

SCIENCE STATION

STATION FOCUS

God loves all people and will forgive them when they repent. We, like Jonah, are called to tell others about God.

SCRIPTURES

The Book of Jonah

STATION OBJECTIVES

Children will have the opportunity to

- become familiar with the story of Jonah;
- explore ways to tell others about God, as Jonah did.

STATION SETUP

A large fish is part of Jonah's story. Set up an aquarium in your classroom for the children to observe.

Photocopy the Main Idea, Objectives, Bible Background, Shepherd Tips, and Check Your Facts for each leader and shepherd. (See pages 3–6.)

WANT TO DO MORE?

Hang posters of whales around the room. (Posters of whales are available at allposters.com.)

Resources

pages 3–6

Supplies

aquarium
fish

Supplies

whale posters

SAFETY CHECK

- The church should be a place of security.
- Each shepherd should know the whereabouts of every child in his or her group and where to reach a parent in case of an emergency.
- Make sure the children use equipment in a safe manner. Invite extra adult help if necessary.

BIBLE STORY (5–10 minutes)

Show the children how to find the Book of Jonah in the Bible.

For Younger Children

Teach the children the first three lines of

the refrain (printed in bold) for “Jonah and the Big Fish” (page 65). As you read the story, lift your hand each time the children should respond with the refrain.

For Older Children

Divide the class into two groups. Have one group read the refrain for “Jonah and the Big Fish” and the other group read the story.

Our LORD, by your wisdom you made so many things; the whole earth is covered with your living creatures. (Psalm 104:24, CEV)

ACTIVITY OPTIONS

(45–50 minutes)

Choose from the suggested activities as your time and the children’s interest allow.

Resources

Bible
pages 65

Check Your Facts

- Jesus referred to Jonah in Matthew 12:39-41.
- Jonah was angry at God for being merciful to the people of Nineveh. He was also angry because the vine which gave him shade withered.

Note

Resources and websites are constantly changing. Check www.powerxpress.com for updates that may help you in planning.

For All Ages

Boomerangs

Note: Template material is available at craft and quilting stores.

Prepare

Make templates from the pattern on page 64. Place the template material over page 64, and trace the pattern with the fine point marker. Carefully cut out the template. Repeat until you have enough templates for each child. (Older children may do this step themselves.)

Make a sample boomerang and practice using it.

With the Children

Ask: What is a boomerang? (*A flat, curved missile, usually of wood. A properly thrown boomerang will return to the person who threw it.*)

Show the children how to find Australia, the home of the boomerang, if you posted a world map.

Guide the children as they make boomerangs:

1. Place the template on a piece of cardboard.
2. Use a pencil to carefully draw around the template
3. Carefully cut out the boomerang.
4. Color or decorate your boomerang. Add the phrase "Jonah came back to God."

Show the children how to use their boomerangs:

1. Rest the boomerang on the top of your hand with the point facing your wrist.
2. Hit one leg of the boomerang with your other hand.
3. Your boomerang will fly across the room and come back to you.

It takes practice to use a boomerang, so don't get discouraged if it doesn't work right away.

Have the children spread out and play with their boomerangs.

Resources

page 64

Supplies

template material
fine point marker
lightweight cardboard
pencils
scissors
crayons or colored pencils
Optional:
world map

Talk Tip

What do a boomerang and Jonah have in common? (*They both came back.*)

Resources

Bible

Supplies

clean glass or plastic
one gallon jar
a dark cloth
large spoons or garden
trowels
soil
sand
leaves
earthworms
spray bottle
shovel
small plastic container
flashlight
magnifying glasses
paper cup
paper towels
paper
pencil
small pieces of glass
tiny pieces of grass,
leaves, fruits, and
vegetables

Talk Tip

Earthworms are a
reminder of how
amazing creation is!

For All Ages

Worms, Glorious Worms!

Prepare

You will need small pieces of glass that have smooth or taped edges.

Read Jonah 4:6-8.

Say: Jonah wasn't very happy with the results of the worm's work! Worms, however, are an important and useful part of God's creation.

Work together to create a wormery, a temporary home for the worms you will be observing. Carefully put a thick layer of soil in the bottom of the jar. Spray the layer with water. Put a thin layer of sand in the jar. Spray the sand with water. Repeat this sequence two more times. End with another layer of soil, and spray it with water. Set the jar in a place where it will be undisturbed. It should be a spot that's not hot or drafty.

