

Thank You!

Since 2000, Killer Whale Tales has been bringing the virtual field to classrooms throughout the region. Sharing our unique blend of storytelling and EALR/GLE supported experiential science activities, we continue to challenge students to sharpen their critical thinking skills and to take the conservation of our Southern Resident orcas into their own hands.

To receive more information on bringing killer whales to your school, give us a call or visit our website. You can also learn about upcoming presentations in your district and future teacher training.

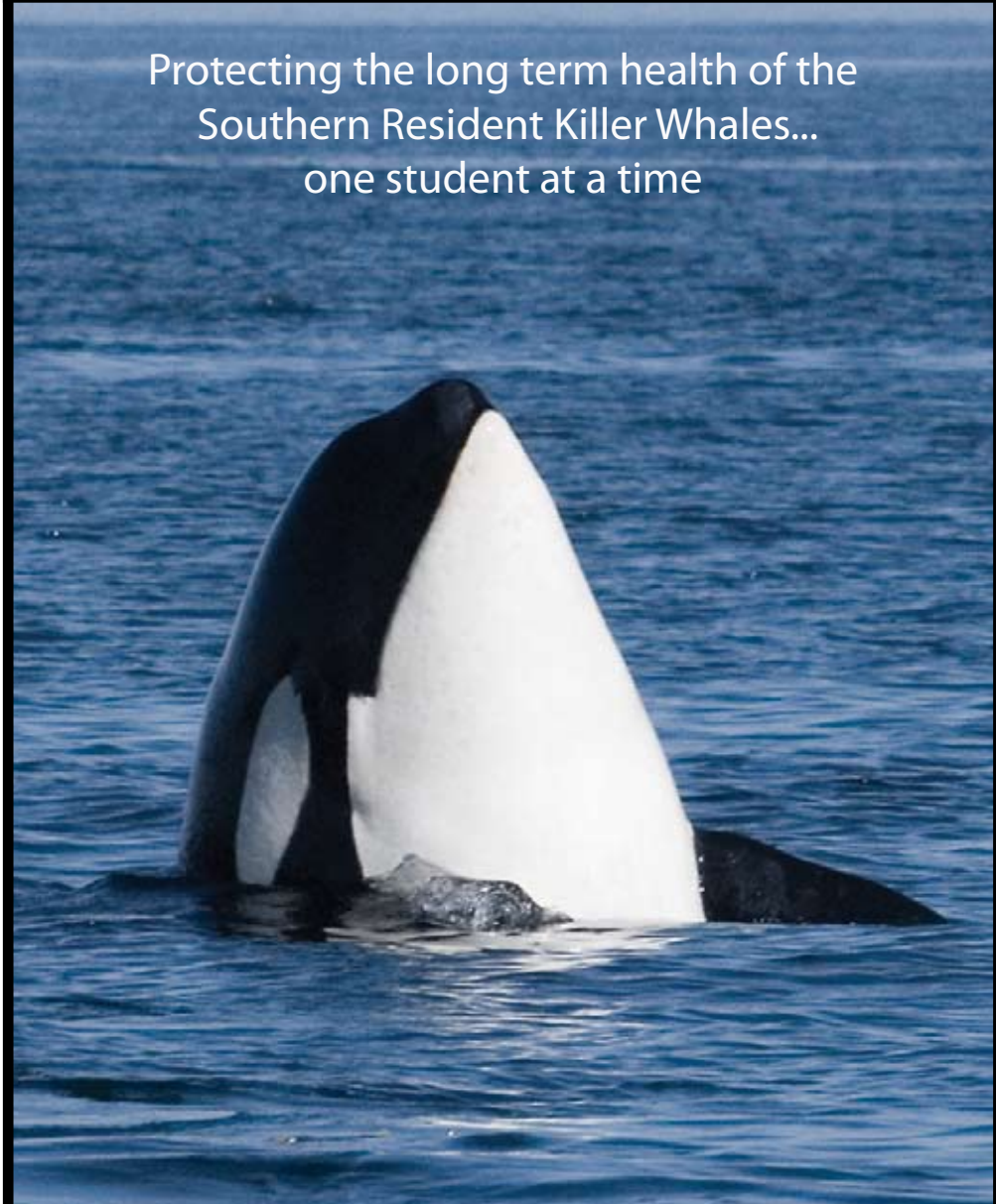


This workbook for students was made possible by funding from NOAA and by supporters like you!

