

MODULES	MODULE ANCHOR PHENOMENON	STORYLINE	PERFORMANCE EXPECTATIONS* (*PEs that integrate traditional science content with engineering through SEPs or DCIs)	 NGSS		CROSS-CURRICULAR CONNECTIONS	
1: The Ultimate Playground NGSS Topic Arrangements: Forces and Interactions; Engineering Design 	How are objects affected by the forces of push and pull?	Students investigate forces and use what they learn to design the most incredible playground ever, with everything from swings and slides to fairground attractions to roller coasters! Through hands-on investigations, texts, and videos, students learn how forces make things move—whether it’s making carousels spin or skydivers fall. They investigate how magnets can exert a force without contact, build their own model swings and dumbbells, and even take part in games of tug-of-war. Hold on tight—it’s going to be quite a ride!	3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. 3-PS2-2 Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion. 3-PS2-3 Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. 3-PS2-4 Define a simple design problem that can be solved by applying ideas involving magnets.* 3–5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost. 3–5-ETS1-2 Generate and compare possible solutions to a problem based on how well each it 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-4 Systems and System Models Disciplinary Core Ideas PS2.A Forces and Motion PS2.B Types of Interactions 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-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.3.1, 3 Key Ideas and Details RI.3.8 Integration of Knowledge and Ideas L.3.6 Vocabulary Acquisition and Use SL.3.1, 3 Comprehension and Collaboration SL.3.4–5 Presentation of Knowledge/Ideas W.3.1–2 Text Types and Purposes W.3.8 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 3.MD.B Represent and interpret data MP1 Make sense of problems and persevere in solving them MP2 Reason abstractly and quantitatively MP4 Model with mathematics MP5 Use appropriate tools strategically MP6 Attend to precision
2: Welcome to the Biodome NGSS Topic Arrangements: Inheritance and Variation of Traits 	How do plants’ and animals’ life cycles help them to survive?	Can’t visit the rain forest? Then let the rain forest come to you! Students join the Biodome—a state-of-the-art greenhouse that mimics a tropical rain forest environment—and discover the wide variety of life that rain forests contain. They look after plants in the Biodome’s nursery, and nurture and observe real butterflies throughout their life cycle. Students also study the life cycles of other organisms, and look at the traits that animals of the same species share and inherit. There’s a lot to explore—out there, and in here!	3-LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction and death. 3-LS3-1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. 3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates and reproducing. 3-LS2-1 Construct an argument that some animals form groups that help members survive.	Crosscutting Concepts CCC-1 Patterns CCC-2 Cause and Effect Disciplinary Core Ideas LS1.B Growth and Development of Organisms LS2.D Social Interactions and Group Behavior LS3.A Inheritance of Traits LS3.B Variation of Traits LS4.B Natural Selection	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	Common Core English Language Arts RI.3.1–3 Key Ideas and Details RI.3.4–6 Craft and Structure RI.3.7, 9 Integration of Knowledge/Ideas L.3.1–2 Conventions of Standard English L.3.6 Vocabulary Acquisition and Use SL.3.1–3 Comprehension and Collaboration SL.3.5 Presentation of Knowledge and Ideas W.3.1–2 Text Types and Purposes W.3.4 Production and Distribution of Writing W.3.7–8 Research to Build and Present Knowledge W.3.10 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 3.MD.A Solve problems involving measurement and estimation 3.MD.B Represent and interpret data 3.NBT.A Use place value understanding and properties of operations to perform multi-digit arithmetic MP1 Make sense of problems and persevere in solving them. MP3 Construct viable arguments and critique the reasoning of others MP7 Look for and make use of structure
3: How to Survive an Ice Age NGSS Topic Arrangements: Interdependent Relationships in Ecosystems 	What is the relationship between an organism and its environment?	Students take a trip thousands of years back in time, to see what the American landscape was like during the last Ice Age. They discover mammoths, saber-toothed cats, and more, and ask the question: Why did some plants and animals go extinct at the end of the last Ice Age, while others survived? Students investigate how environments affect the organisms living in them by planting their own seeds and varying the environmental conditions. They also consider the specific traits that help organisms survive in their environment.	3-LS3-2 Use evidence to support the explanation that traits can be influenced by the environment. 3-LS4-1 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. 3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* 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.	Crosscutting Concepts CCC-1 Patterns CCC-2 Cause and Effect CCC-3 Scale, Proportion, and Quantity CCC-4 Systems and System Models CCC-6 Structure and Function Disciplinary Core Ideas LS2.C Ecosystem Dynamics, Functioning, and Resilience LS3.A Inheritance of Traits LS3.B Variation of Traits LS4.B Natural Selection LS4.A Evidence of Common Ancestry and Diversity LS4.C Adaptation LS4.D Biodiversity and Humans Engineering, Technology, and Applications of Science ETS1.B Developing Possible Solutions	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 V Decisions affecting resources and natural systems are complex and involve many factors	Common Core English Language Arts: RI.3.1–3 Key Ideas and Details RI.3.5 Craft and Structure RI.3.7–9 Integration of Knowledge and Ideas RI.3.10 Range of Reading and Level of Text Complexity L.3.4, 6 Vocabulary Acquisition and Use SL.3.1–3 Comprehension and Collaboration SL.3.4–5 Presentation of Knowledge/Ideas W.3.1–2 Text Types and Purposes W.3.5 Production and Distribution of Writing W.3.7–8 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 3.MD.A Solve problems involving measurement and estimation. 3.MD.B Represent and interpret data. 3.MD.C Geometric measurement MP2 Reason abstractly and quantitatively MP4 Model with mathematics MP5 Use appropriate tools strategically
4: Weather Warning HQ NGSS Topic Arrangements: Weather and Climate 	What is the weather like around the world?	Students become experts in weather and climate by answering calls to Weather Warning HQ. Set up to help people in the local community, Weather Warning HQ handles all kinds of queries—from when to hold an outdoor gala event, to which time of year is best for a jungle expedition. Students find the answers by using weather tools, examining weather and climate data, and making observations. They explore local weather conditions and weather patterns around the world, and help shape a public awareness campaign about the risks associated with lightning.	3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. 3-ESS2-2 Obtain and combine information to describe climates in different regions of the world. 3-ESS3-1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.* 3–5-ETS1-1 Define a simple design problem reflecting a need or 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 it likely to meet the criteria and constraints of the problem.	Crosscutting Concepts CCC-1 Patterns CCC-2 Cause and Effect Disciplinary Core Ideas ESS2.D Weather and Climate ESS3.B Natural Hazards Engineering, Technology, and Applications of Science ETS1.A Defining and Delimiting Engineering Problems ETS1.B Developing Possible Solutions	Science and Engineering Practices SEP-1 Asking Questions and Defining Problems SEP-4 Analyzing and Interpreting Data 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 V Decisions affecting resources and natural systems are complex and involve many factors	Common Core English Language Arts RI.3.1–3 Key Ideas and Details RI.3.7, 9 Integration of Knowledge and Ideas RI.3.10 Range of Reading and Level of Text Complexity L.3.6 Vocabulary Acquisition and Use SL.3.1–3 Comprehension and Collaboration SL.3.4–6 Presentation of Knowledge and Ideas W.3.7–8 Research to Build and Present Knowledge W.3.10 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 3.MD.B Represent and interpret data. 3.OA.D Solve problems involving the four operations, and identify and explain patterns in arithmetic MP2 Reason abstractly and quantitatively MP4 Model with mathematics MP6 Attend to precision MP7 Look for and make use of structure