
Environmental Scientist

Overview:

This lesson and activity are designed to give students hands-on experience collecting data and investigating the seasons.

Grade: K

TEKS

Scientific processes
K.2(C, E)
K.4 (A, B)
Science Concepts
K.5 (B)
K.6 (B)
K.7 (A)

Literature

Moonstick

Vocabulary

Seasons
Spring
Winter
Fall
Summer

Materials

Soil, Rock and Water
Hand lens or loupe
Discovery Book
Dowel Rods
Thermometer
Emory Boards

Seasons

Classroom Activity

1. Begin this activity by discussing with your students the concept of seasons. Ask your students to name the four seasons. What are the distinguishing characteristics for each season?
2. Discuss with your students the importance of the calendar and how we make plans using a calendar. Ask your students, "Can we keep time without a calendar?" Discuss their ideas. Discuss alternative methods of keeping time. How would we know the day of the week? Is that important? Explore these ideas with your students.
3. Explain to your class that a long time ago people did not have calendars, as we know them today. Native American Indians used a calendar based on the phases of the moon. Read Eve Bunting's book *Moonstick* to your class. As you read, ask your students to listen to the story and try to guess the time of year based on the descriptions in the story.
4. Purchase 1/4 wooden dowel rod material from your local home center and cut the rod so that each student will have about 1 foot of dowel rod. Also each student will need an Emory board to cut their notch in their "moonstick."
5. Give each student a dowel rod and an Emory board. Explain to the class that, like in the book, everyone is going to make a moonstick. Just like the Indians, have your students watch the night sky for the full moon. When the moon is full, use the Emory board to sand a notch in the dowel rod.

6. In the story, each notch represented a specific name for the month. Ask your students to think of a name to represent each notch in their moon stick. Create a big book, based on your class' observation each month. Include the new name for the month and your student's observations and art work.
7. Use the weather data page to help students understand the relationship between the seasons and the weather data collected. At first, model the process for your students and work up to where your students are collecting the data independently.
8. Prior to visiting the Eastman Nature and Wildlife Habitat Center, take your class on a virtual tour of the Eastman nature trail at <http://www.eastman.com/EastmanOutdoors/trail.htm>. The trail guide developed by Dr. Eric Taylor will give your students an opportunity to learn about the many different trees along the Eastman nature trail. How many of the Eastman trees are located in your school's backyard?

In the Field

Seasons

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
 - Hula-Hoops
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 make 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 students' 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

Seasons

- Write a narrative about their experiences at the Eastman Nature and Wildlife Habitat Center.
- Have your students create charts and graphs of the data they collected while at the Eastman Nature and Wildlife Habitat Center. Compare the Eastman data with the data collected at your school.
- Have your students write a narrative about their experiences. Pictures are worth a thousand words.
- Invite your local meteorologist to your classroom and discuss the importance of observation skills.
- Where's Waldo is an excellent and fun activity to reinforce observation skills. A recent study found that people that can easily find Waldo make good Biologists.
- Student produced books about their observations.
- Make a big book about your experiences at the Eastman Nature and Wildlife Habitat Center.
- Make a bird feeder out of pinecones and peanut butter. Place outside your window. Record your observations.

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?)

Resources

Publications

Sky Tree: Seeing Science Through Art by Thomas Locker
A Tree for All Seasons by Robin Bernard
Project Seasons by Deborah Parrella
Moonstick by Eve Bunting
When the Whippoorwill Calls by Candance F. Ransom
Stomy Weather by Amanda Harvey
Field Guide for the Eastman Nature Trail by Eric L. Taylor, Ph.D.

Web Pages

Children's Literature

<http://www.carolhurst.com/profsubjects/tchgphysclscience.html>

Texas Parks and Wildlife Education Resources

<http://www.tpwd.state.tx.us/edu/enved/teacher.htm>

Globe Seasons Investigation

<http://globe.gov/k-4/seasons>

Kindergarten Science

http://www.education.ucsb.edu/ucsbt3/tech_res/resources/Kindergarten.html

Brain Pop Seasons

http://www.brainpop.com/science/weather/seasons/index.weml?&tried_cookie=true