

# Hudson Explorers



## Frog Quest

### Activity Guide



THE HUDSON GARDENS  
& EVENT CENTER

**Dear Educator,**

Welcome! Today you and your group will learn all about frogs and how they grow and live at Hudson Gardens.

You will find an Activity Guide, map, and all of the tools you will need to complete each activity in your Hudson Explorers Activity Pack. As you read through the Activity Guide, you will notice that educator instructions and prompts are written in *green italics*. The rest of the text found throughout the Activity Guide is meant for you to read aloud with your students, with important words underlined.

Using the Activity Guide and the map provided in the Activity Pack, you will proceed in sequential order to each of the following five Activity Stations located throughout Hudson Gardens:

Activity Station #1 – Frog Observations, Location: Water Garden

Activity Station #2 – Polliwog to Frog, Location: Amphitheater

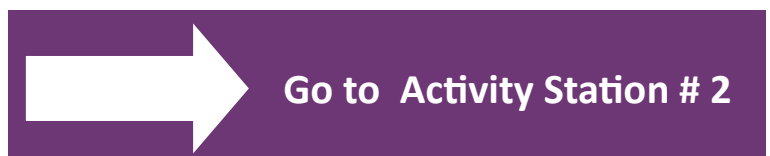
Activity Station #3 – Croak to Connect, Location: Pond's edge

Activity Station #4 – Frog Fashion, Location: Monet's Place

Activity Station #5 – Eat or be Eaten, Location: Amphitheater

You are probably very excited to start finding frogs, so your journey today will start at the Water Garden.

- ◆ *Proceed to the Water Garden now (Activity Station #1)*
- ◆ *Distribute binoculars to each student in your group. Allow the students to search for frogs and signs of frogs for about 10 minutes (there will be additional time at the end of the activities to explore this area again for frogs).*
- ◆ *Once your group is ready to start learning about these amazing amphibians proceed to Activity Station #2 in the Amphitheater.*





### Polliwog to Frog

#### *Educator Instructions:*

- ♦ Find an open spot anywhere on the grass in the Amphitheater area for your group to sit in a circle.
- ♦ Take the “Frogs” book out of your Activity Pack and read it aloud to the students, or, if their reading abilities allow, have the students take turns reading aloud.
- ♦ Then discuss the questions below and on the next page.

### Polliwog to Frog

- ➡ Baby frogs hatch from eggs. Do you think their eggs are similar to bird eggs? *(Wait for responses.)*  
No — Frog eggs do not have a hard shell, they come in large soft clumps with up to 1,000 eggs. These clumps are called frog spawn and are surrounded by jelly to keep them moist and safe. After they hatch, the tadpoles will eat the jelly as their first meal!
- ➡ Where does the mother frog lay her eggs? *(Wait for responses.)*  
The mother frog lays her eggs in water. The first stage of a frog’s life as a tadpole occurs completely in water.
- ➡ Why does the mother lay so many eggs? *(Wait for responses.)*  
Many of the tadpoles will be eaten by fish, birds and other frogs so laying many eggs increases the chance that some of them will grow into adult frogs.
- ➡ What body part do tadpoles use to breathe? *(Wait for responses.)*  
When the tadpoles hatch, they have not yet developed lungs to breathe air, so they rely on gills to breathe under water.
- ➡ What do tadpoles eat? *(Wait for responses.)*  
Small aquatic plants and algae. Once they grow older, they prefer a bigger meal!

Continue to the next page

### Polliwog to Frog, continued

#### *Educator Instructions:*

- ◆ *Take the Frog Life Cycle Model out of your Activity Pack and place on the ground in the middle of the circle.*
- ◆ *Ask your students to identify the first stage of a frog's life cycle.*
- ◆ *Continue the life cycle progression from eggs to adult frog. For each life cycle stage, ask your students to identify what has changed in the frog.*
- ◆ *Use the questions below to prompt observations and discussion.*

