RI.5.4 Craft and Structure RI.5.8 Integration of Knowledge and Ideas RI.5.10 Range of Reading and Level of Text Complexity SL.5.1–2 Comprehension and Collaboration SL.5.4–5 Presentation of Knowledge and Ideas W.5.1–2 Text Types and Purposes W.5.4–6 Production and Distribution of Writing W.5.7–8 Research to Build and Present Knowledge W.5.10 Range of Writing English Language Proficiency Domains Speaking, Listening, Reading, Writing	WIDA English Language Development Standard 1: Social and Instructional Language Standard 2: The Language of Language Arts Standard 3: The Language of Mathematics Standard 4: The Language of Science Common Core Math 5.MD.B Represent and interpret data 5.NBT.A Understand the place value system MP1 Make sense of problems and persevere in solving them MP3 Construct viable arguments and critique the reasoning of others MP4 Model with mathematics MP6 Attend to precision MP7 Look for and make use of structure