

FISHERIES DAY 1 – Teacher Resources

Interview

Michael McCloud
CTUIR Fisheries Technician

Activity

Feed the Fish in Mike's Pond

Materials

Class set of dice (2 per student or student group)
Colored pencils or markers
"Feed the Fish in Mike's Pond" student worksheet

(Online dice can be found at this and other websites <https://www.freeonlinedice.com/>)

Teacher Instructions

1. Students can work individually or in pairs sharing a grid worksheet
2. Students roll two dice
3. The numbers that come up are the numbers the student uses to make an array on the grid
4. They can place the array anywhere on the grid but the goal is to fill the grid as full as possible
5. After the student colors the array, they write the number sentences in the spaces provided at the bottom
6. Game ends after 10 turns or when no other arrays can be drawn

Background

This activity is adapted from the youcubed.org task "How Close to 100?"
<https://www.youcubed.org/task/how-to-close-100/>

The activity works different areas of the brain together building number sense and connecting multiplication facts to both visual representations (area) and conceptual representations (number sentences).

FISHERIES DAY 2 – Teacher Resources

Interview

Sally GEE
ODFW Microbiologist

Activity

Life Cycle of Salmon

Materials

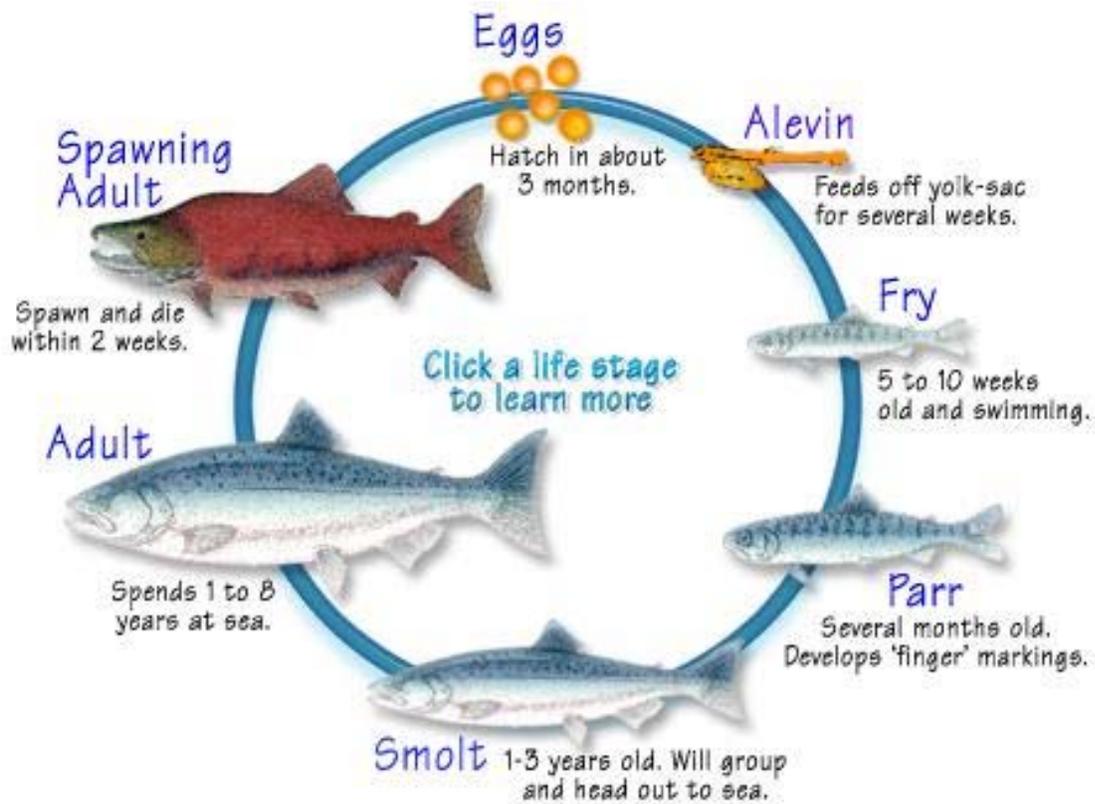
“Life Cycle” student worksheet
Colored pencils or markers (greens, grays, blues, oranges and reds are needed)

Teacher Instructions

1. Ask students to recall the fish they have seen so far – sizes and colors (including eggs)
2. Show students the different life stages on the worksheet and ask them to color each life stage as they are in real life

Background

Sample of life cycle coloring - <http://www.fishex.com/salmon/alaskan/salmon-life-cycles>



FISHERIES DAY 3 – Teacher Resources

Interview

Chuck Simpson
ODFW Screen Shop Manager

Activity

What is a watershed?

Materials

Columbia River Basin map displayed on screen for the whole class – see link below
Blank paper for crumpling

Teacher Instructions

1. Give pairs of students a piece of blank paper
2. Instruct students to crumple their paper and then reopen the page to lay on the desk (slightly crumpled allowing ridges and valleys to form)
3. Ask students to imagine that this paper is the land and they are flying above it in an airplane viewing mountains and valleys. Have them discuss with their partner where the rain would run and collect in their landscape.
4. Describe how water flows from high points on the land all the way to the ocean and how people, such as farmers, and animals, such as fish, use the water as it flows from tiny streams in the mountains all the way to the ocean. See definition of a watershed below.
5. Show map of the Columbia River Basin area and orient students to the map – show state lines and how the Columbia River defines the border between Oregon and Washington. Point out the watershed where your school is located. Ask students if they know the name of the largest river in their county (i.e. Umatilla River, Grande Ronde River, Wallowa River, John Day River, Powder River, etc)
6. Trace the flow of water from your watershed to the Snake River and/or Columbia River and all the way to the Pacific Ocean
7. A longer activity is linked below if you want to go more deeply into modeling a watershed.

Background

Definition of a watershed:

Water falls downhill by gravity. When it snows or rains up high on a mountain, it eventually ends up in the ocean. A watershed is the name we give to an area of land where all the snow and rain ends up in the same river on its way to the ocean.

Link for Columbia Basin Map

<http://plan.critfc.org/vol1/tribal-restoration-plan/biological-perspective/habitat-of-anadromous-fish/>



Note for students in southeastern Oregon counties:

If you live in an area where water enters the Snake River above Hells Canyon Dam, your watershed is not named on the Columbia Basin map because Hells Canyon Dam blocks the passage of anadromous fish above that site. The Powder River, Malheur River and Owyhee River enter the Snake River above the dam. You can still identify your location on the map and trace the flow of water from these rivers to the Pacific Ocean.

Parts of Harney county are not within the Columbia River Basin but rather the Great Basin. The Great Basin is an interesting region because rain that falls here does not flow to the ocean at all. Most of this region is a desert but can you guess where the water flows? What is the lowest point in the United States? Death Valley



Supplementary Activity – Crumple a Watershed

OMSI has a great one-hour activity to help students conceptualize a watershed.

<https://omsi.edu/sites/all/FTP/files/expeditionnw/4.E.1.Crumple.pdf>

FISHERIES DAY 4 – Teacher Resources

Interview

Rebecca Viray
NOAA Fish Biologist

Activity

What does anadromous mean?

Materials

Columbia River Basin map (displayed on screen for the whole class)
“A Day in the Life of an Anadromous Fish” worksheet
Colored pencils or markers

Teacher Instructions

1. Show the Columbia River Basin map to the class. Trace the path from the river near your school to the ocean.
2. Ask students if they have heard the word “anadromous”
3. Explain what anadromous means (you can use the sample statement below)
4. Students trace path of anadromous fish on river map worksheet

Background

Sample statement to read to class:

Some fish live their whole life in a lake or a river or an ocean. Other fish travel! Anadromous fish, such as salmon and steelhead, are travelers. They hatch in a river or a lake and then travel to the ocean where they live most of their life. When they are ready to lay their eggs, they come back home to the river. They are able to live in both salt water and fresh water during their life. They travel thousands of miles through oceans and rivers and are able to “smell” their way home by following familiar scents in the water.

Additional information about anadromous fish and their ecological significance:

Salmon are thought to find their natal stream through a combination of imprinting on the chemicals (smells) in the river where they hatched and imprinting on the magnetic field at the location where they first entered the ocean.

Anadromous fish are very important to forest ecology. By traveling to the ocean and returning as adults, they are an important source of energy and nutrients. Forest animals eat them and their decomposing bodies supplement the stream with nutrients built up from their life in the ocean.

Supplemental activity

“The Comings and Goings of Coho” – see PDF in folder