The HIGH DESERT MUSEUM
BEND, OREGON

HIGH DESERT MUSEUM

LEARNING EXPEDITIONS

FOOD WEBS

How are all living things connected?

Science
Grade Level: 4-5

INTRODUCTION:

On this Expedition, your students will explore the question, "How are all living things connected?" by role playing different parts of a food chain. During the Museum visit, each student finds a focus area to explore a particular food chain in more detail, and the class explores the role of raptors in a food chain. Post visit activities challenge students to learn more about the challenges faced by all living things.

SUMMARY:

Pre-Visit Activities:

1. Play an interactive food chain game, such as 'Deadly Links' from *Project Wild;* modify the organisms involved to fit your study *(option: this game may be played during your visit in the Museum Meadow; we will provide all the game materials for a $5 service fee)*
2. In small groups, make posters showing the relationships between producers, consumers and decomposers; as a class, create definitions, including 'food chain' and 'food web'
3. Before the Museum visit, the teacher assigns or has students choose a focus area

Museum Visit Activities:

1. For each display they are assigned, students list producers and consumers present, and then create food chains or webs, including living things not seen at the Museum
2. At the *Birds of Prey Center,* students explore the hazards and benefits of being at the top of a food chain
3. Optional: Play the *Project Wild* game, 'Deadly Links' in the Museum Meadow *(if you desire this option, please email to reserve the game materials: edu@highdesertmuseum.org)*

Post Visit Activities:

1. Students create hats (or other labels) to identify themselves as one living thing seen at the Museum; each student asks the question, "Who am I connected to?" as a ball of string is passed across the circle, connecting the entire class as a web
2. Students create a food chain with at least four parts, and research the challenges of each living thing based on their place in the food chain

VOCABULARY:

food chain, food web, producer, primary consumer, secondary consumer, decomposer, challenges, benefits, habitat, ecosystem, predator, prey, advantages

Oregon State Standards & Benchmarks:

Organisms:

- Group or classify organisms based on a variety of characteristics
- Describe the relationship between characteristics of specific habitats and the organisms that live there

Bend-LaPine School District Curriculum:

Life Science:

- Describe the basic needs of living things (4)
- Describe life cycle and survival of organisms (5)

Inquiry

- Collect, record, and summarize data (4)
- Write observations, collect, record, and organize data (5)

Science in Social Perspectives:

- Know that people's actions have an affect on others/the environment (4)

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PRE-VISIT ACTIVITIES

DEADLY LINKS

Play an interactive food chain game, such as 'Deadly Links' from *Project Wild.* You may want to modify the organisms involved to fit whatever ecosystem you are studying. Another option is to play this game during your Museum visit. We will supply all the materials needed, and you can use the Museum Meadow as a playing field. If you would like to add this to your field trip plans, email edu@highdesertmuseum.org to reserve the game bag. *(There will be a $5 service fee added to your admission fee.)*

FOOD CHAIN POSTERS

In small groups, have students make posters showing the relationships between producers, consumers and decomposers. This can be detailed, or a brief sketch, as time allows. Then, have a class discussion about the similarities and differences seen between the posters. Create definitions for terms such as producer, consumer, decomposer, predator, prey, food chain and food web. Which of these things do the students think they will see during their Museum visit?

Before your Museum visit, assign or have students choose a focus area for which they will observe and draw a detailed food chain. Have them write their area on the first page of their packets in the space provided. Possible areas of study:

- Desertarium—several areas, such as snakes, reptiles, amphibians
- Otter exhibit
- Stream and Pond
- Wildlife Observation Station
- Mustang Corral (only certain times of year, usually Spring-Fall)

The *Birds of Prey Center* is not listed here, since all students will be doing an activity there during the field trip.

PREPARING FOR YOUR MUSEUM VISIT

Students: As the day of your Museum visit approaches, focus your students' thoughts on what they might experience a the Museum and how that fits in with what they are studying. Preparation should not be entirely academic, however; clarify students' expectations about things such as bathrooms, lunch plans, who they will spend the day with, etc. to alleviate unnecessary anxiety or disappointment.

Chaperones: Don't forget to prepare your chaperones! They are a valuable resource; use them to help make your field trip an educational success! Send them a letter explaining your educational goals/focus for the trip. Outline the tasks they will be responsible for throughout the day. Set aside time to talk with your chaperones and answer their questions.

