

Phenomenon: The radish plants look unhealthy.

Students figure out: The radish plants need light and water to live and grow.

How they figure it out:

Lesson 1: Mystery at School

Students use observations as evidence to explain why the radish plants look unhealthy. Then they develop questions for investigation.

Lesson 2: Making a Plant Plan

Students collaborate to plan how to collect data. They make predictions about what will happen to their radish plants as the investigation proceeds. Students collect their first set of data.

Lesson 3: Plant Patterns

Students collect and analyze their final pieces of data from their radish plant investigation. They use their data to identify patterns of growth and survival based on how each plant was treated during the investigation. Students use their observations as evidence to develop models showing the different resources plants need to live.

Problem: Ada needs us to take care of her caterpillars, but we don't know what they need.

Students solve the problem: The class feeds the caterpillars so they can get the food and water they need to live and grow.

How they solve the problem:

Lesson 4: What's on the Menu?

Students draw on prior experience as evidence to develop a claim about what the caterpillars need. Students use information from a text to identify a pattern in what animals need to live. Students refine their claim using evidence from a text.

Lesson 5: Hungry, Hungry Caterpillars

Students use evidence from observations to revise and support an argument about what caterpillars need to live and grow.

Phenomenon: Caterpillars build webs.

Students figure out: Organisms need other things beyond food and water, such as shelter or space to grow. Plants and animals change their environment to get the things they need.

How they figure it out:

Lesson 6: World of Webs

Students observe different parts of the caterpillar cup. Students use observations as evidence to develop a model showing how the different parts of the caterpillar habitat are related.

Lesson 7: You Get what you Need

Students use information from a text to identify some of the other things plants and animals need to live and grow. Students make observations of caterpillars' webs found in nature and use them as evidence to create a model showing how the webs relate to the things caterpillars need.

Problem: The pavement is broken, and this makes it hard for people to move down the sidewalk.

Students solve the problem: Students think about the needs of both the tree and humans and consider how to meet both through proposed designs.

How they solve the problem:

Lesson 8: Sidewalk Solutions

Students use observations as evidence to determine that the tree trunk and roots are causing the pavement to crack. They collaborate with a partner to develop and propose a solution that attends to both human and non-human needs.

Science Challenge

Problem: Ada's school wants to build a play area behind the school. There are three different plans for the play area.

Students solve the problem: Students predict how each plan will impact the living system on the land and choose the plan with the least impact.

How they solve the problem:

Lesson 9: Play Area Plan Part 1

Students observe photographs taken of the schoolyard. Students develop a model of the school area that shows the parts and relationships within the living system that is on the land.

Lesson 10: Play Area Plan Part 2

For each proposed play area plan, students predict whether caterpillars, woodpeckers, plants, and trees will get what they need. Students use their schoolyard model and their predictions to choose which plan they think Ada's school should adopt.