Grade 2 Science

Subject	Science
Grade Level	Grade 2
Module Title	Module 2 Learning through Science and Story- Fossils Tell of Earth's Changes- Science focus: Earth Systems, Fossils, Slow and Rapid Changes to Earth Module 3 Researching to Build Knowledge and Teach Others- the Secret World of Pollinators- Life Science, Plant-Pollinator Relationships Module 4: Contributing to the Community- Providing for Pollinators - Engineering Design, Habitats, Environmental Stewardship

Module Goals	Module 2 Students investigate fossils and landforms to understand how Earth changes over time. They learn that some changes occur slowly over long periods of time while others happen rapidly. Students use scientific observations and informational texts to explain evidence of Earth's changing surface. Overview: Students build their literacy and science skills as they engage in the study of fossils/ Students begin the module by participating in a close read aloud of Stone Girl, Bone Girl by Laurence Anholdt to explore Unit 1 guiding questions : What do paleontologists do? And How do characters respond to major events? Students learn about Mary Anning and her role as a fossil hunter as they engage with key literature standards. Students focus on how Mary Anning responds to major events and challenges, and the overall structure of narratives through structured retells. Students are also introduced to the skill of answering selected response questions. Students also begin to learn about what fossils are and the work that paleontologists do. Unit 2 Students make a pivot to informational texts and engage more deeply in the study of fossils. Students' learning is centered around the Unit 2 guiding questions: What can we learn from studying fossils? And How do readers learn more about a topic from informational texts? Students engage in a close read-aloud of various excerpts from the text Fossils by Ann O.Squire. Students make important transitions by closely reading complex texts independently. Students are gradually introduced to close reading strategies as they read a few different nonfiction articles on fossils, such as how fossils can teach us about changes that have happened to Earth.. Unit 3 Students take on the role of being authors as they work toward completing the performance talk: adding detailed illustrations to a narrative produced during unit 3 about discovering a fossil. The read-aloud of The Big Dinosaur Dig by Ester Ripley. Through their analysis of text, students begin to answer and unpack the questions for this unit. Students practice writing, revising and illustrating their own narrative from the perspective of a paleontologist who has discovered a fossil. Module 3 Students investigate pollinators and their role in plant reproduction. Through research, students learn how plants and animals depend on one another for survival and create informational pieces to teach others. Unit 1 Learning about Plants Students navigate informational text features, co-create Plant, Seed, Fruit, and Flower Frayer Model anchor charts, create scientific drawings, and participate in a Science Talk, all focused on learning about how plants grow and survive. Unit 2 Researching Pollinators Students hone in on a study of the role of pollinators in helping plants grow and survive. Using " what is Pollination? By Robbie Kalman, students continue to strengthen their research skills as they conduct whole group and small group

	research or insect pollinators. Students use their research notes to write an informative piece about a specific insect pollinator and its role in the p pollination process. Unit 3 Students extend and apply their knowledge of understanding of pollination and pollinators through the creation of their performance task. Using the informative writing piece from Unit 2, as well as other texts, students prepare an oral presentation and create a poster to share their knowledge about a specific insect pollinator and plant. Module 4 Students apply their knowledge of pollinators by identifying challenges pollinators face and designing solutions that support pollinator populations in their school or community. Specifically, students explore: Why should people help pollinators to survive? How can I take action to help pollinators? Unit 1 Students explore folktales and fables in which pollinators are the central characters. They engage in a close-read aloud, focused read alouds, and independent reading to determine the central message of the folktales and fables they read. As they analyze each text, students also consider text dependent questions. Unit 2 Students continue to study pollinators by reading and writing opinion pieces. Students learn about the challenges facing bats and butterflies. Students read opinion pieces. Building on the research skills students have worked with, the class records class notes about these dangers. Students read about the dangers facing butterflies and continue to hone their research skills. Students draft an opinion piece using reasons collected on the notes to support their opinion. Unit 3 Students apply their knowledge about plants and pollinators to help one important pollinator: butterflies. Building on prior knowledge, students learn about a pollination garden. Students are invited to take action by creating a wild flower seed packet to then give a visitor at the end of the unit. This performance task includes a high-quality colored pencil drawing of a butterfly and a short opinion piece about why it is important to help butterflies. Students engage in a routine of oral and written reflection and share a formal reflection on their work and learning.
Pacing (# of weeks)	8 - 9 weeks each
Standards	Module 2