Logistics: Remember to prepare student and/or chaperone materials in advance. Don't forget nametags with your school name, and have your confirmation form and admission fee ready when you arrive to avoid delays as you check in.

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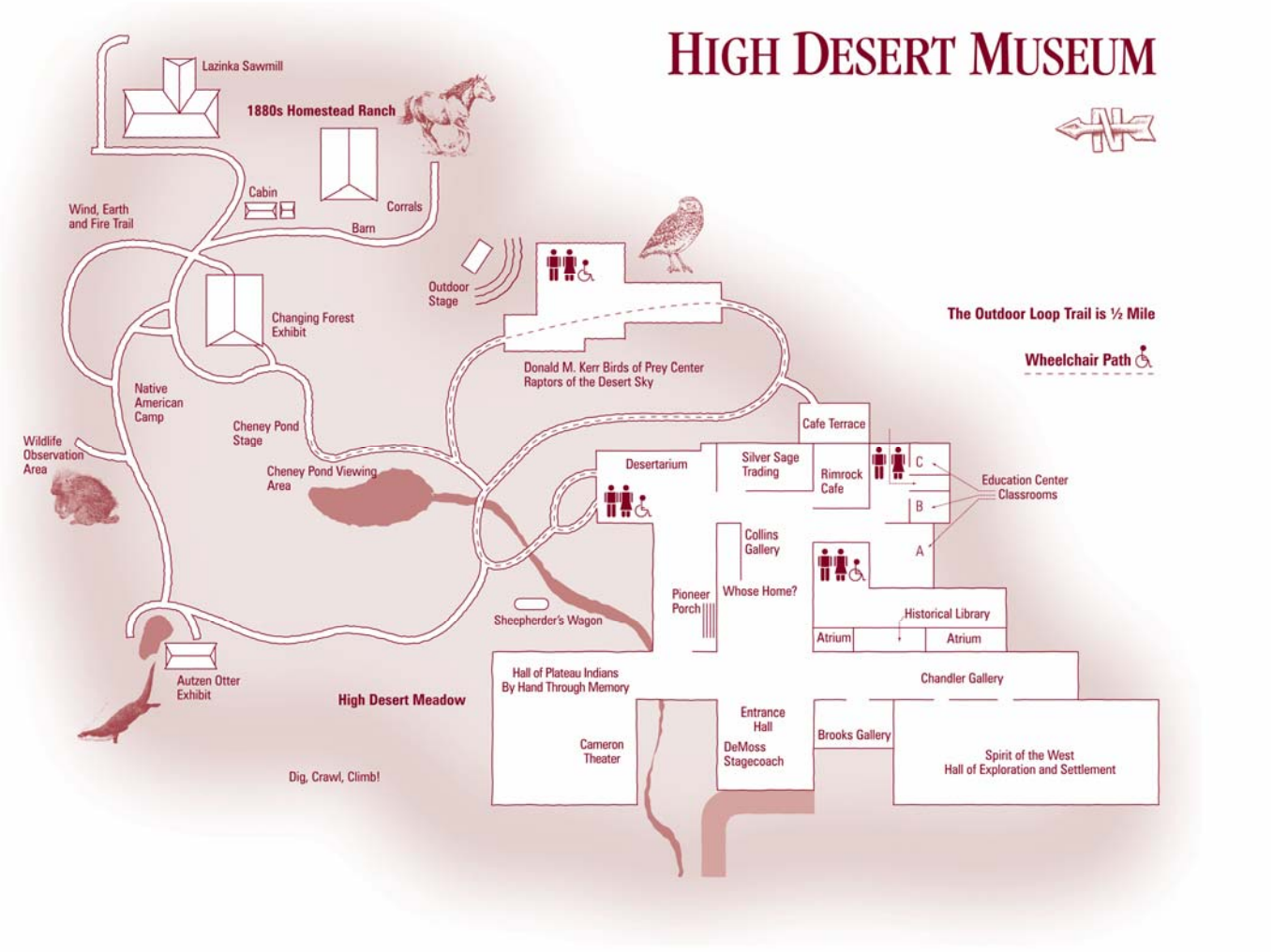
STUDENT PAGES

Grade Level: 4-5

INTRODUCTION:

On this Expedition, you will visit the following areas in order to complete activities related to the theme, 'Food Webs': *(you do not have to visit the exhibits in the order listed)*

EXHIBIT TITLE	DONE?
Birds of Prey Center—"Raptors of the Desert Sky"	
Specific area of study:	



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BIRDS OF PREY CENTER

SCENE: 'WHAT IS A RAPTOR?'

