

PACE GARDEN BASED CURRICULUM

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Plants on Manzo Campus

Lesson 1~ Native Plant Search

Teacher:
Author: Norma Gonzalez

Grade Level: PACE

Date:

Common Core Standard:	
Enduring Understanding:	Biodiversity (the variety of life on Earth): <i>All ecosystems contain a variety of organisms that are interdependent.</i>
Content Objective:	Students will identify various native plants.
Language Objective:	

Vocabulary		Materials		
Saguaro Native Cactus Plants		Clip boards Pencils Plant journal		
Seasonality				
Monsoon July-Sept.	Autumn Oct.-Nov.	Winter Dec- Feb.	Spring Mar.-Apr.	Dry Summer May-June
Guiding Questions: What plants are native to the desert we live in?				

Anticipatory Set:



Display this picture for all the students to see. Pose the following question:
Have you ever seen a plant like this?
Allow for all students to respond. Explain to the students that this is a saguaro cactus and that its home is here in the desert.

Introduce the word native. Share with them that because this plant lives here it is called a native plant. Share with them that today they will be learning about four more native plants that live at Manzo and are from the desert.

Activity/Investigation:

1. Explain to the students that today they will be going out in small groups, to the front of the school, to find four beautiful desert plants. Share with them that they are going to be like scientists (display the picture and word of scientists) making observations. Explain that scientists use all their senses to make observations. Display the pictures of the nose, ears, mouth, hand, and mouth. Explain to them that these are the tools scientists use to make great observations. Now explain the function of each body part; display the word smell to go with the nose and share that when they find the plants they will smell them to see if they have a distinct smell. Follow in the same format with all five body parts and their function.

Explain to them that we have plants in the desert that have some very distinct characteristics. These plants are called cacti and we have to observe with caution, so we might not be able to use our hands to help us observe this plant. Explain that they have spines that can be hurtful if we touch them so they have to be very observant with the cactus and be careful when they touch them. Explain to them that there are some cacti they cannot touch because they have so many spines.

2. Next share with the students the pictures of the four plants that they will be searching for. Display one of the four pictures of a plant for the students to see. Explain to them that this plant is called _____. Ask students to make observations of the picture and to share with the group what can they describe about the plant. Follow in the same format for all of the other three plants making certain that you ask them to describe the plant from the picture.

3. After discussing the plants and the tools they will use on the scientific hunt, share with them that they will also be drawing the plant when they find it. Share with them that they will go out in small groups to find the plants and make observations. When out in the front of school area, allow students to find the plants based on what they know about the plant and the picture they have. Once they find it allow them time to make a scientific sketch of the plant.

Closure Question:

Have the students share with the group the highlights from the observation. What did they like and what discoveries did they make? Give each student an opportunity to share their experience and to share their findings and scientific sketches.

Teacher Reflection:

Plants on the Manzo Campus

Lesson 2~ Verdolagas

Teacher:
Author: Norma Gonzalez

Grade Level: PACE

Date:

Common Core Standard:	
Enduring Understanding:	Culture refers to the resources (language, values, beliefs) people use to perceive their surroundings: <i>The biodiversity and climate of a region are interconnected with the region's culture.</i>
Content Objective:	Students will identify verdolagas and harvest them. Students will follow the steps in a recipe to cook verdolagas.
Language Objective:	

Vocabulary		Materials		
Verdolagas (purslane) harvest		Baskets for the harvest Ingredients for the cooked verdolagas Pictures of verdolagas		
Seasonality				
<i>Monsoon</i> July-Sept.	<i>Autumn</i> Oct.-Nov.	<i>Winter</i> Dec- Feb.	<i>Spring</i> Mar.-Apr.	<i>Dry Summer</i> May-June
Guiding Questions: What can we eat that grows in the Sonoran Desert?				

Anticipatory Set:



Display this photo for all students to see. Ask the students to make observations and pose the question: Do you think that we can eat any of the plants in this picture? Share with them that some of the plants we can definitely eat. Explain to them that they will be cooking and tasting one of the plants that grows in front of the school. The name of the plant is verdolagas.

