



Habitat Helpers

Education Resources: K-2nd grade

Students will identify the things all animals need to survive, and think critically about the relationship between an animal's needs and their habitat. Students will develop an understanding of how human actions affect animals' homes, health, and habitats. Focusing on the issue of litter, students will explore ways we can help keep waterways safe and healthy for all animals.

Standards Alignment

MLS:

K.LS1.C.1. Use observations to describe patterns of what plants and animals need to survive.

1.LS1.A.1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow and meet their needs.

2.ESS2.B.1. Develop a model to represent the shapes and kinds of land and bodies of water in an area.

NGSS/ILS:

K.LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants of animals (including humans) and the places they live.

K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

Animal Needs, K-2nd

Pre-Visit Lesson

45 minutes



Objectives:

- Students will identify four things all animals need in order to survive
- Students will think critically about how animals find all the things they need for survival in the wild
- Students will draw connections between some similarities and differences of animals and how their needs are met

Materials:

- Animal photos: humans, snapping turtle, river otter, reef shark, octopus
- Food photos: sandwich, small fish/worms/snails, fish, fish/squid/octopus/shrimp/lobsters, crustaceans/clams
- Shelter cards: human home, snapping turtle shell, river otter den, underwater cave/coral, octopus underwater den made of shells and rocks

Lesson Plan

Engage

Ask students what they think all animals need in order to survive. Remind them that humans are animals too, and start a list on the board of the things humans need to survive. Guide students to identifying all four needs: food, clean water, shelter, oxygen.

Explore

Students will explore the survival needs of other animals by playing the animal needs matching game. Model the process using the human need cards as an example, and ask students to identify what food, clean water, and shelter look like for a human (sandwich, glass of water, and a home). Discuss that oxygen is available to us all in the air we breathe, and mention that animals that live in water either come to the surface for air, or are able to make use of the oxygen that is found naturally in water. Ask students where non-human animals get clean water (rivers, ponds, puddles, or some animals live in water). Water and air sources are similar for many animals, but we are going to explore different types of food and shelters that animals use to survive.

Explain

Next, introduce the animals we will be discussing, and ask students to identify each species as you show the picture (snapping turtle, river otter, reef shark, octopus). Post these on the board,

Animal Needs, K-2nd

Pre-Visit Lesson (continued)

then go through each food card, asking students which animal might eat the food shown on each card (answers - snapping turtle: small fish/worms/snails, river otter: fish, reef shark: fish/squid/octopus/shrimp/lobsters, octopus: crustaceans/clams). Repeat this process matching each animal to their shelter card (answers - snapping turtle: their shell, river otter: den, reef shark: underwater cave/coral, octopus: underwater den made of shells and rocks)

Elaborate

Ask students to think about what each animal eats and what they use for shelter, then hypothesize where each animal might live. Explain that animals will live in habitats, or areas, where they can most easily find food and shelter. Ask students to name the habitat of each animal on the board, and write each animal's habitat on the board as they are identified.

Evaluate

Ask students to recall what all animals need to survive (answer: food, water, shelter, air). What might a human do if they didn't have food, water, or shelter? Answers may vary from going to the grocery store, to asking someone else for food/water, to utilizing homeless shelter services, etc. How do animals react if their needs are not being met? What might a shark do if they can't find food? What might happen to an octopus if they can't find shelter?

Ask students to think about ways that humans affect the places that animals live. What human actions change the ocean habitat? Answers may include plastic pollution, tourism/scuba diving, climate change, and oil spills. Encourage students to think about how these activities impact the animals that live in the water.

During Visit Guide

K-2nd



The following discussion points for each gallery of the St. Louis Aquarium will help make the most of your field trip by engaging your students and asking them to recall information discussed in the pre-visit lesson.

Conservation & Education Center

Digital Globe

- View short films in 360° on topics related to ocean animals and water conservation

Species Discovery

- View native species and ask students what they use for food, water and shelter in their habitat

Digital River

- View our interactive digital illustration of a local river habitat
- Through a series of mini-games on a giant touch-screen, learn about how human actions affect animals that live in or near our rivers

St. Louis Aquarium at Union Station

Confluence Gallery

- Point out alligator snapping turtle, and ask youth to recall what they eat and what they use for shelter
- Discuss the type of ecosystems you see in this gallery
- Select an animal not previously discussed, and ask youth to brainstorm what they might eat and what they use for shelter, based on what they know about their habitat
- Explain that this is an example of a local habitat and the animals you see here live in our area

Global Rivers

- Point out the river otters, and ask youth to recall what river otters eat and use for shelter
- You may notice otters playing with each other and/or with enrichment toys
 - Not only do we want these animals' basic needs to be met, but we want them to thrive – that means survive and enjoy their life

