

Insulation of Socks

Background: This lab is a follow up of my calories count lab. After running the calorie count lab we will discuss why we lost energy in the lab. Students will start to develop the idea of insulation. We will talk about insulation in homes, natural and manmade. Discuss does the cost of better insulation out weight the money saved? We will discuss if different insulations really save money at all? These questions can all be differentiating depending on the topics you want to cover.

Material:

1. Baby bottle
2. Temperature probes
3. Calculators
4. Hot plates
5. Beakers
6. Beaker clamps
7. Hot water
8. Different type of socks for insulation
9. Navigator

Procedure:

1. Heat your water (Needs to be as close to boiling as possible)
2. Set up your calculator using easy data(usually takes about 6-7 minutes tog et best results)
3. Once water is heated and calculator is set up put your insulation around the bottle
4. Fill up the baby bottle with water and start your time graph.
5. Once the 6-7 minutes are done save your data and have students log in to navigator.
6. Collect all the data from the kids using activity center
7. Compare and contrast the different graphs

Suggestion:

1. You should have each group do a different insulation (The teacher should do the control one, one with no insulation, because the bottle will be hot.
2. When comparing on the navigator have the kids send data points and look at the graph, it will be hard to see which graph is better
3. After you put points up have the kids find the slope of their individual graphs
4. Compare the slopes and discuss which one is the best, one nearest to zero

5. After you decide which one is the best have the kids enter their equation into the activity center
6. Compare the equations and they should match up
7. Several other things you can discuss, starting point, ending point, positive and negative slope.