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SEA LIFE SAFARI

TEACHERS GUIDE

GRADES - KINDERGARTEN-2ND GRADE

Program Description: Let's go on a safari! Come along on this expedition to learn about sea life at the Georgia Aquarium. Throughout this program students will use their senses to explore and compare the characteristics of animals. Participants will navigate through interactive learning stations and aquarium exhibits as they discover the basic needs of animals.

Enduring Understandings for Sea Life Safari:

- ◆ All organisms have basic needs to survive.
- ◆ Aquatic habitats are home to diverse populations of organisms.
- ◆ Through observations we can learn about aquatic animals and their habitats.

Objectives:

- ◆ Students will understand the basic needs of animals; shelter, water, air, and food
- ◆ Students will identify similarities and differences in animals to group living things.
- ◆ Students will understand that the covering of animals is important to their survival.
- ◆ Students will understand that animals do not look the same through all stages of their life cycles.

Georgia Performance Standards Addressed: Kindergarten GPS

SKCS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

- a. Raise questions about the world around you and be willing to seek answers to some of the questions by making careful observations (5 senses) and trying things out.

SKCS2. Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations.

- a. Use whole numbers for counting, identifying, and describing things and experiences.

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- b. Make quantitative estimates of nonstandard measurements (blocks, counters) and check by measuring.

SKCS4. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

- a. Use a model- such as a toy or a picture- to describe a feature of the primary thing.
- b. Describe changes in size, weight, color, or movement, and note which of their other qualities remain the same.
- c. Compare very different sizes (large/ small), ages (parent/baby), speed (slow/fast), and weights (heavy/light) of both manmade and natural things.

SKCS5. Students will communicate scientific ideas and activities clearly.

- a. Describe and compare things in terms of number, shape, texture, size, weight, color and motion.

SKCS6. Students will understand the important features of the process of scientific inquiry.

Students will apply the following to inquiry learning practices:

- a. In doing science, it is often helpful to work with a team and to share findings with others.
- b. Tools such as rulers, magnifiers, and balance scales often give more information about things than can be obtained by just observing things without help.
- c. Much can be learned about plants and animals by observing them closely, but care must be taken to know the needs of living things and how to provide for them.

SKL2. Students will compare the similarities and differences in groups of organisms.

- a. Explain the similarities and differences in animals. (color, size, appearance)

1st Grade

S1CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

- a. Raise questions about the world around them and be willing to seek answers to some of the questions by making careful observations and measurements and trying to figure things out.

S1CS2. Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations.

- a. Use whole numbers in ordering, counting, identifying, measuring, and describing things and experiences.

- b. Make quantitative estimates of familiar lengths, weights, and time intervals, and check them by measuring.

S1CS4. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

- a. Use a model- such as a toy or a picture- to describe a feature of the primary thing.
- b. Describe changes in size, weight, color, or movement, and note which of their other qualities remain the same.
- c. Compare very different sizes (large/ small), ages (parent/baby), speed (slow/fast), and weights (heavy/light) of both manmade and natural things.

S1CS5. Students will communicate scientific ideas and activities clearly.

- a. Describe and compare things in terms of number, shape, texture, size, weight, color and motion.

S1L1. Students will investigate the characteristics and basic needs of plants and animals.

- a. Identify the basic needs of an animal.
 - Air
 - Water
 - Food
 - Shelter
 - Compare and describe various animals-appearance, motion, growth, basic needs.

2nd Grade

S2CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

- a. Raise questions about the world around them and be willing to seek answers to some of the questions by making careful observations and measurements and trying to figure things out.

S2CS2. Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations.

- a. Use whole numbers in ordering, counting, identifying, measuring, and describing things and experiences.
- b. Make quantitative estimates of familiar lengths, weights, and time intervals, and check them by measuring.

S2CS4. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

- b. Use a model- such as a toy or a picture- to describe a feature of the primary thing.
- c. Describe changes in size, weight, color, or movement, and note which of their other qualities remains the same.
- d. Compare very different sizes (large/small), ages (parent/baby), speed (slow/fast), and weights (heavy/light) of both manmade and natural things.

S2L1. Students will investigate the life cycles of different living organisms.

- a. Determine the sequence of the life cycle of common animals in your area: a mammal such as a cat or dog or classroom pet.

Before coming to the aquarium, the student should:

- ◆ Know and understand the four basic needs of animals; shelter, water, air and food.
- ◆ Have a basic understanding of animal coverings.

Pre-activities:

1. Beautiful Basics
2. Fishin' Mission

Post-visit activities:

1. Create a Critter
2. Sea Life Survivor

Beautiful Basics (Pre-visit activity)

Adapted from the Project Wild k-12 Curriculum & Activity Guide.