Go outdoors and turn over the soil in an unobtrusive place until you find some earthworms. Carefully note the spot where you found the earthworms, as you will return them here. Put several worms in the plastic container and take them inside. (Option: Gather worms ahead of time.)

Give each child a worm, a damp paper towel, paper, and pencil.

Tell the children to put their worm on the paper towel and observe it. Ask them to draw a picture of their worm.

Ask: Does it have eyes?
Does it have a mouth?
Does it have legs?
How does it move?

Use a magnifying glass to see the bristles on the earthworms' bodies. Carefully place an earthworm in a paper cup. Put your ear to the cup. Can you hear a scratching sound? That's the noise of the bristles against the side of the cup.

Shine a flashlight on a worm for a second. What does it do?

Find the head (*the darker end*).

Find the back end (*it's flatter*).

Gently turn the worm upside down and watch how it turns back over.

Gently put the worm on a piece of glass. Hold the glass up to the light and look through the bottom. Can you see the blood vessels? Can you see the heart beating?

Put the earthworms in the wormery.

What will the earthworms eat? Put tiny bits of grass, leaves, fruits, and vegetables in the jar. Watch to see which the earthworms pull into their burrows.

Observe what happens to the neat layers of soil and sand in the jar.

Since earthworms live underground, cover the jar with a dark cloth when you're not observing the earthworms.

Earthworms won't be able to live long in the jar. Return them to the spot where you found them at the end of the hour. (Option: if you have a safe place for the jar, leave it until the next class. Let children note the differences from the preceding week, then return the earthworms.)

For All Ages

Mission Project: Composting With Worms

Say: Although Jonah wasn't happy with the worm that ate the vine which was shading him, worms have an important place in the cycle of the natural world. Composting with worms is an effective way to recycle organic waste and enrich the soil.

Read the information below, and decide how you can use it. Possibilities include:

Make a composter as a demonstration project.

Make composters for the children to take home.

Make composters to share with members of the congregation.

Building a Composter

Worm composters can be made from either plastic or wood. A wood composter is simply a hinged plywood box with about a dozen holes drilled in the bottom for drainage. Old dresser drawers, and so forth, can also be used. No matter what material is chosen a cover will be needed in order to maintain moisture, provide darkness for the worms, and reduce odors.

For more information, go to a search engine and type "worm composter." Several websites give extensive instructions.

To prepare the composter for use

1. Set the composter on bricks to allow for drainage. The composter can be set up indoors or outdoors. If indoors, put a shallow pan underneath it to capture drainage. If outdoors, place them out of the hot sun. (Temperatures should be above 40 degrees, however.)

Resources

Optional reference books:

Worms Eat My Garbage, by Mary Appelhof
Let an Earthworm Be Your Garbage Man

materials needed for the composter you will build, including worms

Check Your Facts

- Jonah was angry at God for being merciful to the people of Nineveh. He was also angry because the vine that gave him shade withered.

2. Prepare bedding for the composter. Appropriate material includes shredded newspaper or cardboard, shredded leaves, chopped up straw, sawdust, or compost. Use more than one of these materials to provide an optimal environment for the worms. Add two cups of sand or soil. Add water and mix everything well. The bedding material should be as damp as a wrung-out sponge.
3. Fill the composter about three-quarters full with bedding. Don't pack the bedding; air spaces are important.
4. Add worms. Earthworms won't work; you need to use redworms (red wigglers). These can be secured at some garden supply stores, bait shops, worm farms, or online at redwormcomposting.com.
5. Add food waste such as fruit and vegetable peels, crushed egg shells, and coffee grounds. To avoid problems with smells, flies, and rodents, do not put meat, dairy products, and grains in the composter. Make a hole in the bedding for the food scraps, and cover it with more bedding.

The ratio of worms to food waste is one pound of worms to one-half pound per day of food waste. Your composter should provide one square foot of surface area for each pound of food waste.

6. After about two and a half months of use, you will see little of the original bedding, but lots of brown worm castings. At this point, the worms should be separated from the compost. The compost is ready to use, and the worms can be returned to the composter for the next batch.

For more detailed information, see the books listed under resources or visit such websites as redwormcomposting.com or www.cityfarmer.org/wormcomp61.html.

For Older Children

Where in the World Is Tarshish?

Prepare

Copy "Nineveh and More" (page 65) and cut the sections apart.

Secure a map of the Near East in the time of the Assyrian Empire. Make sure it includes Spain.

With the Children

Divide the children into three groups. Give each group one section of "Nineveh and More. Ask them to read the information about their city, and then locate that city on the map.

