



HANDS-ON

Insulation Station

Objective To understand how blubber (fat) helps to protect many marine mammals.

Materials Heavy zip-lock bags (several of the same size)
Vegetable shortening
Red food dye (optional)
Large bucket of ice water
Plastic or rubber gloves (optional)
Duct tape
Timer

Procedure

1. Mix red food color with bowl of vegetable shortening to form a shade of pink, to resemble blubber.
2. Spoon several large scoops of vegetable shortening into a zip-lock bag.
3. Turn a second zip-lock bag inside out and place inside the first bag.
4. Seal the tops of the bags with the layer of shortening between the two bags. Use duct tape or sealer machine to secure shortening between the two zip-lock bags. Leave the center open for a hand to slip in between the bags.
5. Spread the shortening evenly along the insides of the bags.
6. Make the same mitt of two zip-lock bags without the layer of shortening.
7. Explain to students that the shortening in the bag resembles the lining of blubber or fat under the dolphin's (marine mammal's) skin.
8. Fill a large bucket with ice and water.
9. Have student place their hand into mitt without shortening and dip their hand into the bucket. Time how long they can keep their hand in the bucket. You may have student place their hand into a plastic or rubber glove and then into the mitt.
10. Have student place their hand in mitt with the shortening lining and dip their hand into the bucket. Time how long they keep their hand in the bucket.
11. Compare time. Ask student which hand stayed warmer and why. Discuss with students the importance of a dolphin's (marine mammal's) blubber.
12. *Option:* Have one student wear the mitt without shortening and the other student wear the mitt with the shortening. Have both students place their mitt into the bucket at the same time. Compare results and discuss.