Grade: 2 **Subject:** Science	**Unit 3: New Plants**
Big Idea/Rationale	• During this study of New Plants, students experience the diversity of life in the plant kingdom. They observe the structures of flowering plants and discover ways to propagate new plants from mature plants (from seeds, bulbs, roots, cuttings). They observe and describe changes that occur as plants grow and develop, and organize their observations on a calendar and in a journal. .
Enduring Understanding (Mastery Objective)	• Plants have observable life cycles. • There are many ways to propagate new plants. • Plants are living organisms. • Plants need water and light to grow. • Seeds and bulbs are alive and grow into new plants • New plants can grow from some parts of mature plants. • Bulbs and seeds need water to start growing and water and light to continue growing
Essential Questions (Instructional Objective)	• What do plants need to grow? • How do plants change as they grow? • How can new plants be propagated? • What do bulbs and seeds need to begin growing? • How do plants help themselves, mammals and our planet? • How can we help take care of plants?
Content (Subject Matter)	<u>Activity 1: Brassica Seeds</u> • Plant rapid-cycling brassica seeds in soil and observe changes over time. • Record observations using the techniques of drawing, labeling, and captioning. • Observe the sequence of changes in the life cycle of brassica <u>Activity 2: Grass and Grain Seeds</u> • Find out what happens when rye grass and alfalfa plants are grown, then mowed close to the soil surface, and then allowed to grow again. • Sprout wheat seeds in soda straws and monitor growth. • Record observations using the techniques of drawing and labeling. <u>Activity 3: Stems</u> • Cut plant stems, place them in water or soil, and observe changes over time. • Discover the parts of a stem that can be induced to produce new plants. • Discover the conditions that induce root growth on stems. • Plant rooted shoots to produce new plants from old. • Record observations using the techniques of drawing and labeling.

	Activity 4: Bulbs and Roots • Initiate the growth of a new plant from a bulb. • Initiate the growth of a new plant from a root or part of a root. • Record observations using the techniques of drawing and labeling
Skills/ Benchmarks (CCSS Standards)	• 5.1.P.A.1: Display curiosity about science objects, materials, activities, and longer-term investigations in progress. • 5.1.4.A.1: Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences. • 5.1.4.A.2: Use outcomes of investigations to build and refine questions, models, and explanations. • 5.1.P.B.1: Observe, question, predict, and investigate materials, objects, and phenomena (e.g., using simple tools to crack a nut and look inside) during indoor and outdoor classroom activities and during any longer-term investigations. • 5.1.P.B.2: Use basic science terms and topic-related science vocabulary • 5.1.4.B.2: Measure, gather, evaluate, and share evidence using tools and technologies • 5.1.4.B.3: Formulate explanations from evidence. • 5.1.4.B.4: Communicate and justify explanations with reasonable and logical arguments • 5.1.P.C.1: Communicate with other children and adults to share observations, pursue questions, and make predictions and/or conclusions. • 5.1.4.C.1: Monitor and reflect on one's own knowledge regarding how ideas change over time. • 5.1.4.C.2: Revise predictions or explanations on the basis of learning new information. • 5.1.P.D.1: Represent observations and work through drawing, recording data, • and "writing.". • 5.1.4.D.1: Actively participate in discussions about student data, questions, and understandings • 5.1.4.D.2: Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories. • 5.1.4.D.3: Demonstrate how to safely use tools, instruments, and supplies. • 5.1.4.D.4: Handle and treat organisms humanely, responsibly, and ethically. • 5.2.P.A.1: Observe, manipulate, sort, and describe objects and materials (e.g., water, sand, clay, paint, glue, various types of blocks, collections of objects, simple household items that can be taken apart, or objects made of wood, metal, or cloth) in the classroom and outdoor environment based on size, shape, color, texture, and weight. • 5.3.P.A.1: Investigate and compare the basic physical characteristics of plants, humans, and other animals.

	• 5.3.P.A.2: Observe similarities and differences in the needs of various living things, and differences between living and nonliving things. • 5.3.2.A.1: Group living and nonliving things according to the characteristics that they share. • 5.3.P.B.1: Observe and describe how plants and animals obtain food from their environment, such as by observing the interactions between organisms in a natural habitat. • 5.3.2.B.1: Describe the requirements for the care of plants and animals related to meeting their energy needs. • 5.3.2.B.3: Explain that most plants get water from soil through their roots and gather light through their leaves. • 5.3.2.C.1: Describe the ways in which organisms interact with each other and their habitats in order to meet basic needs. • 5.3.2.C.3: Communicate ways that humans protect habitats and/or improve conditions for the growth of the plants and animals that live there, or ways that humans might harm habitats. • 5.3.P.D.1: Observe and record change over time and cycles of change that affect living things (e.g., use baby photographs to discuss human change and growth, observe and photograph tree growth and leaf changes throughout the year, monitor the life cycle of a plant).

Materials and Resources	• Foss New Plants Kit
	• Foss New Plants Teacher's Guide
	• Websites
	  ○ http://www.fossweb.com/modulesK-2/NewPlants/index.html *(Foss Website)*
	  ○ http://www.mbgnet.net/bioplants.html *(Biology of Plants*
	  ○ http://www.urbanext.uiuc.edu/gpe/index.html *(The Great Plant Escape)*
	  ○ http://www.oznet.ksu.edu/wheatwatch/welcome.htm *(Wheat Watch)*
	  ○ http://www.thebulbproject.org/.html *(The Bulb Project)*
	• Software
	  ○ Life Science: Learn About Plants (Scholastic)
	• Literature
	  ○ Bauer, Jeff. *Sunflower Life Cycle*. New York: Scholastic, 2007.
	  ○ Cherry, Lynne. *The Great Kapok Tree*. New York: Scholastic, 1990.
	  ○ Cole, Joanna. *The Magic School Bus Gets Planted*. New York: Scholastic, 1997
	  ○ Doris, Rather. *A Tree Is Growing*. New York: Scholastic, 1997.
	  ○ Dreyer, Ellen. *Grow Tree, Grow!* New York: Scholastic, 2003.
	  ○ Alert, Lois. *Growing Vegetable Soup*. New York: Scholastic, 1987.
	  ○ Gibbons, Gail. *From Seed to Plant*. New York: Holiday House,

	1994. ○ Jazzperson, William. *How the Forest Grew*. New York: Scholastic, 1980. ○ Markel, Sandra. *Outside and Inside Trees*. New York: Bradbury Press, 1993. ○ Wexler, Jennifer. *Flowers, Plants, and Seeds*. New York: Simon and Schuster Books for Young Readers, 1987
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