



## Food Chain Safari Grade 4

Grade 4 Objectives: Students will use binoculars to explore the landscape for organisms in food chains of the Oak Woodland and will:

- a.) Identify the sun as the source of energy entering all food chains and plants (producers) as the source of all food energy for animals (consumers)
- b.) Explain the eating behaviors of consumers (herbivores, carnivores, omnivores and decomposers) and give an example of each one in a Circle J food chain
- c.) Accurately depict a food chain and explain the flow of energy from organism to organism using feeding relationship vocabulary words (producer, consumer, herbivore, decomposer, etc.)
- d.) Will explain at least two scenarios of producers or consumers competing with each other for resources at Circle J-Norris Ranch

**Grade 4 Life Science Standards:** Students know:

- a.) Plants are the primary source of matter and energy entering most food chains.
- b.) Producers and consumers (herbivores, carnivores, omnivores and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem
- c.) Decomposers, including many fungi, insects and microorganisms, recycle matter from dead plants & animals.

### Materials:

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|---|---|
| <input type="checkbox"/> Binoculars for each student      | <input type="checkbox"/> Laminated "A food chain in the Oak Woodland" & "Pacific Ocean" |
| <input type="checkbox"/> Food chain diagrams              | <input type="checkbox"/> 8 Vis-à-vis pens   |
| <input type="checkbox"/> Herbivore, carnivore, etc. cards | <input type="checkbox"/> Laminated photos of the organisms                              |
| <input type="checkbox"/> Oak Woodland Poster              |   |

### Introduction

Welcome to the Oak Woodland Community! Circle J-Norris Ranch is home to many oak trees (3 species), grasses, wildflowers, shrubs and lots of animals!

Today we are going to go on a safari- A Safari is an overland expedition for hunting or exploring (usually in Africa, but we can go on safari in California's Oak Woodland, too!).

On our safari, we will be exploring the ranch, looking for food chains. A food chain shows the flow of food and energy from organism to organism. The important thing about food chains is that: *Plants take solar energy and transform it into food energy.*

*Herbivores, omnivores, carnivores and decomposers eat the food energy made by plants.*

Show Concept map of sun, producers & consumers.

Sun: Sun is energy source for planet earth

The Food Chain:

Introduction:

Producers: Plants are producers. Producers turn the sun's energy into food energy. Plants absorb (take in) the sun's energy and produce sugar energy that the plant uses to grow and live. [Give examples and non-examples]

Consumers: Animals and decomposers are consumers. Consumers eat plants or other animals to get energy to grow and live. Consumers include: herbivores, omnivores, carnivores and decomposers.

Divide large group quickly into 5 smaller groups of about 3 students. Hand out each food group (Producers, Herbivore, Carnivore, Omnivore & Decomposers) and place the associated plant and animal photos on the ground. Instruct each group to select the photos of the creatures that belong to their group (there are clues on the back). Then, have each group present their food group & its members.

The Safari:

We can use binoculars to see the producers and consumers involved in our food chain! [Pass out binoculars and instruct students to adjust the hinge of the eyepieces to fit their eye-width & to use the middle dial to focus the binoculars]

Walk a while and introduce each food consumer concept as you see an example- for instance, when you see a deer or cow, introduce the herbivore concept, when you see coyote scat, introduce the omnivore concept, when you see a fallen tree riddled with fungus, introduce the decomposer concept.

- **Herbivores** are plant eaters. Examples are cows, deer & rabbits. A non-example is a rattlesnake- it eats mice and squirrels.
- **Omnivores** eat both plants and other animals. Examples are coyote, raccoon and acorn woodpecker. A non-example is a mountain lion- it eats deer & rabbits.
- **Carnivores** eat other animals. Examples of carnivores are bobcats, mountain lions, & hawks. A non-example is a gopher- it eats plant roots.
- **Decomposers** eat plant and animal wastes, including their dead remains. Examples are the FBI- fungi (mushrooms), bacteria and insects. A non-example is a frog- it eats flies and other insects.

For each Food Chain, lay the organism cards on the ground. Have the students follow the flow of the sun's energy through plants and to each of the organisms in a food chain example.

Now we will go on our food chain safari-

We will go out and explore the Oak Woodland ecosystem and discover food chains are all over the place!

As we discover food chains, we will fill in the paper " A Food Chain Oak Woodland: Who Eats What?" Some possible food chains they may discover or see evidence of:

Acorn- woodpecker-Red Shouldered Hawk- (FBI)fly larva (maggots)

Leaf- caterpillar- bluebird- bobcat- vulture- (FBI)- bacteria

Grass-cow-people-(FBI) bacteria in waste water system

Acorn- deer- mountain lion- (FBI) -Dung fly larva

Think-Group-Share and Closing

(Form groups of three students)

Think-Group-Share: Please take a good look at this poster of the Oak Woodland.

Think: Look and think by yourself: Is there a food chain on this poster? What organisms will I put in my food chain?

Group: Each person tells the organisms in their food chain to the other 2 students in their group. Then the group members must discuss & decide on a food chain that they will put on their paper. They draw the pictures & write in the names of organisms in their food chain.

Share: Each group shares their food chain with the other groups, telling how the energy flows from plants to all other organisms in their food chain.

Closing: Groups share and then

The important thing about food chains is that:

*Plants take solar energy and transform it into food energy. Herbivores, omnivores, carnivores and decomposers eat the food energy made by plants.*

And

*All the different ecosystems on earth have a similar pattern of organization.*

When you visit a desert, ocean, Sequoia forest, grassland or any other place, you will find Producers and Consumers (herbivores, omnivores, carnivores & decomposers). They may be different organisms- like kelp-sea urchins-sea otters-crabs, but the organization is the same.