

Name: _____

Period: _____

Cold Bag Challenge

INVESTIGATE

1. Look at the cold bag. Describe how you think it works (how does it keep the things cold or hot?):

2. Investigate the piece of cold bag given. Describe each layer.

Layer characteristics (what part is it? What type of material does it seem to be? How thick is it?)	How do you think it helps or hurts heat transfer?

How could we test the effectiveness of each layer? (design an experiment and explain how you will test it).

Data:

Explain:

3. What conclusions can you make about the materials and their ability to stop heat transfer?

4. How might you change your experiment based on what other groups tried?

5. What were the weaknesses of your experimental design? What would you change?

6. What are the characteristics of a good structure for keeping things cold?

7. What are the characteristics for a good structure for keeping things hot?

Extend

Using the materials provided, create a bag that is no bigger than 100 cm square that will stop the transfer of heat for the longest time. We must be able to place one ice cube into your structure and will time how long until it melts.

Draw and label your design in the space below

Starting time:

Ending time:

Amount still frozen:

Evaluate

1. How do cold bags (either the store bought ones or the ones you created) compare to coolers or ice chests? How are they alike? How are they different?

2. Draw a picture of how a cooler works including the idea of heat transfer (labeling the different methods of heat transfer).