Name

GRADE LEVEL: 2–3
TEACHER GUIDE
On this expedition, you will visit the following areas in order to complete activities related to the theme “Survival Adaptations.”

**EXHIBIT TITLE**

- Desertarium
- Donald M. Kerr Birds of Prey Center
- Autzen Otter Exhibit
- Scavenger Hunt throughout the Museum

**Connection to Standards**

**Next Generation Science Standards**

- Disciplinary Core Ideas
  - LS3.B: Variation of Traits
  - LS4.D: Biodiversity and Humans
LIFE SCIENCE | Survival Adaptations

DESERTARIUM | Survival in the High Desert

REPTILES VERSUS AMPHIBIANS

• Reptiles are cold-blooded animals that have scales and breathe with lungs. Most reptiles live on land and lay eggs.

• Amphibians live on both land and water, using both gills and lungs throughout their lives. They do not have scales and their skin is smooth. Most amphibians go through metamorphosis.

Can you find three different reptiles?
1. possible answers include any  
2. snake, lizard, tortoise or turtle  
3. __________________________________

Can you find two amphibians?
1. possible answers include any  
2. frog, salamander or toad  

WATER HABITAT
Find two animals that live in water.
1. fish, turtle, toad, frog, salamander  
2. __________________________________

• An adaptation is a body part or behavior that helps an animal survive in its environment.

What adaptation helps animals move in water? fins and/or webbed feet

How does that feature help the animal move? answers will vary

What adaptation, or body part, helps animals breathe underwater? gills

How does that feature help the animal breathe? answers will vary
DESSERTARIUM & OUTDOOR EXHIBITS

BUILT FOR SURVIVAL
Organisms vary in how they look and function because they have inherited traits, which are specific for certain environments, from their parents. As you visit the animal exhibits throughout the Museum, look for animals that have the characteristics in the chart below.

Fill in the name of the animals you find with these characteristics:

WINGS
1. Burrowing owl
2. Great horned owl
3. Bald eagle

SCALES
1. Gila monster
2. Western fence lizard
3. Redband trout

FUR
1. Porcupine
2. Bobcat
3. Otter

WORD BANK
- camouflage
- fly
- desert tortoise
- protect
- dig

STRUCTURE TO FUNCTION
Fill in the blanks and finish the following sentences:

1. A burrowing owl’s wings can help it ________________________ fly ________________________.

2. A __________ desert tortoise __________ can use its claws to ________________________ dig ________________________.

3. A bobcat has spotted fur to help ________________________ camouflage itself and protect it from being seen by a predator.

4. A collared lizard’s scales can help ________________________ protect ________________________ its body in a dry and rocky habitat.
RAPTOR ADAPTATIONS
Explore the birds on display in this exhibit and read the exhibit panels.

1. Choose one bird. **answers will vary**

Species name?

2. Draw the bird’s…

3. How does this beak help the bird eat?

   *A hooked beak helps the bird rip apart its prey.*

4. How do these feet help the bird catch prey?

   *These powerful feet and sharp talons help the bird hold onto its prey.*

5. How do these eyes help the bird hunt?

   *Excellent eyesight helps to make raptors great hunters.*
All animals have structures, or body parts, that serve specific functions. For example, the structure of raptor feet allows these birds to pick up and grasp prey.

Find the Western diamondback rattlesnake in the Desertarium and answer the following questions.

Rattlesnakes have brownish skin with dark brown diamond patterns on their backs.
1. How does this pattern and coloration help rattlesnakes survive in the High Desert?

   *The skin and colors help the snake camouflage in the gravel and sand of their habitat.*

Rattlesnakes have a rattle at the end of their tails, hence their name.
2. What is the rattle used for?

   *Rattlesnakes will shake their tail as a warning to frighten predators away.*

Rattlesnakes have long fangs in their mouths.
3. What is the function of these fangs?

   *Fangs can inject venom into predators or prey.*

**Discuss**
To the untrained eye, rattlesnakes and gopher snakes look similar. Look closely at the two types of snakes and discuss how they are similar and different. *Hint: Text on the exhibit panels may help you think about certain features and behaviors between the two species.*
**ENTIRE MUSEUM**

**ADAPTATIONS EVERYWHERE**

**IDENTIFY AND FIND**

Animals that live in the High Desert have many different ways of surviving. As you explore the Museum, look for the animals being described.

<table>
<thead>
<tr>
<th>UNIQUE ADAPTATION</th>
<th>WHAT AM I?</th>
<th>I FOUND IT! (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If I feel threatened, I hide my face and raise my quills to warn predators to keep away.</td>
<td><strong>Porcupine</strong></td>
<td>Schnitzer Entrance Hall</td>
</tr>
<tr>
<td>2. With my webbed feet, long tail and waterproof fur, I’m a perfect underwater predator.</td>
<td><strong>River otter</strong></td>
<td>Autzen Otter Exhibit</td>
</tr>
<tr>
<td>3. I live on high, remote cliffs so that I can see for many miles and no predators can reach my nest.</td>
<td><strong>Golden eagle</strong></td>
<td>Donald M. Kerr Birds of Prey Center</td>
</tr>
<tr>
<td>4. My camouflaged body and feathers that look like tree branches help me blend into a mixed conifer forest.</td>
<td><strong>Great horned owl</strong></td>
<td>Donald M. Kerr Birds of Prey Center</td>
</tr>
<tr>
<td>5. To get away from predators, I run upright on my hind legs like a little <em>Tyrannosaurus rex</em>.</td>
<td><strong>Collared lizard</strong></td>
<td>Desertarium</td>
</tr>
<tr>
<td>6. My rough, scaly skin helps protect me from drying out in the desert heat.</td>
<td><strong>Desert reptiles</strong></td>
<td>Desertarium</td>
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<tr>
<td>7. My strong, horny beak chomps through vegetation and my elephantlike legs with claws allow me to dig!</td>
<td><strong>Desert tortoise</strong></td>
<td>Desertarium</td>
</tr>
<tr>
<td>8. I have a sucker-shaped mouth that “vacuums” up aquatic insects and plants off the bottom of the river.</td>
<td><strong>Sturgeon</strong></td>
<td>By Hand Through Memory</td>
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