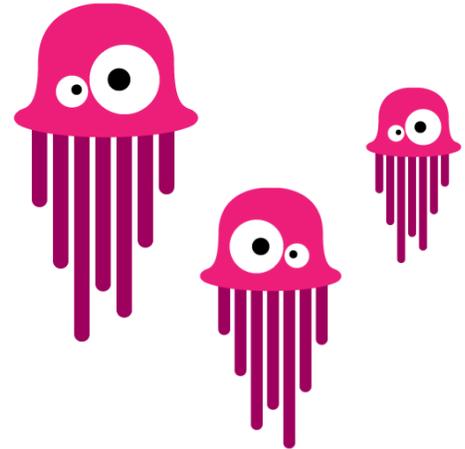


# Greater Cleveland Aquarium

## C.S.I.

### (Creature Science Investigators)

#### *Teacher Guide*



**Theme:** Animals' Basic Needs for Survival

**Grade Band:** K – 2

**Program Length:** 1 hour 30min

#### **Overview**

Dive into the Greater Cleveland Aquarium where your class will become C.S.I.s (Creature Science Investigators!) for the day. Your class will work in cooperative groups to research animals in four different aquarium galleries: Ohio Lakes and Rivers, Lakes and Rivers of the World, the Coastal Zone and Atlantic Ocean habitat in the Main Exhibit. Their investigation begins with a classroom briefing about animal basic needs by comparing humans to our fishy friends. After completing their course, students will be commissioned as official C.S.I.s for the day. A set of “Creature Case Files” will be given to each group and set the stage for their investigation around the world to learn about our aquatic animals. Each file contains a series of clues based on a particular animal’s basic needs. Guides will read the clues to their group and so students can identify each suspect. This program reinforces state standards and uses guided inquiry investigation.

#### **Goal**

Students will investigate four animals from four distinct aquatic habitats based on their individual basic needs. Students will come to an understanding that all living things must meet these needs in order to survive within their environment.

## Standards

Grade	Strand	Topic	Content Statement
K	Life Science	Physical and Behavioral Traits of Living Things	Living things have physical traits and behaviors, which influence their survival.
1	Life Science	Basic Needs of Living Things	Living things have basic needs, which are met by obtaining materials from the physical environment.
1	Life Science	Basic Needs of Living Things	Living things can survive only in environments that meet their needs.
2	Life Science	Interactions within Habitats	Living things cause changes on Earth.

## Objectives

1. Students identify the differences between basic needs of human and aquatic life.
2. Students investigate animals from different aquatic habitats: Ohio's Freshwater Lakes and Rivers, Sub-Saharan Desert, Indo-Pacific Coral Reefs, Coastal Zone, Pacific Northwest Kelp Forests, and Atlantic Ocean, to determine how these environments meet an animal's needs for survival.
3. Using clues, students compare and contrast diverse aquatic animals and discover how each animal meets their basic needs of oxygen, water, shelter, and food.

