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Georgia Aquarium
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Bite-Size Basics

Teacher Guide
Kindergarten-2nd Grade

Program Description: All animals have certain basic needs, including food. Come discover what some of our aquarium residents eat, how they eat, and how their food is prepared.

Enduring Understandings for Bite–Size Basics:

- All organisms have basic needs for survival
- Aquatic animals eat many different types of food in many different ways
- Observing an animal's mouth can help us determine what and how it eats

Objectives:

- Students will understand that food is one of the basic needs of animals
- Students will identify similarities and differences in the ways that animals eat
- Students will guess what an animal eats by observing the animal

Georgia Performance Standards Addressed:

Kindergarten

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.

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.

SKL1. Students will sort living organisms and non-living materials into groups by observable physical attributes.
b. Group animals according to their observable features such as appearance, size, motion, where it lives, etc. (Example: A green frog has four legs and hops. A rabbit also hops.)

SKL2. Students will compare the similarities and differences in groups of organisms.
a. Explain the similarities and differences in animals. (color, size, appearance, etc.)

ELAKLSV1 The student uses oral and visual skills to communicate. The student
a. Listens and speaks appropriately with peers and adults.
b. Follows two-part oral directions.

MKM1. Students will group objects according to common properties such as longer/shorter, more/less, taller/shorter, and heavier/lighter.
a. Compare and order objects on the basis of length.

MKP4. Students will make connections among mathematical ideas and to other disciplines.
c. Recognize and apply mathematics in contexts outside of mathematics.

First 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.

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.
b. Identify the basic needs of an animal (air, water, food, shelter).
d. Compare and describe various animals—appearance, motion, growth, basic needs.

ELA1LSV1 The student uses oral and visual strategies to communicate. The student
a. Follows three-part oral directions.
b. Recalls information presented orally.
c. Responds appropriately to orally presented questions.

M1M1. Students will compare and/or order the length, height, weight, or capacity of two or more objects by using direct comparison or a nonstandard unit.
a. Directly compare and/or order length, height, weight, and capacity of concrete objects.

M1P4. Students will make connections among mathematical ideas and to other disciplines.
c. Recognize and apply mathematics in contexts outside of mathematics.

Second Grade

M2M1. Students will know the standard units of inch, foot, yard, and metric units of centimeter and meter and measure length to the nearest inch or centimeter.
b. Estimate lengths, and then measure to determine if estimations were reasonable.

M2P4. Students will make connections among mathematical ideas and to other disciplines.
c. Recognize and apply mathematics in contexts outside of mathematics.

Before coming to the aquarium, the students should:

- Know and understand the four basic needs of animals; shelter, water, air and food.

Pre-activities:

1. Beautiful Basics

Post-visit activities:

1. Create a Critter
2. Sea Life Survivor

Beautiful Basics

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.
   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. 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)
9. Reinforce to the students that all living things have four basic needs.

Assessment:

1. Did the students list at least four things animals need for survival.

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.

Create a Critter

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, and eyes.

Background

All animals have unique features that define who and what they are. For example fish have gills; mammals and reptiles 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 them 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 or fur for mammals; scales for fish and reptiles (animal coverings to hide/blend into its home)
    c. Fins, flippers, or webbed feet (to move)
    d. Eyes (to see)
    e. Mouth (to eat)
5. Draw some examples of these components on the board for the students to see.
6. Ask students to begin thinking about what they want their animal to look like.

7. Explain to the student 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.
8. Hand out paper and crayons.
9. Students should draw a picture of their animal.
10. Explain to the student 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.
11. 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

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 animal's 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?