

# PLANNING

## UNIT AT A GLANCE

| Activity  | Time to Complete  | Questions   | Phenomena  | Summary: Students Will . . .   |
|---|---|---|--|--|
| 1<br><b>Observing Different Habitats</b>                  | Preparation: 20 min.<br>Activity 1:<br>Lesson 1A: 45–50 min.<br>Lesson 1B: 45–50 min.<br>Lesson 1C: 45–50 min.<br>Lesson 1D: 45–50 min. | <ul style="list-style-type: none"> <li>• What different types of plants and animals live in different areas?</li> <li>• What are some different types of habitats?</li> </ul>   | Observations of the whirligig beetle.  | <ul style="list-style-type: none"> <li>• Make observations of a picture of the whirligig beetle.</li> <li>• Make observations of a photo of a pond with a variety of different plants and animals.</li> <li>• Read information about the variety of living things on and around a pond ecosystem.</li> <li>• Make observations of a variety of photos of different living things in different habitats.</li> </ul> |
| 2<br><b>Schoolyard Detectives</b>                         | Preparation:<br>Activity 2:<br>Lesson 2A: 45–50 min.<br>Lesson 2B: 45–50 min.<br>Lesson 2C: 45–50 min.,<br>3–4 days                     | <ul style="list-style-type: none"> <li>• How can we learn about the different plants and animals that live in the schoolyard?</li> <li>• What different types of plants and animals live in different areas of the schoolyard?</li> </ul> | Observation in a given area leads to the phenomenon that many plants and animals live there. | <ul style="list-style-type: none"> <li>• Conduct outdoor fieldwork in a given area of the schoolyard.</li> <li>• Make observations and record data over time.</li> <li>• Relate their observations in the schoolyard to information in text.</li> </ul>  |
| 3<br><b>Conducting Investigations through Field Study</b> | Preparation:<br>Activity 3:<br>Lesson 3A: 45–50 min.,<br>2 classes<br>Lesson 3B: 45–50 min.<br>Lesson 3C: 45–50 min.,<br>2 classes      | <ul style="list-style-type: none"> <li>• How can we use our observations from our fieldwork to plan and conduct an investigation that answers a question?</li> </ul>  | Observation in a given area leads to the phenomenon that many plants and animals live there. | <ul style="list-style-type: none"> <li>• Conduct an investigation based on findings through fieldwork.</li> <li>• Conduct an investigation with a team.</li> <li>• Interpret their observations, data, and findings.</li> </ul>  |
| 4<br><b>Plants Need Water and Sunlight</b>                | Preparation:<br>Activity 4:<br>Lesson 4A: 45–50 min.,<br>2 classes<br>Lesson 4B: 55–60 min.<br>Lesson 4C: 45–50 min.,<br>2 classes      | What is the effect of changing the amount of or position of sunlight in relationship to plant growth and survival?  | Observe growth of a potted plant over time. Observe that the plant grew toward the light.    | <ul style="list-style-type: none"> <li>• Conduct an investigation to find out the effect of water and sunlight on plants.</li> <li>• Set up an investigation.</li> <li>• Make observations.</li> <li>• Collect data.</li> </ul>  |

| Students Figure Out How to:  | Practices   | PE at Lesson Level and Assessment  |
|--|---|--|
| <ul style="list-style-type: none"> <li>Develop and revise a model of the whirligig beetle in its habitat as ideas and information are gathered.</li> <li>Raise questions about different organisms based on observations.</li> <li>Make comparisons of different living things that live in different regions.</li> <li>Obtain information from text and compare the information to findings through observation.</li> </ul> | <p><b>Asking Questions and Defining Problems</b></p> <p><b>Planning and Carrying Out Investigations</b></p> <p><b>Obtaining, Evaluating, and Communicating Information</b></p>                        | <p><b>PE at Lesson Level</b><br/>Make observations and collect information to compare different living things that are able to live in a given area.</p> <p><b>Formative Assessment</b><br/>Activity Pages<br/>Science Talks<br/>Journal Entries<br/>t-chart</p>   |
| <ul style="list-style-type: none"> <li>Make observations that lead to questions and data.</li> <li>Record and organize findings from observations.</li> <li>Compare and contrast personal observations with observations in text.</li> <li>Determine when measurement is important in observations.</li> <li>Recognize patterns from observations and data.</li> </ul>   | <p><b>Asking Questions and Defining Problems</b></p> <p><b>Planning and Carrying Out Investigations</b></p> <p><b>Obtaining, Evaluating, and Communicating Information</b></p> <p><b>Patterns</b></p> | <p><b>PE at Lesson Level</b><br/>Conduct a field study of a given area to make observations of the plants and animals that live there.</p> <p><b>Formative Assessment</b><br/>Activity Page<br/>Science Talk<br/>Pre-Writing Strategy<br/>Journal Entry/Respond to Text<br/>Schoolyard Observation Log</p>                           |
| <ul style="list-style-type: none"> <li>Develop an investigable question based on observations and patterns from fieldwork.</li> <li>Determine the materials needed to conduct an investigation.</li> <li>Carry out an investigation.</li> <li>Construct an explanation based on evidence.</li> </ul>   | <p><b>Asking Questions and Defining Problems</b></p> <p><b>Planning and Carrying Out Investigations</b></p> <p><b>Constructing Explanations</b></p> <p><b>Patterns</b></p>                            | <p><b>PE at Lesson Level</b><br/>Plan and carry out an investigation based on our field study observations and questions.</p> <p><b>Formative Assessment</b><br/>Science Talk<br/>student-generated questions</p> <p><b>Summative Assessment</b><br/>Science Talk<br/>Activity Pages<br/>Journal Entry</p>                           |
| <ul style="list-style-type: none"> <li>Raise questions and plan and carry out an investigation based on the phenomenon of a plant growing toward the light.</li> <li>Design the investigation.</li> <li>Collect and record data.</li> <li>Construct an explanation based on evidence.</li> </ul>   | <p><b>Asking Questions and Defining Problems</b></p> <p><b>Planning and Carrying Out Investigations</b></p> <p><b>Constructing Explanations</b></p> <p><b>Patterns</b></p>                            | <p><b>PE at Lesson Level</b><br/>Raise questions to plan and carry out an investigation into how plants need water and sunlight.</p> <p><b>Formative Assessment</b><br/>Science Talk<br/>Activity Page, questions 1–3</p> <p><b>Summative Assessment</b><br/>Activity Page<br/>Science Talk<br/>investigations<br/>Journal Entry</p> |