Activity/Investigation:

1. Ask students if any of them have ever heard of the word verdolagas. Allow all students to respond. Explain to the students that today they will be looking for verdolagas in the front of the school because that's where they grow wild. Also share with them that we know they can be eaten because people have been eating them for many years. The native people who lived here before Manzo school existed studied the plants to learn about which ones could be eaten and which ones could not be eaten.
2. Next introduce the word harvest to the students. Share with them that harvest means to pick food from where it is growing when it is ready to be eaten. Also share with them that the verdolagas are ready to be eaten and need to be harvested. Explain to the students that they will be going to the front of Manzo school where the verdolagas grow and they will be harvesting some verdolagas.
3. Display the pictures of the verdolagas for the students to become familiar with them. Share the following characteristics of the verdolagas:
 - They grow close to the ground.
 - The leaves are really small.
 - The stems can be reddish in color.
 - The leaves are very shiny. They almost have a glittery shine to them when the sun shines on them.
 - The leaves are a bright green color.
 - The shape of the leaves is like little ovals.
4. Take students out to the front to where the verdolagas grow. Share with the students that they will look for the verdolagas; have them recall the characteristics. Have the pictures of the plants available so that students can match the picture with the plant. Once they locate them, they can begin to harvest. Allow students to harvest as many as they can.
5. Take the verdolagas back to class and wash them. Allow students to make careful observation of them. Also allow students to taste the verdolagas raw. After all the students have tasted them, ask them to explain the flavor and to share with the class if they liked them raw.
6. Now share with them that many people eat verdolagas because they are very good for you. Explain that they will also taste cooked verdolagas. Read the list of ingredients that go into the verdolagas.
 - Lots of fresh verdolagas
 - One tomato, chopped
 - Half an onion, chopped
 - 3 cloves of garlic, minced
 - Half a bunch of cilantro
 - 2 tablespoons of oil
 - Salt to taste
 - Cheese
7. Cooking directions:
 - Heat up oil in pan
 - Add the onion and garlic and allow a few minutes to sauté
 - Add the tomato and sauté with garlic and onion for a couple of minutes

- Add the verdolagas and allow them to cook for about 5 minutes
- When verdolagas are soft, add the cilantro and simmer for about 2 minutes
- Add salt to taste
- Right before eating add the cheese and let it melt
- Verdolagas are ready
- Give the students a few cooked verdolagas and corn chips to taste

8. Ask the students to share if they liked the taste of the cooked verdolagas. Allow all students to share their experience in eating the cooked verdolagas. Next ask the students to decide how they preferred the verdolagas, cooked or raw.

9. A picture bar graph can be created to document how the verdolagas were preferred for most of the class. Display the bar graph as a documentation of the experience.

10. Finally a sequenced order of events of the experience should also be displayed. As a whole group, write one sentence for each step of the verdolaga experience. For example:

- First we learned about the characteristics of the verdolagas so we could find them in the front of the school.
- Second we went to go find some verdolagas.
- Third we harvested the verdolagas.
- Fourth we cleaned them, cooked them and ate them. Yummy!

Closure Question:

Talk to a partner

Have the students sit with a partner and have them answer the following questions, taking turns to share the response with each other:

What was your favorite part of the activity? Why?

Teacher Reflection:

Chicken Observation

Lesson 1~ Chicken Observation

Teacher:
Author: Aide Silva

Grade Level: PACE

Date:

Common Core Standard:	<p>K.W. 1 Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or name of the book they are writing about and state an opinion or preference about the topic or book (e.g., <i>My favorite book is...</i>).</p> <p>K.W.5 With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed.</p> <p>K.W.6 With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.</p>
Enduring Understanding:	<p>Interconnectedness (being joined or related): Organisms and their environments are interconnected; changes in one part of the system will affect other parts of the system. Essential Questions: How are a region's culture and climate interconnected?</p> <p>Effective writing is the result of multi-stage, reflective processes in which the writer must develop, plan, revise, edit and rewrite their work to evoke change or clarify their ideas. The stages of these processes are enhanced with collaboration and technology.</p>
Content Objective:	<p>Writing: With teacher support, students will observe chickens, write down their observations, and will share their insights with the class.</p> <p>Through this shared writing experience, kindergarten students will be use oral and written skills to share ideas they have about chickens and information they've collected through direct observation.</p>
Language Objective:	

Vocabulary		Materials		
chicken, coop, eggs, nesting boxes, feeding trays, hay, net, red, nest, lay, color, feathers, beak, legs, walk, eat, tools		Teacher: Writing chart paper, different color markers, Anchor Charts, Alphabet charts and other phonics visuals teacher already uses in class to develop Phonological Awareness		
Seasonality (If more specificity is required, please note date/time range under season)				
Monsoon	Autumn	Winter	Spring	Dry Summer

July-Sept.	Oct.-Nov.	Dec- Feb.	Mar.-Apr.	May-June
Guiding Questions: What do we know about Chickens? What do we want to learn about Chickens?				

