

# School Programs

## Curriculum Descriptions



Oakland Zoo Education Department supports the Next Generation Science (NGSS) & Common Core Standards and Practices in our school programs. Our programs are designed to complement and supplement your classes Science curriculum.

### **1<sup>st</sup> Grade - “Ooh, That Smells So Good On My Tongue!” - *Animal Senses & Body Parts* (1-LS1.A, 1-LS1.D)**

Can you hear with your feet? Do you smell with your mouth? Might sound strange to us, but for different animals, using your body parts in different ways is key to survival. Together we'll use some of our senses to see how animals use their bodies and various senses to survive in the wild.

### **2<sup>nd</sup> or 3<sup>rd</sup> Grade - “Habitat is Where the Home Is” - *Animal Adaptations & Habitats* (2-LS4.D; 3-LS2.C, 3-LS4.C, 3-LS4.D)**

Why are polar bears white? Why does a camel have a hump? What would happen if the bear moved to the desert and the camel transferred to the tundra? Join us as we explore the world of animal adaptations and how each habitat affects the animals that live there – and vice versa!

### **4<sup>th</sup> -8<sup>th</sup> Grade - “Animal Skull Morphology” - *Animal Skulls & Structures* (4-LS1.A); *Structures and Processes* (4-LS1-1; 4-LS1-2; MS-LS1-4)**

Animal skulls can tell us many things about creatures and how they survive in their natural environments. A few relatively simple observations of an animal's skull can tell us what the animal ate, whether the animal was predator or prey, and which senses were most important to the animal's survival.

### **4<sup>th</sup> -8<sup>th</sup> Grade - “Oh Deer! Animal Environments” – *Life Sciences Animal Habitats* (5-LS2.A); *Unity and Diversity* (3-LS4-4); *Earth and Human Activity* (MSE-SS3-3)**

There are 4 basic resources for any animal species' survival: food, water, shelter, and ample space. As the population grows and the habitat is used more, sometimes resources decline to a point at which the population can no longer be supported. Students will discover the importance and fragility of ecosystems by thinking critically and reimagining the world with the loss of animal species and the importance of resource availability.

### **8<sup>th</sup> – 12<sup>th</sup> Grade - “California Condor Ecology” - *Earth and Human Activity* (MSE-SS3-3); *Interactions, Energy and Dynamics* (MS-LS2-1; MS-LS2-4; MS-LS2-5)**

Today, the California Condor is regarded as one of the rarest birds in the world. Several factors have played into dwindling population numbers, including habitat loss, environmental pollution, and lead bullets used by hunters. Students will learn more about Condor's natural history, conservation efforts and how biologists track species in the wild.

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Topic by Grade Level Matrix								
Grade Level	Animal Senses & Body Parts	Animal Adaptations & Habitats	Animal Skulls & Structures	Structures & Processes	Life Sciences Animal Habitats	Unity & Diversity	Earth & Human Activity	Interactions, Energy & Dynamics
1 <sup>st</sup> Grade	•	•						
2 <sup>nd</sup> Grade		•						
3 <sup>rd</sup> Grade		•						
4 <sup>th</sup> Grade		•	•	•	•	•		
5 <sup>th</sup> Grade			•	•	•	•		
Middle School 6 <sup>th</sup> -8 <sup>th</sup> Grade			•	•	•	•	•	•
High School 9 <sup>th</sup> -12 <sup>th</sup> Grade			•	•	•	•	•	•
• = Topic meets some requirements for grade      • = Topic recommended and meets requirements for grade								

### NGSS Disciplinary Core Ideas Supported by Topic

#### Animal Senses & Body Parts

1-LS1.A, 1-LS1.D

#### Animal Adaptations & Habitats

1-LS1.A; 2-LS4.D; 3-LS2.C, 3-LS4.C, 3-LS4.D

#### Animal Skulls & Structures

4-LS1.A

#### Structures and Processes

4-LS1.A; ; 4-LS1-2; 4-LS1.A; 4-LS1-2; 4-LS1-1; MS-LS1-4

#### Life Sciences Animal Habitats

5-LS2.A

#### Unity and Diversity

3-LS4-4

#### Earth and Human Activity

MSE-SS3-3; MSE-SS3-3

#### Interactions, Energy and Dynamics

MS-LS2-1; MS-LS2-4; MS-LS2-5

*Oakland Zoo recognizes the importance of the 3 Dimensions of the Next Generation Science Standards. We also strive to include California's Environmental Principles and Concepts in conjunction with the Next Generation Science Standards. While we work to touch on all components, the items in bold are the strongest in our programs.*

### Cross Cutting Concepts and Science & Engineering Practices

#### Crosscutting Concepts in NGSS:

1. **Patterns**
2. **Cause and effect: Mechanism and explanation**
3. Scale, proportion, and quantity
4. **Systems and system models**
5. Energy and matter: Flows, cycles, and conservation
6. **Structures and function**
7. Stability and change

#### Science & Engineering Practices in NGSS:

1. **Asking questions (for science)** and defining problems (for engineering)
2. **Developing and using models**
3. **Planning and carrying out investigations**
4. **Analyzing and interpreting data**
5. Using mathematics and computational thinking
6. **Constructing explanations (for science)** and designing solutions (for engineering)
7. **Engaging in argument from evidence**
8. **Obtaining, evaluating, and communicating information**