



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences --particularly students of color and girls -- by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at [www.projectexploration.org/stemathome](http://www.projectexploration.org/stemathome).

### In this activity, you will:

Have you ever wondered how Arctic animals stay warm in the most frigid, freezing conditions on Earth? Head to the kitchen and pretend to be a walrus or a polar bear to find out.



### Supplies Required:

Bowl full of ice water  
Shortening  
Rubber glove

### Video

Exploring the Arctic: [https://youtu.be/\\_kA-aro3ll](https://youtu.be/_kA-aro3ll)

### Overview

Shortening is made of fat. In this experiment, it simulates the layer of blubber that Arctic animals, like seals, whales, walruses, and polar bears, have on their bodies to insulate them from the cold. It makes a huge difference, doesn't it?



## Instructions

1. Place a bare finger in the bowl of ice water. Count how many seconds you can stand to leave it there before it gets too cold.
2. Pull your finger out and warm it up
3. Get some help to coat one finger with a thick layer of shortening. Be sure that no skin is visible.
4. Place the shortening-covered finger in the ice water and measure how long you can leave it there now.
5. Observations Could you feel the cold water through the layer of shortening? How long did you leave your finger in the ice water?
6. Now Try This! Try coating a finger with other substances to see if it insulates like shortening does. Be sure to measure how long you can leave your finger in the ice water each time and keep track of the results. Some ideas to try include peanut butter, butter, a piece of bread, and whipped cream.

## Additional Resources

1. Animal Adaptations: <https://youtu.be/m2MibjJgyjs>
2. The Big Freeze: [https://youtu.be/r2Ou58p\\_D7k](https://youtu.be/r2Ou58p_D7k)

## Share It Out

Share on social media: Record a video or take a picture of your activity and post the results online using the hashtags:

#ArcticAnimals  
#ProjectExploration  
#StemAtHome

Tag a friend and challenge them to do it, too!

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Call or text us for help: 312-772-6634



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