

**FREE
Ocean
Theme
STEM
Cards!**

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BLUBBER EXPERIMENT

Let's explore blubber!

This blubber experiment asks a couple of questions.

- What is blubber?
- How does blubber keep animals such as whales warm?
- Do all whales have the same amount of blubber?
- What else makes a good insulator?

YOU WILL NEED:

- Large bowl
- Ice
- Cold water
- 4 zip top sandwich bags
- Thermometer (optional)
- Vegetable shortening
- Spatula
- Towel



BLUBBER EXPERIMENT SET UP:

STEP 1: Fill a large bowl with ice and cold water.

STEP 2: Turn a zip top bag inside out, place the bag on your hand, and use a spatula to cover both sides of the bag in vegetable shortening.



STEP 3: Place the shortening coated bag inside another bag and seal.

STEP 4: Turn a clean bag inside out, place it inside another clean bag and seal.

STEP 5: Place one hand in each bag and place your hands in the ice water.



STEP 6: Which hand gets cold faster? Observe how your hands feel and then use a thermometer to check the actual temp inside each bag.



CLASSROOM TIPS

To make this into a true science experiment, let's test some variables!

First, you want to make sure to test the temperature with a plain bag on your hand. That will be your control!

What are other kinds of insulators could you test? Choose a few other materials to observe and record the temperature within the bags.

What variables will you keep the same? Make sure to test the temperature within each bag at the same length of time after being covered in ice. What about the amount of ice? Make sure to have the same amount of ice in each bowl.

These are great questions to ask your kids. Get them to think about what variables need to stay the same and more importantly, how you will do that.

Further Extension: Present the kids with a challenge, keep the ice cube from melting!

How can you insulate an ice cube to keep it from melting? Or [what makes ice melt faster?](#)



WHAT IS BLUBBER?

Whales and Arctic mammals like penguins and polar bears, have a thick layer of fat under their skin called blubber. This fat can be anywhere from a couple of inches to a foot thick!

The blubber keeps them warm and also stores nutrients their body can use when there isn't much food. Different species of whales have varying amounts of fat, which is why some whales migrate, and some do not.

The Humpback whale migrates out of cold waters but lives mostly off of its blubber until it returns! The Narwhal, Beluga, and Bowhead whales generally stick around the colder temperature waters all year!

What is blubber? Fat!

The fat molecules in the shortening act like an insulator, just like the blubber. Insulation slows the transfer of heat, keeping the whale warm in very low temperatures. Other animals that use this feature are the polar bear, penguin, and seal!

Could you test other materials you have on hand to see if they make good insulators too?