Killer Whale Tales is a (501) (c) (3) environmental education program dedicated to promoting the understanding and active stewardship of the Puget Sound killer whales and their habitat by students through experiential science activities and storytelling. By using a unique approach-bringing the field directly to the classroom-the program fosters informed decision making as students explore their relationship and responsibility to the world and the whales around them.

Killer Whale Tales

Protecting the long term health of the
Southern Resident Killer Whales...
one student at a time



Activity Guide and
Orca Research Sheets
Volume 2



Welcome orca scientists!

Hello Students!

On behalf of Killer Whale Tales, thanks for your interest in the orcas and the habitat that supports them. In this workbook we have included all sorts of tasty tidbits and heavy duty information, as much as any orca person might want.

So get up to speed on your orca terminology with our word search and get ready to head to the beach and identify some of our more well known killer whale friends. If you see them, make sure to record where and when. Then head home and draw yourself as a killer whale.

Share our "Making Your Home Orca Safe" tips with everyone you know and get your friends and family to "Be Whale Wise".

If this book whets your appetite and you would like to learn even more, then check out all of the cool orca resources we have included. Hit the library or the world wide web and sift through tons of orca stories and information.

So again, thanks for your interest! We adults appreciate it and I am sure the whales do too!

Jeff Hogan
Executive Director
Killer Whale Tales
jeff@killerwhaletales.org



Designed and printed by
Killer Whale Tales PO Box 2462 Vashon, WA 98070
www.killerwhaletales.org 206-660-0835 Copyright 2006
Orca illustrations by Kelley Balcomb-Bartok

Books and websites

SCIENCE BOOKS ABOUT KILLER WHALES:

- Orca-The Whale Called Killer by Eric Hoyt
- Killer Whales by Ford, Ellis, Balcomb
- Killer Whales of the World by Robin W. Baird
- Orcas in Our Midst by Howie Garrett

BOOKS FOR YOUNG STUDENTS:

- Killer Whales by Seymour Simon
- Storm Boy by Paul Owen Lewis
- Killer Whales-The Orcas of the Pacific Ocean by Nancy Nielsen
- Field Guide to the Orca by Sasquatch Books/ Free Willy Foundation
- In the Company of Whales by Alexandra Morton

KILLER WHALE BOOKS FOR OLDER STUDENTS:

- Guardian of the Whales by Obee/Ellis
- Orcas of the Gulf by Gerald Gormley
- Gone Whaling by Douglas Hand
- Listening to Whales by Alexandra Morton



COOL ORCA WEBSITES:

www.killerwhaletales.org
www.whalemuseum.org
www.whaleresearch.com
www.orca-live.net
www.orcanetwork.org
www.seattleaquarium.org
www.nmfs.noaa.gov/pr/education/whales.htm

Want to buy one of these books?

Visit our website and place an order through us at Amazon.com.
You can get the books you want and help our program at the same time!

Killer Whale Behavioral Data Sheet

Spyhop

[illegible]

Cartwheel

[illegible]

Pectoral Slap

[illegible]

What is the activity state of the pod?

1. TRAVELING

Swimming in a predictable direction,
regular surfacings. Can be slow or fast!

2. PLAYING/SOCIALIZING

Swimming in lots of different directions,
lots of breaches, cartwheels, belly flops.
Whales touching each other.


3. FORAGING/HUNTING

Lots of quick chases, lunges, circling,
food seen in mouth.

4. RESTING

Logging or group synchronized surfacings of 3-5 breaths and then a long dive, repeats.

