

TEACHER GUIDE: Letter 2: Western Fence Lizard

CONCEPTS COVERED

Plant Community—Chaparral

Characteristics

“Elfin forest”

Water sources

People/Animal trails

Invention of chaps

Representative animal—Western fence lizard

Characteristics

Food

Water sources

Habits

Enemies

Carnivore; Insectivore

Camouflage

Geology—Igneous rocks

Staying safe on the Reserve

Always let the adult docent lead the way

Don't put your hands or feet where you can't see

CONTENT VOCABULARY

basalt—a type of igneous rock formed from cooled lava with few or no crystals

bask—to sit or lie back lazily in the warmth of the sun

boulder—any large, rounded rock lying on the ground or embedded in the soil

camouflage—special coloring and shape that helps an animal blend in with its surroundings

carnivore—a plant or animal that eats only animals

chaparral—a community of plants which grows together characterized by short, shrubby plants with smallish leaves; most common plant community in California

chaps—a cowboy's leather leggings worn over the pants as protection for the front of the legs

condensation—to change from a gas or vapor into a liquid or solid through cooling

crystal—the solid form of a mineral, sometimes with many flat surfaces

dew—water vapor in the air which condenses into small drops on plants, and other cool surfaces at night

docent—a knowledgeable person who leads a tour

elfin forest—nickname given to chaparral

granite—a kind of rough igneous rock that is gray, brown, or pink in color; made up of crystals of the minerals quartz, feldspar and mica

insectivore—an animal that eats only insects; a type of carnivore

lava—hot, melted rock that reaches the surface of Earth

magma—hot, liquid rock that stays beneath Earth’s surface

mineral—an inorganic, solid substance found in nature that has a uniform chemical composition, a regular crystal form, and a characteristic hardness and color

threat display—body language that says “Stay away!”

OTHER WORDS TO KNOW

dinosaur

push-ups

shelter

survive

pounce

roam

slither

tunnel

protect

scaly skin

surroundings

THINGS TO THINK ABOUT

How can you tell when you are in the chaparral community?

The plants in this community grow in areas where the sun is hot and there is not much water. How are they able to do this?

Why do some people call this plant community the “elfin forest”?

Name one plant that grows in the chaparral community.

What did cowboys wear to protect their legs when they rode through chaparral?

Can you think of at least 3 things you learned about the Western fence lizard?

What do carnivores eat? Why are insectivores a special kind of carnivore?

Name ways that animals protect themselves from predators?

What is one predator that hunts in the chaparral?

There are many rocks along the trail. What kind are they? How were they formed?

How are magma and lava different? How are the rocks they form different?

What are two things to remember to stay safe when hiking on the Reserve?

FOLLOW-UP ACTIVITY FOR STUDENTS

Try an experiment in condensation. You will need some very cold ice water. Add a little food coloring. Pour water and ice into a clear plastic glass. Watch the outside of the glass to see what happens. Where did the water come from? Why did it form on the outside of the cup? What process is at work here? Look at it later. What changes do you see? Why? (Works best on a day with some humidity or late in the school day when the room is warm and steamy.)



Dear Third Grade Students,

On your visit to the Plateau, we probably won't meet. I am nocturnal, which means I sleep all day long and come out at night. Since I'm a male (or boy), when the sun starts to come up, I look for a place like an old gopher hole to crawl into, or a fallen branch to hide under. Females (the girls) dig holes to sleep in that are about two feet deep and as wide as a quarter.

Some people don't even think of me as an animal, but I am. I'm a special kind of animal that has a skeleton on the outside of my body. It's called an exoskeleton. All animals that have exoskeletons are called arthropods. Crabs, lobsters and all insects like bees and butterflies are arthropods. I'm a special kind of arthropod called an arachnid. Now do you know what kind of animal I am?

I look very hairy but I am not a mammal. I have eight legs, eight eyes, and two fangs for injecting my prey with venom, or poison. Now do you know what I am? You're right—I'm a spider. Do you know what kind of spider I am? Remember, I look big and hairy. Yep, I'm a tarantula. There should be a picture of me with this letter. Aren't I good looking? I have longer legs than a female, and my "hair" is a little darker. It's not really hair. It's just a part of my skeleton that is on the outside of my body. Do you remember what that kind of skeleton is called? That's right, an exoskeleton!

If I think that something wants to hurt me, those hair-like parts of my exoskeleton come in handy. I can rub them off with my legs. They go flying into the air and some may get into the eyes of the animal that might be trying to eat me. This will make their eyes hurt and give me time to get away. By the time their eyes feel better. . .I am outta there! This works on some of the animals that like to eat me like rats, birds, and even coyotes.

It does not work if I meet a tarantula hawk. The tarantula hawk is a wasp that likes to find spiders like me to feed to its babies. First the wasp will try to sting me. I'll try and run, but they fly fast and can catch me. Then I'll try and make myself look big by standing on

my back legs. I'll swing my front legs wildly. I'll keep trying to hit it away, because if it stings me I become paralyzed and I can't move. The wasp will then take me to a nest where it will lay its eggs on me. After the baby wasps hatch, they will eat me, saving my heart and brain for last! Yikes! The tarantula hawk wasp hunts during the day. That's why I have to find a good hiding place to sleep in during the day. I don't want a tarantula hawk to find me.

Sometimes I have to look hard to find a hiding place. In the grassland where I live, there are very few big things to crawl under. If I am lucky, I'll find an old tree that has fallen down or a rock that has a tiny, little space under it. Why is it hard to find a place to hide? Think about it. What plants do you think grow in the grassland habitat? You guessed it—mostly grass. It isn't easy for a big spider like me to hide in grass.

