



LESSON PLAN

PLANT GROWTH CONDITIONS GRADES K-2

SUMMARY

The students will plan and conduct an investigation to determine if plants need sunlight and water to grow.
Duration: 45-60 minutes (initial lesson).



2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

Science & Engineering Practices

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.

Connections to Classroom Activity

- Students will plan and conduct an investigation to determine how plants are affected by variations in the amount of water and sunlight they receive.

Disciplinary Core Ideas

LS2.A: Interdependent Relationships in Ecosystems

Plants depend on water and light to grow.

Connections to Classroom Activity

- Through investigation and observation, students will determine that plants need the right amount of water and sunlight to grow.

Crosscutting Concepts

Cause and Effect

Events have causes that generate observable patterns.

Connections to Classroom Activity

- Observe how variables, such as water and sunlight, effect plant growth.



ENGAGE

Have the four live plants in front of you. Ask the students if they have ever wondered what would happen if a plant didn't get enough water or sunlight. "If you wanted to know, what could you do?" Take student responses. Tell the students that today we are going to plan an investigation to answer the question: Does a plant need sunlight and water to grow?



EXPLORE

Divide students into four groups. Each group will be assigned one plant to take care of. The conditions of the four plants are: (1) water and sunlight, (2) water, but no sunlight, (3) sunlight, but no water and (4) no water and no sunlight. Students label the pots with the condition and the date. Be sure to explain that the plant that gets both water and light (the control / normal condition) is what you will be comparing the other ones to. Remind students that when doing an investigation, you test only one variable at a time. Plants that are receiving water should all have the same amount during the investigation. Move plants to the assigned location.

Encourage students to make predictions about what will happen using guiding questions. Student should record their predictions in their science journal. Ask, "What differences do you expect to see?"; "Why do you think that will happen?" What changes will you look for (e.g., color, size, height)?

For the best results, the plants that are to get no sunlight should be kept somewhere completely dark.



EXPLAIN



WATCH THE GENERATION GENIUS PLANT GROWTH CONDITIONS VIDEO AS A GROUP

Facilitate a conversation using the Discussion Questions.

MATERIALS

- Four small potted plants
- A sunny place
- A dark place (e.g., closet, cupboard)
- Water and watering container
- Permanent marker
- Science journal

DIY Activity

- 2 Plant pots
- Package of seeds
- Bag of regular soil
- Scoop
- Container of plant fertilizer
- Container of water



ELABORATE

Daily observations of their plant should continue for two weeks or until a clear conclusion is reached. Students should revisit their predictions with the guiding question, and answer in their journal. Ask, “Do you see any differences in your plant?”; “Are any differences you see a surprise?”; “Is it what you expected to see?”



EVALUATE

Students can play the online Kahoot! quiz game located below the video which provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz or the exit ticket questions. All these resources are located below the video in the Assessment section.



EXTENSION

For more advanced students, plan experiments to determine how other variables, such as pot size (space), temperature, or fertilizer use can affect plant growth. Students should record scheduled observations, and findings in a journal.

Motivated students can research the science and careers related to plants and plant growth; botany and botanist.