Blow



Breach

[illegible]

Logging

[illegible]

Tail Lob

[illegible]

Session:

Behaviors we saw most:

Activity state of the pod: (Circle all that apply)

Encounter One:

Travel: Fast, Medium, Slow

Play/Socialize

Foraging/Hunting

Resting

Encounter Two:

Travel: Fast, Medium, Slow

Play/Socialize

Foraging/Hunting

Resting

Encounter Three:

Travel: Fast, Medium, Slow

Play/Socialize

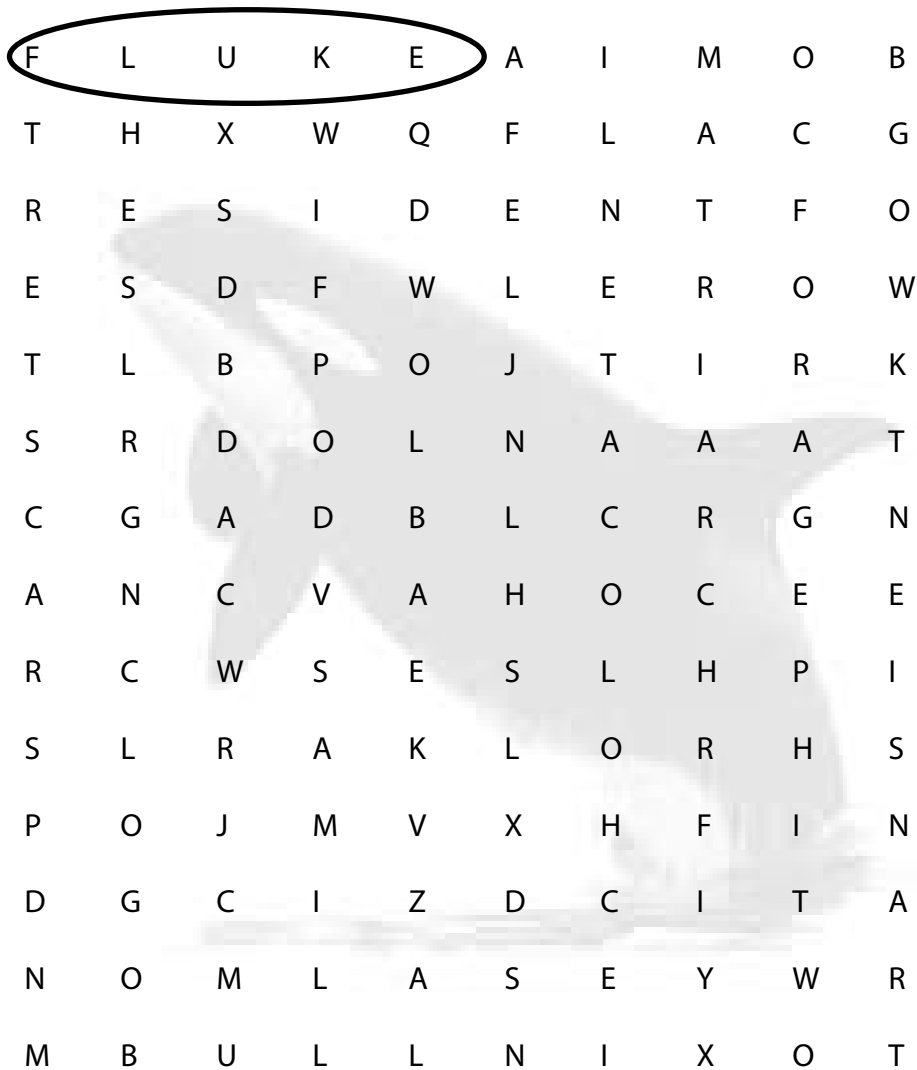
Foraging/Hunting

Resting

Orca word search

At the bottom you will find words that scientists often use when talking about killer whales. Find these commonly used terms hidden in the puzzle.

One of the words is circled for you as an example.



Turn your family tree into a pod

Orca Scientists,

Our resident killer whales travel in large family groups called pods. These pods are led by the oldest female and include all of her blood-related family members. Our whales usually stay with their grandmother, mother, sisters and brothers for their entire lives. Remember, if you were a Southern Resident orca you would only be traveling with your **mom's** side of the family. A whale's father does not usually travel with his offspring, because he is traveling with his mother's pod. Put on your imagination and change your family tree into an orca pod. Everybody's pod will be different!

1 In one of these boxes, write the name of the oldest living female on your mom's side. It might be your great grandma.

Give your grandma a scientific name, use her first initial and make her number one.

