Second Grade: FOSS
Life Science - Insects and Plants

Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
1. Mealworms Each student receives two larval mealworms in a vial to care and observe. Over 10 weeks students observe the larvae grow, molt, pupate, and turn into beetles, which mate, lay eggs, and die. They read two articles about insects in the environments.	• Insects need air, food, water, and space; environment affects growth • Insects have characteristic structures and behaviors; some are inherited from parents • The life cycle of the beetle is egg, larva, pupa, and adult, which produces egg	• Part 1: Anecdotal Notes (page 285) • Part 2: Teacher Observation: Draws and writes observations/Assessment Checklist (pages 286-289)/Notebook Sheet 2: *Insect Record* (page 224) • Part 3: Notebook Sheet 2: Teacher Observation: Draws and writes observations/Understands the mealworm life cycle/Assessment Checklist (pages 286-289)/Notebook Sheet 2: *Insect Record* (page 224)
2. Brassica Seeds Each student plants tiny rapid-cycling brassica seeds in a planter cup. The brassica plants grow under continuous light and develop for a month. Students observe and record the complete life cycle from seed to seed. They read about flowers and seeds.	• Seeds need water, light, air, and nutrients to grow and develop • As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called life cycle • Environment affects growth	• Part 1: Anecdotal Notes (page 285) • Part 2: Anecdotal Notes (page 285) • Part 3: Teacher Observation: Makes good observations and recordings/Assessment Checklist (pages 286-289)/Notebook Sheet 5: *Plant Picture* (page 227)
3. Milkweed Bugs Groups of students receive vials of milkweed bug eggs. Each group prepares a habitat for the bugs, providing air, space, food, and water. They observe structure, pattern and behavior as the insects advance through simple metamorphosis. They read two articles about insect variation, shape, and color.	• Insects have three body parts: head, thorax, and abdomen • Insects have different structures for eating different kinds of food • Some insects go through simple metamorphosis (egg, nymph, adult) • Offspring resemble parents • There is variation in a population	• Part 1: Anecdotal Notes (page 285) • Part 2: Teacher Observation: Draws and labels milkweed bug habitats to show what insects need to survive/Assessment Checklist (pages 286-289)/Notebook Sheet 9: *Milkweed Bug Habitat* (page 231) • Part 3: Teacher Observation: Sequences the stages of an imaginary insect as it progresses through simple metamorphosis/ Assessment Checklist (pages 286-289)/ Notebook Sheet 11: *Life Cycle of the Triangle Bug* (page 233)

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4. Silkworms Students observe the life history of one of the most commercially successful insects. They start with eggs and observe the growth and changes to larvae, pupae, and adults who produce eggs. Students study the structure of a moth larva, and read two articles about insects.	• Insect larvae have characteristic structures • Insect adults have characteristic structures • Male and female insects mate. The life cycle of silkworms is egg, larva, pupa, and adult, which produces eggs	• Part 1: Anecdotal notes (page 285) • Part 2: Teacher Observation: Observes, describes, and compares in detail, and uses new vocabulary/Assessment Checklist (pages 286-289)/Notebook Sheet 2: *Insect Record* (page 224) • Part 3: Anecdotal notes (page 285) • Part 4: Teacher Observation: Makes model that shows silkworm structures/Assessment Checklist (pages 286-289) • Part 5: Notebook Sheet 13: *Life of the Silkworm* (page 235)
5. Butterflies The class observes the painted lady larvae grow, pupate, and emerge as adults. Students experience the stages of complete metamorphosis and compare the behaviors of moths and butterflies. They read about life cycles of other animals and compare to insects.	• Insect larvae and adults have structures in common • The life cycle of the butterfly is egg, larva, pupa, and adult, which produces eggs • There are similarities and differences in the life cycles of different kinds of animals	• Part 1: Teacher Observation: Predicts how larvae will develop/Assessment Checklist (pages 286-289) • Part 2: Anecdotal Notes (page 285) • Part 3: Notebook Sheet 17: Sequences the life-cycle stages of an imaginary moth. *Life Cycle of the Square Moth* (page 239) • End-of-Module Assessment (pages 290-298)