

Question:

How do I keep my feet warm when it is cold?

Procedure:

Heat water (500 mL) to 36 degrees celsius
Pour 500 mL of the heated water into two identical water bottles each
Place one water bottle into custom sock pocket and place the other in the sock being tested against
Place both socks into the freezer
Measure the temperature of each sock every 3 minutes and record the data for the duration of 15 minutes

Hypothesis:

If I test my custom sock against Darn Tough Merino Wool sock, my sock will insulate heat better than Darn Tough Merino Wool sock because the design I used to make my custom sock guarantees its superior thermal insulation properties.

Variables:

Manipulated: Duration of testing, testing intervals.

Controlled: Freezer temp., water temp., water volume, time between each test.

Responding: Change in temp. of the water inside both water bottles.

Materials:

Polyester fleece

Wool fabric

Darn Tough Merino Wool Socks

Thread (Pink & White)

Sewing machine

Real Canadian Natural Spring Water Bottle

Freezer

Meat thermometer

Sink with Hot/Cold function and can reach at least 36

500 mL water

Background Research:

[Sock notes](#)

Results:

https://docs.google.com/spreadsheets/d/1U_IAZOdfOZOjeFUGlbgZV89hMpDliufogQ7SAy6KKA/edit#gid=0