Example: Grandma Helen would be H1. She leads H Pod! Her daughter, Donna, would be H2.

Great Grandma- (_ _)

Grandma- (_ _)

2 In these three boxes below, write the names your aunts and uncles. These are your mom's brothers and sisters. Give them scientific names too! The older they are the lower their number.

Aunts

Cousins

Uncles

Your Mom

3 In this box write names of any of your cousins.

4 In these 2 boxes below write the names of your brothers and sisters and any other young people who you live with. What's your scientific name?

Your brothers and sisters

Your name

()

— Fluke Dorsal Blow Fin Salmon Saddle

Scars Pod Matriarch Mill Log Forage Calf Toxin

Echolocate Resident Transient Bull Travel

Listen to the orcas!

Visit www.killerwhaletales.org and click on the audio link to listen to the whales. We update the clips often, so check back frequently!

Make Your Home Orca Safe

Limit your water consumption:

- When brushing your teeth, turn off the water while brushing.
- Limit showers to 5 minutes per day and/or reduce your bath water level by 1-2 inches.

Reduce electrical consumption:

- Set all thermostats in your house for 68 degrees or less. Less electrical consumption means more water for salmon, the orcas' favorite meal.
- Turn down your hot water heater. Most manufacturers recommend 120 degrees.
- In each room, unplug all rarely used items and make sure to switch off all unused lights.

Reach for unbleached:

- Look for paper products whitened with oxygen instead of chlorine. This includes toilet paper, facial tissue, paper towels and office paper. On your next grocery trip, look for paper products that contain the most post-consumer content. Try for 80% or more. Most local groceries offer at least one recycled option.

Reuse and Recycle:

- Put paper towels out of reach; use a sponge or reusable washrag instead.
- Reuse paper grocery sacks or, better yet, replace them with sturdy cloth bags.
- Avoid extra packaging by buying frequently used items like popcorn, cereal, and soap in bulk.

Buy local and organic:

- Concentrate your shopping dollars on buying as much local and/or organic food as possible.

Swim the extra mile:

- Can you walk or ride a bike instead of drive? How about busing or carpooling?

Want some free orca trading cards?

E-mail us with a list of what you are doing to protect the orca's habitat and we will send you a pack of orca trading cards!

Write to us at conservation@killerwhaletales.org or send your list to Killer Whale Tales PO Box 2462, Vashon WA 98070

We're walkin' the walk!

This workbook is printed on 100% post consumer recycled paper using vegetable based non-toxic inks!

Southern Resident orca facts

Habitat:

Worldwide, with largest populations near coastal areas with cooler waters

Conservation Status:

Worldwide, probably stable. Southern Residents are listed as "Endangered" by Canada and the United States. Transients and the Offshore orcas are listed as a "Species of concern" in Canada. All three types of killer whales are listed as endangered in Washington State.



Miscellaneous facts:

- Orcas live in matrilineal family groups called pods.
- Mature females are the dominant whales in a pod. Female orcas outnumber males 3 to 2
- Orcas can consume somewhere around 5% of their body weight a day
- A pod's unique vocabulary of calls is called a dialect.
- Orca calves have a 16-17 month gestation period.
- The San Juan orcas are the most studied in the world.
Along with ongoing population studies by the Center for Whale Research, there are studies to measure the effect of boat traffic on orcas and research to determine baby-sitting habits among matriarchs. There is even a study to identify what the whales are eating and their level of health by collecting and analyzing their poop! Using a poop sniffing dog no less. *(That's no joke!)*
- Female orcas tend to give birth to a single calf every 2 to 4 years.
- Research has shown that resident whales have a wider sound repertoire than transient whales, which may be partially related to their hunting habits.
- The conical and interlocking teeth of killer whales are adapted for ripping and tearing but not for chewing. There are usually 10 to 14 teeth on each side of the jaw, top and bottom - a total mouthful of 40 to 56 teeth.

Adopt a Southern Resident Killer Whale!

Check out The Whale Museum's Orca Adoption Program at www.whalemuseum.org

What would you look like as an orca?

