

## Prompt: Shade Design Challenge

### Objective(s)

Can you build something to create shade for the animals/dolls?

### Activity that involves problem-solving and strategic thinking:

- Students will use materials provided and plan individually or together (with family at home) how to build a structure that creates shade.
- Students will test their structures with a flashlight or the sun outside.

### Standards/Objectives addressed:

- **K-PS3-2:** Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
- **K-2-ETS1-2:** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- **CCSS.ELA-LITERACY.L.K.1.A** - Print many upper- and lowercase letters.
- **CCSS.MATH.CONTENT.K.G.A.2** - Correctly name shapes regardless of their orientations or overall size.
- **NGSS.K-PS2-1** - Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
- **CCSS.ELA-LITERACY.W.1.2:** Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
- **CCSS.MATH.CONTENT.1.G.A.2:** Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape.
- **1-PS4-4:** Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.

### Background knowledge needed:

- How to make a plan - sketch a design
- Sunlight and shadows
- Temperature change in shade

### Materials:

- Paper, popsicle sticks, cardboard, straws, tape, fabric, etc. - anything they can find at home including toys (blocks, legos..)
- Flashlight for the sun or Go outside, find the sun, and create outside
- Little dolls/animals to put in structure

### Prompts – questions or statements to elicit engagement

- To engage, connect with students by asking them, what happens when you're standing in the sun? What can you do to keep cool?
- What animal or animals might use this structure?
- How can you add on to your structure to create even more shade?

**Vocabulary**

- Habitat, Shade, sketch, temperature, sunlight, shadow, structure, roof

**Reflection prompts**

- What worked well? What material worked best?
- How did you test to see if your structure provided shade?
- What difference is there between your shade structure and some of your classmates?
- What new things did you have to learn about to make your structure?