

Wetland Migrations

Lesson Abstract

Summary: Through the choices posed in a game format, students are asked to consider development impacts on the environmental well-being of migrating birds through wetlands destruction. The activity requires students to use consequential, critical thinking and oral presentation skills.

Grade Level: 4-6

MO GLE: SC: 7.1.E.6, 5.3.A.6,

Subject Areas: Science, Ecology

Show-Me Standards Goals –3.1, 3.2, 3.4, 3.6, 3.7, 4.1, 4.6
Strands – SC 3, 4, 5, 8; SS 3, 4, 5

Skills: Research, oral Presentation

Duration: 2 class period (90 minutes)

Setting: Outdoors/Classroom

Key Vocabulary: Wetlands, dependence, migration, biosphere

Rationale:

- Wetlands are an important factor to insure the success of bird migration.
- Wetlands provide food and shelter for traveling birds.
- Without the wetlands birds would not have the energy to make the trek from areas as far south as South America.
- At the time of the European settlement of the United States there were 215 million acres of wetlands. Today there are less than 100 million.
- Wetlands help relieve flooding, filter pollutants and are an integral part of the biosphere.

Student relevance:

- Through increased education of their importance and beauty students will become responsible stewards of the remaining 100 million acres of wetlands.

Learning Objectives:

Upon Completion Students will . . .

- Have an increased awareness for the need to protect our nation's wetlands.
- Be able to operationally define migration.
- Be able to visualize the importance of wetlands to migrating birds.

Students Need To Know:

- Water travels downhill.
- Floods occur along river borders.
- Wetlands provide wildlife habitat.
- Rivers change over time, naturally, in stages.

Teachers Need To Know:

- Wetlands are an important factor to insure the success of bird migration.
- Wetlands provide food and shelter for traveling birds .
- Without the wetlands birds would not have the energy to make the trek from areas as far south as South America.
- At the time of the European settlement of the United States there were 215 million acres of wetlands. Today there are less than 100 million.
- Wetlands help relieve flooding, filter pollutants and are an integral part of the biosphere.

Resources:

WOW: The Wonders of Wetlands, 1995.

Available from The Water Course, 201 Culbertson Hall, Montana State University, Bozeman, MT 59717-0057, (406) 994-5392.

National Project WET: Water Education for Teachers, 1992.

Available only after attending a six-hour workshop. For more information, contact State Coordinator Joe Pitts, Department of Natural Resources, Field Service Division, P.O. Box 176, Jefferson City, MO 65102, (573) 526-6627.

Missouri Wetlands: A Vanishing Resource, Water Resources Report No. 39. Available from the Missouri Department of Natural Resources, Division of Geology and Land Survey, P.O. Box 250, Rolla, MO 65402, (573) 368-2125.

Also check with your local Natural Resource Conservation Service (NRCS) office or your Soil and Water Conservation District office (most are located in county seats). Telephone number for NRCS state office in Columbia is (573) 876-0900.

website for DNR publications:

<http://www.dnr.mo.gov/geology/adm/publications/pubscatalog.pdf>

Materials Needed For Lesson:

- Chalk or a stick.

Procedure:

- This activity will be best on the school parking lot. The teacher will draw a large size rectangle approximately 30 feet long by 6 feet wide. Draw a line down the middle of the rectangle long ways. Then draw a line width ways making two side by side- 3 foot by 3 foot squares the entire length of the course. The course can be drawn with chalk. The course should contain 10 squares on each side.
- Divide the class into four groups of five depending on your class size.
- Have the students line up one group at a time at the beginning of the course. Tell the first group that they are birds starting their journey northward. Tell them that each of the squares represents a wetland between South America and Missouri. (Specific migration patterns and bird species can be obtained from a bird field guide.) Students are then challenged to migrate northward on the course. They do not have to step on every square, however they must not go outside the course.
- The first group should be successful in the first migration. Now, tell the second group they are a developer. They will destroy 2 wetland areas (2 squares) in order to build condos. Put an "X" on two of the squares. The third group will now make the migration. Some members of the group may not be able to complete the migration and others will. Those who cannot are dead and will not be able to continue. The students cannot step on the destroyed wetlands. If they do, they die and may not continue. Each group will have the opportunity to be a developer and a migrating flock. Repeat the procedure by destroying two blocks each time. Continue until a group fails to make the migration.
- The group that fails to migrate as a whole group represents a complete loss of a species.
- Have students use field guides and/or the internet to investigate birds which migrate to and from their community and give a 5-6 minute presentation on the specific species they have chosen and it's dependence on wetlands for migration.

Evaluation Strategies:

At the end of the activity ask students the following questions:

- Explain why some birds died earlier than others?
- Why did the rest of the birds die?
- Explain how this game represents migration.
- Why did the birds die even though some wetlands remained at the end of the game?
- Why is it important to save wetlands in all states?
- How do migrating birds depend on wetlands during migration?

EXTENSION:

- Have students discuss endangered species that depend on wetlands and consider what may have caused them to become endangered.
- Have students research and discuss what wetland plants are important to migrating birds.

Suggested Scoring Guide:

Oral Presentation Rubric : Wetland Migrations

Teacher Name: _____

Student Name: _____

| CATEGORY | 4 | 3 | 2 | 1 |
|----------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Time-Limit | Presentation is 5-6 minutes long. | Presentation is 4 minutes long. | Presentation is 3 minutes long. | Presentation is less than 3 minutes OR more than 6 minutes. |
| Speaks Clearly | Speaks clearly and distinctly all (100-95%) the time, and mispronounces no words. | Speaks clearly and distinctly all (100-95%) the time, but mispronounces one word. | Speaks clearly and distinctly most (94-85%) of the time. Mispronounces one word. | Often mumbles or can not be understood OR mispronounces more than one word. |
| Stays on Topic | Stays on topic all (100%) of the time. | Stays on topic most (99-90%) of the time. | Stays on topic some (89%-75%) of the time. | It was hard to tell what the topic was. |
| Content | Shows a full understanding of the topic. | Shows a good understanding of the topic. | Shows a good understanding of parts of the topic. | Does not seem to understand the topic very well. |
| Relates Species to Wetland Dependence | Relates species chosen to wetlands dependence and shows a thorough knowledge of this relationship. | Relates species chosen to wetlands dependence and shows some knowledge of this relationship. | Relates species chosen to wetlands dependence and shows little or no knowledge of this relationship. | Does not relate species chosen to wetlands and shows no knowledge of this relationship. |

Rubric Made Using: **RubiStar** (<http://rubistar.4teachers.org>)