

Personal Ecosystem

For An Ecology Unit

Description: Students will build an aquatic ecosystem in a large jar (a pickle or relish jar with the lid, from a restaurant is the best). The students will be observing water plants, snails, and fish. Students will record data concerning the observations they make over a minimum for week period. (If you do this in the fall, students keep them going until Christmas and then take them home)

Goal: Students will develop and apply scientific skills: observing, measuring, classifying, communicating data, inferring, and predicting.

Objectives:

- will construct aquatic habitats in jars (small group or individual)
- will create charts to record data from observations.
- will observe their habitats over a period of 1-4 months, and record what they see: i.e. changes in population, plant growth, water quality, and animal growth.
- will graph their data.
- will write explanations for what they observe
- specific questions, such as:

What would happen to your plant population if you added more snails?"

"What environmental factors do you think influenced the growth of your fish/snails/plants?"

"What do you think would happen if the fish population doubled? Doubled again (quadrupled)?"

Materials:

1. large relish or pickle jars – the lid as well
2. water – let sit for 24 hours to remove chlorines etc.
3. guppies
4. elodea
5. duckweed
6. water snails
7. aquarium gravel

Procedure:

- Fill bottom of bottle with gravel (about 5 cm deep) – be sure to clean both the jar and the gravel thoroughly
- Add the water (leave 8 – 10 cm at the top) and then root two-three 10 cm elodea stalks firmly into the gravel.. Sprinkle a small amount of duckweed onto the water's surface. Let stand for 24 hours.
- Add one or two small snails. Let sit for another 24 hours.
- Add two guppies.
- Screw the lid back onto the jar, and
- Begin your observations

Students research pond ecology and the organisms involved in their project. They study their entire little ecosystem, constantly observing, looking for changes etc.

At the end of the observation period, students can graph the information they've obtained through observation. They could write an hypotheses to explain some of the things they've seen.