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|---|--|---|--|--|
| 5<br>Plants and Animals Interact to Help Plants Reproduce | Preparation:<br>Activity 5:<br>Lesson 5A: 45–50 min.<br>Lesson 5B: 45–50 min.<br>Lesson 5C: 45–50 min.<br>Lesson 5D: 45–50 min.<br>Lesson 5E: 45–50 min. | How do animals help plants in seed dispersal?<br><br>How can we develop a model to demonstrate how animals help plants in seed dispersal?   | Exploding seeds videos:<br>Some plants have seed pods that burst open, spreading seeds away from the parent plant. | <ul style="list-style-type: none"> <li>• View a video of exploding seed pods.</li> <li>• Share ideas of how seeds move from place to place.</li> <li>• Collect seeds from the schoolyard.</li> <li>• Investigate different ways seeds disperse.</li> </ul> |
| 6<br>Not Enough Bees                                      | Preparation: 20 min.<br>Activity 6:<br>Lesson 6A: 45–50 min.<br>Lesson 6B: 45–50 min.<br>Lesson 6C: 45–50 min.<br>Lesson 6D: 45–50 min.,<br>2–3 days     | How can we develop a model that demonstrates how the interaction between animals and plants aids in seed dispersal?<br><br>What features of the animal help in pollination?<br><br>What are the features of the plant that are essential for pollination? | Bee moving from blossom to blossom.  | <ul style="list-style-type: none"> <li>• Use a model to demonstrate pollination.</li> <li>• Make a model of an apple blossom.</li> <li>• Read about the importance of pollen in pollination and plant reproduction.</li> </ul>                             |

| Students Figure Out How to:   | Practices   | PE at Lesson Level and Assessment   |
|---|---|---|
| <ul style="list-style-type: none"> <li>Obtain information from text.</li> <li>Relate information to experiences.</li> <li>Develop a model that aids in seed dispersal.</li> <li>Plan and carry out an investigation into seed dispersal.</li> </ul> | <p><b>Planning and Carrying Out Investigations</b></p> <p><b>Developing and Using Models</b></p> <p><b>Obtaining, Evaluating, and Communicating Information</b></p> <p><b>Cause and Effect</b></p> <p><b>Structure and Function</b></p> | <p><b>PE at Lesson Level</b></p> <p>Use observations and resources to determine different methods of seed dispersal.</p> <p>Design a model that mimics how animals interact with plants to disperse seeds.</p> <p><b>Formative Assessment</b></p> <p>Science Talk<br/>t-chart</p> <p><b>Summative Assessment</b></p> <p>Summary Discussion<br/>Activity Pages<br/>Science Talk<br/>Journal Entry<br/>seed models and presentations<br/>"Seedy Characters"</p> |
| <ul style="list-style-type: none"> <li>Obtain information from text and media to help develop a hand pollinator.</li> <li>Develop a hand-pollinator model to aid in pollination of fruit trees in orchards with too few bees.</li> </ul>            | <p><b>Developing and Using Models</b></p> <p><b>Obtaining, Evaluating, and Communicating Information</b></p> <p><b>Cause and Effect</b></p> <p><b>Structure and Function</b></p>  | <p><b>PE at Lesson Level</b></p> <p>Use observations and resources to gain an understanding of how animals interact with plants to gather nectar and pollen.</p> <p>Design a model of a hand pollinator.</p> <p><b>Formative Assessment</b></p> <p>What We Think chart<br/>Activity Page<br/>class discussion</p> <p><b>Summative Assessment</b></p> <p>Journal Entry<br/>Respond to Text<br/>models and presentations</p>                                    |