



Lesson Delivery Date: __/__/__
Lesson Delivered By: _____
Initial when complete:
Supplies Bought: _____
Materials Prepped: _____
Feedback Complete: _____

## SCALED LEARNING™ LESSON PLAN - SACC

Review this lesson plan at least 3 days prior to leading.

<b>LESSON NAME:</b> (What is the name of the activity?) Blubber Glove	<b>TIME REQUIRED:</b> 20 – 30 minutes	<b>AGES:</b> All
<b>SCALED LEARNING FRAMEWORK ELEMENTS:</b> (STEM, Career Connected Learning, Arts, Literacy, Education, Diversity and Global Learning, etc.) <ul style="list-style-type: none"> <li>• STEM</li> </ul>		
<b>STANDARDS ADDRESSED:</b> (Common Core State Standards; National Core Art Standards) <ul style="list-style-type: none"> <li>• <b>Science:</b> As a result of activities in grades K-4, all students should develop understanding of the characteristics of organisms; Life cycles of organisms; Organisms and environments</li> </ul>		
<b>LESSON OBJECTIVE:</b> (What youth should get from this activity, what they should achieve?) Youth will be able to: <ul style="list-style-type: none"> <li>• Investigate how blubber helps marine mammals stay warm in cold water but experimenting with insulation properties of a blubber glove.</li> </ul>		
<b>MATERIALS NEEDED:</b> For each group of 3 youth: <ul style="list-style-type: none"> <li>• 2 one-gallon or one-group releasable freezer bags (NO zipper bags)</li> <li>• 36 ounces of vegetable shortening</li> <li>• Spatula</li> <li>• Duct tape</li> <li>• Towels</li> <li>• Ice</li> <li>• 2 Digital thermometers</li> <li>• Bucket or tub</li> <li>• Water</li> <li>• Bubble Wrap</li> <li>• Blubber Glove Recording Sheet (<b>attachment</b>)</li> </ul> Optional: <ul style="list-style-type: none"> <li>• Feathers</li> <li>• Wool</li> <li>• Sweatshirt</li> <li>• Fleece</li> <li>• Styrofoam peanuts</li> </ul>	<b>PREPARE AHEAD OF TIME:</b> <ul style="list-style-type: none"> <li>• Intentionally create groups with mixed ages with at least one older child per group.</li> </ul>	

### PART ONE:

**SAY:** Today we're learn how marine animals are able to stay warm in cold water.

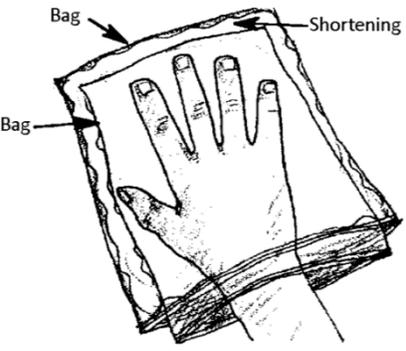
**ASK & CONNECT** (prepare opening ideas to connect lesson to youth's prior experience or prior session)

- How do you think marine animals stay warm in the water?

- Discuss: How do humans stay warm in cold water? [wet suits; dry suits]
- Introduce the concept of blubber and fur that marine animals use to keep warm. Share: like humans, marine mammals are warm-blooded. Although they may live in some of the coldest environments on earth, they are still able to maintain a constant body temperature. Most marine mammals have blubber, which is a thick layer of fat under the skin that acts as insulation against cold ocean water. Whales, dolphins, and walrus depend primarily just blubber to keep warm, while sea lions and seals depend on both blubber and fur.

## PART TWO:

(What are the steps for youth to complete this activity?) Highlight steps when youth have a choice.

1. Either you or the youth need to make the blubber glove.  
Warning: this can be messy but it is fun!
2. Divide youth into groups of three or more and make the blubber glove using the following instructions.
3. Fill one plastic bag with enough shortening to coat all of the surfaces.
4. Turn the second bag inside out and insert it into the first bag. Try to keep the seals free of shortening to allow for a better grip. Zip the tops together.
 
5. Use duct tape on the seals to prevent water from entering the blubber glove.
6. **Make the control gloves:** follow the procedure above but leave out the shortening.
7. **Prepare the cold water:** fill a bucket or tub with ice water. The container needs to be large enough to hold two gloves at the same time.
8. **Procedures (K-1):** Test how well each glove insulates against the cold water.
  - a. Put one hand in each glove.
  - b. Place both gloves in the cold water for 60 seconds.
  - c. Record which hand feels colder.
9. **Procedures (2<sup>nd</sup> grade and up):** Measure the temperature of the blubber glove and in the control. Use the Blubber Glove recording sheet in the groups of 3.
  - a. Have youth predict which glove will be warmer.
  - b. Put the blubber glove and control glove in the ice water. Make sure the ice water doesn't get in the glove.
  - c. Assign task:
    - i. **Tester:** holds the blubber gloves and control glove to that the temperature can be measured of each.

What key skills will I need to be prepared to model or teach?

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**ASK DURING** (open-ended questions for during activity)

<ul style="list-style-type: none"> <li>ii. <b>Temperature Measurer:</b> uses the digital thermometer to record the temperature.</li> <li>iii. <b>Data Recorder:</b> records the temperature on the recording sheet.</li> </ul> <p>d. Rotate roles among the group so each person experiences the different roles.</p> <p>e. Have youth calculate average temperatures from their three trials and compare the results from the blubber glove and control glove, writing a conclusion about which glove provides the most insulation.</p> <p><b>Extension:</b> Have youth create their own glove by substituting the optional materials for the shortening, retry the experiment, and record results.</p>	
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**SITE SPECIFIC** (complete prior to lesson delivery)

<p><b>Leadership</b> (How can youth help lead?)</p>	<p><b>Choices</b> (What content or process choices are there?)</p>	<p>How will I promote exploration?</p> <p>How will I nurture creativity?</p>
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**PART THREE:**

**REFLECT**

- Discuss the results. Which material provided the best insulation and why?
- Were there any surprises?
- What are other materials that could be used? How do other animals stay warm?
- What there anything that affected the outcome? (e.g, did water get into the glove?) Think about how this could happen in an animal with blubber.

**FAMILY AND PARENT ENGAGEMENT** (Select how activity will be shared)

- Invitation: During activity, invite families to join as they are picking up their child
- Conversation: Draw parent’s attention to their youth’s contribution at pick up and explain their child’s positive contributions to the final product or process
- Communication (written): Photos or written Staff or Youth recap for upcoming newsletter or parent email