The grassland of the Plateau isn't like the grass in your yard. In your yard the grass grows real close together and someone cuts it with a lawn mower. The grasses where I live are taller, and they grow in bunches. That's why they are called bunchgrasses. Since there is space between these clumps of grass, it is easy to walk between them. A lot of animals live in the grassland with me. They slither, crawl, and hop through the clumps of grass. Animals like racer snakes, alligator lizards, and kangaroo rats live here in the grassland.

One thing we all need to stay safe is shelter. Besides tarantula hawk wasps, there are many other animals that hunt in the grassland. Hawks fly above looking for movement, and coyotes sniff the ground for smells. Most of the animals of the grasslands can only hide in one place—under the ground. Many of them, like pocket gophers and kangaroo rats, dig their own holes or burrows. Many insects dig their own burrows. Snakes NEVER dig their own homes. They can't. They don't have any legs. You will not find a snake hole on the Plateau. But you might see a snake going into a

hole. Whose hole is it? That's right—it might belong to a gopher or a kangaroo rat. Why do you think a snake would go under the ground into the burrows of other animals? Well, sometimes a snake will go into a hole to eat the animal that lives there. Sometimes a snake will go down a hole to hide from another animal that wants to eat it. A hole is also a good shelter from the heat and cold.

There are other animals that go underground after their prey. You've already learned about snakes going into holes to hunt small animals, but what about animals like badgers that are too big to fit down a hole? Badgers belong to the weasel family and are the size of a small dog. They have strong legs and sharp claws that they use for digging. They dig into the ground for animals that are hiding from them. They eat gophers, snakes, beetles. . .just about anything—even me. But you know what kind of animal they eat the most? Earthworms. Think about it. If a badger is digging for a mole, and an earthworm happens to be in the way—GULP! YUM! FOOD! And, there are lots of earthworms in the grassland. If you see a hole that your head would fit into, you know a badger has been there digging for food. But don't stick your head in it! You never know what might be down there beside earthworms!

People and animals that live on or near the Plateau need to be careful about fire. Some fires are started by lightning. Other fires are started by people who are careless. If a fire gets started, it can burn quickly through the chaparral and grasslands. Sometimes people's houses burn. The deer, rabbits, coyotes and other animals that live above ground have to run away from the fire. The animals that live under the ground can hide from fires in their holes. After the fire has passed, everything looks black and bare. There is not much food left. There are not many places to hide. It will take time for the plants to grow so the animals will have food and shelter again.

As bad as fires can be, they can help the plants and animals that live in the grassland. They help by burning the old, dry, and brown leaves and grasses. How does this help? Well, the plants

can get more sunlight, and sunlight helps them grow. Also, when fire burns the old leaves, it turns them to ash. The ashes have a lot of nutrients that can now go back into the ground. The plants will take these nutrients in through their roots and use them to grow. This will make the plants strong and healthy. Then, after it rains

there will be lots of new, fresh green leaves for the herbivores to eat.

Burning all those old, dry leaves also helps small animals like me. Without that old stuff, it is easier for us to move around. And, if fire didn't burn the old dead leaves every now and then, they would build up. Then if a fire burns our grassland, it will burn so hot that we won't even be safe underground in our holes.

To help keep the animals and plants of the Reserve healthy, the people who work here burn some of the grassland each year on purpose. They have studied fire and have learned how to control it. They are very careful and only burn one small area at a time. They will only burn an area when there are no winds and when there are a lot of firefighters who can work to make sure that the fire stays on the Reserve.

Oh, I almost forgot! We have a lot of wildflowers on the Plateau every spring, but you should see the flowers after the grassland is burned. There are s-o-o-o many different kinds! There are white popcorn flowers and yellow buttercups. There are orange California poppies, Johnny jump-up violets, fairy lanterns, and brown chocolate lilies. That's right. Chocolate lilies! No, we can't eat them, but the bees and butterflies love them. They go inside the flower and drink the nectar. While they're drinking the nectar, they bump up against something that looks like yellow dust called pollen. After the pollen gets stuck on them, they will fly to another chocolate lily flower. While drinking the nectar from that flower, some of the pollen will fall off them into the flower. When this happens, part of the flower will turn into seeds! This is called pollination. New plants

can grow from the seeds, and there will be more chocolate lilies for you to see.

Not only can you see more flowers when the old, dry leaves have been burned, but the bees and the butterflies can see them, too. What if the bees and butterflies couldn't see the flowers? Well, without bees and butterflies pollinating the flowers, there would be no seeds. No seeds means no new plants. No new plants mean less food for herbivores. Less food for herbivores means less food for carnivores. That's me! So you see, as damaging as fires can be, they help a lot, too.

When you come up for your hike, you might not see me, but I'll know you are there. Every step you take shakes the ground and I can feel it with my feet. Like most of the animals up here, when I feel the ground shake, I will hide or stand still. If I don't move, I blend in with everything else. People walk right past me and never see me. When I don't feel any more shaking, I'll start walking again. So, try not to stomp or drag your feet as you hike on the trail. You just might see me out walking.

Some of you might be scared of big spiders. Well, I'm just as scared of you! After all, just think how big you look to me. You look as HUGE as King Kong! When you see me, I might try to scare you because I'll think you want to eat me. I'll stand up on my back legs and wave my front legs around trying to look scary. If you try to pick me up, I might even bite. To a big predator my bite would be like a bee sting. But, as mean as I am trying to look, I just want you to go away!

If you don't see me on your field trip, come back to visit with your friends and family. The best time to look for me is in the late afternoon, around dinnertime during the summer.

Until then, Boo! I mean, Bye!

A Tarantula