Have the children share information about their city and its location with the group. Show the children how to use the map legend. Calculate the distances between the three cities.

Resources

page 65

Supplies

map
rulers

Talk Tip

How does this information help you better understand Jonah's story?

For Older Children

Whale of a Tale

Prepare

Photocopy the trivia sheet (page 66). Gather resources on whales. You can order the poster "Great Whales of the World" from *art.com*.

Resource books can include *Awesome Ocean Science*, by Cindy A. Littlefield; *The Kids' Natural History Book*, by Judy Press; *Thar She Blows! Whaling in the 1860s*, by Sue Kassirer; *The Whale Comedian*, by Martin Nelson Burton; *If You Ever Meet a Whale*, by Myra C. Livingston; and *The Whale Who Wanted to Be Small*, by Gill McBarnet.

With the Children

Say: No one knows what kind of fish swallowed Jonah. Scientists have a system for classifying and naming animals, but that system wasn't invented when Jonah was alive. All we know is that it must have been a big fish! Tradition says it was a whale. We're are going to learn a little more about whales.

Show the children the poster. Let each child pick one of the whales on the poster. (More than one child may pick the same whale.)

Give the children five minutes to learn all they can about the whale they chose. They may use the resource books, the trivia sheet, sketch the whale themselves, or read a children's book.

Call the group together and ask the children to share one thing they learned about whales.

For Younger Children

How Do Whales Eat?

Prepare

Prepare the milk container as shown in steps 1-2 (page 64).

With the Children

Say: No one knows what kind of fish swallowed Jonah. All we know is that it must have been big! Some say it was a whale. Whales are a part of God's good creation. Read Psalm 104:24-26, 30. ("Leviathan" was the word used in the Bible for huge sea creatures.)

Say: Did you know that many kinds of whales don't have teeth? Instead, they have something called baleen that helps them

Resources

books on whales
page 66

Supplies

fine point marker
whale poster
drawing paper and
pencil

Talk Tip

Tell the children that "leviathan" is the word the Bible uses for huge sea creatures.

Read Psalm 104:24-26, 30.

Resources

Bible
Optional:
If You Ever Meet a Whale, by
Myra C. Livingston

Supplies

clean one-gallon
plastic milk or juice
jug with a handle)
permanent marker
craft knife
shallow baking pan
glitter
Optional:
tiny shrimp

Talk Tip

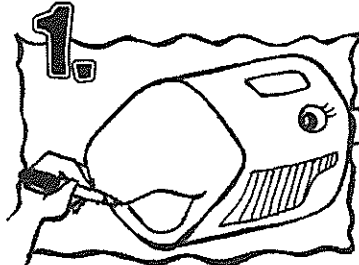
Some people like to go on whale watches. Do you think you would like to be on a boat looking for whales?

gather food. Baleen is made out of the same kind of stuff our fingernails are made of. We are going to have a demonstration of how baleen works.

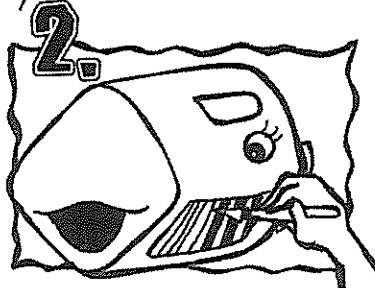
Note: If the children saw *Finding Nemo* in the Video Station, they saw baleen. Remind them of the scene when Dory and Marlin were swallowed by the whale. Marlin kept trying to get out, but he couldn't get past the baleen.

Follow step 3 below.

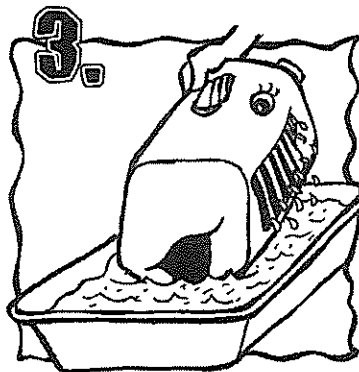
Option: Read "If You Ever Meet a Whale" to the children.



1. Place the jug on its side (handle at top) and draw a whale's eye. At the bottom of the jug draw a whale's mouth. To create a whale's baleen, draw several vertical lines on one side of the "jaw." (Note: An actual whale has baleen on both sides, but for this activity one baleen will work fine.)



2. An adult should cut out the mouth. Then cut along the lines to form slits.



3. Fill the lasagna pan about half full of water. Add half a tablespoon of glitter. The glitter will represent krill. Krill is plankton, and it's what whales eat. If you have small shrimp, show them to the children. Actual krill looks something like the shrimp.

