**UNIT 6: Adaptation and Change**

**Vocabulary:**

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| **Word** | **Parts/meaning of word, if any** | **Definition** | **Picture example if any** |
| Trait |  | A characteristic or something about an organism. |  |
| Adaptation | Adaptation  | Something about an organism that helps it to survive in its environment. |  |
| Structural Adaptation | Structural Adaptation  | A physical body part of an organism that helps it to survive.  |  |
| Behavioral Adaptation  | Behavioral Adaptation  | An action or something an organism does to survive in its environment. |  |
| Innate Behavior  |  | A behavior that is built into an organism since birth (genetic)  |  |
| Learned Behavior  | Learned Behavior  | A behavior that an organism develops, or picks up during its life  |  |
| Endangered  |  |  |  |
| Extinct  |  |  |  |
| Succession  |  |  |  |
| Carrying Capacity  |  |  |  |
| Exponential Growth |  |  |  |
| Overpopulation  |  |  |  |

**OLS Lesson 1: Change Over Time**

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| **Essential Questions** | **Main Concepts** |
| * What are traits?
* Why have humans bred different types of dogs and horses?

* How can the environment affect the traits of a species?
* How have the traits of sparrows changed over time?

 https://encrypted-tbn2.gstatic.com/images?q=tbn:ANd9GcSogOXDVrN-zKilUAxcSIkoxlGaQwnLW2QItnGv0XrRn91A8A-FWwhttps://encrypted-tbn2.gstatic.com/images?q=tbn:ANd9GcSogOXDVrN-zKilUAxcSIkoxlGaQwnLW2QItnGv0XrRn91A8A-FWw | A trait is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_List 5 examples of traits1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_To produce different breeds with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(or helpful) traits to people.

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|  | What Traits are favorable?  |
| Dogs  |  |
| Horses  |  |
| Vegetables  |  |
| Chickens  |  |

Add different environmental changes House Sparrows were brought to North America in the 1850’s. Over time, their body size has changed.Sparrows living in the northern part of the continent developed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to survive the colder temperature. Sparrows in the south developed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to deal with the warmer environment.The trait of body sized changed because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**OLS Lesson 2: Structural Adaptations**

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| **Essential Questions** | **Main Concepts** |

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| * What is an adaptation?
* What is a Structural Adaptation?
* Organisms have structural adaptations for

 -getting energy -maintaining structure and  -getting food.  | An adaptation is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.video97.gif<http://www.youtube.com/watch?v=sJH-01WLEg0>List 5 Adaptations of Camels 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A physical \_\_\_\_\_\_\_\_\_\_\_\_ part that helps an organism to survive in its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.Choose any organism- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.List 1 structural adaptation it has for each

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| Challenge of Life  | Adaptation  |
| Getting Energy- |  |
| Maintaining- Structure  |  |
| Reproducing-  |  |

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**OLS Lesson 3: Behavioral Adaptations**

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| **Essential Questions** | **Main Concepts** |
| * What is a behavioral adaptation?
* What are some behavioral adaptations of

organisms?* How is **Learned Behavior** different than **Innate Behavior**?

Baby geese learn what their mother looks like and follow her around. This helps them stay together and protects them from predators.* CHECK THE BOX FOR THE CORRECT TYPE OF ADAPTATION

 | Behavioral adaptaion- the way an organism \_\_\_\_\_\_\_\_ or something it does to survive in its environment Some spend the winter months in a sleeplike state called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.Some organisms \_\_\_\_\_\_\_\_\_\_\_\_\_\_to warmer places during cold months to find food and shelter. Learned behavior is determined by past \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, often by observing others. Innate behavior is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or built into an organism’s body.

