

TEACHER GUIDE: Letter 3: Acorn Woodpecker

CONCEPTS COVERED

Plant community—oak woodland

Characteristics

Acorns

Animals that can be found there

Representative animal—acorn woodpecker

Characteristics

Defense

Getting food

Food chains and food webs

Migration

Photosynthesis

Poison oak

Identification

Avoiding it on the Reserve

Reserve history—

Luiseno Indians--use of Plateau resources

Trail manners

Use quiet voices

Why have a Reserve?

CONTENT VOCABULARY

acorn—seed of the oak tree; important food source for Native Americans and animals

birds of prey—birds, such as hawks, eagles, and owls, that hunt and kill other animals for food

carbon dioxide—a colorless, odorless gas that occurs naturally in the atmosphere; formed during respiration

chlorophyll—the green pigment in the leaves and stems of plants that absorbs sunlight for use in photosynthesis

energy---the power or ability to make something work or be active

food chain—A series of organisms within an environment in which each kind of organism in the series is eaten by another higher in the chain in its effort to acquire energy

food web—a group of interrelated food chains in a particular ecological community

larvae—the stage of an insect between egg and adult; grub

migration—to move to a different area or region, especially at a particular time of year

oak woodland—a community of plants where oak trees are the dominant plant

photosynthesis—the chemical process by which a green plant changes sunlight, carbon dioxide and water into food

tannic acid—a natural substance found in the fruit and bark of certain plants and used for tanning hides; had to be removed from acorns before the Native Americans could use them for food

OTHER WORDS TO KNOW

beetle	gas	insect	shelter	stuff (fill something)
defend	grind	peck	startle	Visitor Center

THINGS TO THINK ABOUT

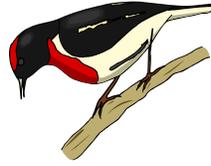
Can you remember three things about the acorn woodpecker?
What plant community do acorn woodpeckers spend most of their time in?
What kind of trees grows in this community?
What do we call the seeds from these trees?
The plant on the Reserve that people should stay away from grows in this community.
What is it? What does it look like?
What is photosynthesis? Can you explain how it works?
Why can't people make food like plants can?
What is a food chain?
What would happen if we woke up one day and there were no plants? Why?
Some birds migrate each year? What does that mean? Why do they migrate?
Name two animals you might see signs of in the oak woodland.
How do acorn woodpeckers defend themselves from predators?
When the Luiseno Indians lived on the Santa Rosa Plateau they used things they found
in their daily lives. What were some of the things they used and what were they used for?
What did the Native American women have to do to the acorns before they could cook
them for food for their families? Why?
Animals hide when they hear you coming. So, if you hope to see animals when you are out on the
trail, what do you have to remember to do?

FOLLOW-UP ACTIVITIES FOR STUDENTS

With your teacher's help, draw a diagram showing how an oak tree makes its own food. In your picture include what the tree needs (takes in) and what it gives off.

Draw a food chain. Remember to start it with a plant. Now, can you extend it into a food web?





Good day Third-Grade Students,

When I learned you were coming to visit the Santa Rosa Plateau Ecological Reserve, I became very excited. I was excited because when you visit the Reserve you will be able to learn about the animals that are here and see how they live. You will also learn how the Luiseno Indians, who once lived here, used the plants and animals in their every day life.

I have seen quite a bit of what goes on here because I am able to fly over the whole Reserve. As I fly, people usually notice the black and white feathers of my body and the red ones on top of my head. My beak is a strong one, and it helps me peck holes into solid wood when I am looking for insects. Let me tell you who I am—I am an acorn woodpecker. While you are here, look and listen for me. Do you know what I sound like? If you read the next three words very fast, it will almost sound like our call. “JACOB! JACOB! JACOB!”

There are many acorn woodpeckers living on the Reserve. That is because there are so many oak trees growing on the Santa Rosa Plateau. There are coast live oaks and Engleman oaks. These trees grow together in a habitat called oak woodland. Most of the trees in the oak woodland are over 150 years old. Some of the biggest oaks are over 300 years old. They were growing here before the United States was a country! My ancestors have been using these trees for food and shelter for hundreds of years. We build our nests inside them, and we eat their seeds, which are called acorns. In fact, we eat so many acorns that if it weren't for the oak trees, I don't think we could live here. We really need those acorns to get us through the winter when insect food is hard to find.

Acorns are full of energy! All of the other seeds and plants growing here on the Plateau are full of energy, too. Without that

energy, plants and animals could not live! Where does that energy come from? Would you believe it comes all the way from the sun? Sunlight is just full of energy! But how does the energy from sunlight get into the plants? I will try to explain. Let's say you were out walking on a hot, sunny day and you walked under an oak tree. How do you think it would feel? Shady and cool? Right! Well, where did all that hot sunlight go? Some of it bounced off of the leaves and went somewhere else. But, the tree took a lot of that sunlight into the leaves above you. At the same time, its leaves were taking in a gas called carbon dioxide from the air, and its roots were taking in water. All the other green plants around you are doing the same thing. They will mix these three things—sunlight, water, and carbon dioxide—with the chlorophyll in their leaves and make their own food. (Chlorophyll is what gives plants their green color.) The food that all green plants make is called sugar. That sugar is full of the sun's energy. The way that plants make sugar is called photosynthesis. Photosynthesis means changing sunlight, or energy, into food.

