

Figure 1.5. Unit Planning Guide: Structure and Function of Plants

Unit Planning Guide	Timeline
<p>Core Idea/Topic: Structure and Function of Plants</p> <p>Concepts: Plant parts, plant needs, photosynthesis</p>	<p>Standards</p> <p>NGSS</p> <p>LS.A Structure and function of plants; LS.B Growth and development of organisms (plants); LS.C Organization for matter and energy flow in organisms (plants); LS.D Information processing; ETS1.2 Developing and using models</p> <p>CCSS ELA</p> <p>RI.1 Key ideas and details; RI.4, RI.5 Craft and structure; RI.7 Integration of knowledge and ideas; W.5, W.6 Production and distribution of writing; W.7, W.8 Research to build and present knowledge; SL.1, SL.2, SL.3 Comprehension and collaboration; SL.4, SL.5, SL.6 Presentation of knowledge and ideas</p>
<p>Questions to Drive the Inquiry</p> <ol style="list-style-type: none"> 1. What do you know about plants? 2. How do plants work? 	<p>Performance Assessment</p> <ol style="list-style-type: none"> 1. Students will build a model plant using straws, tubes, lids, netting, bubble wrap, and other objects. 2. Students will present their model plant to the class and explain how a plant works. 3. Students will write a report or create a brochure that explains how plants make food, what plants are used for, and why plants are important.
<p>Student Questions</p> <ol style="list-style-type: none"> 1. How does a plant make food in that tiny, thin space in the leaf? 2. How do things move up and down in the stem? 3. How does air go in and out? 	<p>Investigations</p> <ol style="list-style-type: none"> 1. Observe how different variables affect plant growth (water, soil nutrients, sunlight). 2. Observe a celery stem in colored water. 3. Use straws to suck up water from a cup. Place a finger over the straw when it is in the water. Discuss. 4. Place a plastic bag over a leaf on a plant outside. Observe over time.



Figure 1.5 (continued)

Science	Technology	Engineering	Mathematics	English Language Arts	Social Science	Art
<ul style="list-style-type: none"> How do the parts of a plant work? How does climate affect the growth of plants? How do seasons affect the growth of plants? How does weather affect the growth of plants? How does soil quality affect the growth of plants? 	<ul style="list-style-type: none"> Digital microscope: View seeds, roots, and stems, and leaves. Kidspiration: Organize key details in preparation for writing. Class blog: Report data and information collected from plant experiments (include pictures). Apps: Kids Discover: Plants; Leaf Snap. 	<ul style="list-style-type: none"> Build a model plant to show the parts of a plant and explain how the parts work. 	<ul style="list-style-type: none"> How would you measure a sunflower or other plant as it grows? Create charts and graphs to organize the data collected from plant experiments. 	<ul style="list-style-type: none"> Read informational text to explain key details about plants. Record observations and describe relevant details in journals. Label diagrams and drawings. Write reports communicating understanding of how plants work. 	<ul style="list-style-type: none"> Where do plants grow? Research and compare plants that grow in different ecosystems. Locate geographic regions on a map. How is food transported locally and globally? 	<ul style="list-style-type: none"> van Gogh: Observe, draw, and paint sunflowers. Cézanne: Observe, draw and paint still life (using real vegetables and fruits). O'Keefe: Observe, draw, and paint flowers.

Learning Styles

<p>Visual: See It</p> <ul style="list-style-type: none"> Real plant experiments Campus field trips Time-lapse videos Picture books 	<p>Auditory: Hear It</p> <ul style="list-style-type: none"> Discussions, large and small group Student collaboration Video presentations Audio recording
<p>Kinesthetic: Do It</p> <ul style="list-style-type: none"> Campus field trips Gardening tasks Building model plants 	<p>Differentiation Strategies</p> <ul style="list-style-type: none"> Use songs and chants about plants. Use videos, technology applications, and hands-on investigations. Create charts that emphasize key vocabulary in context with photographs or drawings.