OBJECTIVES

At the end of this lesson, the students shall be able to do the following:

- 1. Illustrate or tell ways that the actions of people affect fish:
- 2. Simulate or talk about the addition of pollutants to water;
- 3. Order numerals 1-13; and
- 4. Give an oral or written definition of new terms: chemicals, cooling pond, and pollutant.

BACKGROUND INFORMATION

Water has the amazing ability to clean itself. If waste materials are put into a river, they often sink to the bottom or mix with so much water that they cause no real problems— unless we dump too much waste material or even small amounts of dangerous material. Then it <u>is</u> a problem for people and for the plants and animals that live in the water.

SUBJECTS:

Science, Whole Language, Math, Art

TIME:

Advance prep (day 1) 20-30 min Activity (day 2) 30-40 min Follow-up (day 3) 20-30 min (This activity should be spread over 3 days to allow drying time.)

MATERIALS:

Happy the Fish (story)
sentence strips
pictures of Happy the Fish
15 sheets of white 12 x 18
construction paper
blue, brown, red and green tempera
paint
wide, clear shipping tape (may use
regular width transparent tape)
hole punch
2 or 3 large metal rings (may use
yarn)

When factories pour hot water into rivers, it is not healthy for the plants and animals that live there. Some fish need cool water and cannot live in warm water.

<u>Terms</u>

chemicals: substances which are used in factories, farms, and homes for a variety of purposes such as cleaning, painting, killing pests, and maintaining vehicles.

cooling pond: a pond where hot water from factories and power plants is stored until it is the same temperature as nearby bodies of water.

pollutant: any substance suspended or dissolved in water that builds up in sufficient quantity to impair water quality.

ADVANCE PREPARATION

- A. Prepare the pages of the big book.
 - 1. Cut the sentence strips apart.
 - 2. Glue the #1 sentence strip to the bottom of one of the pieces of large, white construction paper turned lengthwise.
 - 3. Do the same for sentence strips #2 #13 (one sentence strip per page).
 - 4. Copy the fish picture page for each child.
- B. Prepare the fish pictures.
 - 1. Have students color and cut out the pictures of Happy the Fish.
 - 2. Have students sort and stack the fish pictures according to facial expressions. (3 stacks)

PROCEDURE

Setting the stage

Share background information and definitions of terms.

- II. Activities
 - A. Read the story of Happy the Fish, encouraging the students to make facial expressions to match how they think the fish feels throughout the story.
 - B. Make the pages for a class big book.
 - 1. Distribute the prepared big book pages to the students. Since there are 13 pages, some of the students should work together.
 - 2. Let the students illustrate the pages.
 - 3. The students who illustrate pages which need a picture of a fish should go to the sorted pictures, select the appropriate fish, and glue it to the illustration according to the text. (For example: the student who has page 2 will glue a smiling fish to the bottom of the illustration because page 2 says, "Happy loved to swim...Happy swam low....")
 - 4. Let one or more students design the book cover on one of the large pieces of construction paper.

- 5. Let one or more students make the last page by writing: "This is the end of our little fish tale!"
- 6. Make a paint wash by diluting tempera paint with water. Let the students brush the paint wash over their pictures.

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pages 1-5 - blue paint wash
pages 6-7 - brown paint wash
pages 8-9 - red paint wash
pages 10-11 - green paint wash
pages 12-13 - blue paint wash
book cover and last page - blue paint wash
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III. Follow-Up

- A. Assemble the book.
 - 1. When the pages are dry, spread them in random order on the floor.
 - 2. Lead the class in counting aloud 1-13.
 - 3. Choose a student to write the numerals 1-13 on the chalkboard.
 - 4. Let the other students put the pages in order and number them.
- B. Bind the book.
 - 1. Reinforce the left edge of each page with wide, clear shipping tape. Punch holes in each page along the left edge (either 2 or 3 holes).
 - 2. Attach the pages by threading metal rings through the holes.
- C. Read the class big book.

IV. Extension

Give each student small amounts of blue and brown playdough or clay. Say, "Let's pretend the blue is river water and the brown is a chemical. Mix the two together." Allow time for them to do this. Ask, "When people put chemicals in water, do you think it would be easy to get them back out?" "Can you get the brown playdough back out?" Discuss.

RESOURCE

"Water Pollution Fact Sheet", Water Sourcebook: Grades 3-5.

Once there was a little fish named Happy.

He was happy because he lived in a cool, clean river.

2

Happy loved to play and swim in the clean water. Happy swam low - splishy, splashy.

3

Happy swam high - splishy, splashy.

Happy was comfortable in the cool water.

Happy relaxed low - flitty, floaty.

5

Happy relaxed high - flitty, floaty.

6

Then one day someone put chemicals in the river.
The chemicals made Happy sick.

7

Happy didn't feel like splishing or splashing.

Then hot water is poured in the river from a factory.

The hot water made Happy uncomfortable.

9

Happy didn't feel like flitting or floating.

10

Then the people said, "We should be nice to the fish. We should keep the water clean."
They stopped putting

chemicals in the water. Happy felt a little better.

11

Then the factory workers said, "We should be nice to the fish. We should keep the water cool."

They built cooling ponds to cool the hot water.

12

Happy felt much better.
Once again Happy swam
low -

Splishy splashy, Splishy splashly. Splishy splashy, SPLISHY SPLASHY!