Anticipatory Set:

Ask students: Today we will go to the chicken coop and will observe Manzo's chickens. What are some things you think you might see? Think about it for a minute and be ready to share.

Activity/Investigation: Guided writing Sharing the Pen

1. For the next few weeks and that they will draw pictures of what they see and write sentences about their observations and the many questions they will want to investigate. Tell them that before they go outside today, you will teach them important things writers and scientist do to record their ideas down for other to read.

2. At this point of the Guided Writing lesson, everyone is sitting on the rug and you are by an easel or the board. **Refer to Kindergarten Chicken Coop Investigation #1**

Supporting Teaching Materials for suggested Guided Lesson:

Guided Lesson:

Teacher: "Boys and girls, there are many exciting and interesting things always going on at our school. We have a vegetable garden, we have a greenhouse were we grow lots and lots of basil, we grow mint too (have some basil and mint for student to smell and taste). And did you know we also grow tilapia fish? We sure do!" We will have many opportunities to visit all those wonderful spaces this year. Today we are going to take a trip around our school. We are going on a nature hunt. We are going to use all of our senses to collect information. Today you will be scientists. Scientists like to study nature. Anyone has an idea about one way a scientist might study nature?"

3. **Prediction Chart:** After the writing lesson, quickly record some predictions in **What We Think We Will See/What We Saw chart**. As a class, you will go back to their predictions later in the lesson.

4. **Gallinero Observations.** Walk class to Manzo's *gallinero*.

First: Allow students to quietly observe what the chickens. Have them notice what they look like: Feather colors, beak, feet, comb, eyes, etc.. what they do, how they move about inside the coop. What they eat, how they eat.

Next: Have them draw a sketch of what they see. Initially, students might need a lot of support in recording down their observations. This time just have them draw one or 2 things.

5. Back in class, have them add color to their sketches. Walk around the room and support as necessary encouraging students to add more details.

6. Language Experience Chart. Gather them on the run. You will be recoding on a chart their observations and as you do so, you will be the scribe modeling for and reinforcing these concepts about print: **Good Writers:**

- **Write their ideas down**
- **Start at the top left corner**
- **Stretch out sounds**
- **Use Alphabet chart to find the right letters**
- **Leave spaces between their words**
- **Use the Word Wall to find word they need.**
- **Re-read their story to make sure their story makes sense.**
- **End their sentences with a period.**

7. Wrapping up the investigation: Tell students they will be studying Manzo's chickens for the next few weeks and that they will investigate the answers to the many questions they have about chickens.

Closure:

Think about our visit to the chicken coop today. Look at your drawings. What are 2 things you noticed about chickens today?

Teacher Reflection:

Chicken Observation

Lesson 2~ Chicken Feather Observation

Teacher:
Author: Aide Silva

Grade Level: PACE

Date:

Common Core Standard:	<p>K.W. 1 Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or name of the book they are writing about and state an opinion or preference about the topic or book (e.g., <i>My favorite book is...</i>).</p> <p>K.W.5 With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed.</p> <p>K.W.6 With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.</p>
Enduring Understanding:	<p>Interconnectedness (being joined or related): Organisms and their environments are interconnected; changes in one part of the system will affect other parts of the system. Essential Questions: How are a region's culture and climate interconnected?</p> <p>Effective writing is the result of multi-stage, reflective processes in which the writer must develop, plan, revise, edit and rewrite their work to evoke change or clarify their ideas. The stages of these processes are enhanced with collaboration and technology.</p>
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Language Objective:	

Vocabulary		Materials		
Chicken, coop, feathers, body, fluffy,		<u>Teacher:</u> Writing chart paper, different color markers, anchor charts, alphabet charts and other phonics visuals teacher already uses in class to develop phonological awareness, one feather for each student, magnifying lenses		
Seasonality				
Monsoon	Autumn	Winter	Spring	Dry Summer

Anticipatory Set:
Tell students: Yesterday we observed chickens at the chicken coop. What is one thing you are still thinking about our chickens? Share with your neighbor.