Complete this paragraph:

Raptors are producers/consumers (circle one), and are also called _____ _____ _____. The one bird in this exhibit that is <u>not</u> a true raptor, because it does not have powerful feet is the _____.

SCENE: 'LIFE CYCLE'

Find the text with the title, 'Survival of the Fittest . . . ' Name two reasons that most raptor chicks don't live beyond their first year:

1.

2.

SCENE: 'MIXED CONIFER FOREST HABITAT'

Living in this habitat are two adult Northern Spotted Owls. Can you find them?

This bird is called a 'specialist' because it eats only certain animals, compared to the Great Horned Owl, a generalist that eats a wide variety of prey. Fill in the Northern Spotted Owl's food chain below:

PRODUCERS	→	PRIMARY CONSUMERS	→	SECONDARY CONSUMER
				

What part of the food chain is missing?

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STUDYING A FOOD CHAIN

AREA ASSIGNED TO YOU:

_____

First, list all the producers and consumers you see or read about for your area:

PRODUCERS	CONSUMERS

What other living things might be in your area, but you don't see them here?

Now, create a food chain or food web that shows how the living things relate to each other. Use pictures and words. Draw the habitat that surrounds the living things. Be sure to use labels for:

Producers = P Consumers = C Decomposers = D

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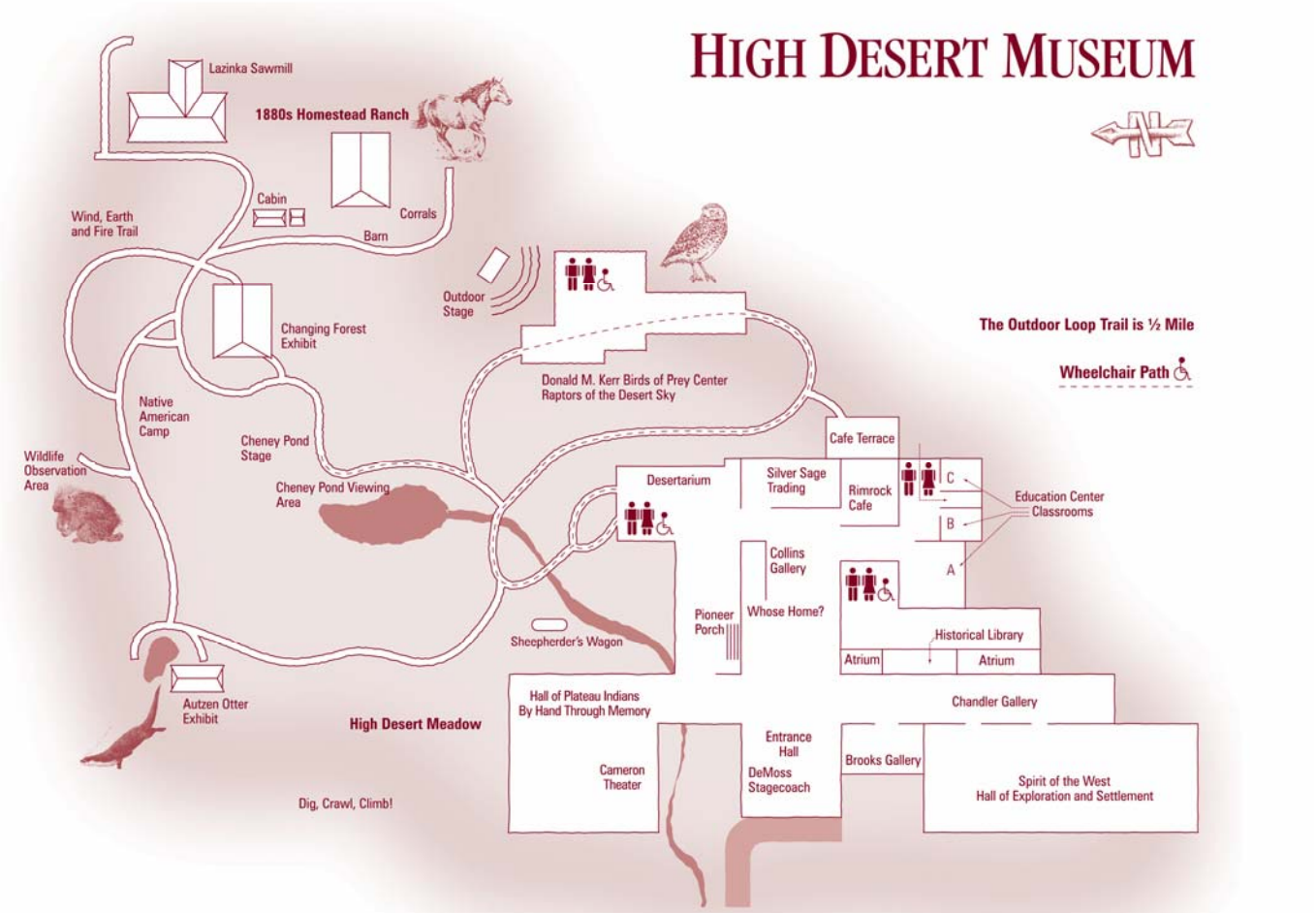
CHAPERONE PAGES