During Visit Guide

K-2nd (continued)

- Enrichment toys and activities keep them active and challenge their brains
- Relate this to humans playing with toys or learning how to do something new

Changing Rivers

- Ask students what they think might cause a river to change, and how these changes might affect the animals that live in or near the rivers (farming, cutting down of trees, levees/dams, pollution, and land development can all change the river ecosystem)
- Encourage students to get their hands wet and explore the interactive water table!
- Explain that all rivers eventually lead to the ocean, so pollution in the rivers will be carried to the ocean

Ocean Shore

- Animals featured here live in the shallow areas of the ocean – discuss the features of an ocean shore ecosystem
- Encourage students to gently touch the animals in our touch pools
- Ask students if the animals in the touch pools have their needs met – do they have food, shelter, water, and oxygen? (Answer – yes, of course!)
- Interact with our staff and volunteers in this area and encourage students to ask questions and learn more about our animals

Shark Canyon

- Point out the black tipped reef sharks
- Ask students what type of ecosystem they are viewing (ocean)
- Discuss the other animals they see living in this ecosystem

The Deep

- Show students the octopus and observe the animals' behaviors
- Discuss how the ecosystem of an octopus differs from the ocean shore ecosystem (it's darker and colder)
- Ask students how the octopus' needs are met in the Aquarium
 - Where does he/she find food?
 - Explain that octopus in the wild might move shells or rocks they find to cover their bodies for protection. Some even use a shell or a rock to create a 'door' on their den, pulling it over the opening after they enter for protection.
 - Is there shelter for the octopus in the exhibit? Is he/she safe?



Habitat Helpers, K-2nd

Post-Visit Lesson

45 min

Objectives:

- Students will identify the things all animals need to survive
- Students will understand how trash makes its way into our waterways
- Students will think critically about how trash in waterways affects the lives of animals
- Students will make connections to evaluate the impact human actions have on animals and the environment

Materials:

- Supplies to for creating a model of animal needs: clay or play-dough, Legos, or crayons/paper
- *Alternative to creating models: pictures of animals and habitats for a matching game*

Lesson Plan

Engage

Ask students to remember their field trip to the Aquarium and think about their favorite animal. Have them turn to their neighbor and talk about their favorite animals at the Aquarium and why they liked that animal. Ask a few students to share their responses with the class and write these animals on the board.

Explore

Refer to the short list of animals on the board and ask students where these animals live in the wild (if they didn't live at the Aquarium, where might they be found living in nature?). Possible answers include: the ocean, rivers, ponds, and areas surrounding water.

Explain

Review animal needs from the pre-visit lesson and write these needs on the board: food, water, shelter, and oxygen. Next, have students create their favorite animal living in the wild. You might give students the option to draw, mold with clay or playdough, or use Legos to create their animal models.

Ask students to include all of the things the animal needs to survive. For example, students might draw a shark in the ocean with small fish nearby as food and an underwater cave as shelter.

Habitat Helpers, K-2nd

Post-Visit Lesson (continued)

Modification option: print pictures of animals and their homes and have students match each animals to their habitat. Example: picture of a fish matched with picture of the ocean, picture of a bear matched to a picture of a forest, etc.

Elaborate

Ask students to think about what might happen if there were trash in the water. Would trash in the water make it difficult for animals to find food, shelter, clean water, and oxygen? Discuss ways that trash impacts the lives of animals (you might choose to introduce the vocabulary word *pollution*). Trash makes water unclean and unhealthy. For example, plastic can release toxic chemicals into the water. Trash, especially plastic, can also be mistaken for food by animals who might eat it by accident. Animals can also become entangled in trash like milk rings, netting, or plastic 6-pack rings.

Modification for 2nd grade: include discussion of different bodies of water and how trash in rivers makes its way to the ocean.

Evaluate

Ask students to brainstorm things they could do to keep trash out of our waterways and help the animals that live there. Make a list of their ideas on the board. Possible answers include: picking up trash we see on the ground, never throwing trash on the ground ourselves, asking an adult to cut 6-pack rings or milk rings before throwing them away, and trying to reduce how much waste we all produce.

Ask students to get out a piece of paper and write down the type of animal they created, the animal's needs, and one way they can help keep wild animals like the one in their picture safe and healthy. *Kindergarten and 1st grade, optional modification: students copy or trace a sentence stating how we can help keep wild animals safe and healthy. Example: "Help animals by picking up trash you see on the ground!"*

What great ideas did your students come up with to keep trash out of waterways? What sparked your students' interest or motivated them the most? We encourage you to share your results and students' work with us by emailing arodgers@stlaquariumfoundation.org with the subject line, "Habitat Helpers".

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