Would your dorsal fin be straight or curved like the crescent moon? Would your saddle patch be puffy like a cloud or crooked like a hook? What about your eye patch, pectoral fins and your fluke? Would they have scars on them or would they be perfect? Now is your time to exercise your imagination and draw yourself as a whale. Remember each whale, like yourself, is unique.....

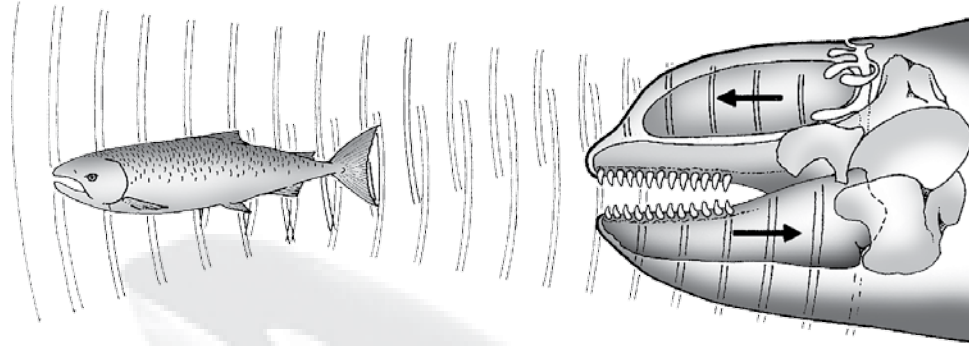
Don't forget to draw in your habitat too!



Did you know?

All marine mammals are protected by the federal government under the Marine Mammal Protection Act. For more information go to www.nmfs.noaa.gov/pr/education/whales.htm

Focus on Echolocation



Orcas find their prey through the use of echolocation, just like bats. This "biological radar" allows them to see through the often dark waters of the region. They do this by producing high frequency sounds, which are transmitted over long distances. The sound strikes objects in the water, such as fish, land formations or ocean flora. The "echo" from the sound returns to the transmitting animal, and provides information about the nature of the object. This capability is referred to as "echolocation," since the animals are able to locate objects in the water on the basis of the returning echo. Echolocation sounds are produced in air sacs attached to the respiratory tract, and are directed through fatty deposits in the forehead (the "melon"). The sounds are produced in pulses, so that as the echo from each pulse returns, the animal is able to compare it with the outgoing pulses. The difference between the two provides the animal with information about the distance to the object, the size of the object, its shape, and even the material from which it is made. To the human ear, the echolocation pulses sound like a series of rapid clicks, because we can only hear a portion of the frequencies which are contained in the pulsed sounds.

(Text courtesy of The Pacific Whale Foundation)



Watch from the beach!

Checkout Lime Kiln State Park on San Juan Island.
The whales will often swim within yards of the beach!

Be Whale Wise!!!

Be Whale Wise

Marine Wildlife Guidelines for Boaters, Paddlers and Viewers (Revised 2006)



Guidelines:

- THE QUALITY and DURABILITY**
 of our valves is known or suspected
 means wildlife activity with no undue
 concern. I need in all dimensions before
 planning your approach or departure.

- 2.5.019 Downward speed to less than 7 knots when within 400 m (or 400 ft) of the ocean surface. Should stop if the vessel does.

2. **KEEP CLEAR** of the whale's path. If whales are approaching you, cautiously move out of the way.

- 4.00 KOT APPROACH** whales from the front but from behind. Always approach and depart whales from the side, moving in a direction parallel to the direction of the whales.

- 5. DON'T APPROACH** or position your vessel closer than 100 metres/yards to any whale.

6. If your vessel is not in compliance with the following 5, and appears to qualify for 105, place on file in manual and allow 90 days to pass.

7. STAY on the OFFSHORE side of the whales when they are travelling close to shore.

8. UM: You're saving time to accommodate all round-music NFL teams. This will minimize the cumulative impact of many vessels and edge collisions on other viewers.

- 9.00 KOT swim with touch or
hood mark on wild life.

- Bowl and stern riding
-
- porpoises and dolphins

1. DO NOT drive through groups of pedestrians or children in the same way you would a car.

- 2) Should dolphins in captivity choose to ride the currents of your man-made water course changes, like course and speed or reduce speed gradually.