Now you know how plants get the energy they need. What about animals like acorn woodpeckers and bobcats? What about boys and girls like you? We can't make food like plants can. What do we do? We have to get that energy from someplace else. What do I mean? Let's say a beetle is eating a leaf. The sun's energy goes from the leaf into the beetle. Then I come along and eat the beetle. The sun's energy will become part of me. A rabbit may eat some grass and gets the sun's energy. Then a bobcat comes along and eats that rabbit. The energy from the plant that was in the rabbit passes to the bobcat. Cows get energy from the grass they eat. Meat from that cow is used to make a hamburger. You eat that hamburger. That energy is now inside you. All animals get their energy from something else. It doesn't matter what animals eat, they are all part of a food chain, or food web, which starts with the plants that catch the sun's energy on earth. I'll bet you didn't know how important plants were.

Like you, I am an omnivore. I eat acorns that come from plants and insects, which are animals. I know you like pizza. How do you

feel about beetle larva? They are baby beetles and one of my favorite foods. They are kind of like little worms and are just full of energy. I love eating them! Beetle larvae are very hard to catch. They like to hide inside of trees where they are safe from most animals—but not from me. My beak is so strong that I can peck and break into the wood where they are hiding. Then I can pull them out with my very long, sharp tongue and eat them. I can also catch insects to eat while I am flying. Yum! Yum!

Sometimes, like in the winter, I have a hard time finding insects to eat. They are hiding from the cold. Then I need something else to eat. So, before winter comes, I go looking for acorns. It's kind of like going shopping for food. You go to the market for your food, and I go to the oak trees for mine. But you are lucky. You can go to the market all year. Oak trees only have acorns in the autumn season so, I need a place to store them for the rest of the year. I peck holes into a dead tree or branch, and then stuff the acorns I find in them. Then I have acorns that I can eat all year long.

Most birds don't save food for later. As winter comes, there is less food for them to eat. They can't stay where they've lived for the spring and summer. They have to go somewhere else where it is warmer, and where they can find more food. When animals leave a place and go somewhere else to find what they need, it is called migration. In the fall and winter, many of the birds on the Santa Rosa Plateau are only visiting. They come when it is too cold where they live—from the higher mountains or places far to the north like Alaska. Sometimes our visitors don't stay very long. In years when we have not had much rain, there is not much food to be found on the Plateau. Then our feathered visitors have to fly on and look for a place that has enough food for them.

When you are here, look for the stuffed birds on the walls of the Visitor Center. They were hunted in the 1950's when it was still o.k. to hunt on the Plateau. They were hunted when they stopped to rest during their migration. Today, people cannot hunt on the Santa Rosa Plateau Ecological Reserve. Birds can safely stop here to eat and rest as they fly from one place to another.

As you walk through the oak woodlands where I live, you might see signs of a skunk, a bobcat, or a gray fox. I have to watch out for the gray fox. Even though it is a member of the dog family, it can still climb trees. Can you picture that—a dog climbing a tree? The gray fox does! I also have to be careful of other predators like the Cooper's hawk. This bird of prey is very good at flying through the oak woodland looking for birds to catch and eat. Most predators find that acorn woodpeckers are hard to catch. We can defend ourselves pretty well with our strong beaks, and we travel in family groups and help one another. Birds that stay in groups have a better chance of staying safe because they have more eyes watching for danger. If one of us sees a predator, we get very loud and warn everyone else. "JACOB! JACOB! JACOB!"

Long ago, Luiseno Indians called the Plateau home. They used wood from the willow tree to make houses. They knew which plants to use for food. They knew which plants would help them if they got sick or hurt. They got water from the streams. They hunted animals like deer, rabbit and quail for food. One of their most important foods is one of my favorites. Can you guess what it was? You guessed it—acorns!

People cannot eat acorns like I eat them. I can just break off the shell, and eat them raw. Yummm! You can't do that. There is something in the acorn that tastes terrible to people and can make you sick. It is called tannic acid. But the Native Americans were smart. They found out that they could grind the acorn seed with a rock. Then they poured water over the ground up acorns. The water would wash away the tannic acid! Then the pieces of acorns could be cooked into all kinds of things to eat.

People don't come to the Plateau for acorns any more. In fact, people don't even live on the Santa Rosa Plateau Ecological Reserve where I live. People have saved the land for the animals and plants that live here. People can only visit here. They come to the Reserve for many reasons. They come to get exercise and to breathe fresh air. They come to see all the different habitats and animals like me!

People really like it here. I see them all the time hiking on trails just the way you are going to hike the trails on your field trip.

If you want to see me or any of the other animals of the Plateau when you are on the trail, you will have to be very quiet. Most visitors to the Reserve don't remember this. They scare all the animals away with their loud voices and other loud sounds. Remember, all the animals on the Plateau are scared of people. If we hear you, we will hide! If you are very quiet, you may be able to sneak up on us. I've been surprised by people who have been sitting quietly while looking at me through what look like a big pair of glasses that they hold up to their eyes. Do you know what those things are? I think they help you get a closer look at animals and other far away things.

To be safe when you walk here, it is always a good idea to stay on the trails. That way you will stay away from the one plant that grows here that you don't want to touch. Poison oak!!! It likes to grow under the trees in the oak woodland. When it has its leaves it is easy to see. The leaves are shiny and grow in groups of three. When it loses its leaves in the winter, it just looks like dry sticks. If you touch poison oak, you could get an itchy rash the next day. The rangers are always cutting it away from the trail to keep hikers safe. Poison oak doesn't bother the animals that live up here. I see deer and birds eating it all the time. But it sure bothers people!

Well, I'd better be going. I should check my family's acorns. I am sure you are going to enjoy your trip to the Plateau. And remember, it will always be here for you to visit again and again with your family and friends.

JACOB! JACOB! JACOB!

An Acorn Woodpecker