

Science at the Cienega
Pre-Visit Activity
Honing Your Powers of Observation and Investigation Overviews

Activity Overview

In preparation for their visit to the Leonora Curtin Wetland Preserve, students will hone their powers of observation and review the investigations to be conducted during their field trip. First, the class conducts an exercise in which they test their powers of observation by recalling or otherwise detecting specific elements about their surroundings. They will be encouraged to hone their senses to increase their powers of observations as a first step to preparing for Science at the Cienega. Student will next be divided into four groups. Each group will receive an *Investigation Overview* which provides details on one of the four investigations that will be conducted during the field trip. Each *Investigation Overview* includes an activity description, vocabulary words, and questions and predictions to consider. Each group reviews their information and prepares a presentation to share their investigation with the rest of the class. Following each presentation, the entire class contributes comments and makes predictions about the investigation. Students are encouraged to write down and remember their predictions for their field trip.

Materials

Investigation Overviews:

Sampling at the Cienega

Seasons at the Cienega

Survey at the Cienega

Seasons at the Cienega

Learning Objectives

Upon completion of this activity, students will be able to...

- define the terms wetland, ciénega, preserve, and ecosystem.
- hone their senses to increase their powers of observation.
- quickly divide themselves into four color-coded groups.
- describe each of the four investigations to be conducted during Science at the Cienega.
- define scientific content and process terms that will be used during their investigations.
- make predictions about specific investigations conducted during Science at the Cienega.

Activity Preparation

- Prepare the classroom for the “Powers of Observation” exercise:
 - plant a paper towel soaked in rubbing alcohol or vinegar in the room
 - draw and color in a geometric shape on the white board
 - tape a random word on the wall (large enough for all to see)
 - put up a map of a specific place (it could even be a world map)
 - wear something different and distinct
 - (Note: The above are examples of preparing for this game as per the questions presented in the procedures. These may be modified as needed.)
- Make copies of the four *Investigation Overviews*. Consider making several copies of each as students will be reviewing these together in groups.

Activity Procedures

Part I – Introduction / Honing Your Powers of Observation

1. Explain to students that the class will soon be taking a field trip to a special place where there are lots of trees, birds and other wildlife, and a pond! The place is called the Leonora Curtin Wetland Preserve. Ask students if they have heard the term wetland, and if so, can someone describe a wetland for the class. Help students understand the definition of a **wetland**:

A wetland is an area of land that is either covered by or saturated with water either seasonally or permanently.

Ask if any students know the Spanish term for wetland. If they don't already know, share with students the term, **cienega**:

Cienega is the Spanish word for a wet, marshy area that is spring fed (a wetland).

2. Ask students to visualize the ground (the soil) around a wetland and describe what they think it might be like. (*muddy, wet, damp, moist*) Ask students to imagine a pond, then the shoreline of the pond, then the ground as one moves farther and farther away from the pond. Ask students to describe what the ground might be like as one moves away from the pond. Do students imagine there would be many plants near the pond? Where is the soil the wettest, the driest?
3. Explain that at the Leonora Curtin Wetlands, students will be studying **Science at the Cienega!** They will investigate the pond, the wetlands around the pond, and the entire Preserve. Review the definition of **preserve**:

To preserve is to maintain something in its original or existing state.

4. The Leonora Curtin Wetland Preserve is a great place to go to have fun doing science. Which is exactly what the class will be doing. They will be “citizen scientists” and conduct real investigations to contribute to the understanding of the entire wetland ecosystem. Review the definition of **ecosystem**:

An ecosystem is a community of organisms living in close proximity and interacting with each other and their physical environment.

5. To prepare for their study of the wetland ecosystem, students should start by honing their skills of observation. Discuss with students the importance of being aware of all that is around them while on their field trip. Point out that being aware and making careful observations is the first step in science. In fact, careful observations are important for nearly all aspects of life including sports, art, and personal interactions. Students should be prepared to use all their senses to make observations while on their field trip.

6. Explain that you will now play a short game to test students' powers of observation. Students should get out a blank piece of paper and pencil and be prepared to write. Tell students to look around the room for about fifteen seconds then look down at their papers when you indicate. Tell students you are then going to read a few questions and they should answer them without looking up from their desks until you are finished. Be sure they are ready to write and after they have looked around for fifteen seconds tell them to look down at their papers and listen to your questions:

- 1. How many windows are there in this classroom?*
- 2. What color is my (the teacher's) shirt? (or other item of clothing or accessory)*
- 3. What new word is hanging on the wall?*
- 4. How many plants are there in the classroom?*
- 5. Would they describe the room temperature as chilly, just right, or warm?*
- 5. A map of what part of the world is hanging on the wall?*
- 6. What is the smell in the room today?*
- 7. Who is sitting in the seat behind you? (Last person in a row can name the person at the front.)*
- 8. List two other items you noticed in the room.*
- 9. How many different sounds can you hear right now?*
- 10. List one thing located on the ceiling.*
- 11. Name the five senses.*

7. Review and discuss student responses. How observant do students feel they were? If you hadn't given them that fifteen seconds, would they have still noticed things? Which senses did they use to make observations? Did they learn anything from this exercise?
8. Explain that this was an activity to get them accustomed to making careful observations, especially "in the field" during their trip. As with the classroom exercise, they will be using all their senses. Challenge students to start honing their skills of observation in everything they do from now until their trip. They will be further challenged by their guides at the Preserve to test their powers of observation!

Part II – Investigation Overviews

1. Divide the class into four equal-sized groups. Give careful consideration to the creation of these groups as THESE WILL BE THE SAME GROUPS THAT THE CLASS WILL DIVIDE INTO DURING THEIR FIELD TRIP.

Assign each group a color code: RED GROUP, YELLOW GROUP, GREEN GROUP, and BLUE GROUP. Tell students it is very important that they remember which group they are in.

2. Explain that, as part of Science at the Cienega, students will be conducting four different investigations. To prepare for these, each group is going to become an "expert" in one of the investigations. Each group will receive an *Investigation Overview* which includes a description of the activity, important questions, and some vocabulary words. They will work together to read and understand their investigation then they will share it with the rest of the class. In this way, everyone will be prepared to do all the investigation activities.

3. Have each group get together at a designated table or area of the room. Give each group an *Investigation Overview* (consider making several copies for each group). Give each group time to review their *Investigation Overview* and decide how they will share it with the rest of the class. Share the following with the students:

- Everyone in the group should participate in the review and presentation of the investigations.
- Discuss the activity, questions and predictions, and vocabulary words to be sure everyone in your group understands the information.
- Make predictions about the possible findings from your investigation.
- Decide how you will present the information to the rest of the class. Consider the following presentation styles:
 - Simply take turns reading the overview, each of the vocabulary words and questions.
 - Print the vocabulary words on the white board or large piece of paper to share with the class as you review them.
 - Act out your presentation: conduct a newscast to present the information.
 - Act out your presentation: conduct an interview to present the information.
 - Act out the investigation: conduct a performance to convey the information.
 - Be sure to ask the class to make predictions about the investigation.
 - Write down any and all predictions made about the investigation.

4. Have students present their investigations to the rest of the class. They should review the activity description and vocabulary and especially, they should pose the questions to the class and have the class make predictions about the investigations. Be sure students understand that each group will do *all* of the investigations.

5. When all groups have presented, discuss the different investigations and predictions. Ask students to remember their predictions about the different investigations and to share them with their guides during the field trip. REMIND STUDENTS TO REMEMBER THEIR GROUP COLOR!

6. Review the other preparations and procedures for the field trip with students. They should now be ready for Science at the Cienega!