Grade Level: 4-5

INTRODUCTION:

On this Expedition, you will visit the following areas in order to complete activities related to the theme, 'Food Webs': *(you do not have to visit the exhibits in the order listed)*

EXHIBIT TITLE	DONE?
Birds of Prey Center—"Raptors of the Desert Sky"	
Specific area of study:	



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BIRDS OF PREY CENTER

SCENE: 'WHAT IS A RAPTOR?'

Complete this paragraph:

> Raptors are producers/consumers (circle one), and are also called *Birds of Prey*. The one bird in this exhibit that is not a true raptor, because it does not have powerful feet is the *vulture*.

SCENE: 'LIFE CYCLE'

Find the text with the title, 'Survival of the Fittest . . . ' Name two reasons that most raptor chicks don't live beyond their first year:

1. *Any two of the following: starvation, disease, accidents,*
2. *or predation by other hunters, including humans*

SCENE: 'MIXED CONIFER FOREST HABITAT'

Living in this habitat are two adult Northern Spotted Owls. Can you find them?

This bird is called a 'specialist' because it eats only certain animals, compared to the Great Horned Owl, a generalist that eats a wide variety of prey. Fill in the Northern Spotted Owl's food chain below:

PRODUCERS		PRIMARY CONSUMERS		SECONDARY CONSUMER
conifer trees such as fir, hemlock, cedar and pines (these produce cones with seeds)	→	*flying squirrels and other small mammals*	→	

What part of the food chain is missing? *decomposers*

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STUDYING A FOOD CHAIN

AREA ASSIGNED TO YOU:

_____

First, list all the producers and consumers you see or read about for your area:

PRODUCERS	CONSUMERS
Student answers for this activity will vary, depending on the area they are assigned	

What other living things might be in your area, but you don't see them here?

Now, create a food chain or food web that shows how the living things relate to each other. Use pictures and words. Draw the habitat that surrounds the living things. Be sure to use labels for:

Producers = P Consumers = C Decomposers = D

POST-VISIT ACTIVITIES

MAKING THE CONNECTION

Have students create hats (or other labels) to identify themselves as one living thing seen at the Museum. Have students stand in a circle, with one ball of string to be passed across the circle; begin with one student, who asks the question, "Who am I connected to?" The student identifies a connection their species has to another living thing, and then passes the string to that person in the circle. This continues until all students have made a connection. The result is a big 'web' in the middle of the circle. Ask one student to pull on his/her string and see how many other students felt the tug. Discuss this interdependence. Complete the activity by placing a tray of snacks on top of the middle of the 'web' and encourage students to work cooperatively to lower the tray to the floor. Their reward = survival (and treats!) for all.

Option: The activity, 'Habitat Lap Sit' from *Project Wild* is another lesson which can be used to summarize this interdependence of living things.

FOOD CHAINS

For assessment, have students create a food chain with at least four parts. Research the challenges of each living thing based on their place in the food chain, and write a 1 page summary of findings.