



SeaWorld/Busch Gardens

Bony Fishes

4-8 Classroom Activities

Scale Study

OBJECTIVE

The students will be able to identify and describe three different types of scales.

ACTION

1. Have students pair up. Provide each pair with a microscope, some fish scales, paper, and pencil.
2. Direct students to study each scale individually under the microscope.
3. Have students do a careful, detailed drawing of each scale.
4. Place transparency of enlarged scales on overhead projector. Invite students to use it as a guide to help identify their different types of scales. Have them label each scale sketch.
5. Ask students to write a description of each scale under its drawing.

DEEPER DEPTHS

A fish scale shows growth rings like those on a tree trunk. You can determine how old a fish is by counting the rings on one of its scales. Wide spacing between rings indicates a rapid growth rate. Ask students to estimate the age of each fish by counting the rings on its scale. How many periods of rapid growth has the fish experienced?

BACKGROUND INFORMATION

There are three types of scales found on bony fishes: cycloid, ctenoid, and ganoid. Cycloid scales have a smooth, circular surface. Ctenoid scales have tiny teeth, like a miniature comb, along the outer edge which make the fish feel rough to the touch. Hard, shiny ganoid scales are diamond-shaped and cover the skin of primitive bony fishes like gar.

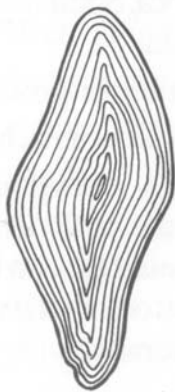
MATERIALS

For student pair:

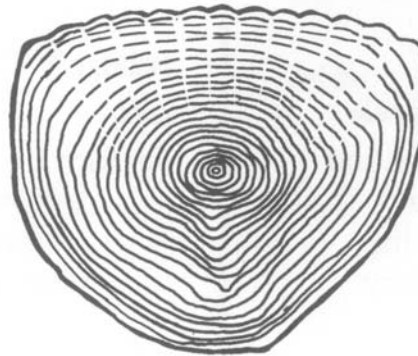
- wide-mouth pint jar
- dissection microscopes
- bony fish scales (available through a biological or science supply catalog, or visit a fish market and ask for scales from these fishes: perch or bass (ctenoid scales), salmon (cycloid scales), sturgeon or gar pike (ganoid scales))

For class:

- overhead projector
- transparency of enlarged copy of the scales at the bottom of this page
- paper
- pencils



ganoid



ctenoid



cycloid

Bony fish scales can be cycloid, ctenoid or ganoid.