



LESSON PLAN

LIFE CYCLES GRADES 3-5

SUMMARY

All plants and animals are born, grow and change, reproduce and die over time. How these stages of their lives are carried out are their life cycles. In this lesson students study the life cycles of several different plants and animals.



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. [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]

Science & Engineering Practices	Connections to Classroom Activity
<p>Developing and Using Models Develop models to describe phenomena.</p> <p>Connections to Nature of Science Scientific Knowledge is Based on Empirical Evidence Science findings are based on recognizing patterns</p> <ul style="list-style-type: none"> Students study and then create life cycle diagrams 	<p>modelling the life stages of different plants and animals.</p> <ul style="list-style-type: none"> Students compare life cycles of several different plants and animals to identify patterns of similarities and differences.
Disciplinary Core Ideas	Connections to Classroom Activity
<p>LS1.B: Growth and Development of Organisms Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles.</p>	<ul style="list-style-type: none"> Students recognize that as life cycles, new plants and animals are produced and life continues into the future.



Additional DCIs addressed by this lesson:
PS3.D: Energy in Chemical Processes and Everyday Life

The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (5-PS3-1)

- Students study different types of life cycles for different types of plants and animals.
- Students observe an avocado plant growing using only water and sunlight to produce energy. (DIY)

Crosscutting Concepts

Patterns
Patterns of change can be used to make predictions.

Connections to Classroom Activity

- Students observe patterns related to life cycles.

DURATION

One-two 45 minute classroom period

PRE-ASSESSMENT QUESTIONS

Please see discussion questions located under the video. These can be discussed as a group or answered individually in student science notebooks.



ENGAGE



WATCH AS A GROUP THE GENERATION GENIUS LIFE CYCLES VIDEO.

Then, facilitate a conversation using the Discussion Questions.



EXPLORE

Divide students into small groups of up to four. Give each group a set of copies of all the different life cycles explored in the video (chicken, butterfly, frog, plant and avocado).

Students will explore the question: how are animals and plants life cycles similar? How are they different? In their science notebooks, students should create a page called "Animal and Plant Life Cycles". On that page they should create a "T" chart. They should label on side "similarities" and the other "differences". Students should now work together in their groups to list as many similarities and differences between the different animal and plant life cycles as possible.

MATERIALS

- Life Cycle Diagrams (attached)
- Science notebooks
- Pencils
- Markers or colored pencils (optional)
- Access to Internet or library for research (optional)

DIY Activity

- A ripe avocado
- Cutting board
- Knife
- Help from an adult
- Bowl of water
- Clear plastic cup
- Toothpicks
- Water
- Pot
- Soil

For example:

Similarities	Differences
The life cycles of butterflies, frogs and chickens all start out as eggs.	The life cycles of plants do not start out as eggs, they start out as seeds.
Both plants start out as seeds.	
Frogs and butterflies look very different from their young stage to their adult stage.	Chickens change somewhat, but always look like birds from their young stage to their adult stage.
All these living things go through different stages of life.	



EXPLAIN

Gather all the students back together. Facilitate a discussion about life cycles with student input. Work towards the understanding that:

- The life cycles of all plants and animals include the stages of birth, growth, reproduction and death
- Some plants and animals life cycles are shorter or longer than others
- Some plants and animals life cycles include dramatic changes (some animals undergo metamorphosis as part of their life cycle)
- Understanding life cycles can help us predict patterns in the lives of animals and plants



ELABORATE

Using their knowledge of life cycles, students can create life cycle models (diagrams) for other animals from the video (gorillas, penguins, dogs), or they may research an animal or flowering plant of their choosing and create a life cycle diagram based on what they learn.



EVALUATE

Evaluate student understanding by assessing the life cycle diagrams they create during the Elaborate portion of the activity.



EXTENSIONS

As a class or individually grow avocado plants using the DIY Activity