#### Let's Make Observations!

- ➡ What differences do you notice between the tadpole (or polliwog) and the adult frog? *(Wait for responses.)*  
The adult frogs lose the tail and develop legs to go on land; lungs develop to breathe air; skin color becomes darker in order to blend in with the environment; and they become carnivores, meaning they eat other animals (they will eat anything that can fit in their mouth).
- ➡ Do you think an adult frog's behavior is different than a tadpole's? *(Wait for responses.)*  
Yes! Adult frogs begin spending more of their time on land in search of food and places to live (habitat).
- ➡ Why do tadpoles have a tail and adult frogs do not?  
Tadpoles live entirely in water so a tail allows them to be good swimmers! Adult frogs have webbed feet to help them swim, but they also have long legs to hop around on land.
- ➡ What are frogs called in the stage between being a tadpole and an adult frog?  
Once they start to lose their tail and develop legs, they are called froglets.

- ◆ *Return the Frog Life Cycle Model to the Activity Pack.*



Go to Activity Station #3 at the Pond's edge



### Croak to Connect

#### *Educator Instructions:*

- ♦ Find a grassy area along the Pond to sit.
- ♦ Remove the Wood Frog from your pack.

#### How and Why do Frogs Communicate?

- ➡ Dogs bark. Lions roar. Ducks quack. What sound does a frog make? *(Wait for responses.)*
- ➡ Animals make different sounds so they can communicate with each other. Frogs talk to each other by croaking. Frogs will croak to find partners, give a warning about danger, to protect their homes, or even to tell each other about storms! Usually only male frogs croak; female frogs only croak when they are scared.
- ➡ Not all frogs sound the same. Each frog has its own unique call so that they can attract the right partners. When a frog croaks, its throat looks like a blown-up balloon! Most of the frogs at Hudson Gardens are American Bullfrogs. They were named after bulls (another word for male cows) because their croaking call sounds like the mooing sound that a cow makes!
- ♦ Pass the Wood Frog around so that every student has a chance to make a frog call.
- ➡ Do you think that the frog call sounds like a cow mooing? If not, what else might it sound like? *(Wait for responses.)*
- ♦ Collect the Wood Frog. Walk slowly along the edge of the Pond. Listen for frog sounds. You may hear slow and low croaking calls or high-pitched “alarm” calls (usually followed by a splash as the frog jumps into the water).
- ➡ Do you hear any croaking sounds from real frogs right now? Why might this be happening? *(Wait for responses.)*



Go to Activity Station #4 at  
Monet's Place



### Frog Fashion

#### *Educator Instructions:*

- ♦ *Find a grassy open area along the Pond or at Monet's Place (if it's not being used) and ask the students to sit in a circle.*

➡ There are many ways in which animal bodies are different from human bodies. Sometimes these can even be different body parts that help an animal to live in their environment better— these are called adaptations.

➡ For example, polar bears have thick white fur to blend into their snowy environment and keep them warm. Birds have feathers and wings so that they can fly and get away from enemies or catch flying insects to eat. Now let's learn about all the many amazing adaptations that frogs have.

- ♦ *Ask for a student volunteer and ask him/her to come to the front of the group.*

➡ Does the volunteer (*insert student's name here*) look like a frog? Maybe not now, but in this activity, we will be turning him/her into one!

- ♦ *Remove the Frog Adaptation Kit from the pack. First, take out the goofy eyeballs and have the volunteer wear them.*

➡ How might frog eyes be like goofy eyeballs? (*Wait for responses.*) The real reason that frog eyes are like goofy eyeballs is because their eyes are amazing! Frogs' eyes are big and very strong. When a frog swallows, its eye balls help push food down its throat. Frogs also have two sets of eyelids. One set of eyelids is see-through so that they can protect their eyes while swimming underwater with their eyes open. Their eyes can also see in all directions to help them spot predators.

