

Name:

Date:

Class:

Soda Can Insulation Challenge

Part 1

Choosing Materials: You may pick any **3 materials** from the table. When your group is called, you will have **30 seconds** to go and grab the materials you need.

Design Time: Use the first 10 minutes to look at the materials you could use and think about the best way to insulate a soda can. **The goal is to keep it either warm or cold.**

- Write down the materials you are going to use.
- Decide if you are going to keep your can warm or cold.
- Record the materials you used to create your sleeve
- You will be presenting your results to the class later

Constraints:

- You are only allowed to use the materials in front of you.
- You must be able to remove your insulator and put it on a new can for recording data.
- You will be recording the temperature with a thermometer at 3 minute intervals

Creation Time: Use the next 30 minutes to create your insulation sleeve

1	2	3	4
Group stopped working or was incapable of completing the task	Not everyone participated. The group may have had a few small problems working with each other.	Everyone participated.allowed everyone to be involved, and group was focused almost all the time on the task.	Everyone participated equally , encouraged/praised others work and ideas, and group was 100% focused on the task.

Grade yourself on your group participation by highlighting how well you worked together.

Part 2

Testing and Recording: **You will record your temperature in 5 minute intervals over 30 minutes.**


- You will be given either hot or cold water depending on what you have chosen
- Take the initial temperature once it is in its insulation sleeve
- Record your data in a data table every 5 minutes (we will be graphing the results later)
- Record the data from the control at the same time intervals.

If your testing is not going well and you would like to make changes to your insulation sleeve that is OKAY. In fact, real engineering solutions are seldom perfected on the first attempt, and mid-course corrections are commonplace. Make adjustments and improvements and then begin testing again.

Part 3

Data analysis: **Create a graph in google sheets and link it to the google classroom assignment.**

- Time should be on the x-axis
- Temperature should be on the y-axis

			
I can use a template to construct a graph.	I can construct an appropriate OR complete graph for the given data.	I can construct an appropriate AND complete graph for a data set.	Additionally, I can use a graph to make accurate predictions using the data set.

Part 4

Presentations: Short 2 minute presentation on the materials you used and the data you collected. If you changed your design part way through, talk about why you changed it.

- Show the class your graph
- What do your results say about the materials you used?

- What factors did you **not** control for?
- What factors did you control for?
- What trends did you find in your data?

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