

Teacher Information

Fisheries

I. Objectives

A. Forming Concepts (Introductory) Objectives

1. Explain what fisheries management is.
2. Explain why fisheries management is important.
Describe how fish populations are managed

B. Interpreting Data Objectives

1. Determine the year that had the greatest and least fish landings (catches).
2. Describe the pattern of catches over a long period of time.
3. Determine the method of fishing that catches the most fish.

C. Applying Principles Objectives

1. Hypothesize the effects of better fishing methods on the long-term landing (number of fish caught).
2. Explain why the commercial fishing license system should be continued.
3. Develop a list of illegal activities that should be reported to the National Marine Fisheries.

II. Interdisciplinary Uses

A. Social Studies

1. Predict the economic effects on people affected by fisheries management.
2. Graph the landing data for certain fish.

B. Math

1. Interpret graphical data.

C. Language Arts

1. Create written and oral communications about fisheries management.
2. Develop an explanation of the importance of fisheries management for third grade students.

III. Science Standards Coordination

The Fisheries activity has been designed to incorporate science standards as specified by the National Science Education Standards (NSES) and the National Science Teachers Association (NSTA) Scope, Sequence, and Coordination (SS&C) of Secondary School Science. Only the major topics are listed. For further explanation of each standard see the complete documents:

NSES - National Academy Press, 2101 Constitution Ave, NW,
Washington, DC 20481

NSTA - 1840 Wilson Blvd, Arlington, VA 22201-3000

NSES	SS&C
Reproduction and heredity	Niche, habitat, population, community
Populations and ecosystems	Life cycles
Diversity and adaptations of organisms	Patterns of reproduction
Populations, resources, and environment	
Natural hazards	
Science and technology in society	

IV. Advanced Preparation

A. Materials

1. One computer per two or three students is a recommended minimum.
2. One copy of the Student Activity Book for each student or group of students.

B. Time Required for Completing the Activity

1. The *Get Info* section takes about 30 minutes.
2. The *Gather Data* section takes about 35 minutes.
3. The *Application* section takes about 35 minutes but does not require the use of a computer.

C. Teacher Familiarity

Preview these materials thoroughly. As with all these activities, before using this activity in class, review the sites and work through the activity yourself to learn about Fisheries so you can answer questions or direct students to the answers.

The activity is set up so students are taken to sites containing information that will be used to answer questions regarding Fisheries. The sites contain either the answers or the information from which the students can infer the answers. At the end of the activity, there is a list of enrichment activities and related web sites.

D. Select Questions for Students to Answer

It would be prudent for you to read the questions students will be expected to answer. These questions are in order of ascending difficulty. Depending on grade level and ability level, you might want to assign specific questions for your students.

E. Student Grouping

These activities can be done individually or in small groups of two or three students. Students who have Internet access can also do them at home for extra credit.

F. Software Requirements and Duplication Preparation

1. Adobe Acrobat Reader is required to download the pages. Click the "Tech Info" link on the Science with NOAA Research homepage to download Acrobat Reader.
2. Download the Teacher Information, Teacher Key, and Student Activity Book PDF files from the "Teacher Info" web page.
3. Duplicate and distribute student pages. Ideally, each student should have a copy of the Student Activity Book that should be distributed and discussed the day before the exercise.