

Sled and Hill

Objective(s)

- Can you design a sled and sledding hill using these materials?
- How will your sled move? Can you make it move faster or slower?

Activity that involves problem-solving and strategic thinking:

- Students will use materials provided to build a sled
- Students will label and/or create signs to identify roads and buildings

Standards/Objectives addressed:

- K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or directions of pushes and pulls on the motion of an object.
- K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or pull. (see K-2-ETS1-3)
- K-2-ETS1-2 Develop a simple sketch, drawing or model to illustrate how the shape of an object helps it function as needed to solve a given problem

Background knowledge needed:

- How to make a plan - sketch a design
- Understanding of sleds and slopes/hills

Materials:

- Bottle caps, aluminum foil, wax paper, cardboard, tape/duct tape, glue, string/yarn, blocks, bear counters or other small characters to ride the sled.

Prompts – questions or statements to elicit engagement

- What are some slippery materials?
- What makes a good sledding hill? What would it look like?
- How will you make your sled move (up or down the hill)?
- How many will fit on your sled?

Vocabulary

- sled, slope, hill, velocity, speed, angle, push, pull, motion

Reflection prompts

- What worked well? What part of your design do you like best or would you change? Why?
- How did you play today - 3,2,1,0 scale -
 - 3: We worked together the **whole** time. We completed our plan.
 - 2: We worked together **most** of the time and almost completed our plan.
 - 1: We worked together a **little** bit. We needed some reminders or help from a teacher.
 - 0: We **did not** work together. We did not complete our plan.