Seals, sea lions and birds on land:

1. DE CAHILL AND GILL (1991) WITH ANNE HARTMAN AND BIRD COLON (as especially during breeding season and prepping season, together by King to September).

2. **RETRACT SPEED**, minimize wobble, warts and noise, and transition to peak without snapping.

3. #XID appears hung down then
If it immediately re-appears, no line on track
is lined.

4. **PAY ATTENTION** and move away slowly and carefully in the direction of the observer's attention.

5. DO NOT disturb, move, feed or touch any marine wildlife, including sea turtles. If you are concerned about a potential turtle or stranded animal, contact your local stranding network, if available.

Marine Protected Areas, Wildlife Refuges, Ecological Reserves and Parks:

1. CHECK your nautical charts for the location of any uncharted areas

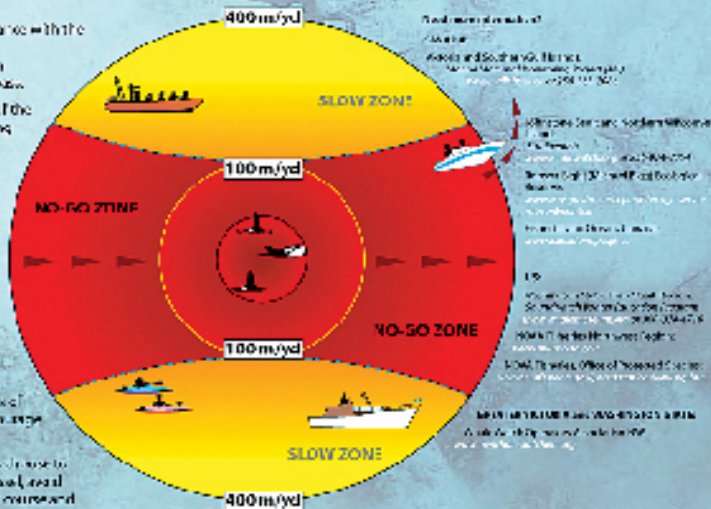
4. **ABIDE** is a general mechanism of control,
a local authority for further information.

To report a marine mammal disturbance or harassment:

- SNYDER**
Theodore and Margaret Snyder, 1989

- 22
 Journal of Management Education 32(1)

- Transportation national directorate**
 At: Avenida de la Independencia 100, Ciudad de Panamá, Panamá
 or: 405-5540-5400
Director, Mr. Juan Carlos Muñoz, phone number: 405-5540-5400
 or: 405-5540-5402
Chief Accounting Officer, Mr. Roberto Martínez, phone number:
 or: 405-5540-5400



