

# The Blubber Mitt

As an elementary school teacher and later a middle school science teacher, there was one lesson that I was able to adapt up or down and was typically relevant to *something* I was teaching. Whether it was thermodynamics, animal adaptation, insulating properties, density, or perception, I could usually bring this activity into my classroom. Most seasoned teachers have seen this activity—or a variation of it—but surprisingly, not everyone has. I always called it the Blubber Mitt activity.

Winter in Connecticut is one of my least favorite times of the year. I just don't like being cold, and when I think of some of the frigid habitats around the globe, a shiver goes through my body! How do those polar bears and penguins survive with the arctic temperatures dropping below -20 degrees... and then they dive off the ice into the water? Brrrr!

The answer is their blubber, the insulating materials that surrounds their bodies and allows them to live in those harsh environments.

## You will need:

- 4 large zip-style plastic baggies
- 1 pound of vegetable shortening
- 1 large basin
- ice
- water

## Before class:

Take one of the plastic baggies and spoon the shortening into it.

Turn a second baggie inside out and place it inside the one filled with shortening.

**IMPORTANT:** Make sure that the “zippers” in both bags line up.

After you've squeezed out any air you should zip the two bags together, sealing the shortening inside.

You'll probably have to knead the shortening so it is evenly distributed along all sides of the bag.

Follow the same instructions for the two remaining bags... except do NOT add any shortening.

Fill a large basin halfway with cold water. Add ice cubes to the water.

## In class:

Have a student put one hand inside each of the mitts. Instruct the student to insert both mitts into the basin at the same time. (Make sure they do not dip so deeply that the water enters the top of the bags.) Your student should feel the difference between the two mitts immediately!

If you have older students and want to quantify and graph the results, you can place a thermometer in each baggie and students can record the change in temperature over a short period of time.

As an extension, you can explain that many animals have thick fur or use air as insulators. Feel free to make additional mitts with fur or wool in one baggie and bubble wrap in another. Each can be substituted for the blubber mitt. Instruct students to use thermometers to record the effectiveness of each material in protecting against the cold.