1. Tell class today they will be scientists and that they will use a special tool to observe a chicken's feather. Model for them how to appropriately use the magnifying lens, but don't tell them that a magnifying lens make things look bigger. Let them discover that through the next activity.
2. **Free Exploration before the investigation:** Allow a few minutes for students to explore looking at things with the magnifying lens. After a few minutes gather them on the floor and ask them what they noticed. Record their responses on a chart titled: Magnifying Lenses.
3. **Feather Exploration:** Have students seat at their tables. Feather, magnifying lenses. Have them observe and talk about what they noticed. After a few minutes of observations and lively discussions, tell them you want to record some of their insights and wondering about those feathers on a chart.
4. **Record their observations and wondering.**

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5. **Drawing feather observations:** Tell class scientists can write down their observations in words and in pictures. Model for them how you can record through a drawing what you notice about your feather. Next, ask one student what she notices about her feather and ask her/him: How can you draw that on your Feather Observation page? What color will you add? How big will you make that? It is a curvy line or a straight line you will draw? (etc.)
6. **Wrapping up the investigation:** Gather up students on the rug. Praise them for being such great chicken feather scientists. Tell them that as they study chickens they will learn a lot of interesting information which will answers some of their wonderings you recorded in the chart today.
7. **Creating Interest and Anticipation leading into Next Investigation:**
Ask: Class why do you think chickens need feathers? I want you to think about this really hard in your head and be ready to share your ideas tomorrow in our next investigation!

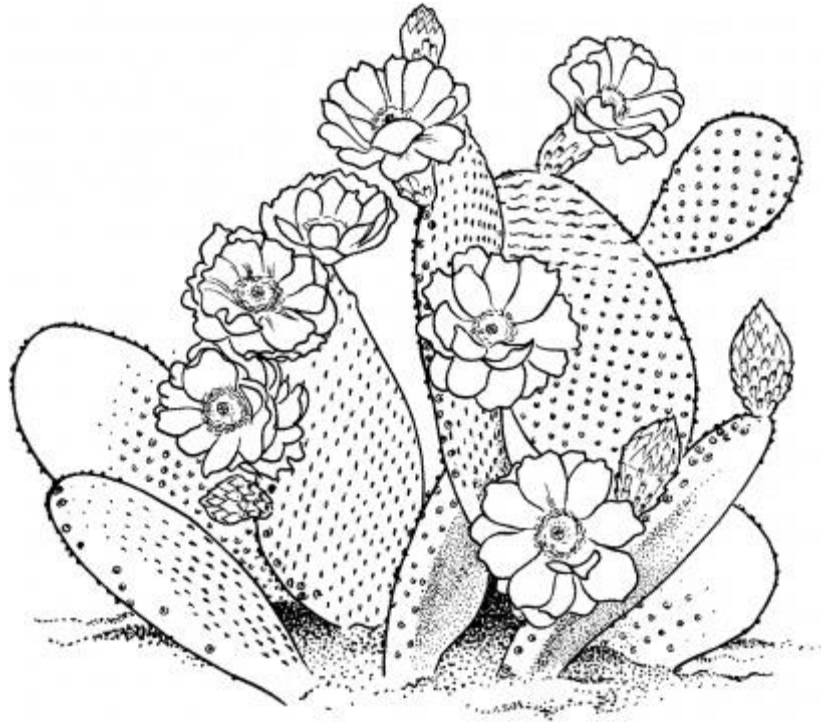
Closure:

What are 3 interesting things you noticed about your chicken feather? Share with an elbow partner.






Teacher Reflection:




Manzo Desert Plants Journal



Name: _____

<p>Can you find this plant?</p> 	<p>Common Name</p>	 <p>Draw a picture</p>
	<p>Agave</p>	
	<p>Prickly Pear Cactus</p>	
	<p>Jojoba</p>	

	Creosote	
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Agave



Prickly Pear Cactus



Jojoba



Creosote

