



LESSON ONE-ACTIVITY ONE: Classification of Alaska's Salmon

Content Objectives: The students will deepen their understanding of the concept of classification. They will use this knowledge to learn the classification of the five species of Pacific salmon.

Key Vocabulary: taxonomy, adaptive radiation, homology, parallelism, convergence, analogy, salmonids, *Oncorhynchus*, endothermic, ectothermic

Supplementary Materials: website topic flashcards, website crossword puzzles, Wikipedia Worksheet, lined paper notebooks and binders

Resources: ADFG-Alaska Department of Fish and Game, USFWS-United States Fish and Wildlife Service, 4-H Fisheries, Pacific Salmon Foundation

Books: Fish and Fisheries Alaska Sea Week, Project Wild Aquatic

Website Wandering:

1. <http://anthro.palomar.edu/animal/default.htm>
2. <http://en.wikipedia.org/wiki/Oncorhynchus>
3. http://encarta.msn.com/media_701500896_761563856_-1_1/Classification_of_Fish.html

PREFACE TO FISHERIES UNIT:

Begin a fisheries notebook/binder before starting the unit. Provide each student with a lined notebook and a binder. Have the students organize all the notes taken during the unit in the notebook. Have the students organize all worksheets, internet activities and research work in the binder by lesson/activity.

Activity Sequence:

Part One-What is classification?

Have students open the first listed website and read each topic. The topics lead the student through the classification of a familiar species-humans. While reading each topic they should click on highlighted words to hear the proper pronunciations of words. They should also be sure to note any information pertaining to fish. This will help them build background knowledge for the next lessons.

NOTE: This is a good opportunity to give a notetaking assignment and have the students begin using their fisheries notebooks. By the end of the unit they will be able to see how, with the help of the instructor, they have honed their notetaking skills over time. The following notes give a brief description of each topic and include some potential questions for discussion.

Topics:

1. Introduction-Note the discrepancy among scientists on the number of species on earth. Why is this? How many species have been given scientific names? Do all species eventually get classified? Who were the forefathers of classification? How did classification itself evolve from taxonomy to adaptive radiation?
2. Principles of Classification-Introduces the concepts of homology, parallelism, convergence, and analogy. Great link to a PBS website on tigers and ligers.
3. Kingdom to Subphylum-How organisms are distinguished on the basis of cellular organization and methods of nutrition under the classification of kingdom. How organisms are distinguished on the basis of similarities in basic body plan or organization under the classification of phyla. Find information on fish here.
4. Class-If fish are in the subphylum vertebrata, what class are they? Are they endothermic or ectothermic?
5. Subclass to Infraclass-It's all about reproduction. Why is the platypus such an interesting mammal? What's the latest news on the platypus?

Have students take the short quizzes at the end of each topic. Encourage them to read the feedback given as it is designed to help them better learn the material. (This assignment can be done independently in class or as homework.)

Use the flashcards on the website as a resource for a classroom challenge using small groups as teams. You could also have the students use them on the website as practice.

Use the same small groups for a similar challenge using the crosswords provided on the website. Have the groups delegate at least one person per topic to find the answers. The groups should work together as a team to finish all the questions of the two crosswords.

Part Two- What are the Pacific specifics?

Have students open the second listed website. Give each student a Wikipedia Worksheet and have them use their fact finding skills to answer the questions. The extra credit assignment has the potential to be interesting.

Extension: Make cards with the classification levels listed on them and challenge students to put them in order as quickly as they can.

Part Four-What about other fish?

Have students open the third listed website. Instruct each student to create five questions for which the answers may be found on this website. The idea is for the students to familiarize themselves with how salmon fit into the overall class of fishes.

Extension: Have the students do the activity in Project Wild Aquatic called Fashion a Fish (pages 56-60).

Part Five-Name That Salmon

Have students do Activity One from Unit Two-Name That Salmon in Fish and Fisheries Alaska Sea Week.

Wrap-up Discussion:

Discuss with students the need for such a complex system of classification. Remind them that there are 1.8 million named species in the world and many millions more undiscovered. (Some species may even become extinct

before they are discovered.) How has classification changed over time and what were the main things that influenced those changes.

SIOP FEATURES:

Preparation

- Adaptation of Content
- Links to Background
- Links to Past Learning
- Strategies incorporated

Scaffolding

- Modeling
- Guided practice
- Independent practice
- Comprehensible input

Grouping Options

- Whole class
- Small groups
- Partners
- Independent

Integration of Processes

- Reading
- Writing
- Speaking
- Listening

Application

- Hands-on
- Meaningful
- Linked to objectives
- Promotes engagement

Assessment

- Individual
- Group
- Written
- Oral