## Vocabulary

Habitat

Saltwater

Observation

Survival

Freshwater

Environment

Basic need

Investigate

Aquatic

Shelter

Trait

## Pre-Activities

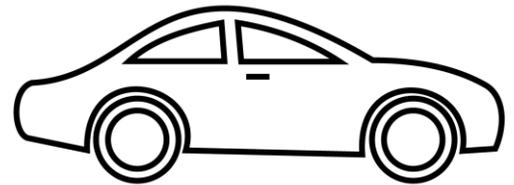
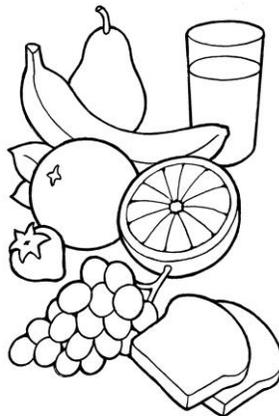
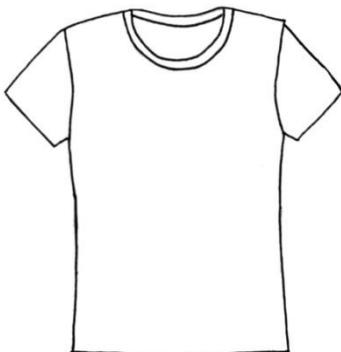
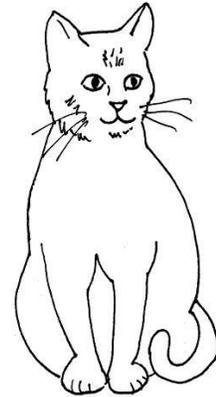
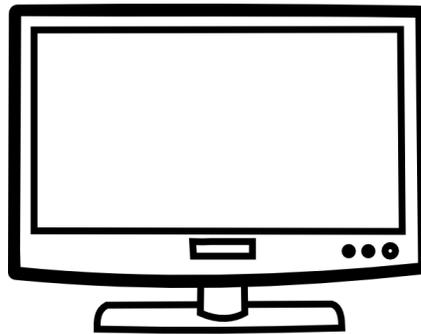
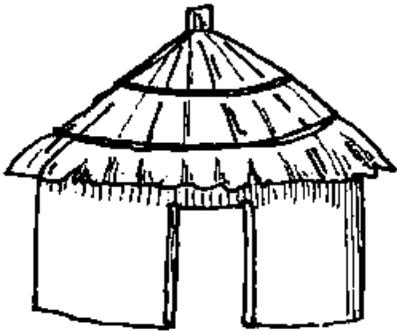
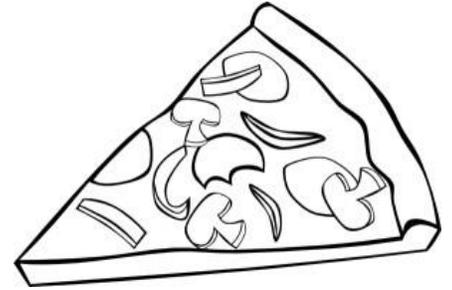
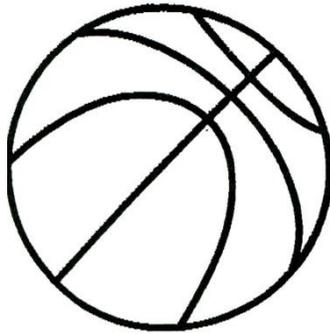
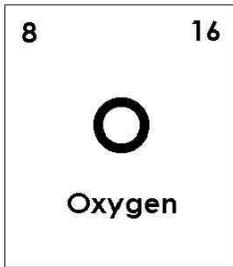
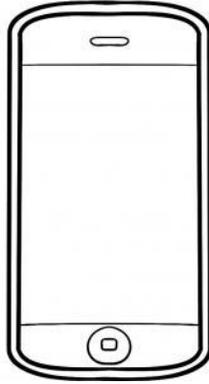
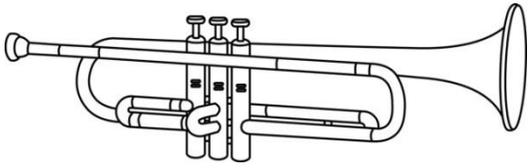
Lessons to help prepare your students and enhance your field trip experience:

1. What's That, Habitat? Adapted from Project Wild K-12 Curriculum and Activity Guide.
  - a. Introduce the concept of basic needs. Have students generate a list of basic needs for humans. The list should include food, water, shelter, and air.
  - b. Give the students a piece of paper and a drawing implement. Have students draw a picture of where they live that includes where they find their basic needs. Students can label the faucet "water" and label the refrigerator "food" etc.
  - c. Introduce the term habitat. Habitat: where a living thing lives and gets everything it needs to survive.
  - d. Give students a second piece of paper and have them draw a habitat for their favorite animal. Students should include all of the basic needs for their animal.
  - e. Compare the human habitats to the animal habitats. Though the basic needs may look slightly different (different food source, different homes, etc.) the basic needs of all living things remain the same.
  - f. On the back of each picture, have students write and complete the sentence "This is a good habitat because..."
  - g. Extensions:
    - i. Include space and arrangement in the list of basic needs. Could people survive in a single room with 40 other people? Could a Sand Tiger Shark survive in a 10 gallon tank? What would happen if the bathroom in your house was 9 miles away from the kitchen? Discuss how space and arrangement play an important role in survival.
    - ii. Discuss the differences between wild and domestic animals. Make a list on the board or sort pictures of different animals to distinguish between them. How are the basic needs of these animals met?
2. Explore the basic needs of humans with the Basic Needs Match.
  - a. Use the images at the end of this guide. Have students circle the items that relate to a basic need of people (food, water, oxygen, and shelter).
  - b. As an extension, discuss how people around the world meet their basic needs.
    - i. Do people who live on other continents have the same types of shelter that we do? Houses, apartments, huts, tents, igloos, and boats are all different types of shelters where people can live.



