

HIGH DESERT MUSEUM

WILDLIFE *and* LIVING HISTORY

SELF-GUIDED LEARNING EXPEDITION



Name _____

GRADE LEVEL: 4–5
TEACHER GUIDE

LIFE SCIENCE | Organisms and Ecosystems

On this expedition, you will visit the following areas in order to complete activities related to the theme “Organisms and Ecosystems.”

EXHIBIT TITLE **Check (✓) when complete**

Donald M. Kerr Birds of Prey Center

Autzen Otter Exhibit.....

Choose one of the following study areas:

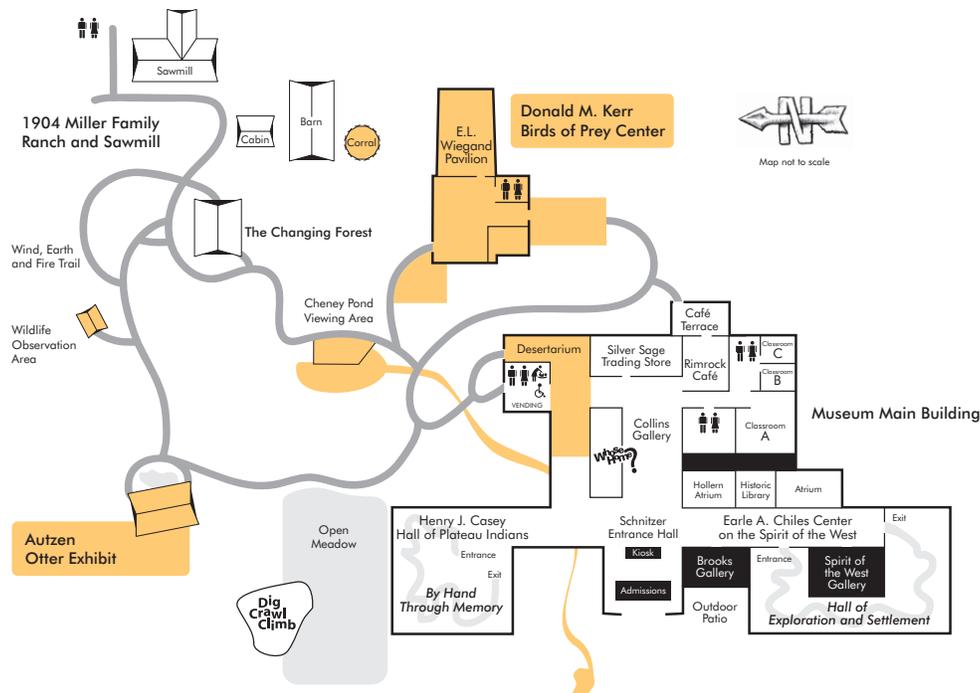
• **Autzen Otter Exhibit**

• **Desertarium**.....

• **Museum stream and Cheney Pond**

• **Mustang corral**

• **Wildlife observation station**



Connection to Standards

Next Generation Science Standards

Disciplinary Core Ideas

- LS1.A: Structure and Function
- LS2.A: Interdependent Relationship in Ecosystems

HOLLERN ATRIUM | Everything Serves a Purpose

FORM AND FUNCTION

- An adaptation is a body part or behavior that allows an animal to survive in its environment.



OBSERVE AND EXPLAIN

Plants and animals have different ways to defend against or deter predators. What unique feature of porcupines might help protect them from predators?

Quills

Draw the body part here:

From catching prey to allowing for movement, feet can serve several functions for animals. What unique feature on its foot helps a porcupine climb?

