

Parachute Design

Mission Briefing

You are an materials engineer working at a company to design the most efficient device to transfer refrigerated items from one location to be delivered to homes. You will create a prototype using a cup. You have many options in your choice of materials to design your insulated cooler. Your design should use low-cost recycled materials and maintain the cool temperatures for a long period of time.



Action Plan:

Create a labeled diagram of the insulated cup that includes the material used. Consider areas where heat could be transferred easily

Brainstorm ideas for materials. Give your reasoning for each material listed.

<u>Materials</u>	<u>Rationale</u>

1. Brainstorm a list of variables to change in order to decrease heat transfer on the cup

Variables to decrease heat transfer
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2. Draw your insulated cup design below. Include areas where heat transfer would be reduced using as well as the material you chose to use.

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3. Test your design and record your data

Design	Time for cold liquid to reach room temperature	Observations/notes
No insulation		
Design 1 (include a sketch)		
Design 2		
Design 3		

4. **Evaluate**

Look at your observations and notes. Evaluate your design. What went well? What didn't go well?

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5. **Redesign:**

How would you redesign your insulated cup? What would you do differently? Try it out and record your data!

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