

WHAT ARE WE INVESTIGATING?

How well will objects slide on ice?

MATERIALS:

- Pan or Tub
- Water
- Freezer
- Bottle Cap
- Rock
- Crayon
- Marble
- Strive Academy's Engineering Design Process Handout (found at www.striveacademy.org)
- Pencil or Pen

EXTENSION:

- * Try this variable - slide your objects on different materials like carpet, sand paper, or straws.
- * Try this variable - repeat the experiment but with objects of significantly different masses. How does mass affect your results?
- * Research these different types of friction - static, sliding, and rolling. What are the differences between them?

How Well Does It Slide?

DIRECTIONS:

1. Gather all of your materials. Our materials are just suggestions - feel free to add other things too!
2. On your handout (found at www.striveacademy.org), fill in the title of your experiment (How Well Does It Slide?).
3. On your handout, fill in your hypothesis. You want to answer the question: Will the objects slide across the ice? To answer this, list the objects that you have chosen and put a check next to any objects that you think will slide and an "X" next to the objects that you think will not slide.
4. On your handout, sketch a design of your experimental setup. You will be trying to slide your objects across the ice. Feel free to use color and label the materials that you will be using!
5. Place your first object on the edge of the ice pan. Give it a push and see if it slides or not.
6. Under "Data Collection/Observation", list your object and record what happened.
7. Repeat steps 5 and 6 with as many different objects as you like.
8. Under "Results", make a table with one column labeled "Slides" and one column labeled "Does Not Slide". List the items under their correct column.
9. Answer the "Analysis" questions on your handout:
 - Friction is a force that slows objects down. Which objects had more friction?
 - Which objects had less friction?
 - How would your results change if you tried to slide the objects on carpet instead of ice?

**** Try the extension activities on the first page for more fun! ****