

“Cracking Dams” Website

Overview

Grade: 4th (Darden Elementary)

Date: January 21, 2003

Time: 50 minutes

Source: TM (Rebekah Gano), <http://simscience.org/cracks/>

Standards: *Science 4.2.6:* Support statements with facts found in electronic media.

4.3.5: Describe how water shapes and reshapes land surfaces.

Technology #13: Appropriately operate technological devices and systems.

Student Objectives: Given computers with Internet access and a task sheet with directions, students will gather information about dams from websites, will make inferences based on their findings and previous knowledge about land and water, and will communicate their ideas about how dams can shape land by accurately answering questions on the task sheet.

Materials

- Computers with Internet access
- One red flag per student
- One task sheet per student
- Checklist for student behaviors

Proposed Instructional Sequence

1. Tell students that they are going to be taking another look at the “Cracking Dams” website that they used during their SuperSleuth project last semester. Inform students that this time, they are going to be working individually, and they will have the opportunity to look at the parts of the website that most interest them. Although students will have more freedom on this activity, they need to make sure they can answer the two questions at the end of their task sheets and should only be looking at the website about dams. Students’ grade for the activity will be based on their behavior in the computer lab and their answers to the questions.
2. Give each student a red flag and a task sheet. Remind students that they are to raise their red flags if they have a question or problem in the computer lab, rather than calling out or getting out of their seats, as they have a bad habit of doing.
3. Have students line up (taking pencils, red flags, and task sheets with them), and take students to the computer lab. Take the checklist and a few pieces of scrap paper to the computer lab; some students may reach the section of the website that asks them to do a quick experiment that involves making dams out of paper.
4. Direct students to each sit at their own computer and to bring up Netscape and type in the website address at the tops of their task sheets. Instruct students to read and follow the directions on their task sheets.
5. Walk around the room and check to make sure students understand the directions, can access the website, and can locate areas of the website they

need to find their information. Watch for red flags; they mean that students want your help.

6. Fill out the checklist while students work.
7. Give a five-minute warning about six minutes before the computer lab period ends. After five minutes, tell students to shut down their browsers, push in their chairs, grab their pencils and task sheets, and line up.
8. Take students back to the classroom. Give students about ten minutes to answer the questions on the task sheet. Collect the task sheets after students have finished.

Provisions for Varying Abilities

The teacher will take into consideration that some students are better computer users than others and will offer assistance. Also, some students have trouble expressing themselves in writing, so the teacher will walk around the room, questioning and observing students to determine if they understand concepts and should receive checkmarks on the checklist.

Formative Evaluation

The teacher will observe students' participation in the activity and will mark the checklist of wanted behaviors as students work on the computers. (An example checklist page is attached.) The teacher will write comments on students' task sheets, and to each student's worksheet, the teacher will attach a checklist showing how the student was graded on the assignment and the number of points he or she earned.

Reflection

This lesson went well overall. Most of the students enjoyed being able to look at the parts of the website that interested them most, and all students focused on the activity, so I encountered only very minor behavior problems. The majority of students searched the website for information to answer the task sheet questions, but despite my warnings and suggestions, a few students spent all of their time watching and downloading movies (about dams). Consequently, these students were not able to answer the questions accurately, and they did not seem to understand how water (or building or breaking dams) shapes land, even despite their previous experiences with the subject matter. Nearly all students wrote only about what would happen to the land either upstream or downstream from a dam, not both, when they answered the first question. This indicates that most students do not fully understand how a dam stops up a river on one side, creating a lake, and dries up the river on the other side.

In the future, if I teach this lesson, I will make sure to have a hands-on experience or demonstration that shows students how a dam works; simply reading what happens apparently was not enough for students to really understand the concept. Also, when teaching this lesson in the future, I will tell students to make sure they have enough information to answer the questions *before* they start downloading movies. Hopefully this way everyone will be able to answer the questions, and students will not leave the computer lab feeling frustrated that they spent nearly all of their time downloading movies that only played for a few seconds.



Name _____

“Cracking Dams” Website Task Sheet

Directions

1. Type in this website address: simscience.org/cracks/
2. When the website loads, click on the green **Beginning** button.
3. Surf through the website.
4. You may skip parts you have already seen, but you can also choose to read or see them again.
5. Make sure you find enough information to be able to answer the questions when the computer lab period is over.
6. Answer the questions. (You will have time in class to write answers to the questions, but you might want to answer them while you work in the computer lab.)

Questions

When you answer these questions, think about what you have learned in science about how water can shape land and what you learned from the “Cracking Dams” website.

1. How would building a dam change the land around a river?

2. What could happen if a dam cracked? (You might write about what would happen to people, to animals, to the land, or to nearby towns.)