

Third Grade Science Curriculum Connections

Physical Science

Standard(s) and Practices

SA1.1, SA1.2 Students will demonstrate an understanding of the processes of science and the approaches to scientific inquiry.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> How do scientists draw conclusions? How does scientist find evidence? What are the process skills and scientific method? 	FOSS Kit: IDEAS and INVENTIONS: Investigation 1-3: ex. Rubbings, Fingerprints, Carbon printing, Color writing (Chromatography), Experiment with code writing with mirrors, and make a spy periscope.	The Trial of Cardigan Jones	<ul style="list-style-type: none"> Draw conclusions based on evidence. 	Students will: <ul style="list-style-type: none"> Plan, write and design a science experiment following the scientific method and draw a conclusion based on evidence. 	<ul style="list-style-type: none"> Brain Pop Jr.: Scientific method, fingerprints Crime Scene Investigation Activities

Standard(s) and Practices

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.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> What is force? What is gravity? What are the effects of balanced and unbalanced forces on the motion of an object? 	FOSS Kit: BALANCE and MOTION Investigation 1-3		<ul style="list-style-type: none"> Cause and effect Use a graphic organizer to model laws of motion. If, and Then... 		<ul style="list-style-type: none"> Brain Pop Jr.: Gravity, Forces and Sir Isaac Newton's Laws of Motion, Sir Isaac Newton, Kinetic Energy Mystery Science Website Invisible Forces: How could you win a tug of war? Balance of Forces/Friction: How could you go down a slide faster?

Standard(s) and Practices

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. **3-5-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. **ETS1.B, ETS1.C**

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> • What are the forces that act on objects such as Bridges? • What makes a bridge strong? • Which bridge design will hold the most weight? 	<p>EIE Kit: To Get to the Other side Designing Bridges Curriculum Units</p>	<p>Unit 1 Week 3 Pop's Bridge, Bridges</p>	<ul style="list-style-type: none"> • Infer/Predict: • Predict or make hypothesis • Compare and contrast • Different bridge designs and how they balance. Will compression and tension be distributed evenly? 		<ul style="list-style-type: none"> • Write a compare and contrast paragraph for two types of bridge designs. p. 157 text Sites for what are the forces acting on bridges: What Makes Bridges So Strong How Bridges Work: https://science.howstuffworks.com/engineering/civil/bridge2.htm • Science Olympiad Book: Straw bridges or toothpick and marshmallow bridges. • Compare different bridge designs.

Standard(s) and Practices

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.** Students will define a simple design problem that can be solved by applying scientific ideas about magnets.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> • What do magnets stick to? • Can you detect iron with a magnet? • What does it feel like when two magnets come close together? 	<p>FOSS Kit: MAGNETS and ELECTRICITY Investigation 1: The Force, Part 1–5 EIE Kit: The Attraction is Obvious: Designing a Maglev Systems a door using a magnet.</p>	<p>Week 6: 27 Power of Magnets</p>	<ul style="list-style-type: none"> • Cause and effect • Use graphic organizer to write cause and effect results from investigation • Because, Then, If, and So... 		<ul style="list-style-type: none"> • Mystery Science Website Invisible Forces (Grade 3 NGSS) Mystery 4: Magnets, Forces: What can magnets do?, Invisible Forces (Grade 3 NGSS) Mystery 5: Magnets and Engineering: How can you unlock

Standard(s) and Practices

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.** Students will define a simple design problem that can be solved by applying scientific ideas about magnets.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> How do you make electricity flow through a circuit to make a light bulb light or make a motor run? How is the motor circuit and the light bulb circuit alike or different? What does a switch do? How do you detect insulators and conductors? What do scientists like Thomas Edison and Michael Faraday do? 	<p>FOSS Kit: MAGNETISM and ELECTRICITY Investigation 2: Part 2-5</p> <p>EIE Kits: Electricity: An Alarming Idea Designing an Alarm Circuit Curriculum Units</p>	<p>Unit 2, Week 10 Young Thomas Edison</p> <p>Unit 6, Week 27 Pg. 23 Power of Magnets, (Electromagnets and Michael Faraday) Electromagnets, and You</p> <p>Unit 2, Week 10 Moving Pictures</p>	<ul style="list-style-type: none"> Main Idea Details: Use a graphic organizer and write a summary. Sequence events Create a timeline for Thomas Edison and add to the timeline with research. 	<ul style="list-style-type: none"> Respond to literature with text evidence or supporting details. Think about the traits to describe Thomas Edison and Michael Faraday and support with examples from the passages, Journeys, and Foss Kit. 	<ul style="list-style-type: none"> Brain Pop: Electricity, Current Electricity, Battery, and Thomas Edison Mystery Science Website: What if there is no electricity? Bill Nye the Science Guy S01E18 Electricity
Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> How does wind produce energy? 	<p>EIE Kit: Catching the wind: Designing Wind Mills</p>				<p>Stem Works Website Wind Energy</p>

