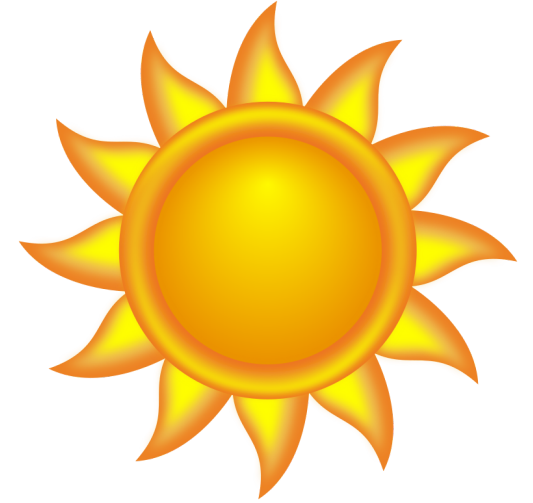


The plants in your garden are getting too much sun!



What could you build to protect the plants?

Kindergarten: Designing a Shade Structure

Standard: K-PS3-2. Use tools and materials to design and build a model of a structure that will reduce the warming effect of sunlight on an area.

Possible Materials (materials can be flexible based on what is available to you): popsicle sticks, tissue paper, construction paper, toothpicks, tape, glue, string, cardboard.

Ask: Pose the problem to the students that some plants in the garden are getting too much sun.

Imagine: Have students imagine how they could help prevent the plants from getting too hot.

Plan: As a class, groups, or individuals, students can draw a sketch or orally explain what they hope to create.

Create: Provide students with the necessary materials and allow the time to build a model of their plan.

Present: Students can share their creations with the class and explain how they would work. Students can provide comments or feedback.

Improve: If time allows, students could revisit their plan and make adjustments to their models.

Extension: The following ideas could be asked to extend the students' thinking and prompt them to make additions or improvements to their structure.

- How will your structure work if the plant grows taller?
- Your structure blocks all of the sun, what could you do to allow some sun to reach the plant?
- If you were going to make this for real, what materials would you use?
- The direction the sunlight comes from changes. How does your structure work if the sunlight was coming from the other side?

The plants in your garden are getting eaten by animals!



What could you build to protect the plants?

Grade 1: Designing a Fence

Standard: 1.K-2-ETS1-2. Generate multiple solutions to a design problem and make a drawing(plan) to represent one or more of the solutions.*

Possible Materials: photographs of garden, pictures of animals, paper, images of real-life solutions

Ask: Pose the problem to the students that some plants in the garden are being eaten by animals.

Imagine: Have students imagine how they could help prevent the plants from getting eaten.

Plan: As a class or groups, students can meet and discuss their ideas for solving the problem.

Create: Provide students with the necessary materials and allow the time to draw a picture/diagram of their plan.

Present: Students can share their creations with the class and explain how they would work. Students can provide comments or feedback.

Improve: If time allows, students could revisit their plan and make adjustments to their pictures based on classmate suggestions or questioning from the teacher.

Extension: The following ideas could be asked to extend the students' thinking and prompt them to make additions or improvements to their picture.

- What type of materials would they use to build their plan in real life?
 - o Have them consider the cost of materials and properties of materials that might affect their plan.
 - (i.e. a rock wall would be very heavy, building a fence would cost money for wood)
- Does their plan include a way for people to still access the garden?
- In creating their plan did they consider how it looked? Could it be made in a more artistic way?

Name: _____ Date: _____

—
*Use the space below to design a fence that would protect
against a bunny.*

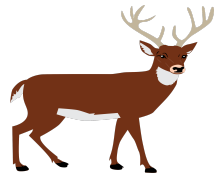




Name: _____ Date: _____

—
Use the space below to design a fence that would protect

against a deer.





Name: _____ *Date:* _____

—
*Use the space below to design a fence that would protect
against a chipmunk.*





Name: _____ *Date:* _____

—
Use the space below to design a fence that would protect

against a flying bugs.



Name: _____ *Date:* _____

—

What do I know about my animal?

My fence needs to be:
