Swimming Along a Salmon's Life

GRADE LEVEL: upper elementary, middle school

DURATION: one 30-40 minute class period

OBJECTIVES

After this activity, students will be able to:

- List the steps of a salmon life cycle and place them in the proper order
- Explain that salmon life in both salt and fresh water
- List the types of aquatic habitats that salmon live in during their life cycle

MATERIALS

- **Activity 1:** One copy of salmon lifecycle per student, strip of colored paper (approx. 1" x 6" per student, glue or paste, scissors
- **Activity 2:** Large images of salmon life cycle, masking tape
- **Activity 3:** Map that identifies the life cycle route of salmon that pass through or near your local area (this is unique to your location and will need to be created)

PROCEDURE

1. Begin with a discussion about the life cycle of a salmon, emphasizing that it travels through both fresh and salt water and that it will return to its birthplace to spawn before death. Use a pictorial example of the salmon lifecycle during the discussion.

2. Continue the lesson by selecting one or more of the following activities (as time allows).

3. **Activity 1:** Provide students with a copy of the salmon life cycle and a strip of colored paper. Ask them to begin by cutting out the pictures of each of the stages of the salmon life cycle. Students should then reconstruct the salmon life cycle by pasting the pictures on their strip of colored paper in the correct order. Ask the students to finish this portion of the activity by working with a neighbor to glue the strip into a circle around their wrist as a bracelet. Explain that this is to

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The life cycle of a salmon is staged in both fresh and salt water habitats, making them an 'anadromous' species. Hatched in the gravel of streambeds, they make their way downstream to the ocean as they mature through the alevin, fry and smolt stages. Reaching a nutrient-rich estuary at the boundary of fresh and salt water habitats, the salmon smolt feed and grow as they ready themselves to be adults in the ocean.

Salmon are remarkable in their ability to return to spawn in the same stream of their birth. It's not well known how they find their home stream, but the sense of smell plays a large role in their homing ability. Salmon stop feeding when they enter their rivers and tend to travel upstream as a group.

When the home stream is reached, the female finds a place to build a nest or 'redd' in the gravel streambed and releases thousands of eggs for the males to fertilize. The adults will die after spawning, but the salmon life cycle begins again as the egg matures and hatch into another alevin.

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represent that the salmon life cycle continues through the new generation.

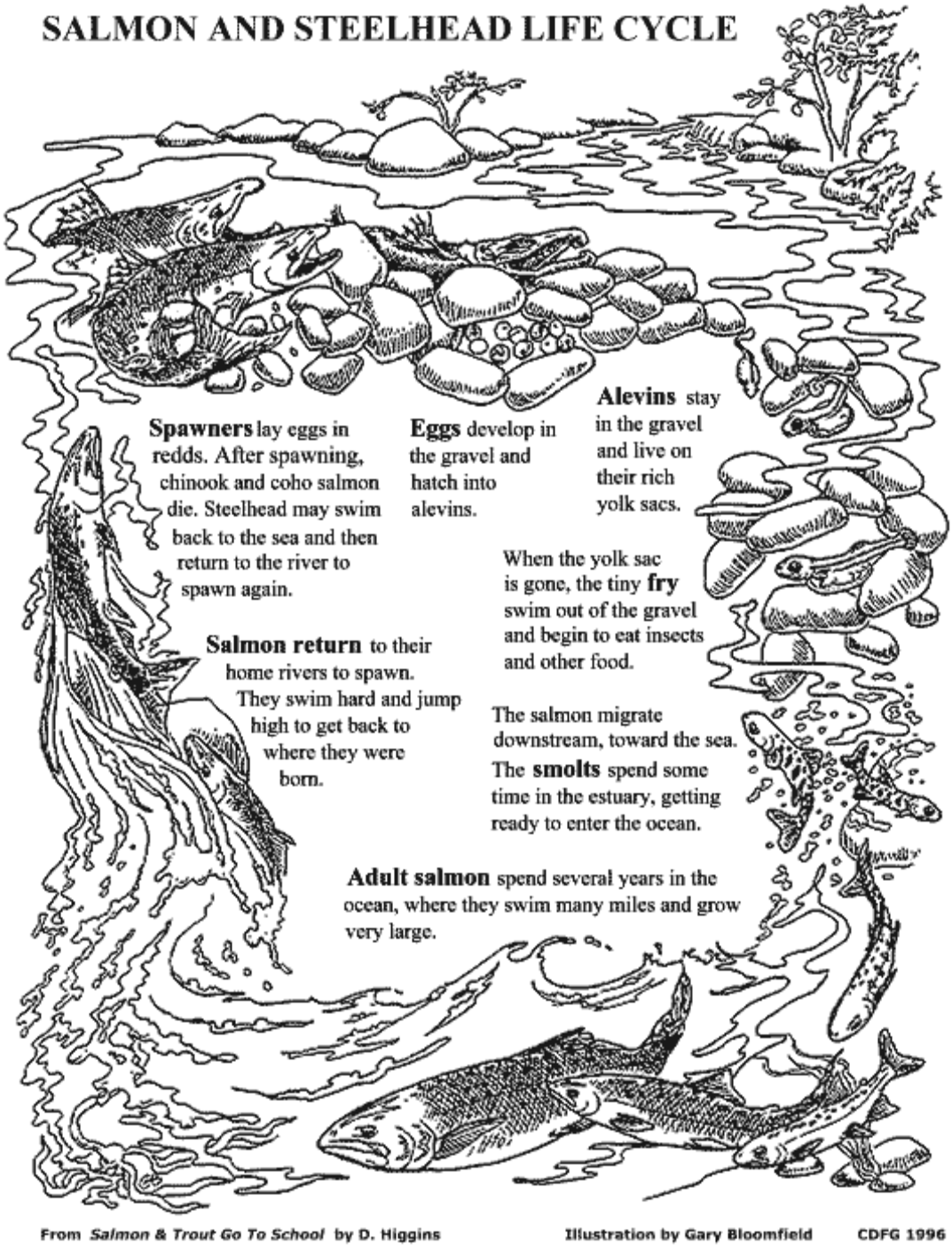
4. **Activity 2:** Bring students to a hill outdoors or a stairwell large enough for the classroom to share. Using large images of the stages of a salmon lifecycle, guide the students through recreating the salmon cycle by placing the stages in the appropriate 'upstream' (uphill or upstairs) or 'downstream' (downhill or downstairs) location.

5. **Activity 3:** Provide students with a map that also identifies the life cycle route of salmon that pass through or near your local area (this will need to be created in advance). Ask students to use the map to make calculations and/or estimates such as:
   - # of bodies of water the salmon pass through
   - length they might travel over the life cycle
   - # of regions they pass through (states, provinces, etc.)
   - distance between where they gather to move upstream and where they spawn

EXTENSION

1. Ask students to use the internet or library resources to create their own map of a salmon life cycle for species that travel through your local area.
2. Use Google Earth or Google Ocean to trace the life cycle of a salmon.
3. Research the life cycle of a salmon born in another location and compare and contrast the route they follow.

4.


SALMON AND STEELHEAD LIFE CYCLE
Spawners lay eggs in redds. After spawning, chinook and coho salmon die. Steelhead may swim back to the sea and then return to the river to spawn again.
Eggs develop in the gravel and hatch into alevins.
Alevins stay in the gravel and live on their rich yolk sacs.
When the yolk sac is gone, the tiny fry swim out of the gravel and begin to eat insects and other food.
Salmon return to their home rivers to spawn. They swim hard and jump high to get back to where they were born.
The salmon migrate downstream, toward the sea. The smolts spend some time in the estuary, getting ready to enter the ocean.
Adult salmon spend several years in the ocean, where they swim many miles and grow very large.
From Salmon & Trout Go To School by D. Higgins
Illustration by Gary Bloomfield CDFG 1996