

PLANNING

UNIT AT A GLANCE

Activity	Time to Complete	Question	Phenomena	Summary: Students Will . . .
1 Observations of the Fiddler Crab	Preparation: 15–20 min. Activity 1: Lesson 1A: 45–50 min. Lesson 1B: 45–50 min. Lesson 1C: 45–50 min.	How do the traits of the fiddler crab help it to survive?	The male fiddler crab has one large claw and one small claw.	<ul style="list-style-type: none"> • Make and record observations of the fiddler crab. • Brainstorm ideas of how the traits of the fiddler crab help it to survive. • Develop a schedule for the care and feeding of the fiddler crab habitat in the classroom. • Compare the large and small claw of the fiddler crab to different tools humans use.
2 Structure and Function Analogies	Preparation: 15–20 min. Activity 2: Lesson 2A: 45–50 min. Lesson 2B: 45–50 min., 2–3 class periods Lesson 2C: 45–50 min.	How is the structure of an object or physical trait related to the function it performs? How are animal body parts similar in structure and function to tools used by humans?	The male fiddler crab has one large claw and one small claw. The blue heron can eat a large fish or other animal whole.	<ul style="list-style-type: none"> • Brainstorm how different tools used by humans are similar to the different structures of the fiddler crab. • Use pictures of the anatomy of the crab and pictures of common tools to make comparisons. • View a video on the blue heron to make observations of its traits and how they function. • Read the book, <i>Feathers: Not Just for Flying</i>
3 Structure and Function of Plant Parts	Preparation: 20–30 min. Activity 3: Lesson 3A: 45–50 min., 2 class periods Lesson 3B: 45–50 min., 2–3 class periods Lesson 3C: 45–50 min., 2 class periods	How can the structures of plants be used to help the plant to survive? How do the structure and function of plant and animal parts relate to the structure and function of tools and object made and used by humans?	A plant stays anchored in a pot of soil when a gentle force is applied. A pencil is easily removed from the pot of soil when a gentle force is applied.	<ul style="list-style-type: none"> • Make purposeful observations of plants to determine how the plant structures help it to survive. • Create a chart to explain the structure and function of different plant parts • Relate the function of plant parts to different tools used by humans.
4 Solving Problems w/ Plant & Animal Structures	Preparation: 15–20 min. Activity 4: Lesson 4A: 50–55 min. Lesson 4B: 50–55 min.	How can humans solve problems by mimicking a plant or animal structure?	The fiddler crab claws function like a pair of pliers. The blue heron can eat a large fish or other animal whole because of its long neck.	<ul style="list-style-type: none"> • Plan and draw their model of a device that mimics a plant or animal structure that solves a human problem. • Collaborate as a team and use the engineering design process to solve a problem. • Present their solution to the class. • Compare their inventions to that of an account of young Benjamin Franklin.

UNIT AT A GLANCE

Students Figure Out How to:	Practices	PE at Lesson Level and Assessment
<ul style="list-style-type: none"> Develop a model that explains how the traits of the fiddler crab help it to survive. Use prior knowledge and informational text to determine how to meet the needs of the fiddler crab in the classroom habitat. 	<p>Obtaining, Evaluating, and Communicating Information</p> <p>Developing and Using Models</p> <p>Structure and Function</p>	<p>PE at Lesson Level Observe the external parts of the fiddler crab to determine how the traits help it to survive.</p> <p>Formative Assessment Activity Page, Science Talk</p> <p>What We Think Chart, Observation Log, Journal Entry</p>
<ul style="list-style-type: none"> Develop an analogy between a tool used by humans and one structure of the fiddler crab. Use prior knowledge about the function of a common tool used by humans to compare to the function of a part of the fiddler crab. Use strategies for the fiddler crab analogy using other animals and their traits. Relate their analogies to information obtained in reading <i>Feathers: Not Just for Flying</i> 	<p>Obtaining, Evaluating, and Communicating Information</p> <p>Developing and Using Models</p> <p>Structure and Function</p> <p>Patterns</p>	<p>PE at Lesson Level Compare external parts of the fiddler crab to common tools developed by humans.</p> <p>Make connections from fiddler crab observations and analogies to the blue heron and other animals.</p> <p>Formative Assessment Activity Page, Science Talk</p> <p>Summative Assessment Activity Page, Science Talk, Journal Entry</p>
<ul style="list-style-type: none"> Use plant observations to create analogies between plant parts and tools used by humans. Use prior knowledge about the function of a common tool used by humans to compare to the function of a plant part. Relate analogies of plants and tools to those of animals and tools. 	<p>Constructing Information and Designing Solutions</p> <p>Obtaining, Evaluating, and Communicating Information</p> <p>Developing and Using Models</p> <p>Structure and Function</p>	<p>PE at Lesson Level Make observations of plant parts to determine their function. Develop analogies between the function of plant parts and tools used by humans.</p> <p>Formative Assessment Activity Page, Science Talk</p> <p>Summative Assessment Journal Entry, Science Talk</p>
<ul style="list-style-type: none"> Identify a human problem that can be solved by mimicking a plant or animal structure. Use their analogies to develop a model of a device that solves a human problem. Use information from prior lessons to build a model of a device that mimics the function of a plant or animal part to solve a human problem. 	<p>Constructing Information and Designing Solutions</p> <p>Developing and Using Models</p> <p>Structure and Function</p>	<p>PE at Lesson Level Use analogies and plant and animal structure information to design a device that solves a human problem.</p> <p>Formative Assessment Activity Page, Science Talk</p> <p>Summative Assessment Group presentations, Science Talk, Journal Entries</p>

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Activity	Time to Complete	Question	Phenomena	Summary: Students Will . . .
<p>5</p> <p>Animals and Their Young</p>	<p>Preparation: 10 min. Activity 5A: Lesson 5A: 50–55 min. Lesson 5B: 50–55 min., 2 classes</p>	<p>Do baby animals look like their parents?</p> <p>What structures do animal parents have to care for their young?</p>	<p>The parent elephant cares for its young.</p> <p>The parent sea turtle lays eggs and leaves.</p>	<ul style="list-style-type: none"> • Make observations and obtain information from media about the elephant and the turtle • Read the book, <i>Whose Baby is This?</i> to compare how the parent and offspring are alike and different. • Read the book, <i>Whose Baby is This?</i> to find out how animals care for their young. • Match adult animals to their babies.

Students Figure Out How to:	Practices	PE at Lesson Level and Assessment
<ul style="list-style-type: none"> • Obtain information from text to determine how baby animals are alike and different from their parents. • Use observations from media and information from text to find out how different baby animals change and grow into adults. • Use information from text and reasoning to determine that some animals are born resembling their parents and others go through great changes before they look like their parents. 	<p>Constructing Information and Designing Solutions</p> <p>Obtaining, Evaluating, and Communicating Information</p> <p>Developing and Using Models</p> <p>Structure and Function Patterns</p>	<p>PE at Lesson Level</p> <p>Obtain information to compare how baby animals are alike and different from their parents.</p> <p>Obtain information to determine how some animals care for their young and some do not.</p> <p>Formative Assessment Class discussion, Journal Entry/Respond to Text</p> <p>Summative Assessment Activity Page, Science Talk, Journal Entry</p>