

Best Practices of Technology Integration

Title: *Frogs*

Subject: Science

Grade Level: 7th and 8th grade

Description:

The students will explore the basic external and internal structures of an amphibian and how an adult frog is able to live in and out of water. The students will also compare the frog anatomy to humans. The students will be collecting pictures of their frog using Casio Digital Cameras and the QX3 Intel Play Microscopes. The students will then use their pictures to:

- Create a web page to develop home school connections
- A class PowerPoint® that will examine and reflect all parts of the frog that was learned in the dissection; and
- A virtual frog dissection.

Narrative:

Focus questions include:

- What are the basic external and internal structures of an amphibian?
- How is an adult frog adapted to live in water as well as on land?
- What is the color of the frog and the type of skin?

This activity will meant to be a hands-on. The hands-on activities allows the students to be teamed in groups that will enable all learning styles to excel and encourage these students to support each other. The groups in this lesson will be responsible for following the step-by-step instructions and taking clear and precise pictures that can be used in the class development of the frog PowerPoint®. This creates an authentic audience for the students and generates a purpose to the project and the learning.

Curriculum Benchmarks:

[MI.SCI.I.1.MS.1](#)

Generate reasonable questions about the world based on observation.

[MI.SCI.I.1.MS.2](#)

Design and conduct simple investigations.

[MI.SCI.I.1.MS.4](#)

Use measurement devices to provide consistency in an investigation.

[MI.SCI.I.1.MS.5](#)

Use sources of information to help solve problems.

MI.SCI.I.1.MS.6

Write and follow procedures in the form of step-by-step instructions, recipes, formulas, flow diagram, and sketches.

MI.SCI.II.1.MS.1

Evaluate the strengths and weaknesses of claims, arguments, or data.

MI.SCI.III.2.MS.1

Compare and classify organisms into major groups on the basis of their structure.

MI.SCI.III.2.MS.4

Explain how selected systems and processes work together in animals and plants.

MI.SCI.III.3.MS.1

Describe how characteristics of living things are passed on through generations.

MI.SCI.III.3.MS.2

Describe how heredity and environment may influence/determine characteristics of an organism.

Materials/Hardware/Software:

Lab Directions

Colored Pencils

Writing Utility

Netscape Navigator

Computers with Internet access

Microsoft™ PowerPoint®

Digital Cameras

QX3 Microscopes

Preserved Frogs

Dissecting Trays

Dissecting Pins

Scalpel

Scissors

Forceps

Dissecting Needle

Medicine Dropper

Probe

Detailed Timeline:

Students will need:

- 3 class hours in Science to dissect the frog, collect their data and pictures,
- 1 class hour to produce the web page and upload pictures and
- 2 class hours to produce the class PowerPoint® presentation.

The teacher will act as facilitators, lab guide and software/hardware consultants.

Teacher Preparation:

The teacher will have to be trained in Netscape Composer, using Microsoft PowerPoint®, QX3 Microscopes/ Software and Digital Cameras. This can be done during preschool training of the software and computer equipment. These activities would take approximately 9 hours in training time.

Prerequisite Student Skills:

Students would need to be instructed on Netscape™ Composer, using Microsoft™ PowerPoint®, QX3 Microscopes/ Software and Digital Cameras This training would have been completed in the 6th and 7th grade curriculum.

Activities/Procedures:

The students will start in their science classes-discussing amphibians focusing on frogs. The students will be divided into groups for the dissection portion of the assignment.

The frog dissection procedures can be found in *Parade for Life - Laboratory Investigation 14* by Prentice Hall, or any science book containing procedures for dissecting frogs.

During the lab students should be taking pictures after every main step in the process.

The students will then use a computer to create a web site with their frog pictures included on the site should be the process and reasoning for the dissection.

The classes PowerPoint® presentation will be a combination of all groups' information; the classroom teacher will guide the lesson in creating one presentation working through all the steps of the process. The best pictures should be used to create and guide the learning, the writing process should be used to insure only the best, and most concise explanations are used.

Assessment/Evaluation:

This project is very self-directed, therefore the expectations should be clear and mapped out ahead of time so that the teacher can act as a facilitator and consultant. The evaluations will be through observations, lab reports and contribution towards a final product.

Follow-up Activities:

Compare the frog to humans and explore other animals. Another activity is to make connections with the frog's environment and the make-up of a frog.

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