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| Adaptation  | Structural  | Behavioral  |
| The **THORNS** of a rose bush keep animals from eating it. |  |  |
| The **COLORFUL SKIN** of a poison dart from warn its predators that its toxic. |  |  |
| A lizard **keeps warm by sunning itself** on a rock. lizard **keeps warm by sunning itself** on a rock. |  |  |
| A turtle’s **hard shell** protects it from predators.  |  |  |
| A mother lion **teaches her young to hunt**.  |  |  |

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**OLS Lesson 4: Extinct or Endangered**

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| **Essential Questions** | **Main Concepts** |
| * What is an Endangered Species?
* What is an Extinct Species?
* Why has the Giant Panda become an Endangered Species?
* Why do species go endangered or extinct?
 | * A species in danger of going \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* A species that\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**video97.gifGiant Panda-**  **https://encrypted-tbn0.google.com/images?q=tbn:ANd9GcReYctUsB05xV7HeSD7WEtYMIddLLi7KejuHOlIUdKThf7nNQ1F****Specialized Diet**- 99% of a Giant Pandas food is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Adaptations for eating Bamboo1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Habitat Loss**- The Pandas Bamboo forests are disappearing because of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Add something more About a change envi and mismatch of adap  |

**OLS Lesson 5: Changes in Ecosystems**

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| **Essential Questions** | **Main Concepts** |
| * What are some changes that can affect an ecosystem?

There can be changes to the BIOTIC and ABIOTIC parts of the ecosystem. * How can a tsunami affect an Ecosystem?

 * How can a Tsunami affect an ecosystem?
 | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- The living things in an ecosystemExamples of Biotic Changes 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of new species
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of species

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- The nonliving things in an ecosystem Examples of changes 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tsumani- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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| Biotic Changes | Abiotic Changes |
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**OLS Lesson 6: Rates of Environmental Change**

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| **Essential Questions** | **Main Concepts** |
| * How can the rate of an environmental change affect an ecosystem
* How did the eruption of Mt. St Helen affect the surrounding ecosystem?
* What is succession?
* Put a check in the box labeling the change as rapid/slow and Biotic/Abiotic
 |  \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ - a change that takes less than a day \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ - a change that takes more than one day (sometimes over many years)What happened to the ecosystem during and right after the eruption? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_How did the ecosystem change in the years after the eruption? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Succession- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Change  | Rate- (rapid or slow)? | Biotic or Abiotic? |
| Regrowth after a volcanic eruption  |  |  |
| Flooding  |  |  |
| Seasonal Change |  |  |
| Global Warming  |  |  |
| Succession  |  |  |
| Tree Falling  |  |  |

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**OLS Lesson 7: Building a Dam**

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| **Essential Questions** | **Main Concepts** |
| * What is a dam?
* How does a human built dam affect the ecosystem?

 * What are 5 reasons why humans build dams?
 | Any structure that blocks (or retains) the flow of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.Two organisms that build dams are \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.How does a human dam affect the ecosystem downstream? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_How can a human dam affect the ecosystem upstream? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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**OLS Lesson 9: Population Changes**

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| **Essential Questions** | **Main Concepts** |
| * How do population changes affect an ecosystem?
* Why was the rabbit population able to grow so large?
* What is Exponential Growth?

  * What is over population?
* How did the exponential growth of Australia’s rabbit population affect the ecosystem?
* What happens when a species is taken out of an ecosystem?
 |  In 1859 a man named Thomas Austin released 24 rabbits in Australia. In six years, those rabbits had reproduced and multiplied to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!When a species population \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ without limitation.When a species population size \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the carrying capacity of the environment.

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| **BIOTIC CHANGES** | **ABIOTIC CHANGES** |
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**OLS Lesson 10: The Human Factor**

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| **Essential Questions** | **Main Concepts** |
| * How has the human population on earth increased in the past 40 years?
* How do humans change their environment?
 |  Between 1960 and 2000 the human population has gone from \_\_\_\_\_\_ to \_\_\_\_\_\_\_ billion.

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| **Human Action**  | **Why?** | **Effects on the Environment** |
| Burning Fossil Fuels -  |  |  |
| Farming-  |  |  |
| Deforestation  |  |  |
| Habitat Loss  |  |  |

Something else with this lesson  |