Grades: K-2

Objectives: Students will identify the four basic needs of people and animals.

Duration: 20 minutes

Vocabulary: basic needs, wildlife, shelter

Background:

All living things have basic needs for their survival. Animals, including people, need food, water, shelter and air to survive. Animals must be able to obtain these needs in their environment to survive.

Materials

Whiteboard
Dry erase markers

Procedure:

1. Draw a three-column chart on a whiteboard with the headings People, Pets, and Wildlife.
2. Ask the students, "What do people need to live or survive?"
3. List the student's ideas in a column under the word "People".
4. Complete the same for pets and wildlife.
5. After the chart is complete, tell the students that all living things have certain basic needs that they must have to survive. Go through each basic need (shelter, food, air, and water) and make sure it's been covered by items on each list.
6. Ask the students to look at their lists on the whiteboard. Are there words in each column that describe the same basic need, i.e. Food? Shelter? Air? Water? Read through the lists on the board showing the students that the basic need is needed by each group.
 - a. For example, a place to sleep could be combined with a place to hide under the concept of shelter.
7. Create a new chart with the students that illustrate the four basic needs plugging in the information from the first chart.
8. Reinforce to the students that all living things have four basic needs.

Assessment:

1. Have the students list at least four things animals need for survival.
2. How do human needs differ from animal needs?
Examples: Humans get water from the sink; penguins get their water from their food. Humans get their oxygen from air; fish get their oxygen from water)

Extensions:

Display a variety of photos or drawings of humans, domesticated animals, and wild animals in their habitats. Show the first photo, for example, of a beach. Ask the students, if they were going to live on this beach what would they as humans need? Then ask the same for pets and wildlife. Compare the results.

Resources:

Project Wild: K-12 Curriculum & Activity Guide. Council for Environmental Education. 2001.

Fishin' Mission (Pre-visit activity)

Adapted from Dolphin Quest "Fin-tastic Fishing Fun".

Grades: K-2

Objectives: Students will group animals by comparing and contrasting physical characteristics.

Duration: 45-60 minutes

Vocabulary: Lungs, gills, animal coverings, reptile, mammal, fish, bird.

Background:

There are many characteristics that make animals different from each other such as appearance and habitat. Comparing and contrasting animal characteristics can provide insight to their lifestyle. For example, animals living in cold climates must have fur, feathers, or blubber to keep them warm while warm water animals will not have these types of coverings. Another great way to compare and contrast animals is to classify them by reptiles, fish, and mammals. By doing this it is easy to see similarities within the groups and how the animals differ.

Materials:

- ◆ Animal pictures (obtain pictures of 2-3 different animals that look very different from each other. We suggest a picture of a dog, snake and bird.)
- ◆ Fishing cards (one sheet per student)
- ◆ Kiddie pool or open classroom space
- ◆ Magnet Strips
- ◆ Brass Fasteners (found at office supply stores)
- ◆ String
- ◆ Glue
- ◆ Popsicle Sticks
- ◆ Safety Scissors
- ◆ Plastic bags (one per student to take home their magnets)

Procedure:

1. Introduce the concept that not all animals are the same and we can learn a lot by examining what makes them different
2. Use the animal pictures to facilitate this discussion.
3. Have the children identify the similarities and differences between the dog, snake and bird. Differences may include animal shape, number of legs, animal

coverings, etc. Similarities may include colors (if applicable) or habitat (depending on what picture you choose)

4. Make enough copies of the fishing cards for each student to have their own sheet.
5. Have the students color and cut out their animal cards and attach a brass fastener to each card.
6. Have students glue a piece of string to their popsicle stick. On the other end of the string the children should attach a magnet by tying the string around the magnet or using glue (If using glue let it dry before moving on to the next step.)
7. Have the children scatter their fishing cards in a kiddie pool or on the floor.
8. Instruct them to go fishing and catch as many animals as they can in the 30 second time limit.
9. Students will sort their catch based on the following criteria:
 - a. Air breathers vs. non-air breathers
 - b. Type of animals coverings (including fur, feathers, scales)
 - c. Whether the animal is a reptile, mammal, fish or bird
10. Review with the students why it is effective to use these characteristics as a way to compare and contrast animals.

Extension:

Repeat the above activity using magnetic alphabet letters. Once a letter is caught have the class name as many animals that start with that letter as they can, write them up on the board, and then group them following the same criteria as listed above. Have students come up with additional criteria to sort animals.

Assessment:

Have the students group pictures of various animals using the criteria listed above.

