

Lesson Plan: Creating a Mini Ecosystem

By: Sara Perry



Suggested Grade Levels: 1st Grade/2nd Grade

Materials:

1 Beta Fish

1 Aquaponic Fish Tank (kits usually include bottom gravel)

Organic plants/seeds

Objectives:

Students will understand what all plants and animals need to survive.

Students will learn how plants and animals rely on each other for survival.

Students will understand the importance of proper care of plants and animals.

Lesson Steps:

1. Introduce students to fish and plants by creating a diagram of each and labeling the parts together in a science journal.
2. Discuss with students what all plants and animals need to survive (sunlight, water, air, food, and temperature). This can be done by reading a book about them, or through video, or a teacher led discussion.
3. Introduce students to the the vocabulary word: Ecosystem: Where all living things in an area interact with each other for survival (living and non-living).
4. Show students the Water Garden or Aquaponic Garden. Explain that this system works when the plant roots having access to the water from the top. The fish feed on the roots of the plants, while the fish waste feeds the plants, and the plants clean/filter the water.
5. Introduce the class Beta fish (be sure to give it a name), and set up the tank. It is important to plant some plants in the water to ensure that the fish is receiving enough nutrition.
6. Assign a student to be the monitor each week (it may be necessary supplement with fish flakes at times, or to get a snail to help keep the tank clean). Students will observe weekly as plants grow, and record the changes and behavior in a science journal.

7. Students can journal plant growth, and fish behavior throughout the school year. Teachers should focus on teaching the life cycle of a plant, life cycle of a fish, distinguishing features of each, and how they survive in their environment.

Evaluations/Assessments: Students should be able to put the life cycle of a plant in order, and label the features of a fish that help it survive in its environment. Students should also be able to write or explain what animals and plants need to survive. This can be done orally or in written form.