Hold the container by the handle. With the baleen facing the pan, slowly scoop water into the mouth of the whale. Then, tip the jug so the water drains through the baleen. What happened to the glitter?

Art: Paige Easter
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CLOSING (5 minutes)

Ask the children to name their favorite animals.

Pray: God, we are amazed by all the wonderful things you have created. Thank you for (list the animals the children named), and for whales and worms. Amen.

Jonah and the Big Fish

by LeeDell Stickler

Once a long time ago, there lived a man named Jonah. Jonah was a good man. Jonah obeyed all the laws. Jonah tried to do everything that God wanted him to do.

And Jonah said:

**I want to always do what's right
I want to be faithful and true.
I try to live as God would want
And do what God wants me to.**

One day God spoke to Jonah. "Jonah, I want you to go to the grand city of Nineveh. Tell the people there how wicked they are. I want them to change their wicked ways or they will be very sorry."

And Jonah said:

**I always want to do what's right
I want to be faithful and true.
I try to live as God would want
But this I will not do.**

Jonah did not like the people of Nineveh. They were his enemies. Jonah didn't care what God did to the people who lived there. So, instead of going to Nineveh, Jonah bought a ticket for a ship that was going in the opposite direction.

And Jonah said:

**I always want to do what's right.
I want to be faithful and true.
But now I'm going to run away,
That's just what I will do.**

So, Jonah got on the ship. He went below and promptly fell asleep. While Jonah was sound asleep, the boat set sail. As it sailed, a great storm came up. The wind blew. The lightning flashed. The waves crashed against the ship. Everyone feared the boat would sink.

The captain woke Jonah up. "How can you sleep in such a storm? Pray to your God that we might not all be killed."

And Jonah said:

**I always want to do what's right.
I want to be faithful and true.
But when I ran away from God,
I brought this trouble for you.**

So, Jonah told the sailors, "Throw me into the sea and the storm will come to an end." The sailors did not want Jonah to drown. So, instead, they rowed with all their might. But the storm just got worse and worse.

Again Jonah said:

**I always want to do what's right.
I want to be faithful and true.
Throw me into the deep dark sea
That's just what you must do.**

Finally, the sailors picked Jonah up and threw him over the side. As soon as Jonah hit the water, the storm stopped. Jonah would have drowned. But God sent from the deep dark depths of the ocean a big fish. The fish opened its mouth and swallowed Jonah whole.

And Jonah said:

**I always want to do what's right.
I want to be faithful and true.
Now here I am in the belly of a fish,
Feeling sad and blue.**

For three days Jonah sat there in the belly of that fish. For three days Jonah thought about what he had done. For three days Jonah prayed to God.