Claws

Draw the porcupine's foot here:

DESERTARIUM | A Dry World: High Desert Life

ANIMAL ADAPTATIONS

- An adaptation is a body part or behavior that helps an animal survive in its environment.
- In this exhibit, explore the adaptations that help these animals survive in dry environments like the High Desert. *Hint: find your answers by looking at the animals and by reading information on the exhibit panels.*

FILL IN THE BLANK

WORD BANK

sun water roots rocks leaves hiss
Gila monster Great Basin gopher snake California kingsnake

1. **Water** in the desert is precious and scarce so animals and plants must conserve it.
2. Plants are able to resist drought by having special **leaves** and **roots**. Sagebrush plants have a coat of fine hairs on the leaves to reflect heat and slow water loss.
3. When disturbed, I will rise to a striking position, flatten my head, hiss loudly and shake my tail. You might mistake me for a rattlesnake, but I am a **Great Basin gopher snake**.
4. To protect itself from predators, the burrowing owl has brown feathers to camouflage itself within dry grass. If a predator enters the burrow, the young owls will **hiss** like a snake to scare the predator away.

5. Draw the tortoise's habitat:	6. Draw and name what the tortoise eats:
	

DESERTARIUM | Energy in the Ecosystem

THE SAGEBRUSH SEA: FOOD WEB

Label and draw the following organisms in the correct spaces below to show how food energy makes its way from plants to large predators.



Lizard



Sagebrush



Ant



Coyote

Top predators, secondary and tertiary consumers



American badger



Northern harrier

Small carnivores/ secondary consumers



Sage thrasher



Prairie rattlesnake

Herbivores/ primary consumers



Sage grouse

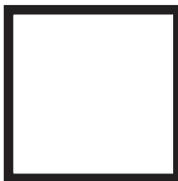


Pronghorn



Pygmy rabbit

Primary producers



Cactus



Desert wildflowers

Discuss

When an animal dies in the ecosystem, what happens to the stored energy within that animal?

DONALD M. KERR BIRDS OF PREY CENTER

HEALTHY ECOSYSTEMS

Find the “High Desert Ecoregions” panel at the Birds of Prey Center.
(across from the barn owl exhibit)

1. The High Desert is a unique region that includes many different landscapes, such as mountain ranges with ponderosa pine forests, streams and wide meadows with aspen. After reading the panels, fill in the blanks with the names of the organisms that can be found in each of the habitats.

		
Shrub-steppe	Riparian	Aspen
Carnivore: <u><i>Ferruginous hawk</i> <i>or prairie falcon</i></u>	Carnivore: <u><i>Peregrine falcon</i> <i>or Cooper's hawk</i></u>	Carnivore: <u><i>Northern goshawk</i> <i>or American kestrel</i></u>
Herbivore: <u><i>Answers may include</i> <i>cottontail rabbit, pocket</i> <i>gopher or ground squirrel</i></u>	Herbivore: <u><i>Answers may include</i> <i>waterbirds, small birds</i> <i>or mammals</i></u>	Herbivore: <u><i>Answers may include</i> <i>birds, mammals or insects</i></u>
Producer: <u><i>Answers may include</i> <i>wildflowers, shrubs</i> <i>or grasses</i></u>	Producer: <u><i>Answers may include</i> <i>various plants</i></u>	Producer: <u><i>Answers may include</i> <i>aspen or other trees,</i> <i>shrubs or grasses</i></u>

DONALD M. KERR BIRDS OF PREY CENTER

HEALTHY ECOSYSTEMS

Ecosystem Roles

- **Producers** are organisms that use sunlight, water and nutrients to make their own food.
- **Herbivores** are organisms that consume plants.
- **Carnivores** are organisms that consume animals.
- **Omnivores** are organisms that consume both plants and animals.
- **Decomposers** are organisms that break down dead plants and animals.

Find the great horned owl within the Donald M. Kerr Birds of Prey Center.

1. In the table below, list the plants and animals that are in the owl's home. *To complete the table, use your imagination to describe the ones that you don't see, but could be present in a great horned owl's forest habitat. Answers will vary.*

Energy Source	Producers	Herbivores	Carnivores	Decomposers
SUN	1. Tree 2.	1. 2. Mouse	1. 2.	1. 2.

2. Choose six plants and animals from the table above and write their names in the squares below. Draw arrows between the squares to show how they are related. *For example, a mouse would eat the seeds of a wildflower.*