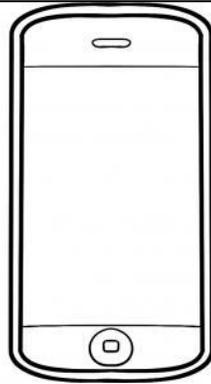
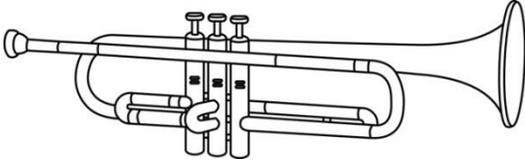


Circle the items that show a **basic need**. Things that people cannot live without.

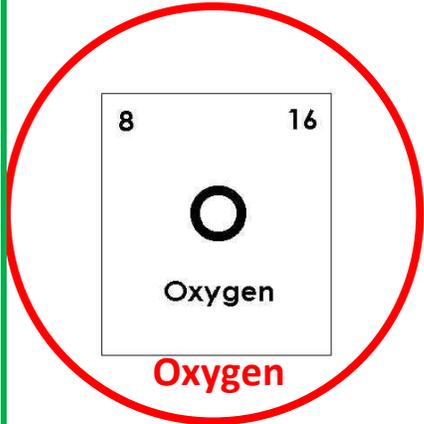


**Answer Key**

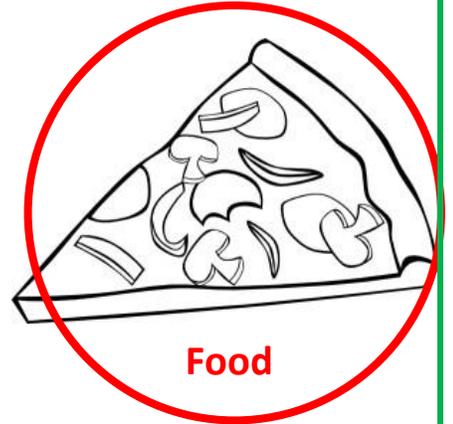
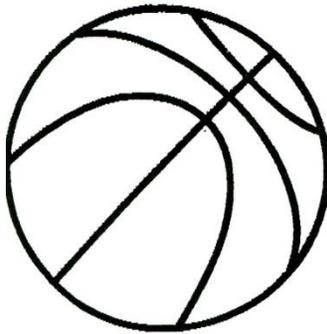
Circle the items that show a **basic need**. Things that people cannot live without.



**Water**



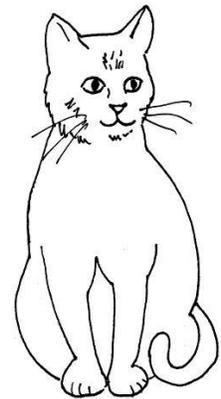
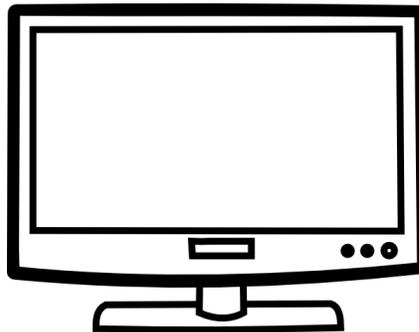
**Oxygen**