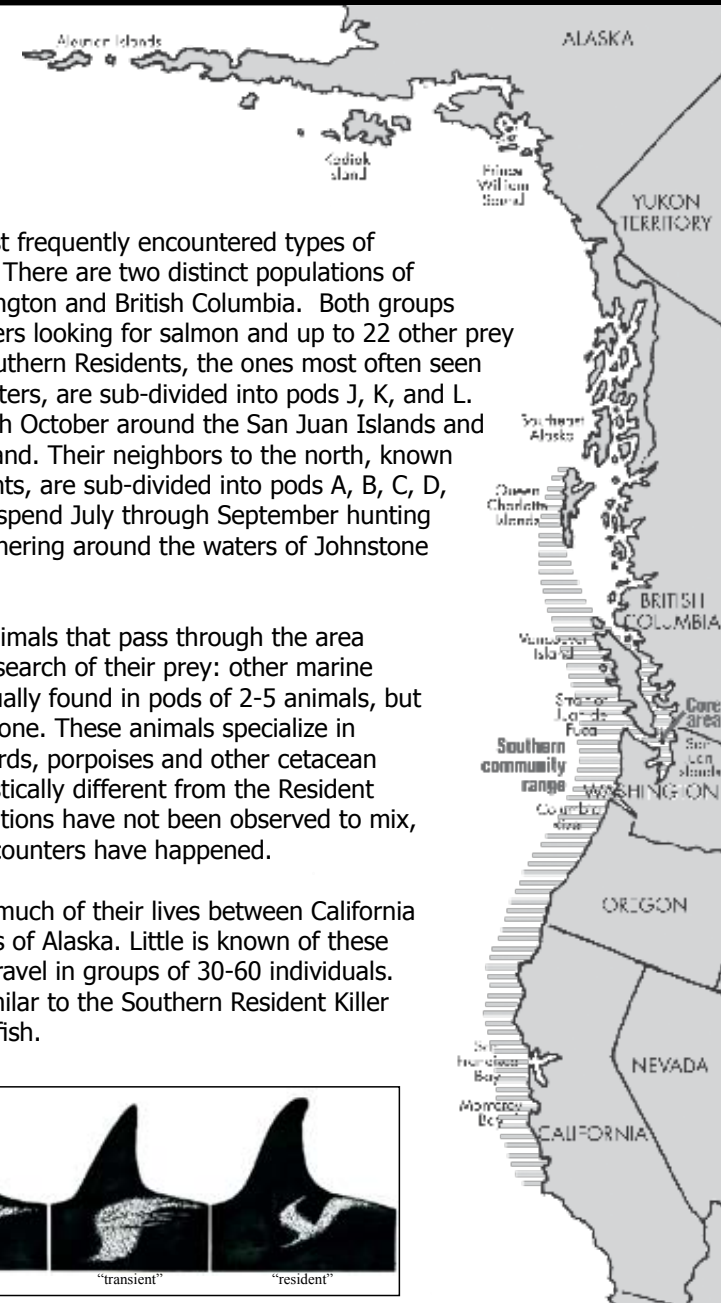
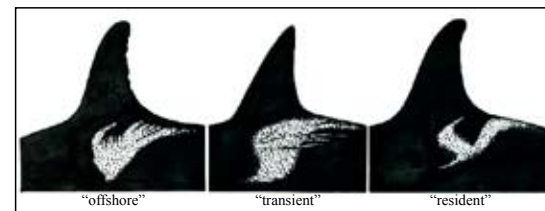
Southern Resident orca facts

There are three distinct groups of orcas in the Pacific Northwest:

Residents are the most frequently encountered types of orcas here in the area. There are two distinct populations of resident orcas in Washington and British Columbia. Both groups come to the inland waters looking for salmon and up to 22 other prey species of fish. The Southern Residents, the ones most often seen in Washington State waters, are sub-divided into pods J, K, and L. They spend May through October around the San Juan Islands and southern Vancouver Island. Their neighbors to the north, known as the Northern Residents, are sub-divided into pods A, B, C, D, G, H, I, R and W. They spend July through September hunting fish, socializing and gathering around the waters of Johnstone Strait, BC.

Transient orcas are animals that pass through the area throughout the year in search of their prey: other marine mammals. They are usually found in pods of 2-5 animals, but are occasionally seen alone. These animals specialize in hunting seals, otters, birds, porpoises and other cetacean species. They are acoustically different from the Resident whales. The two populations have not been observed to mix, although occasional encounters have happened.

Offshore orcas spend much of their lives between California and the Aleutian Islands of Alaska. Little is known of these animals. They tend to travel in groups of 30-60 individuals. They are genetically similar to the Southern Resident Killer Whales and likely hunt fish.



Want to know more?

Check out the Soundwatch Boater Education program at www.whalemuseum.org
Help others "Be Whale Wise"- pass on these guidelines!

Got an orca question?

Send an e-mail to: whalequestions@killerwhaletales.org

Who am I? Play on-line!

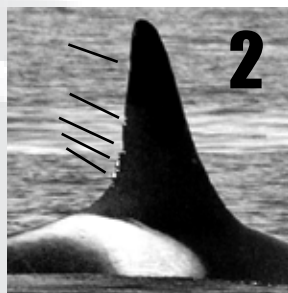
Objective: To identify the whales pictured below.

1. Go to our website at www.killerwhaletales.org
2. Click on the "Orca Games" link.
3. Once on the games page click on the "Identification Game" icon, (the one with the dorsal fin) and follow the instructions.
4. You will need this guide and a pencil to play, so have them handy.



