**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 traits  1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  To produce different breeds with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (or helpful) traits to people.     |  |  | | --- | --- | |  | 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   |  |  | | --- | --- | | Challenge of Life | Adaptation | | Getting Energy- |  | | Maintaining- Structure |  | | Reproducing- |  | |

**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.   |  |  |  | | --- | --- | --- | | 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**. |  |  | |

**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 Bamboo  1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  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 ecosystem  Examples of Biotic Changes   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of new species 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of species   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- The nonliving things in an ecosystem  Examples of changes   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   Tsumani- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   |  |  | | --- | --- | | Biotic Changes | Abiotic Changes | |  |  | |  |  | |  |  | |  |  | |

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

**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|

**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.   |  |  | | --- | --- | | **BIOTIC CHANGES** | **ABIOTIC CHANGES** | |  |  | |  |  | |  |  | |  |  | |

**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.   |  |  |  | | --- | --- | --- | | **Human Action** | **Why?** | **Effects on the Environment** | | Burning Fossil Fuels - |  |  | | Farming- |  |  | | Deforestation |  |  | | Habitat Loss |  |  |   Something else with this lesson |