

## **BEFORE YOU VISIT THE GARDEN...**

### Lesson Ideas for **Grade 2**

#### ***Activity #2: Living a Fish Life***

##### **Lesson Objective:**

Students will understand that koi offspring resemble their parents.

Students will be able to describe the sequence of steps in the life cycle of a koi fish.

##### **Materials:**

Picture of Koi (picture #1)

Fish Life Cycle worksheet (activity page #2)

##### **Background:**

A typical fish life cycle starts with an egg. The egg hatches into what is called a yolk sac fry - a larval stage where the fish has an attached yolk that provides it with nourishment for its first week or two. The true larval stage begins when the fish has absorbed the yolk and starts feeding for itself. When the fish gets bigger and looks very much like an adult, it is considered a juvenile. Once the fish matures and can reproduce and lay eggs, it becomes an adult.

Koi are not live bearers but lay thousands of eggs in a single breeding. Koi must be at least 3 to 4 years old and of sufficient size before they breed. Koi require special water conditions and environment for breeding. The eggs and baby Koi must be separated from the adult Koi or they will more than likely be eaten. The baby Koi hatch in about 3 to 7 days depending on the weather. The survival rate for baby Koi is less than 50%.

##### **Exploration:**

1. Show students pictures of koi. Ask students what kind of animal is in the pictures.
2. Explain that the animal in the picture is a special kind of fish called a koi, which they will be visiting on their trip to the Japanese Gardens. Ask students to volunteer what they think a baby koi would look like (encourage responses that a baby koi would look like its parents).
3. Ask students if they know how a baby fish begins its life (you may want to refer to the movie "Finding Nemo" if students are familiar with this story).
4. Explain to students that fish start their life as an egg (diagram this on chart paper or on the board). When they hatch the baby fish are called "fry." When they are a bit older they are called "juveniles (just like people!)," and when they are full-grown they are adults. Have students repeat the stages as you write them.

*For kinesthetic learners:*

5. Have students act out the stages in a fish life-cycle by first curling up in a ball to represent the egg, then pretending to hatch and be “little” for the fry, growing bigger for the juvenile, and finally swimming around like a “big” fish as an adult. Be sure to have students say the stages aloud as they are acting them out.

**Activity:**

6. At their desks, give each student a copy of the Koi Life Cycles Worksheet (activity page #2).
7. Explain to students that the pictures represent the life cycle of a koi fish, but that they are all mixed up. The students are to put it right by cutting out the squares, and glueing the stages in the correct order on a piece of construction paper.

**Discussion:**

8. When all students have completed the activity, have them repeat the stages from egg to adult, pointing to their papers.

Tell students that one koi fish can lay thousands of eggs, which hatch after only three to seven days. Ask students why they think koi lay so many eggs. Explain that this is because the adults often eat the newly hatched fry, and since it takes three to four years before a koi fish is mature, most don't survive to become an adult.

