

CURRICULUM SUPPLEMENT

For use with the **Background** section of Watching Walrus

ACTIVITY ONE: EAT LIKE A WALRUS

Materials:

- 150 small Dixie cups
- large box of oyster crackers (or similar snack cracker)
- classroom or other large room with tables
- bath towel or scrap of fabric (one towel per four students)
- one adult helper

Teaching Time: 15 minutes

Prep Time: 10 minutes

Teachers will want to prep the Dixie cups with crackers before the lesson (each cup need only contain 2-3 crackers). Plan to have enough cups that each round of the activity will take between one and two minutes, about 150 total cups for 25 students. Set up half the cups on tables, evenly distributed throughout the room. Remaining cups can be staged on a cart for ease of preparation for 'round two'.

Background:

In this activity students will act out the experience of walrus foraging from different types of haulouts. Throughout the summer, Pacific walrus females and calves follow the melting sea ice north in the Chukchi sea where they forage from floating sea ice platforms. These floating pieces of ice provide many adaptive advantages to walrus; limiting group sizes, protecting animals from predators, and as we'll see in this activity, allowing them easy access to different foraging areas. In recent summers, sea ice has melted away beyond the edge of Pacific walrus range. As a result of lack of sea ice habitat walrus have been recorded hauling out on land. When walrus haul out on land they run the risk of depleting accessible food resources. In round one of

this activity students act like walrus on a sea ice haulout. Holding onto their towel, groups of students 'float' around the room, foraging for crackers. In the second round, students forage from a land-based haulout. This time students must return to their land-based haulout between feeding trips. They are further limited by the number of steps they may take (limit of physical exertion) on their mission to find food. The follow up discussion gives students an opportunity to compare their experience with each of the scenarios, extrapolating that to walruses' experiences at these very different haulouts.

Directions:

1. After watching the *Females and Calves video* (on the Background page of Watching Walrus), break students into groups of four and pass out a towel to each group.
2. With Dixie cups already set-up around the room, gather students together in the front. Explain to the students that they will be participating in an activity behaving like foraging walrus. Let them know they will be participating in two different scenarios and that you want to them to remember their experiences during each scenario for discussion at the end.
3. Explain that in the first round of the activity, each group of walrus will be foraging from a sea ice haulout. Their sea ice haulout is represented by the towel. Explain to students that they must travel around the room with their group, each holding the towel with one hand, as they forage for crackers.
4. Allow students to run through round one, foraging from their sea ice haulout. The round ends when all cracker cups are empty.
5. When all cups are empty, gather students back at the



front of the room. Collect the towels from each group. Explain that in the second scenario they will be behaving like walrus at a land-based haulout. (While the teacher gives directions for round two, have an adult volunteer the second round of cups). Ask students to remind you when walrus would use these types of haulout sites. Outline the directions for foraging from a land-based haulout:

*-Students **may only collect one Dixies cup** per foraging trip.*

*-When foraging from land, each walrus must **return to the beach between feeding sessions**. The front of the room represents the beach.*

*-Students may take **no more than six steps** to reach any given Dixie cup (you may need to adjust this number depending on the size of your room, ideally some cups will be very hard to get to taking using your maximum number of steps).*

6. Run through the second round, allowing students to forage until all cracker cups are empty.

7. Clean-up, get a drink of water and gather up for a discussion.

Discussion:

Ask the group to compare their experiences foraging from the different haulouts:

-What were your experiences foraging from the sea ice haulout?

-Was it easier or harder to forage from the land-based haulout?

-What were the specific advantages of foraging from the sea ice haulout?

-What consequences might you expect if a large group of walrus were to haul out in one area for a long period?

Conclusions:

Land-based haulouts pose many risks to walrus. You've already seen explored how disturbances at land haulouts may result in dangerous stampedes. Now we've seen that that exhaustion of available food resources may be another risk for walrus hauled out on land.

When walrus haulout on sea ice they are continually transported over new foraging areas. As a result, they are less likely to over-forage any one area. When large numbers of walrus repeatedly forage from a beach, they run the risk of eating up all the near shore food resources. Since summer populations in the Chukchi are made up of females and calves, there is the added concern that younger animals, who are less strong swimmers, will be especially effected by land-based haulouts.



ACTIVITY TWO: BEHAVIORAL AND PHYSICAL ADAPTATIONS

Materials:

- Pacific Walrus Fact Sheet (print or pdf)
- Videos: **The Pacific Walrus** and **Females and Calves**
- Software or materials to construct adaptations chart for display.

Time: 30 minutes

Background:

Pacific walrus have many unique adaptations that allow them to live in the cold Arctic and subarctic oceans near Alaska and Russia. After reading the **Pacific Walrus Fact Sheet** and watching the videos **The Pacific Walrus** and **Moms and Calves**, students should be familiar with many of these adaptations. Use class discussion to identify different adaptations, deciding whether each is behavioral or physical and discussing how specific adaptations help walrus survive in their environment.

Directions:

1. Ask students to brainstorm Pacific walrus adaptations.
2. Using their ideas, create a chart (see next page) include: what the adaptation is, whether it is behavioral or physical, and how it helps walrus survive in their environment.

3. Encourage student responses with questions:

- What type of physical adaptations help walrus hunt for food and eat?*
- What physical adaptations help walrus survive the cold arctic temperatures?*
- What do female walrus do that helps ensure a high survival rate of calves?*
- Why do Pacific walrus migrate? What type of adaptation is this?*

Conclusions:

As your classroom chart has demonstrated, Pacific walrus are well adapted to their environment. However, after reading the **Sea Ice Fact Sheet**, we are aware that conditions in the Arctic are changing. Events like the stampede at Icy Cape have people concerned that walrus face environmental changes they may not be well adapted to handle. Lack of available sea ice increases walrus’ dependence on land-based haulouts,. Scientists want to know how walrus will react.

Writing Activity:

In science journals or on a sheet of paper, ask students to respond to the following prompt.

WRITE AT LEAST TWO SCIENTIFIC QUESTIONS YOU HAVE ABOUT HOW WALRUS WILL REACT TO CHANGES IN THE AVAILABILITY OF SEA ICE. USE YOUR QUESTIONS TO BUILD HYPOTHESES ABOUT HOW WALRUS MIGHT ADAPT TO LAND-BASED HAULOUTS.

SAMPLE ADAPTATIONS CHART

Adaptation	Physical or Behavioral	Importance
tusks	physical	fighting, moving around



vibrissae (whiskers)	physical	finding food, sensing surroundings
mothers spend two+ years with calves	behavioral	low calf mortality, females protect calves
walrus migrate seasonally	behavioral	access to food resources, breeding grounds
walrus haul out on floating sea ice	behavioral	avoid predators, rest, access food
blubber	physical	insulation
use suction to eat food	physical	access food on seafloor
etc.		

