# Investigation Title and Synopsis

**1. Grass and Grain Seeds**
Students plant miniature lawns with rye grass and alfalfa. They mow the lawns and observe the response of grass and alfalfa to cutting. They plant individual wheat seeds in clear soda straws and observe how grain seeds germinate and grow. They read about plant needs and view a video on how plants grow.

**2. Stems**
Students make new plants from stems of houseplants. They put sections of stems from mints and other plants into water and look for evidence that a new plant is forming. Stem pieces that develop roots are planted to make new plants. Students plant pieces of potatoes (modified stems) and observe them grow. They learn about how plants make food. Students read about seed dispersal.

# Concepts

**1. Grass and Grain Seeds**
- Seeds are alive
- Seeds need water and light to grow into new plants
- Some plants die and some plants continue to grow after they are mowed
- Plants have different structures that function in growth and survival
- Wheat and other cereals that we eat come from seeds called grains

**2. Stems**
- New plants can grow from stems of mature plants
- Plants need water and light to grow
- Leaves, twigs, and roots develop on stems at the nodes
- Potatoes are underground stems
- Seeds have structures to help them travel to new locations to grow
- Plants make their own food, using sunlight

# Assessments and TE Page Numbers

**1. Grass and Grain Seeds**
- Part 1: Anecdotal Notes (page 203)
- Part 2: Notebook Sheet 4: Growing and Mowing a Lawn (page 166)
- Part 3: Teacher Observation: Compares leaves and roots and explains why they grow in predictable directions/Assessment Checklist (pages 204-206)

**2. Stems**
- Part 1: Notebook Sheet 6: Stem Cuttings (page 168)
- Part 2: Teacher Observation: Compares the structures of potato plants to others they have grown/Assessment Checklist (pages 204-206)
- Part 3: Anecdotal Notes (page 203)
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| **3. Terrariums** Students set up terrariums using seeds and plants from Investigations 1 and 2. They add local animals such as snails, isopods, and worms and provide for the needs of the plants and animals. They learn about other animals and plants through readings and multimedia. | • A terrarium is a place where plants and animals live in soil  
• A habitat is a place where plants and animals live  
• There are many different kinds of habitats  
• Plants and animals have structures and animals have behaviors that help them live in their habitat  
• Changes in a terrarium happen over time and can be recorded | • Part 1: Teacher Observation: Assessment Checklist (pages 204-206)/Notebook Sheet 8: *Terrarium Map* (page 170)  
• Part 2: Teacher Observation: Assessment Checklist (pages 204-206)/Notebook Sheet 8: *Terrarium Map* (page 170)  
• Part 3: Teacher Observation: Matches plants and animals to their habitat based on their strictures and behaviors/Identifies different habitats in the world and some of the plants and animals that live there/Assessment Checklist (pages 204-206) |
| **4. Bulbs and Roots** Students plant onion bulbs or garlic cloves in moist cotton and observe as they develop into new plants. They plant parts of roots—carrots and radishes—to discover which parts will develop into new plants. Through a reading, they learn about the shape and functions of different kinds of teeth, and use their own teeth to eat a carrot. | • Bulbs are alive  
• Bulbs need water to start growing  
• Parts of roots will grow into new plants other parts will not  
• Animals eat plants  
• Animal teeth come in different shapes and sizes and are used to capture and eat different kinds of food | • Part 1: Notebook Sheet 11: *Growing Bulbs* (page 173)  
• Part 2: Teacher Observation: Knows plant needs and structures and their functions/Understands functions of different kinds of teeth/Assessment Checklist (pages 204-206)  
• End-of-Module Assessment (pages 207-209) |