Technology

Standard(s) and Practices

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.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> How do inventions help athletes? 		<p>Unit 3, Week 11 Technology Wins the Game</p> <p>Science Sports Fans: (Try some of the sweet spot experiment)</p> <p>Leveled Readers</p>	<ul style="list-style-type: none"> Sequence events Text and graphic features 	<ul style="list-style-type: none"> Writing pg. 321 text Compare text to text scientific process between Thomas Edison and the Science Engineers in Technology. Wins the game Compare technology used in sports between anchor text and Science Sports Fans. 	<ul style="list-style-type: none"> Science and sports experiments: Sports Science for Kids Science Buddies-Sports Science Project Ideas Does technology cause problems? What does technology do to our brains? What the Internet is Doing to Our Brains Opinion Piece

Life Sciences

Standard(s) and Practices

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.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> What is a mammal? What makes a bat a mammal? What physical and behavioral characteristics help a bat to survive? What is a bird and how are they different than mammals? What traits do owls have that help them to survive? 		<p>Unit 2, Week 6 Bat Loves Night</p> <p>A Bat is Born</p>	<ul style="list-style-type: none"> Sequence Compare and contrast Bats and owls Venn 	<ul style="list-style-type: none"> Opinion and response writing to literature with evidence. Persuasive paragraph why bats should be protected. 	<ul style="list-style-type: none"> Brain Pop: How do you classify animals? Birds and bats What is a mammal? All About Mammals for Children Video All About Owls for Kids

Standard(s) and Practices

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.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> • What are some physical characteristics that help the Venus Fly Trap survive? • Why did carnivorous plants exist? • What traits helped it to evolve (adapt) to survive? 		<p>Unit 4, Week 16 Judy Moody Saves the World</p> <p>“My Smelly Pet” from Judy Mood</p>			<ul style="list-style-type: none"> • Venus Flytrap Videos • Excellent source • Carnivorous Plants
Standard(s) and Practices					
<p>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.</p>					
Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> • What can fossils tell us about our past? • How do scientists draw conclusions about our past and what evidence do they use? • What are some theories for dinosaur’s extinction? • Is a theory fact or opinion? 		<p>Unit 4, Week 17 Albertosaurus Mystery Fining Fossils</p> <p>Leveled Readers</p> <p>Trade Book: Boy Were We Wrong About Dinosaurs!</p>	<ul style="list-style-type: none"> • Draw Conclusions based on evidence 	<ul style="list-style-type: none"> • Research writing: What is a theory for the extinction of dinosaurs? Give evidence that may support that theory? • Site sources 	<ul style="list-style-type: none"> • Mystery Science Website Mystery 2: Structures and Adaptations, Fossil evidence, Classification: How do we know what dinosaurs look like? • Mystery 3: Fossil evidence, Behavior: Can you outrun a dinosaur? • Sometimes theories of science are proven.
Standard(s) and Practices					
<p>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-LS2-3 Use evidence to support the explanation that traits can be influenced by the environment.</p>					

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> Where do seeds come from? Where are seeds found in plants? Is a seed a living organism? Can a seed grow without soil? How can we grow more fresh vegetables in Alaska's short summer? How do plants reproduce? 	FOSS Kit: STRUCTURES of LIFE Investigation 1-2	Unit 3, Week 12 Tops and Bottoms	<ul style="list-style-type: none"> Sequence Compare and contrast hydroponics and growing a plant in soil. 	<ul style="list-style-type: none"> Sequence germination and plant life cycle. Use time order words. 	<ul style="list-style-type: none"> Brain Pop: Seed Plants How a Seed Grows: Germination Process for Growing Seeds Time Lapse Video Germination of Seed Hydroponics: Who Needs Dirt?: Crash Course Kids #27.1 Compare and contrast plants grown in water solution and plants grown in soil. The Great Plant Escape: Plant parts https://extension.illinois.edu/gpe/case1/c1facts2a.html Magic School Bus Goes to Seed Mystery Science Website: Power of Flowers Investigations Dissect flowers http://grade4gate.weebly.com/uploads/2/3/3/9/23390928/flower_dissection_lab_updated.pdf
Standard(s) and Practices					
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.					
Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> What are some similarities /differences between trees? What are some similarities/ differences between you and trees? 	FOSS Kit: IDEAS and INVENTIONS: Investigation1, Part 2: Leaf Rubbings and Venations.	Unit 4, Week 18 A Tree is Growing Leveled Readers	<ul style="list-style-type: none"> Graphic Features Picture walk of graphic features and refer to an anchor chart. 	<ul style="list-style-type: none"> Writing: Compare and contrast Text p.122 Compare and contrast seasons and use text details. Use anchor text to use text evidence to describe how they 	<ul style="list-style-type: none"> Brain Pop: Plant growth and photosynthesis Mystery Science Website Plant Adventures: Mystery 5: Adaptations and Habitat: How do plants and trees grow? Plant Adventures (Grade 2 NGSS) Mystery 2: Roots,

				are similar or different to trees.	water, and minerals: Do plants eat dirt?
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Standard(s) and Practices

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.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target Skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> What body structures and behaviors do Bess Beetles have that help it to survive? 	FOSS Kit: STRUCTURES of LIFE: Investigation 4 Bess Beetles				<ul style="list-style-type: none"> Decomposers-The FBI is on the Scene, whenever something dies Mystery Science: Why would you want an old log in your back yard?