**Food**



**Shelter**

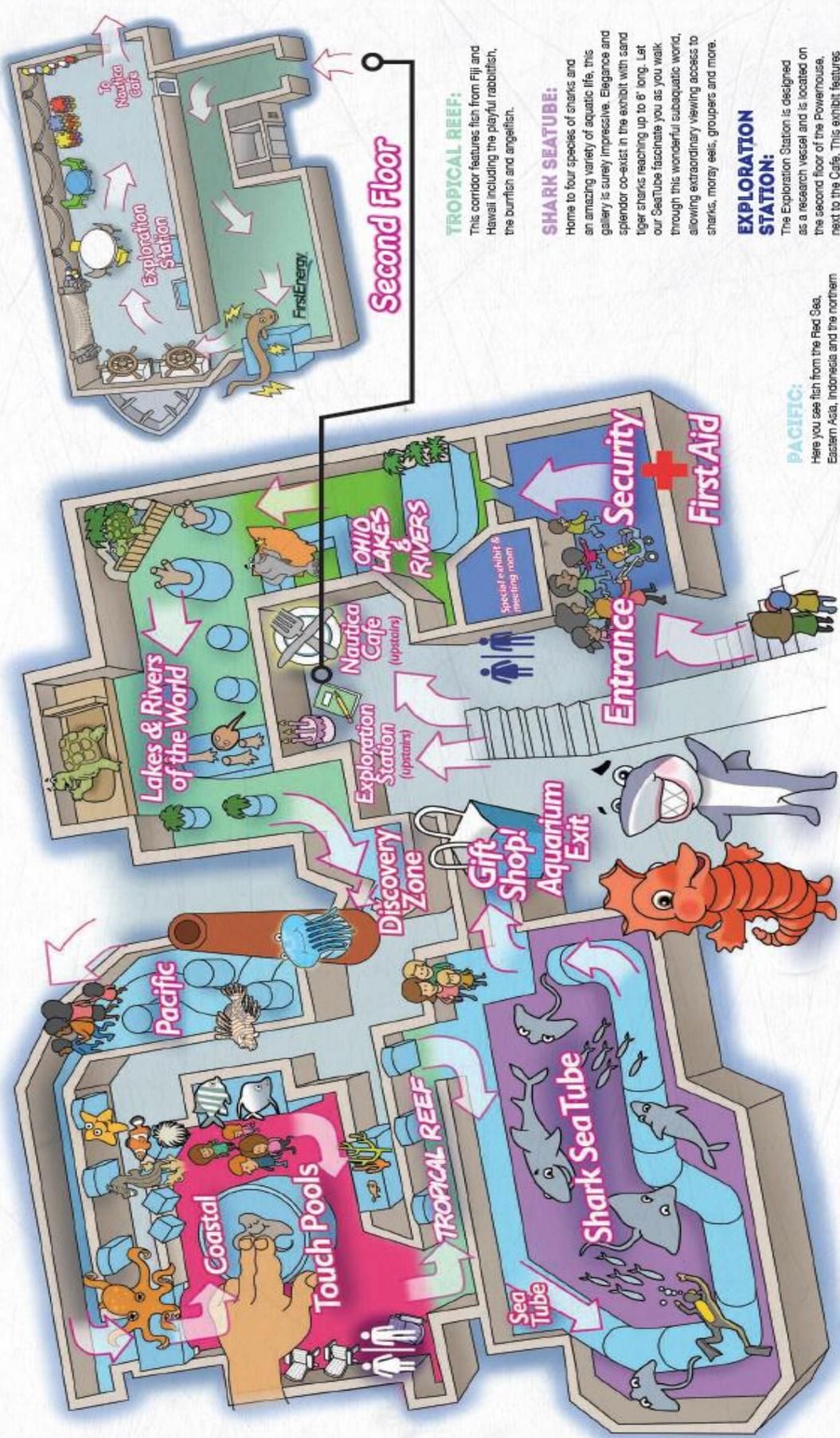


**Shelter**



**Food**





**OHIO LAKES & RIVERS:** Follow the stone path through our forest and check out our bubbling "brook" and our new reptiles and amphibians including salamanders, newts, snakes and turtles.

**LAKES & RIVERS OF THE WORLD:** Enjoy four individual regions through this gallery: Australia, Asia, South America and Africa. On this journey you meet eastern snake-neck turtles in Australia, archarfish, and one very special giant gourami in Asia, ocellated stingrays, and an Amazon river turtle in South America, and spurred tortoises from Africa. Pay

special attention to these tortoises; they are gentle creatures with playful personalities who encourage you to interact with them by touching their shells.

**DISCOVERY ZONE:** First, discover facts about water pollution and learn about what you can do to help. We must remember that creating awareness is an incredible challenge; our oceans, lakes and rivers are depending on us. Don't forget to look up at what comes next; the base of one of the Powerhouse's original smokestacks is now home to a moon jellyfish exhibit. Learn about their life stages, from polyps to fully grown jellies, and watch as they "glow" in the dark.

**PACIFIC:** Here you see fish from the Red Sea, Eastern Asia, Indonesia and the northern cold water regions. Of the many, pay close attention to the venomous lionfish, the black and white snowflake eels, the tussockfin, sea stars and the giant Pacific octopus.

**COASTAL:** Check out our 11,000 gallon Touch Pool, sealion exhibit, and live coral exhibit in our Coastal gallery. New this year: a small touch pool with sea stars, urchins, cleaner shrimp and more!

**TROPICAL REEF:** This corridor features fish from Fiji and Hawaii including the playful rabbitfish, the burrfish and angelfish.

**SHARK SEATUBE:** Home to four species of sharks and an amazing variety of aquatic life, this gallery is surely impressive. Elegance and splendor co-exist in the exhibit with sand tiger sharks reaching up to 8' long. Let our Seatube fascinate you as you walk through this wonderful subaquatic world, allowing extraordinary viewing access to sharks, moray eels, groupers and more.

**EXPLORATION STATION:** The Exploration Station is designed as a research vessel and is located on the second floor of the Powerhouse, next to the Cafe. This exhibit features hands-on interactive fun especially for our younger guests. Stop by to meet our most electrifying resident, the electric eel, presented by FirstEnergy.

**Second Floor**