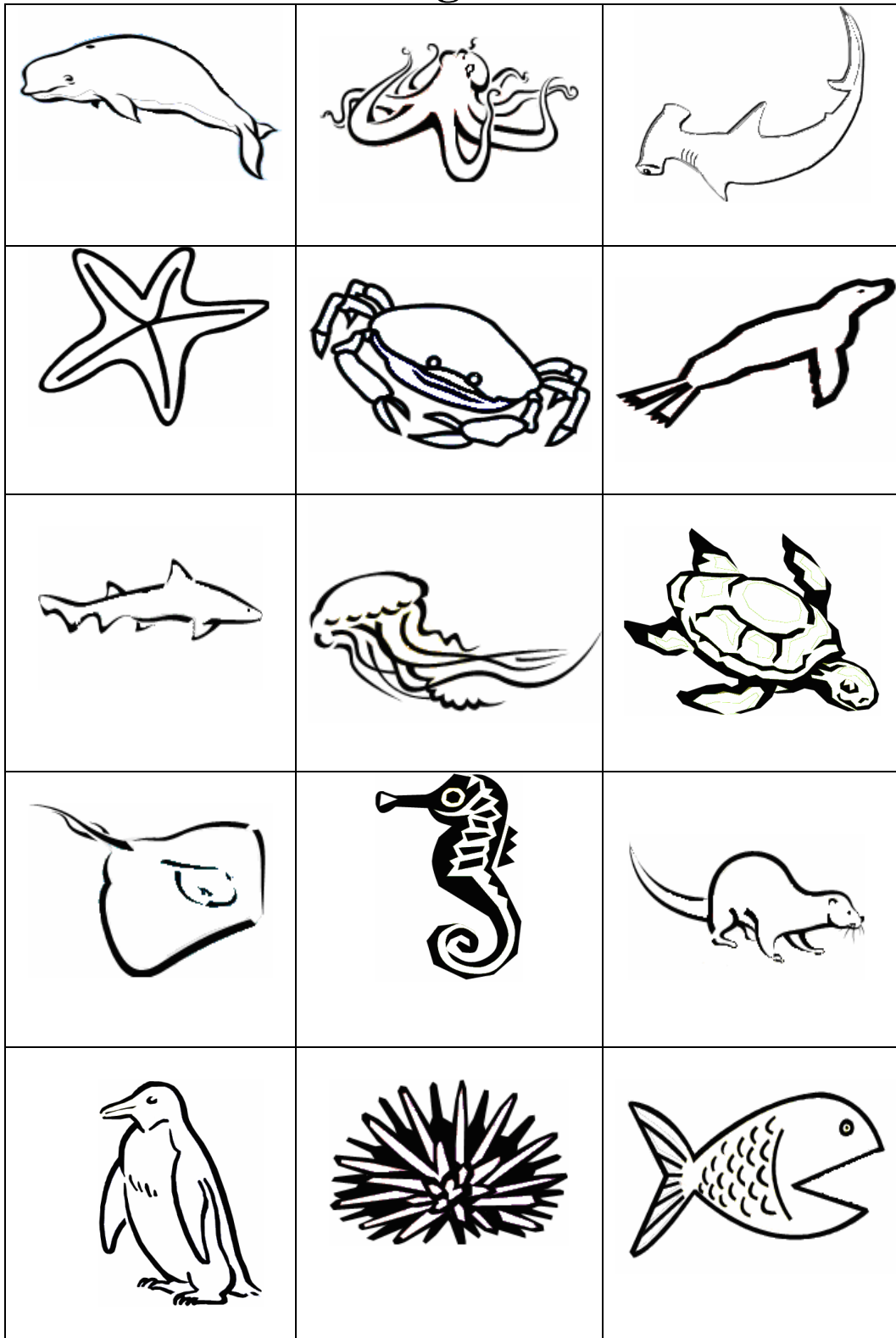
Resources:

Animal Bytes. 26 Sep. 2007. Sea World. 26 Sep. 2007 <http://www.seaworld.org/animal-info/Animal-Bytes/index.htm>.

Learning Quest. 2007. Dolphin Quest. 26 Sep. 2007. <http://dolphinsquest.org/learningquest/index.php?aID=3>.

Wade, Laura. Sea and Sea Life, Knowledge Master Series. London: Chrysalis Children's Books.2004

Fishing Cards



Create a Critter (Post-visit activity)

Grades: K-2

Objective: Students will create an animal and include features that will help the animal meet its basic needs.

Duration: 30-45 minutes

Vocabulary: basic needs, fur, skin, scales, feathers, blubber, gills, lungs, blowhole, nose, flippers, feet, tail, color, mouth, teeth, eyes.

Background

All animals have unique features that define who and what they are. For example fish have gills; mammals have lungs. Even though animals may share a common feature, individual species may have different adaptations of the same feature (i.e. fish have gills under their operculum, sharks have 5-7 gill slits) to allow it to best meet their basic needs; shelter, water, air, and food.