Continue to the next page



### Frog Fashion, continued

#### *Educator Instructions:*

- ◆ *Below is a list of the remaining items in the Frog Adaptation Kit. Repeat the process from the previous page for each item, making sure the volunteer wears all items until the end of the activity.*

- ➡ Ear Muffs: Frogs' ears look like flat circles on the side of their heads. When sounds reach the frogs, they vibrate, sounding a little bit like a drum to the frog. Each flat circle is called a tympanum.
- ➡ Mesh Shirt: Frog skin has many tiny holes in it that help water and oxygen get into their bodies easily. A frog grows new skin very often; some types of frogs do it every day! New skin grows under the old and frogs eat the old skin. Eating the skin makes sure the frog doesn't lose any of the nutrients contained in the old skin! The frog also breathes through its skin when it is under water.
- ➡ Webbed Finger Gloves: Frogs have strong webbed feet (kind of like ducks) that help them swim easier and faster.
- ➡ Snap Bracelet: Frogs have very long tongues that fold up inside their mouths. Frogs eat mostly insects and don't chase their food. They hold very still and wait for an insect to fly by and then flick out their tongue to catch it. The insect sticks to the end of their tongue, which is kind of sticky, and the frog swallows the insect whole. It takes less than one second for a frog to catch and swallow an insect.
- ➡ Now *(insert student's name)* really looks like a frog! On the rest of your visit today, try and look for other ways in which frog bodies have adapted to their environment!

- ◆ *Pass around all of the adaptation items to allow each student a chance to dress like a frog. Return all items to the bag before moving to the next station.*



Go to Activity Station #4 in  
the Amphitheater

### Eat or Be Eaten: Predator vs. Prey Game

#### *Educator Instructions:*

- ♦ Find a large open spot anywhere on the grass in the Amphitheater.
- ♦ Remove the lily pads, plastic insects, and bandanas from your Activity Pack.
- ♦ Spread out the lily pads and scatter the bugs around the lily pads.

- ➡ Today we learned that bullfrogs eat insects. Can you think of any animals that might want to eat a bullfrog? *(Wait for responses.)* Hawks, herons, snakes, turtles, foxes, raccoons, coyotes, and even larger frogs might eat a frog.
- ➡ An animal that eats other animals is called a predator. The animal that gets eaten is called prey. A bullfrog can be both prey and a predator.
- ➡ Today we are going to see whether you can survive as a bullfrog in a pond filled with predators.
  - ♦ For every 5 students, ask for 1 student volunteer to be a predator. Tie a bandana around the predator's arm to indicate who the predator is. The remaining students are the bullfrogs (prey). Have the predator(s) stand on one side of the lily pads and the prey stand on the opposite side of the lily pads.
- ➡ The bullfrogs will hop from lily pad to lily pad and try to gather as many insects as they can without getting "eaten" (tagged) by the predator. The bullfrogs are only safe when they are on or touching a lily pad (lily pads can be shared). If a predator tags you, you are out of the game.
- ➡ The game is over when all insects have been collected or when all bullfrogs have been "eaten" by the predators. The bullfrog that has collected the most insects and has not been eaten by a predator wins the game and lives the longest in the pond!

Continue to the next page



## Eat or Be Eaten: Predator vs. Prey Game, continued

---

### *Educator Instructions:*

- ♦ *Play one round of the game to make sure everyone understands the rules.*
- ♦ *For the second round of the game, introduce a variation so that when a bullfrog is tagged for the first time, it becomes “injured” and only loses a leg instead of being eaten. After being tagged once the bullfrog can continue to play the game but must hop on one leg to collect insects. If a bullfrog is tagged a second time, it has been “eaten” and is out of the game.*
- ♦ *Play multiple rounds of the game allowing each student to have a turn as the predator.*
- ♦ *After playing the game, ask your students if it was harder or easier to catch insects when they were missing a leg? Explain how the faster frogs with both legs are more likely to get away, survive, and have babies.*



## Congratulations!

---

### You have completed Frog Quest!

- ➡ Remember everything you have learned today about how frogs grow and survive.
- ➡ Now take your knowledge with you and return to the Water Garden and other ponds throughout Hudson Gardens to search for more frogs using the binoculars.

#### *Educator Instructions:*

- ◆ *Refer to your map for other great habitat around Hudson Gardens to find frogs and tadpoles.*
- ◆ *Please collect all materials and binoculars from your students and return them to your Activity Pack.*
- ◆ *Please return Activity Packs to the Welcome Center before leaving Hudson Gardens.*