

### MATERIALS

- Booklet sheet for each student
- Colored pencils or crayons

### PREPARATION

- Depending on grade level, you may want to pre-draw and copy the lifecycle of a plant pictures. If students are going to draw/write, consider pre-folding booklets.

## PROCEDURE

### Part 1: Pollinators Aplenty

Arrange students around the classroom so that they have room to move easily. Select 3-4 students to serve as pollinators. Guide students through the apple's journey from seed to fruit. "Imagine you are an apple seed. Scrunch into a tiny ball on the floor. Slowly grow until you are standing tall with your arms outstretched like the branches of a big apple tree. Pinch your hands shut like tiny buds, then open your hands to flower." At this point, the pollinators can buzz around and lightly touch each student's hand to pollinate the apple blossoms. "You've been pollinated. Close your hands into a fist. Allow your fists loosen and get bigger and bigger. Fruit is forming! You begin to sag down under the weight." Finally, "pluck" an apple off the arm of nearby student. "Tada! Life cycle complete!" After students return to seats, recap the lifecycle process they just experienced.

### Part 2: Make a Book

Using the format below, create a Life Cycle of a Plant booklet with students, have them draw and label parts. Front Cover: Title & Name, Pg 1: Seed, Pg 2: Sprout, Pg 3, Leaf, Pg 4: Flower, Pg 5: Fruit, Pg 6: Fruit with Seed

Page 6	Page 5	Page 4	Page 3
Back Cover	Front Cover	Page 1	Page 2

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### Part 3: Life Cycle of a Plant Dance

Once all have finished making their books, introduce students to "the plant dance." Begin as a "tiny seed" (crouched down on the ground). Grow roots (press fingers into the ground). Grow a stem (stand up slowly). Grow leaves (put hands out to your sides). Grow a flower (join hands above your head). Grow a fruit (bring joined hands in front of belly). "What's inside a fruit? A seed!" Pretend to take a seed from the fruit and plant it in the ground. Repeat the process multiple times having students say the lifecycle steps and acting it out. Try doing the dance very slowly, very quickly or using a funny voice!

# Apple Tree Life Cycle

## Patterns & Preparation

### ENGAGE

“Everyone pretend they are holding a delicious, juicy apple in your hand. On the count of 3, let’s “bite” into it together. 1, 2, 3! You just bit into the fruit, did you know that an apple is a fruit? Now look at your apple – what are those small, dark pieces near the middle of the apple?”

“Apples, just like all plants, grow from seeds. Today we’re going to talk about how a tiny little seed grows into a delicious fruit, like an apple!”

### OBJECTIVES

- Students will understand the apple’s life cycle from seed to fruit
- Students will understand that life begins with a seed.

### EXPLAIN

#### Apple Life Cycle and Cultivars

In this lesson, we explore the apple’s life cycle from seed to fruit. Wild apple trees, such as numerous species of Crabapple, begin their lives as seeds. Over time, seedlings develop into mature trees. Once a tree has reached maturity, it is able to produce fruit. Apple trees must be cross-pollinated in order to successfully produce fruit. During cross-pollination, pollen grains are transferred from one flower to another, thereby fertilizing the flower and enabling reproduction. Apples produce the most fruit when pollen is exchanged between two different varieties of trees. Therefore, orchards contain many different apple varieties in order to ensure successful cross-pollination and encourage abundant fruit production. Beneficial insects, such as bees, are valued for their role in transferring pollen grains between trees and flowers. Once an apple blossom has been pollinated, it begins to form fruit as the base of the flower.

While apple trees can easily grow from seeds, commercial apples are produced using a special technique called *grafting*. Grafting is an asexual form of plant propagation that allows breeders to select for desirable traits, giving them greater control in developing certain varieties, or *cultivars*, of apples. As a result, there are over 7,500 different cultivars of apples. Each cultivar possesses its own unique set of characteristics. Therefore, while some apples are ideal for fresh eating, other varieties are better suited for sauces or pies. Try them all!

### ADDITIONAL CONTENT INTEGRATION (see previous page)

Using the easy booklet format (on page 1) and what students learned from the lesson, make a lifecycle booklet for a pumpkin or a bean plant.

### ADDITIONAL MATERIALS

- Booklet for each student
- Crayons or Colored Pencils

### EVALUATE

**Exit slip:** Write or draw the 6 stages in the life cycle of a plant.