



Pond Ecology

Guide for Curriculum Unit 92.05.07
by Joe Lewis

The subject of ecology is particularly important for our students today because we as Americans have finally realized that in order for our planet to remain alive, we must take preventive measures to save it. Pond Ecology takes into account one aspect of the planet—ponds. Through experiments, readings and discussions, the students will look critically at ecosystems and ecology as they relate to ponds.

The curriculum, “Pond Ecology,” will involve the following components:

I. Introduction

The origin of the pond and its characteristics will be discussed in this section of the paper.

II. The Scientific Method

Since one of my goals in this unit is to encourage students to perform and design their own experiments, I feel that it is necessary to include a summary of the proper method of writing a scientific investigation. Therefore I will list and briefly explain the five basic steps of the scientific method.

III. The Water Cycle

The students will draw a diagram and discuss the steps involved in the water cycle. They will identify the water cycle as the continuous movement of water from the atmosphere to the earth and from the earth back to the atmosphere.

IV. Fundamentals of Pond Ecology

This section of the paper will concentrate on giving the students background information on ecology in order for them to fully understand ecosystems. Therefore, the following ecological concepts will be discussed, including but not limited to: (a) food webs, chains and pyramids; (b) biotic versus abiotic components of the environment; (c) ecological relationships, communities, population and organism that are found in ponds; (d) ecological succession of the pond community.

V. Constructing a Pond Community

The students will set up one or two aquariums in the classroom. Once the aquariums are ready, the students will take a trip to a nearby pond and collect water, plants, animal life, soil, etc.. The specimens collected will be placed in the aquarium located in your classroom. I will also include a lesson plan for constructing a pond outside of your school if we can receive permission to do so.

VI. Limiting Factors Within a Pond Community

This section of the paper will include experimentation relating to the biotic components of the pond community. Students will perform simple experiments to see how water, temperature, light and minerals effect the biotic community that exists within the pond.

(Recommended for General Science, grade 5, and Biological Science, grade 7)

Key Words

Ecosystems Ecology Environmental Science

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