

# Polar Plunge

Have you ever wondered what keeps aquatic and arctic animals warm when it's freezing?! The following experiment teaches us the importance of blubber. We can even test out what it would be like to have blubber!



## Background

Blubber is a thick layer of fat under the skin of many aquatic mammals. This provides excellent insulation, which is necessary to help keep these mammals warm and protected from the cold. Mammals are warm-blooded, which means they could not survive arctic temperatures without blubber. It also naturally helps keep animals afloat. Lastly, blubber stores energy! It is a thick layer of fat - which means it is where extra fats and proteins are stored.

## Key Terms

Blubber: the fat of marine mammals

Insulate: to protect from the elements/effects of something

## Materials

Crisco (or other shortening)/Vaseline

Timer

Tub/Bin/Large bowl

2 Ziploc bags

Ice and water

Towel

Recording materials (pencil and paper)

## Procedure

1. Place a towel down, then fill the tub/bin/large bowl with water and ice.
2. Time and record how long you can keep your hand submerged in the cold water on its own. \*Be mindful that this shouldn't be more than a couple seconds!\*
3. Put one Ziploc bag inside of the other.
4. Fill the space between with Crisco. \*The bag without Crisco in it is where you'll place your hand. You'll wear it like a glove!\*
5. With the bag on your hand, test how long you can keep your hand submerged. Does the water feel as cold as it did before?

## Extra Questions

1. What other animals do you think use blubber to survive colder temperatures? Why is it important for these animals to be able to insulate themselves?

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2. What would the habitat of an animal with blubber look like? Draw a picture and make sure to label where the animal can get its four basic needs (food, water, space, shelter).



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3. How do humans “insulate” themselves to stay warm?