

WHAT ARE WE INVESTIGATING?

Which powder will make ice melt the fastest? Why is this important for scientists to know and how can they use it to make our lives easier?

MATERIALS:

- Muffin Tins (or small bowls)
 - Ice Cubes
 - Sugar
 - Salt
 - Baking Soda
 - Baking Powder
 - Corn Starch
 - Brown Sugar
 - Powdered Sugar
 - Flour
 - Spices/Seasoning
- ** All powders do not need to be used and feel free to use substitutions
- Timer
 - Strive Academy's Engineering Design Process Handout (found at www.striveacademy.org)
 - Pencil or Pen

EXTENSION:

Check out this video about what melts ice on the roads:

https://www.youtube.com/watch?v=6V_AVe3zWu8

Disappearing Ice Cubes

DIRECTIONS:

1. Choose the powders that you want to use in your experiment. Examples are: sugar, salt, baking soda, baking powder, corn starch, brown sugar, powdered sugar, flour, spices, or seasonings. These 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 (Disappearing Ice Cubes).
 3. On your handout fill in your hypothesis. You want to answer the questions: Which ice cube do you think will melt the fastest? Which ice cube do you think will melt the slowest?
 4. On your handout, draw a picture of how you will set up your experiment. Be sure to label each muffin cup with which powder you are adding!
 5. Place an ice cube in each cup of your muffin tin that you will be using. One ice cube will be your control so it will not get any powder!
 6. Place a teaspoon of your first powder on top of one of your ice cubes. Use your drawing to see which ice cube gets that powder.
 7. Repeat step 6 for each powder. Don't forget to leave one ice cube alone with nothing on it!
 8. Set your timer for 20 minutes. While you are waiting, fill in the "data collection/observations" section of your handout. Write down or draw pictures of what you notice happening to each ice cube.
- After you are finished, check out this video about what melts ice on the roads:
https://www.youtube.com/watch?v=6V_AVe3zWu8
9. At the end of the 20 minutes, make some observations. On your handout, in the "results" section, list the powders in order of how fast they melted (fastest to slowest).
 10. Answer the "analysis" questions on your handout:
 - Which powder melted ice the fastest?
 - Was your hypothesis correct?
 - Why do you think this powder melted ice the fastest?
 - In the winter when it is icy, we put salt on the roads so cars do not slide. How does your experiment help to explain why we do this?
 - How could you redo your experiment and make it more scientific?