	2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly 2-ESS2-1 compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land Module 3 2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing informational pieces to teach others 2- LS2-2 Core Disciplinary Idea: Interdependent Relationships in Ecosystems 2 - LS2-2 Engineering Practice: developing and using models 2-LS2-2 Cross-cutting: structure and Function Module 4 K-2 ETS1-1 Ask questions , make observations, and gather information about a situation people want to change K-2 ETS1-2 Develop a simple sketch, drawing, or model to illustrate how and object helps solve a problem K-2 ETS1-3 Analyze data from tests of two objects designed to solve the same problem
Content/Conceptual Knowledge (know)	Module 2 Fossils are preserved remains or traces of living things Fossils provide evidence about the past Earth changes through weathering and erosion Some Earth events happen suddenly Some Earth changes occur over many years Engineers design solutions to protect land from erosion Module 3 Pollinators include bees, butterflies, birds, bats, and other animals Pollination helps plants produce seeds Plants provide food and shelter for pollinators Pollinators help many food crops grow Module 4 Pollinators face threats such as habitat loss Pollinator gardens provide food and shelter Engineers follow a design process Communities benefit from healthy ecosystems Plants depend on animals for pollination or to move their seeds around People play an important in a community
Skills (be able to do)	Module 2

	Observe and describe fossils Gather information from texts and illustrations Compare slow and rapid Earth changes Explain evidence using scientific notation Conduct simple investigations Communicate scientific findings through speaking and writing Module 3 Conduct simple research Gather information from multiple sources Take notes from texts Create models of pollination Explain plant -pollinator relationships Present information to an audience Module 4 Identify environmental problems Design solutions for pollinator support Create models and plans Gather and analyze information Collaborate with peers Present solutions to authentic audiences
Essential Questions	Module 2 How does Earth change over time? What can fossils tell us about the past? What causes changes to the Earth's surface? How do people reduce the effects of erosion? What do paleontologists do? How do characters respond to major events? What can we learn from studying fossils? How do readers learn more about a topic from informational texts? How do authors write compelling narratives? Module 3 What are pollinators? Why are pollinators important? How do plants and pollinators help one another? How can research help us teach others? How do plants grow and survive? How do pollinators help plants grow and survive? How do we get the fruits, flowers, and vegetables that we enjoy? How do we become researchers and share our learning? Module 4 Why do pollinators need our help?

	How can people protect pollinators? What makes a good habitat? How can we solve environmental problems? Why should people help pollinators to survive? How can I take action to help pollinators?
Enduring Understandings	Module 2 Earth changes through both slow and rapid processes. Fossils provide evidence of organisms and environments from long ago. Wind and water shape Earth's surface. Humans can design solutions to reduce erosion. Paleontologists are people who look for, unearth, and study fossils. Characters respond in different ways to major events and challenges in books. Fossils can help us understand what plants and animals lived long ago and how the Earth has changed. Readers use different strategies to learn about a topic from informational texts. Writers use various writing techniques to tell compelling stories. Module 3 Plants and animals depend on each other Pollinators play a critical role in ecosystems Pollination helps plants reproduce Research can be used to educate others Plants need light and water to grow. Plants need pollinators because they help with the pollination process that enables new plants to grow. Pollinators help plants produce the fruits, flowers, and vegetables we enjoy through the process of pollination. Scientists use models to explain an idea or describe relationships. Module 4 Humans can positively impact ecosystems Pollinators need, food, water, shelter and safe habitats Engineers solve problems through design Communities can work together to protect living things Researchers gather evidence before forming an opinion We can help pollinators so we can continue to have the fruits, flowers, and vegetables we enjoy. We can take action to affect the lives of pollinators. Taking action on research-based opinions can contribute to a better world.
Vocabulary	Module 2 Fossil, evidence, erosion, weathering, landform, sediment, cliff, canyon, flood, earthquake, observe, compare, explain, investigate, source, conclude