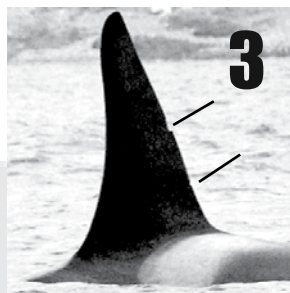
1

Name: _____
Pod: _____
Sex: _____ Age: _____



2

Name: _____
Pod: _____
Sex: _____ Age: _____



3

Name: _____
Pod: _____
Sex: _____ Age: _____



4

Name: _____
Pod: _____
Sex: _____ Age: _____



5

Name: _____
Pod: _____
Sex: _____ Age: _____



6

Name: _____
Pod: _____
Sex: _____ Age: _____

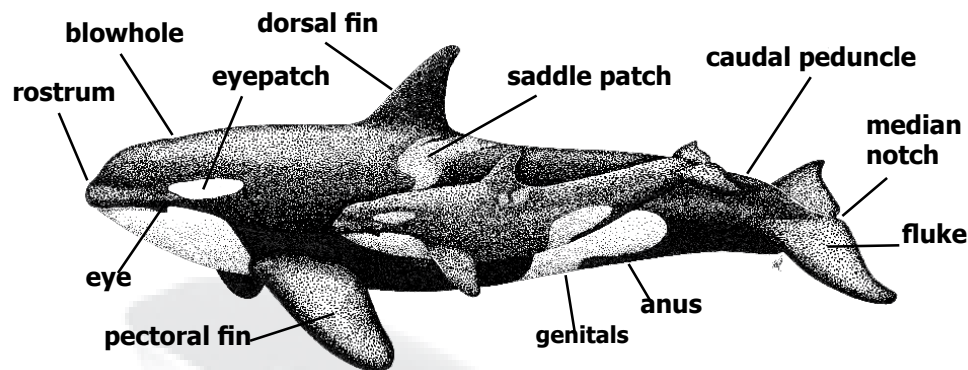
Want to play more killer whale games?

Visit our website at www.killerwhaletales.org.

Show your friends and family the activities we did in class.

You are the whale expert now, share what you learned and more!

Southern Resident orca facts



Common name: killer whale or orca

Scientific Name: *Orcinus orca*

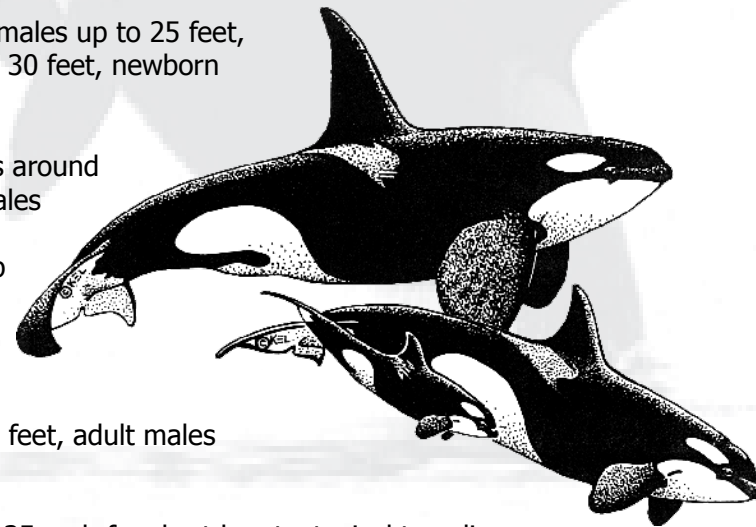
Length: Adult females up to 25 feet, adult males up to 30 feet, newborn calves 7-9 feet

Weight: Females around 8,000 pounds, males around 11,000 pounds, calves up to 800 pounds

Height of dorsal fin: adult females up to 2.5 feet, adult males up to 6 feet

Travel speeds: 35 mph for short bursts, typical traveling speed 4-6 mph. They can swim up to a 120 miles a day

Typical dive times: Residents 0-5 minutes, Transients 7-10 minutes, most are 10-30 seconds



Got Whales?

Go to the www.orcanetwork.org to report your sightings.

Your reports helps local scientists and researchers and lets those on the list know when the whales are in their neighborhood.