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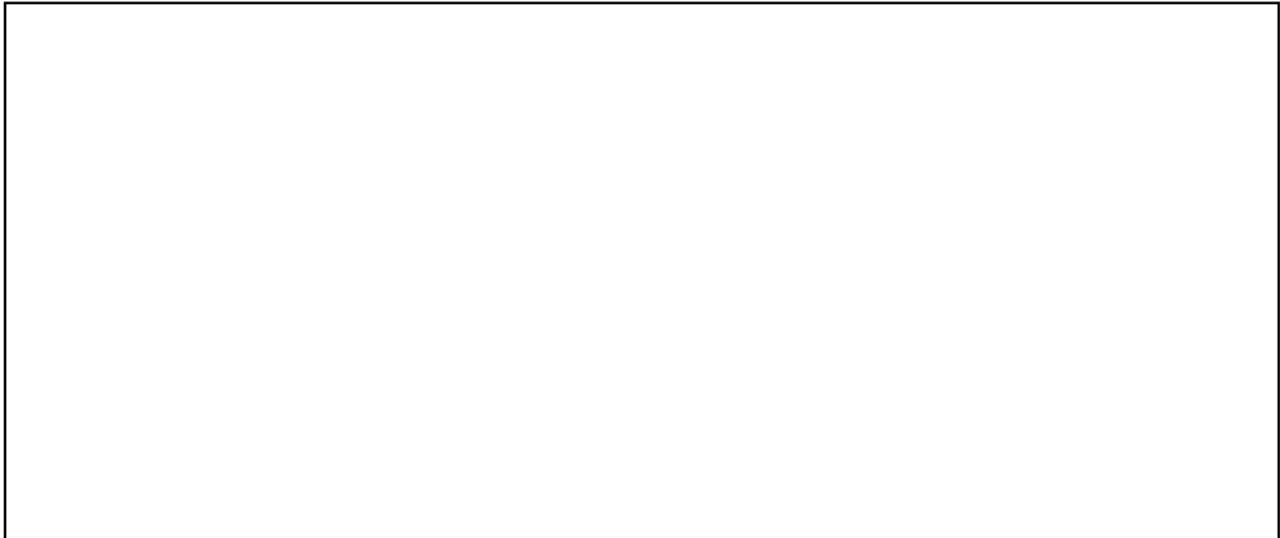
Keep Your Cool! Design Your Own Cooler Challenge Worksheet

Directions: Answer the following questions below.

Before Building your Design

1. Why is it important to keep perishable food and drink within a safe temperature range? (**Identify the Need, Research the Problem**)

2. Draw your design for the inside and outside of your cooler in the box below. Label the materials that will be used for each part. (**Imagine Possible Solutions**)



3. Predict how your design will work to keep the bottled water cooler than it would be staying out at normal room temperature.

Building your Design

Share your design with the rest of your teammates and choose the best design (or choose the best elements from each design) for the prototype, then build the prototype. (**Plan by Selecting a Solution and Create a Prototype**)

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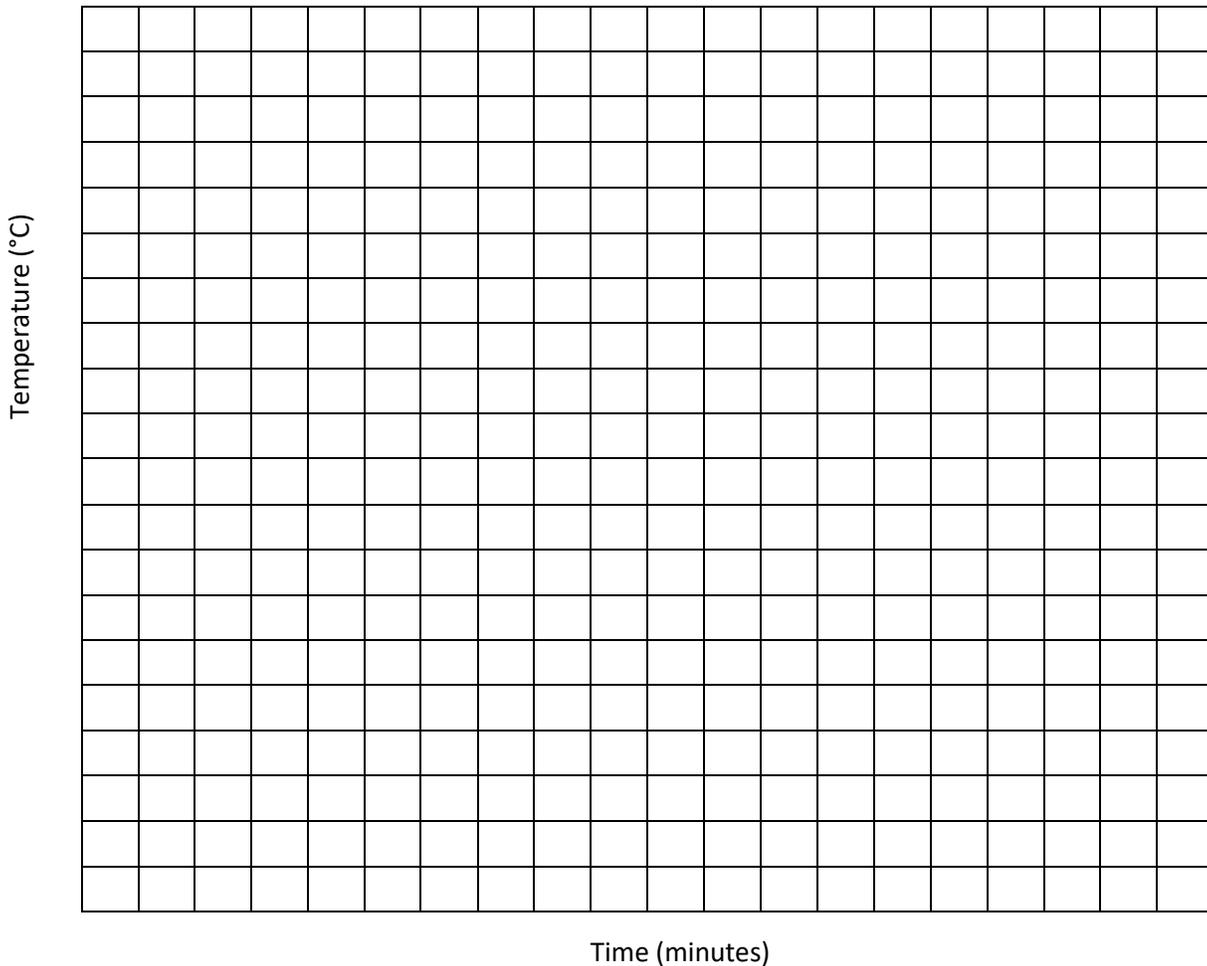
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Record your times, and temperatures in the following chart. **(Test and Evaluate the Prototype)**

Time (minutes)	Room Temperature (°C)	Temperature of Water in Cooler (°C)	Temperature of Water at Room Temperature (°C)

Using the data from the chart above, create a graph that demonstrates the information that you have gathered.

Temperature of the Water in the Cooler over Time



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9. Based on your graphed results, and seeing the results of other groups' coolers, how would you improve your design for the future? In the box below, draw improvements to your design, and describe how you expect the differences to improve the overall design. (**Improve and Redesign as Needed**)



4. How well did your design work? What might you need to improve?

Prepare to share your cooler, graph, and findings with the rest of the group.