
Environmental Scientist

Overview:

This lesson and activity are designed to give students hands-on experience making and interpreting maps.

Grade: 1

TEKS

Scientific processes

1.2 (A, B, C, E)

1.3 (A, B, C)

1.4 (A, B)

Science Concept

1.6 (A, B)

1.7 (A)

1.10 (B)

Literature

The Map Book

Grandfather's Journey

Vocabulary

Cartographers

Map

North

South

East

West

Symbol

Materials

Discovery Book

Compass

Thermometer

Field Guides

Ziploc Baggies

City Map

Mapping Nature

Classroom Activity

1. Make transparencies of the aerial photographs of the Statue of Liberty, Longview and Eastman Chemical Company.
2. Place the "Statue of Liberty" on the overhead. Without showing the name, ask your students if they can identify the picture. Record their observations.
3. After some discussion, reveal to your students the identity of the picture. Help your students to "see" the statue and identify its location on a United States map.
4. Ask the class if they would like to try another photograph closer to home? Place the Longview aerial photo on the overhead. Ask your students to find the following: houses, pastures, forested areas, lakes, ponds, and major highways. Ask your students to draw a map based on what they see in the "Longview" aerial photograph.
5. Explain to your students that maps are created based on the real world. Show your students a city map. Help your students see the relationship between the map and the aerial photograph. What kind of symbols did your students invent to represent the real world?
6. Place the "Eastman" aerial photograph on the overhead. Can your students find the following: I-20, residential streets, Eastman Road, forested areas, pastures, lakes, and the Eastman Nature and Wildlife Habitat Center? Ask your students to draw another map and compare it to their first map.

7. Make a sign for North, South, East, and West. Take your students out to the playground and ask your students form a circle. Using a compass, find North and give one of your students on the "north side" the "North" sign. Locate the other points and have your students to hold the East, West and South signs. Ask your students to look around and find landmarks for each direction.
8. Play "Simon Says" to reinforce the concepts of North, South, East and West. Tell your students, "I will call out North, South, East or West." Your students are to face the direction called out. Students facing the wrong direction are to step out until a winner is determined.
9. To start the game have all of your students form one line and everyone faces the same direction. Review the directions with your students before starting "Simon Says."
10. Start the game out slow at first and then pick up the pace as your students begin to get the hang of the game. Be sure to call out the names in a random order so the your students do not memorize the pattern. Play it again!
11. Back in the classroom, tape each North, South, East, and West sign on your classroom walls.
12. Close the lesson by reading Sara Fanelli's book *My Map Book*. This is a wonderful book about maps and how to map everything from a child's bedroom to mapping the events of a day. After reading the book discuss the different types of maps with your students. Did any of the maps surprise your students?
13. As a final activity, ask your students to take one of the map concepts from Fanelli's book and create their own based on their experiences.

In the Field

Mapping Nature

1. Prior to leaving your school make sure you have the following items.
 - Discovery Books
 - Ziploc Baggies (1 gallon size)
 - Pencils (inexpensive mechanical pencils are excellent)
 - Compass
 - Thermometer
 - Water
 - First Aid Kit
 - Sack Lunch or light snack
 - Camera
 - Backpack
 - Meter Stick
 - String
2. Before getting on the trail, remind students their observations and data collected will be used back in the classroom to create charts and graphs of their observations.
3. Set your behavior expectations before leaving the parking lot. Explain how students are to behave along the trail and in small groups. State specifically what behaviors you want to see along the trail. Remind students the higher their voices are the less likely they will see wildlife along the trail.
4. Distribute Discovery Books to students and record weather data observations. Teachers a gallon size ziploc baggie makes an excellent container for pencils and Discovery Books during lunch or at the end of the day.
5. Walk through the gate and follow the trail. Remember to go slow and listen to your student's observations along the trail.
6. If you have enough adult supervision, divide your class into two groups. Have each group go in opposite directions along the trail. This will help reduce the noise level and also give your students an opportunity to share their observations when the class comes together at the halfway point. This is a good opportunity reinforce the idea that scientists share data too.

Post Eastman Activities

Mapping Nature

- To evaluate students' understanding of maps, ask your students to create a concept map based on their experiences with the mapping lesson.
- Write a narrative about their experiences at the Eastman Nature and Wildlife Habitat Center.
- Have your students write a narrative about their experience at the Eastman Nature and Wildlife Habitat Center.
- Divide the class into several teams and have each team create a "treasure map." Each team places an object on the school playground and each team tries to find the "treasure" based on the team's "treasure map."
- Invite a Cartographer to visit your classroom and discuss the importance of maps.
- Students create an "Environmental Report" based on their Discovery Book observations.
- Where's Waldo is an excellent and fun activity to reinforce observation skills.
- Student produced books about their observations.
- Maintain an Environmental Journal for 1 school year.
- Email each state requesting a map.
- Register at <http://pcg.cyberbee.com/> for the Postcard Geography Project. This is a wonderful program that engages students in Geography. Your class will receive postcards from all over the United States and around the world too!

Weather Data

Date: _____ Time: _____

Location: _____

Present Weather: _____
(Clear, Cloudy, Overcast or Raining)

Air Temperature: _____ Celsius

Air Temperature: _____ Fahrenheit

Wind: _____
(Which direction is the wind coming from?)



Longview, Texas 1995



Eastman Chemical Company 1995



Statue of Liberty

Resources

Publications

The Tin Forest by Helen Ward

My Map Book by Sara Fanelli

Say, Allen. *Grandfather's Journey*

Where Am I : the Story of Maps and Navigation by A. G. Smith

Field Guide for the Eastman Nature Trail by Eric L. Taylor, Ph.D.

The Kid's Nature Book: 365 Indoor/Outdoor Activities and Experiences by Milord, S.

Learning Orienteering Step by Step, by Gunnar Hasselstrand.

Teaching Orienteering, by Carol McNeill. Jean Ramsden and Tom Renfrew

Web Pages

The Perpetual Preschool

http://www.perpetualpreschool.com/preschool_themes/forest/forrest_science.htm

The Center for Environmental Education

<http://www.cceonline.org/default.aspx>

The Forest Where We Live

http://beta.lpb.org/index.php?/site/programs/the_forest_where_we_live_the_series

Trees and Forests

<http://eduscapes.com/42explore/treesforests.htm>

USGS Learning Web

<http://www.usgs.gov/education/>