For example:

1. Beluga whale - blowhole to breathe, flippers to swim, white skin to blend/hide in its surroundings, mouth, and eyes. Their home would include cold water/icebergs. Their food would be fish.
2. Fish - Gills to breathe (use oxygen), fins to swim, scales to blend/hide in its surroundings, mouth, and eyes. Their home could be the open ocean, coral reef, or freshwater (river/lake). Their food could be plants or smaller animals.

Materials

- ◆ Piece of construction paper (one per student)
- ◆ Crayons, markers, colored pencils
- ◆ Photocopy of three different habitats (for extension)

Procedure

1. Review with students the animals that they saw at the aquarium.
2. Review some of the features the animals had that they observed while visiting.
3. Tell the students that they will be creating their own aquatic animals.
4. Tell students that their animal needs to include:
 - a. Gills, blowhole, or nose (to breathe)
 - b. Skin, fur, or feathers for mammals; scales for fish (animal coverings to hide/blend into it's home)
 - c. Fins or flippers (to move)

- d. Eyes (to see)
- e. Mouth (to eat)
5. Ask students to begin brainstorming what they want their animal to look like.
6. Hand out paper and crayons.
7. Students should draw a picture of their animal.
8. Explain that different animals with different features (characteristics) meet their basic needs differently (i.e. large animals live in large spaces; small animals live in small spaces). State that all animals have basic needs and that they must be met in order for that animal to survive. Basic needs for survival include shelter, water, air, and food.
9. Once their animal is created, ask students to add the following to their drawing,
 - a. Home for the animal
 - b. Food for the animal (fish/plants)
 - c. Water

Assessment:

Have each student display their picture to the class and describe out loud how their animal meets their basic needs (shelter, water, air, and food).

Extension:

Display photocopies of aquatic habitats. Reflecting on their own animals, students will be asked in which habitat they'd survive and why.

Resources:

Fish. Eyewitness Guides. DK Publishing, 2005.
ISBN 9780756610746

Pond & River. Eyewitness Guides. DK Publishing, 2005
ISBN 9780756610852

Whale. Eyewitness Guides. DK Publishing, 2004
ISBN 9780756607395

Sea Life Survivor (Post-visit activity)

Adapted from G8 Sea Island Summit 2004.

Grades: K-2

Objectives: Students will identify the four basic needs of an animal and visually interpret it.

Duration: 30-45 minutes

Vocabulary: basic needs, shelter, survival

Background:

All living things have basic needs for their survival. Every animal meets these needs differently. Much can be learned by identifying the basic needs of an animal and how they are obtained. For example, while all animals need oxygen from some source it is obtained differently. Sharks use their gills to breathe from the water while mammals use their lungs to breathe air.

Materials

- ◆ Ocean resources (visit school or local library or use the internet).
- ◆ Sea Life Survivor worksheet.
- ◆ Crayons, markers, colored pencils.

Procedure:

1. Review the basic needs of animals (shelter, food, water, air) and how these needs affect an animals survival.
2. Have students research a sea animal of their choice using the sea life survivor worksheet to answer the following questions.
 - a. Where the animal lives
 - b. What the animal eats and why the animal needs water (swim/drink/breathe)
 - c. How does the animal get oxygen (gills extract oxygen, blowhole, or nose gets oxygen from air)
3. Instruct the students to first draw the animal of their choice in the appropriate box.
4. Instruct the students to draw or write how their animal meets their basic needs in the assigned boxes.

Assessment:

Have students present their drawings to the rest of class explaining what the basic needs of their animals are.

Extensions:

2nd grade extension: Have students research the life cycle of their animal and draw or write them on the bottom or the back of their Sea Life Survivor worksheet.

Resources:

Diane Snowball, Cynthia A. Belcher (Illustrator), Cynthia A. Belcher (Illustrator), Miriam Katin (Illustrator) Exploring Freshwater Habitats. Mondo Publishing, 1994.

John Bonnett Wexo Aquatic Animals 8 Book Set (Zoobooks Series). Wildlife Education, Limited, 2002.

Reene, Renne (Illustrator) Animals That Live in Water (Animals up Close Series). World Almanac Books, 2000.

Sue Smith, Cynthia A. Belcher, Miriam Katin, Cynthia A. Belcher (Illustrator) Exploring Saltwater Habitats. Mondo Publishing, 1995. ISBN: 1879531321



I'm a Sea Life Survivor!



Choose any sea animal and find out about how it meets its basic needs.
Fill in the boxes below by either writing or drawing.

Where does it live?

What does it eat?

Draw the animal here.

How does it breathe?

How does it use water?