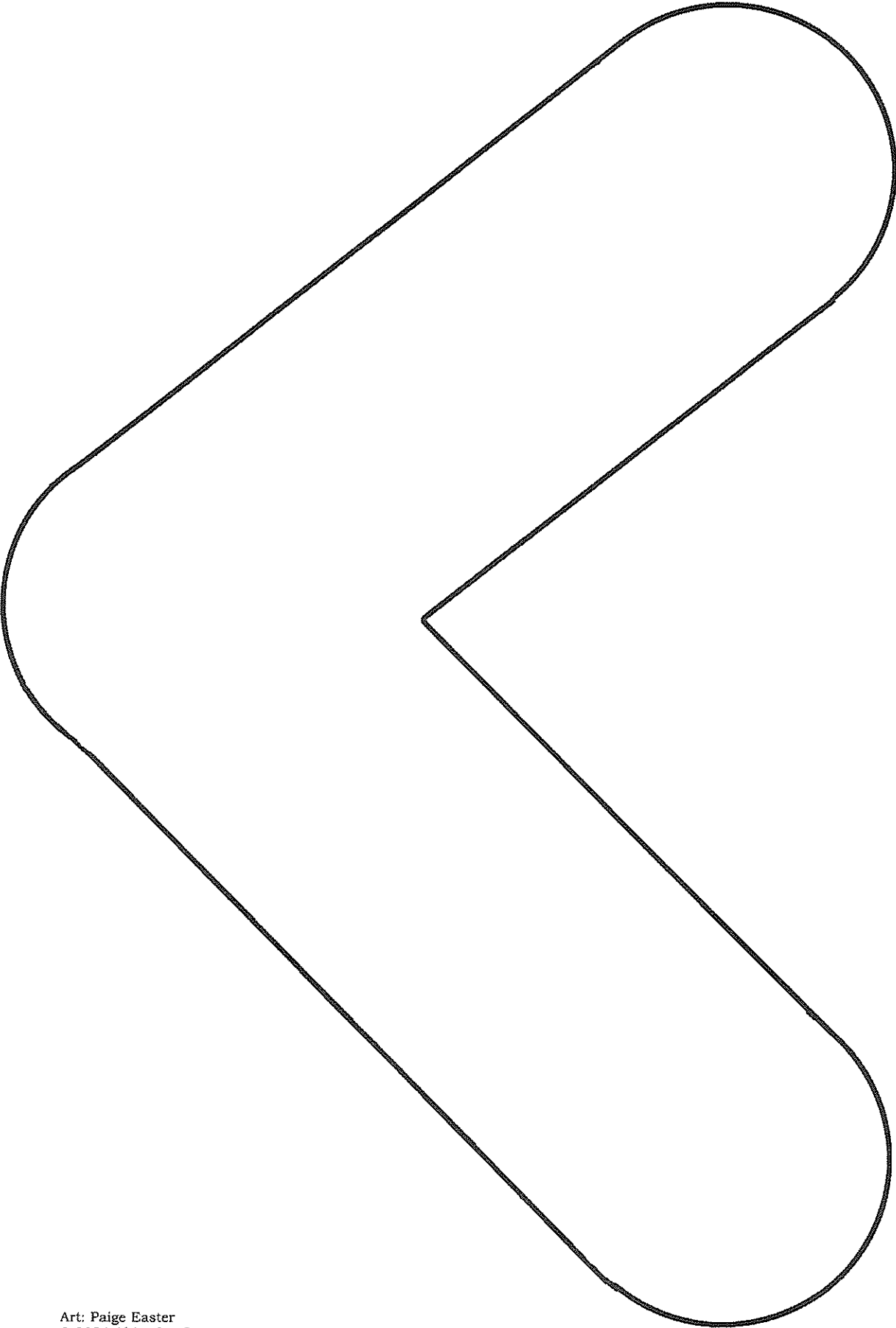
And Jonah said:

**I always want to do what's right.
I want to be faithful and true.
Whatever job you have for me,
Then that is what I'll do.**

The fish came to the surface of the water and spit Jonah onto the dry land. Again God spoke to Jonah, "Jonah I want you to go to the grand city of Nineveh. Tell the people there how wicked they are. I want them to change their ways or they will be very sorry."

And do you know what Jonah did? He went. And do you know what the people of Nineveh did? They changed their ways.

From *Don't Just Sit There: Bible Stories That Move You (For Ages 3-5)*.
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Nineveh

Nineveh was the capital city of Assyria. In the eighth century B.C., Assyria took over the northern kingdom of Israel and forced the southern kingdom of Judah to pay a tax called a tribute. The people of Israel hated the Assyrians because they had cruelly oppressed them.

Tarshish

Tarshish was a town in southern Spain, perhaps Tartessus. Israel imported silver from Tarshish. This is the city to which Jonah was fleeing. It's in the opposite direction from Nineveh. Tarshish represented the end of the earth to the people of Jonah's time. The city of Tarshish is also mentioned in I Kings 10:22, Jeremiah 10:9, and Ezekiel 27:12.

Joppa

Joppa was in Palestine. The name Joppa means "beauty." During the time of Jonah, Joppa was a Philistine city on the coast of Palestine. Joppa is a natural harbor on the coast of Israel. It's about thirty-five miles from Jerusalem. Joppa is where Jonah boarded the ship headed for Tarshish.

Whale Trivia

There are at least 78 species of whales.

Whales are mammals.

Dolphins are whales.

Many whales don't have teeth.

Blue whales continue to grow throughout their lives. They can weigh up to 160 tons.

Gray whales migrate from Mexico to the Arctic (about 12,500 miles).

Whales have lots of fat to help them keep warm in cold water.

Whales breathe through lungs.

A small group of whales (2-10) is called a pod. A larger group is called a herd.

Whales have one or two blowholes for breathing.

One of the greatest novels written in the U.S. was named after a whale—*Moby Dick*.

A killer whale can stay underwater for 10 minutes.

When a whale dives, its heart rate slows down to conserve oxygen. Some drop from 120 beats per minute to 4 to 6 beats.

A baby whale is called a calf, and a female whale is called a cow.

Some whales use sound to "see." This is called echolocation.