	Module 3 Pollinator, pollen, nectar, pollination, seed, flower, adaptation, habitat, exosystem, research, source, evidence, explain, present, information Module 4 Habitat, pollination garden, conservation, environment, design, solution, engineer, model, improve, community, evaluate, revise, create, propose,
Common Learning Experiences	Module 2 Fossil observations and investigations Reading informational texts about fossils Comparing photographs of changing landscapes Erosion demonstrations using sand and water Science notebooks Close reading of science texts Structured discussions Scientific explanations using evidence Module 3 Observation of flowers and pollinators Pollination simulations Research projects Note-taking practice Reading informational texts Pollinator models Collaborative discussions Module 4 Habitat investigations Designing pollinator gardens Engineering design challenges Community action projects Creating informational displays Presentations to families or community members
Assessments	Module 2 Science notebook entries, observation journals, exit tickets, turn and talk discussions, evidence charts, written explanations of how Earth changes, fossil evidence project, end of module science writing task Performance task: students take on the role of being a paleontologist and produce a narrative about the moment they discovered a fossil. Using a photo of a fossil that they find interesting, students will produce a draft with a beginning, middle, and end. They revise to include elements of narrative writing , combine their writing with detailed drawings that correspond to each part of the story. Books are presented

	orally to visitors, Module 3 Research notes, vocabulary journals, observation records, discussion protocols, pollinator research report, informational writing piece, oral presentation -teaching others about pollinators Performance task: create a poster and oral presentation to share information about a specific insect pollinator and plant. The poster contains scientific drawings and captions the students then deliver an oral presentation at the end of the module. Unit 2- students deliver a presentation, orally describing how their specific pollinator aids in the pollination process on a specific plan and explaining the process using their poster. Students include a reflection about the role critique and revision played in their final product and answer questions following their presentation from an audience. Module 4 Design sketches Planning sheets Observation notes Peer feedback sessions Pollinator habitat design project Community presentation Engineering design portfolio End-of-module performance task Performance task: students take action to help butterflies by creating a wildflower seed packet filled with wild flower seeds. The front of the packet includes the title and a detailed , colorful pencil drawing of a monarch butterfly. The back of the packet includes instructions for how to plant the seeds as well as a typed opinion piece explaining why people should help butterflies.
Resources	Module 2 EL Module 2 Fossil images and replicas Videos showing erosions and weathering Science notebooks Maps and landform photographs “The Dog That Dug for Dinosaurs”, “Fossils”, “Stone Girl, Bone Girl”, “Paleontology: the Study of Prehistoric Life”, “Curious About Fossils”, “Fossils Tell of Long Ago”; “The Maiasuraa Dig: The Story of Dr Holly Woodward Ballard”; “Fossils and the Earth Long Ago”; “Other Types of Fossils, Digging Up The Past”. Module 3 Module 3 texts Pollinator photographs and videos Research articles Diagrams of flowers Science notebooks

	“From Seed to Plant”, “Plant Secrets”; “Seed to Plant” ; “What is Pollination” Module 4 Module 4 texts Pollinator habitat guides Garden planning materials Engineering design templates Community partner resources “The Little Hummingbird”, “The Ant and the Grasshopper”, “The lizard and the Sun”, “Hey!, Little Ant”, “ A Place for Butterflies” “ A Place for Bats”; “The Bear and the Bee”