RETA CURRICULUM

EL RIO GRANDE: FIELD GUIDE

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Teacher's Guide of General Lesson

Introduction
The Rio Grande supports a wide variety of life forms. In this lesson, students will identify various organisms that exist in the river environment. They will consider physical characteristics and roles that plants and animals play in the river ecosystem. Using information from research and a trip to the local river, they will create field guides of the plants and animals that thrive in the river ecosystem.

Technology
- Multimedia software
- Scanner
- Digital Camera or 35mm Camera
- Audio Recorder (cassette)
- Video Recorder (camcorder or digital camcorder)
- Journal (legal pad or wirebound notebook)

Resources
Online
- Plant Gallery http://plants.usda.gov/plantproj/plants/cgi_bin/photogal.cgi
- Desert USA http://www.desertusa.com/
- Digital Desert Library http://horizon.nmsu.edu/ddl/
- Desert http://www.cdri.org/Desert/

Off-line

Process

Tips
Remind students that there are endangered animals and plants in the area. The key phrase of the trip should be: "Take only pictures, leave only footprints."
Materials
- Drawing materials (paper, colored pencils, etc.)
- Notebooks for field notes
- Field guides (see Resource list)
- Digital camera (recommended, not required)
- Scanner
- Audio recorder (recommended, not required)
- Video recorder (recommended, not required)
- One computer (minimum) with multimedia software (Hyperstudio, PowerPoint, etc.)

Preparation
1. A field trip to the river will be necessary to complete this lesson.
2. Have students review field guide references so that they may see what type of information should be included in their field guides.
3. For the field research and subsequent research on physical characteristics, students should be divided into groups of 4 or 5. Each group has assigned roles and tasks for each role: Researcher, Photographer, Recorder, Editor, and Artist (optional).
4. Options for groups: A) Assign each group one organism (e.g. Birds) or B) allow each group to study all organisms. Option B will create a field guide from each group. Option A will create one large field guide.

Driving Questions
- What plants and animals live in and near rivers?
- What characteristics do they have that allow them to live in and near rivers?
- What roles do these plants and animals play in the river ecosystem?

Tasks
1. Before the trip to the river, groups will study and research their assigned tasks, gather and learn to operate the appropriate equipment, and prepare for the trip.
2. Take a field trip to the river. Each group will identify and draw or photograph as many different types of their organisms as possible. They will follow the directions set forth in their assigned roles (see Task card).
3. Back in classroom, each group will continue to research the various physical structures (and their functions) of each organism as well as any other data relating to the organism that they can find. All data will go into field notebooks, including sketches, etc.
4. As each student in the group finishes her/his research, s/he should begin to scan drawings and/or download photographs, video and audio onto computer for incorporation into multimedia software.
5. All images should be labeled and placed in a database containing all information gathered in field notebooks.
6. Finally, each group will use the data and images to create a both a printed Field Guide and a digital presentation of the Field Guide (see Group Task card).
Assessment
Different rubrics can be used to evaluate the students. Included is a Field Guide rubric, and a
digital presentation rubric. These rubrics evaluate products, not student contributions.

Extensions
Digital Desert Library
http://horizon.nmsu.edu/dll/experiments/chihuahua_study/chih_student.html

Outcomes
Upon successful completion of this unit, the learner will:
• be able to identify several species of plants and animals indigenous to the Rio Grande.
• understand which physical characteristics help the organisms adapt to their particular
  environment.
• describe role played by each in their ecosystem.
• be able to use scanner, digital camera and multimedia software to create electronic field
guide.

Content Standards

National Educational Technology Standards
3) Technology productivity tools
4) Technology communications tools
5) Technology research tools

New Mexico's Standards and Benchmarks

Visual Art
2) Use visual art to express ideas.

Language Arts
1) Students will understand and use Language Arts for communication.
2) Students will understand and use Language Arts as a learning tool.
3) Students will listen and read for a variety of purposes.
4) Students will speak clearly and write effectively for a variety of audiences and purposes.
10) Students will use state-of-the-art computer technology to gather, use and synthesize
information, and to create and communicate knowledge.

Science
3) Students will use form and function to organize and understand the physical world.
10) Students will know and understand the characteristics that are the basis for classifying
organisms