

Grade 3 Science Unit: Plant Growth and Development (PGD)

Unifying Theme: Evolution and Equilibrium

Why	What	How
<p>Enduring Understandings</p> <ul style="list-style-type: none"> • Plants need air, water, nutrients, and light to survive. • Organisms survive in environments in which their needs are met. • Identifying and controlling variables are important parts of a controlled experiment. • Organisms have special parts that allow them to perform certain functions. 	<p>Essential Questions</p> <ul style="list-style-type: none"> • What do plants need to survive? • What happens when growing conditions of a plant are altered? • How are honey bees and flowers interdependent? 	<p>Major Indicators, Prioritized</p> <ul style="list-style-type: none"> • 3.3.8 explain that animals need air, water and food and that plants need air, water, nutrients, and light to survive. (MLO 3.4) • 6.3.2 explain that organisms can survive only in environments in which their needs (e.g., food, water, and habitat) can be met. • 3.3.2 describe examples that show that living organisms have special parts (e.g., legs, wings, fins) that allow them to perform certain functions (e.g., walking, flying, swimming). (MLO 3.1) • 1.3.4 recognize/plan simple and well-designed procedures that identify important variables within an investigation. • 1.3.6 use numbers and metric units when counting or measuring objects and recording data. (MLO 1.1.5)
		<p>Assessment Examples</p> <p>Pre-assessment:</p> <ul style="list-style-type: none"> • What do you know and what would you like to know about plants and honeybees? <p>Formative Assessment:</p> <ul style="list-style-type: none"> • Why do you think it is important to put the same number of fertilizer pellets and seeds in each quad? • Using the data you have collected on the height of your plant, predict how many centimeters your plant will grow by tomorrow. Use what you know to explain your prediction. • Draw a model to show the relationship between bees and plants. Explain how the model demonstrates the relationship between bees and plants. <p>Summative Assessment:</p> <ul style="list-style-type: none"> • “Which Wick to Pick?” developed by MCPS Science Office.

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How

Suggested Instructional Sequence	Differentiation Examples
<ul style="list-style-type: none"> • Observing the Plant Life Cycle (Scientific Inquiry, Technology) <ul style="list-style-type: none"> - Observe germination, growth, and development of specialized parts of plants. - Quantify observations by taking frequent measurements and recording these on growth graphs. - Record observations both in writing and by making scientific drawings. • Identifying and Controlling Variables (Scientific Inquiry, Critical Thinking) <ul style="list-style-type: none"> - Design and conduct investigations in which growing conditions are altered (e.g., light, fertilizer, water, wicks, pollination). • Recognizing Interdependence Between Organisms (Scientific Inquiry) <ul style="list-style-type: none"> - Explore the reasons why the bee and flower depend on one another. - Access and process information in the expository text, “The Bee and the Brassica: Interdependence” on pages 68-69 of the Teacher’s Guide. • Career Awareness <ul style="list-style-type: none"> - Engage students in career awareness activities to learn about horticulturists and biologist. 	<p>Challenge:</p> <ul style="list-style-type: none"> • Research on the Internet about the life cycles of plants and the detrimental effects of environmental conditions on plants. Topics might include: acid rain, salt on roads, pollutants, and fire. Use evidence from your research and your experience in the plant unit to propose ways of solving these problems. Report your findings and proposal for improvement to the class. <p>Adjust:</p> <ul style="list-style-type: none"> • Adjust the instructional idea above by providing guided instruction in small groups and selecting appropriate reading materials according to the level of the learner. <p>ESOL:</p> <ul style="list-style-type: none"> • Conduct a shared writing activity to show how to record observations.