

THE LIFE CYCLE OF A PLANT

Teacher:

Grade Level(s): 3rd-6th

Time: 1 hour

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Next Generation Science Standards:	<p>3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>4-LS1-1. Construct an argument that plants have internal and external structures that function to support survival, growth, behavior, and reproduction.</p> <p>MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>
Enduring Understandings:	LS1.B: Organisms have unique and diverse life cycles.
Content Objective:	Students will define the term <i>life cycle</i> by engaging in collaborative discussions and will identify, correctly order, model, and label the life cycle events of one plant using evidence from the garden.

Vocabulary	Materials
Life Cycle Flower Bud, Open Flower Fruit (ripe/unripe) Seed (pod/dried fruit)	Life Cycle Event Cards Magnifying glasses (if available) Glue, Tape, Scissors, Paint Brushes Cardstock for Life Cycle Model

Seasonality: Flowers will be available at the store year-round, however, during Autumn and Spring there are generally many available buds, flowers, fruits, and seeds to be found in the garden.				
Monsoon July-Sept.	Autumn Oct.-Nov.	Winter Dec.-Feb.	Spring Mar.-Apr.	Dry Summer May-June

Engage: Guiding Question: Can anyone name a Sonoran Desert plant? What does it look like? Does it *always* look like this? If not, how does it change? When does it change? Discuss these ideas with your table group. Ask each group to choose a representative to share ideas.

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Explore: Provide each student with at least one Life Cycle Event card (front/back example below).
Teacher note: if students receive more than one card, make sure it is from the same plants species.



Have students stand up to find others with the same plant species represented on their card(s) and sit down with their new group. Ask each group to look carefully at their cards. They may be surprised to learn that this is all the same plant!

Guiding Questions: Do any of these pictures look familiar to you? What do you see? How is the plant changing?

Explain: Just as humans grow and change, so do plants. Plants go through *life cycles: series of changes in the life of an organism, including reproduction*. Each part of the plant has a function just like you and I. Our nose serves a function, our eyes serve a function, and so on. What do you think each part of the plant does? Let students use their own vocabulary as they explore the pictures. Scientific terms can be introduced later on.

Challenge the student groups to place their cards in the correct order of the changes that this plant will go through during its life cycle. As groups share their cards with the class, discuss any themes that emerge and help students re-organize their cards if necessary (flower bud, open flower, unripe fruit, ripe fruit, unripe seed, ripe seed).

Elaborate: Students will explore the garden to create a life cycle diagram of their plant. Students should work with their group to identify the location of the plant represented in their Life Cycle Event Cards. Give groups a container (where they can place their garden materials) before departing. Remind students to take *small* examples of their plant's displayed life cycle events. A completed diagram is depicted below:

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As students return with garden samples, give each group equipment to create a life cycle diagram of their plant. Tell students to use their Life Cycle Event Cards to guide them in correctly sorting and labeling each represented life cycle event.

Evaluate: Use student's completed and labeled life cycle diagrams to assess learning. Have students share their work with someone that modeled a *different* plant's life cycle events.

Guiding Question: What if you do not see a fruit, flower bud, or seed and cannot complete your full diagram? It may mean that it is not time for that life cycle event to happen. Sometimes we see more than one life cycle event displayed at the same time, and even on one plant! Other times, we may notice very few life cycle events occurring on our plants for long periods of time.

**PRINT THE LIFE CYCLE CARDS ON 2-SIDED
PAPER TO ENSURE THE BACK OF THE CARD
IS CORRECTLY LABELED.**



Desert Marigold Flower

Desert Marigold Flower Buds

Desert Marigold Fruit

Desert Marigold Unripe
Seeds

Desert Marigold Ripe Seeds

Jjoba Flower Bud



Jjoba Open Flower

Jjoba Unripe Fruit

Jjoba Ripe Fruit

Jjoba Seed

Fairy Duster Flower Bud

Fairy Duster Flowers



Fairy Duster Unripe Seed Pod

Fairy Duster Ripe Seed Pod

Fairy Duster Seeds

Pomegranate Flower Bud

Pomegranate Open Flower

Pomegranate Unripe Fruit



Pomegranate Ripe Fruit

Pomegranate Seeds

Yellow Bells Unopened
Flower

Yellow Bells Open Flower

Yellow Bells Unripe Seed
Pods

Yellow Bells Ripe Seed Pods
with seeds exposed