Standard(s) and Practices

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.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> Why do some species migrate? What changes do grasshoppers go through when their climate changes? How does the climate make it necessary for the whales to migrate? 		Unit 5, Week 22 Journeys of Migration	<ul style="list-style-type: none"> Compare and contrast Locust and Whale and reasons for migration. Venn 		

Earth Science and Weather

Standard(s) and Practices

3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> Why do we have days, months, and seasons? 			<ul style="list-style-type: none"> Sequence phases of the moon Cause and effect: Different locations on 		<ul style="list-style-type: none"> Mystery Science: How can the sun tell you the seasons? Why do the stars change with

<ul style="list-style-type: none"> How does this affect climate? 			the globe have different climates.		the seasons? Why does the moon change shape? <ul style="list-style-type: none"> Mystery Science Website: Spaceship Earth-Sun, Moon, Stars, and Planets
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Standard(s) and Practices

3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> What is the recipe for weather? How are clouds formed? How can we observe, measure, collect and organize weather data taken over time? Can we predict weather? 	FOSS Kit: AIR and WEATHER Investigation 1-4		<ul style="list-style-type: none"> Compare and contrast local weather with another region of the world and collect data to draw conclusions about its geographic location. Students will understand a variety of natural hazards that result from natural processes. Understand humans cannot eliminate natural hazards but can take steps to reduce their impacts. 		<ul style="list-style-type: none"> Brain Pop: Weather, temperature, water cycle, thunderstorms, clouds, humidity, wind, hurricanes, tornadoes, natural disasters, and snowflakes. Weather Wiz Kids website Scholastic Weather Unit Weather investigations: (<i>scroll down to grade 3 investigations.</i>) Beyond Penguins and Polar Bears Stem Works Website Extreme Weather Magic School Bus Kicks Up a Storm Mystery Science Website Activities

Standard(s) and Practices

3-ESS2-2. Obtain and combine information to describe climates in different regions of the world. **3-LS2-1.** Construct an argument that some animals form groups that help members survive. **3-LS3-2.** Students will use evidence to support the explanation that traits can be influenced by the environment. **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.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> How does geographical location affect climate? How does climate influence the physical and 		Unit 4, Week 20 Life on Ice Climate What are the coldest places on Earth?	<ul style="list-style-type: none"> Main Idea Details: Informative Paragraph using details from the story to describe extreme conditions of Antarctica. 	<ul style="list-style-type: none"> Writing Main Idea Details: What some adaptations a polar bear or animal of choice have to help its survival in 	<ul style="list-style-type: none"> Stem Works Website: Adaptations Physical and Behavioral Adaptations Power of Knowledge Life Science-Animal Adaptations

behavior adaptations of people and animals? <ul style="list-style-type: none"> How do animals adapt or survive? 		Leveled Readers- Polar Bears, Beating the Heat, Living in trees The Raven: An Inuit Myth Play Explains Nature	<ul style="list-style-type: none"> Model Informative Paragraph Using Emperor Penguins. Compare and contrast climate, inhabitants, location...the Arctic and Antarctica. 	extreme cold places? <ul style="list-style-type: none"> Research Compare and contrast paragraph of different climates: Polar and Desert climate 	Behavioral and Physical Adaptations <ul style="list-style-type: none"> Penguin Chick Video Read Aloud March of the Penguins video Education Nature Lesson Plans on why some animals form groups, ex. penguins Mystery Science Website Weather: Why are some places always hot? Climate and Geography
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Standard(s) and Practices

3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.

Guiding Questions	FOSS/EIE Kits	Journeys Connection	Target skill and Ideas	Writing	Other Resources
<ul style="list-style-type: none"> How are the Hawaiian Islands formed? How did life form on the Hawaiian Islands? 		Unit 5, Week 24 Dog of the Sea Waves The Land of Volcanoes Leveled Readers			<ul style="list-style-type: none"> Kids Geology Website Volcanoes and more Discovery Kids: Build a Volcano!
<ul style="list-style-type: none"> What is the climate at the top of Mount Everest and how do people adapt to survive extreme conditions? 		Unit 5, Week 25 Mountains; Surviving Mt. Everest Unit 6 Becoming Anything He Wants to Be			<ul style="list-style-type: none"> Disney Channel: The Time I Climbed Mt. Everest You Tube Video 360 Climbing Mount Everest You Tube Video