**3rd Grade**

**Unit 2: Life Science** **Duration: 8-16 weeks**

**Animals Through Time- Habitats, Heredity, & Change Over Time**

# Desired Results

**ESTABLISHED GOALS/ STANDARDS:**

**3-LS4-1**

**Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they livedlong ago. [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [*Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.*]**

**3-LS4-2**

**Use evidence to construct an explanation for how the variations in characteristics among individuals of the same speciesmay provide advantages in surviving, finding mates, and reproducing. [Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more**

***Transfer***

***Meaning***

**ENDURING UNDERSTANDINGS: Crosscutting Concepts**

***Students will understand that…***

- ***Students reason about the cause and effect relationship between environment and the type of organism that can survive there. They observe that organisms have body parts (structure) that helps them survive in their habitat (function). Students also consider the rate of stability and change of an environment.***
- ***Students consider that fossilized evidence of organism's teeth (structure) can determine which type of food they ate (function) and the type of environment they inhabited.***
- ***Students explore quantity by measuring stride length. They observe the relationship between stride length and speed.***
- ***Students recognize patterns in traits between parents and offspring.***
- ***Students recognize the cause and effect relationship between a change in the environment and the survival of organisms that inhabit it. They recognize environments as a system, made up of interdependent parts that function as a whole. They can be stable and change over time at different rates of speed.***
- ***Students recognize the cause and effect relationship between animals living in a group and the members of that group surviving.***
- ***Students recognize the cause and effect relationship between a change in the environment and the survival of organisms that live there. They recognize environments as a system, made up of interdependent parts that function as a whole.***
- ***Students recognize the cause and effect relationship between the environment and its influence on physical traits (physical characteristics).***

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| **likely to survive and therefore more likely to leave offspring.]**<br><br>**3-LS4-3**<br>**Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]**<br><br>**3-LS4-4**<br>**Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [*Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.*]**<br><br>**3-LS3-1**<br>**Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. [Clarification Statement: Patterns are the similarities and differences in traits shared between offspring and their parents, or among** | ***Acquisition***<br>**Disciplinary Core Ideas**<br>***Students will know…***<br>● Fossils provide evidence of the types of organisms that lived long ago and also about the characteristics of their habitats. They help tell the story of how the environment, and the things that live in it, have changed over time. As the environment changes, some organisms survive, some adapt, and some die out. DCIs: LS2.C, LS4.A, LS4.C, LS4.D<br>● Fossils are clues to the past! They can tell us what an organism looked like on the outside, the habitat it lived in, and even the food it ate. Dinosaur skeletons helped us learn that dinosaurs looked a lot like lizards do today. Fossils of their teeth helped us determine if they were meat or plant-eaters. DCIs: LS4.A<br>● Dinosaur footprints are a type of fossil, meaning they can help us learn about the past. When footprints are farther apart, an organism is moving faster. When footprints are closer together, the organism is moving slower. Some dinosaurs are faster than others and we can use their footprints to figure out how their speeds were different. DCIs: LS4.A<br>● People want their pets to look a certain way--they want them to have desirable traits. Since many characteristics of organisms are | **Students will be skilled at…**<br>● **Students analyze and interpret data from fossil records to determine how the environment they were found in has changed over time. They use this evidence to engage in an argument for which environment an organism survived in based on its characteristics.**<br>● **Students analyze and interpret data from fossil records to determine what type of food an organism ate/eats. They use the fossil evidence to engage in an argument for why they chose each food source.**<br>● **Students carry out an investigation by comparing the stride length of student runners to the stride length of a comparable sized dinosaur, CeeLo. They use mathematics and computational thinking to record stride length, graph the value and determine the speed at which the student was running.**<br>● **Students analyze the traits of parent dogs to determine which puppy they could have. They construct explanations about which traits the puppy gets from each parent.**<br>● **Students carry out an investigation by using a model to simulate the introduction of a predator species on Lizard Island. Students simulate multiple generations of lizards, analyzing and interpreting the data** |

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| **siblings. Emphasis is on organisms other than humans.] [*Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.*]**<br><br>**3-LS3-2**<br>**Use evidence to support the explanation that traits can be influenced by the environment. [Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.]**<br><br>**3-LS2-1**<br>**Construct an argument that some animals form groups that help members survive.**<br><br>**3-ETS1-2**<br>**Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** | inherited from their parents, people can change organisms to have the traits they want! This is called selection. If people want an animal to have a specific trait -like, a dog to be small - they will breed two of the smallest dogs they can over and over again! DCIs: LS3.A, LS3.B<br>● It isn't just people that can change the traits of animals over time--nature can too! When the environment changes, like the introduction of a new predator, some organisms survive well and reproduce, some have traits that help them survive less well, and some cannot survive at all. Over time, most offspring will be born with the trait that helps them survive well. This is because offspring inherit their traits from their parents--and the ones that survive well and reproducing! **End of Unit Project in Optional Extras DCIs: LS2.C, LS3.A, LS3.B, LS4.B, LS4.C, LS4.C<br>● Dogs, descendants of wolves, are different than other pets because of how they interact with us. Wolves live in groups, work together, and communicate with one another. Being in a group helps wolves survive because they are able to catch more prey in a pack than when they are alone. There are other types of animals that also live in groups to help them survive. Being part of a group can help animals defend | **after each one. They use this data to engage in argument from evidence to support their claim about how the offspring change from the original lizards.**<br>● **Students carefully observe animals that live in groups in order to obtain, evaluate, and communicate information about animal social behavior. Using the evidence from their observations, students engage in an argument to support their claim that animals form groups to help them survive.**<br>● **Students obtain and evaluate information from different people who live in Pondville, a town with a severe mosquito problem. Then, using this information, students design solutions that will reduce the number of mosquitoes that live in Pondville.**<br>● **Students measure their own physical traits (arm strength, balance, and height) and then make predictions about how these traits would change after living in outer space for a year. Students use this information to construct an explanation for how the environment can influence and change physical traits.**<br><br>**Inquiry Questions:**<br>**1. Where can you find whales in the desert?** |

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| | themselves from predators, obtain food, and cope with environmental changes. Animals living alone have a much harder time surviving. DCIs: LS2.D<br>● Mosquitoes suck blood and spread diseases. Mosquitoes live all over the world, but there are more in the tropics where the environment is warm and wet. This is because adult mosquitoes lay their eggs in water and need warm weather to survive. When the environment changes with increased rainfall, there will be more mosquitoes because they can survive and reproduce in greater numbers. Scientists and engineers can use this information to design solutions that help reduce the population of mosquitoes in certain areas. When there are fewer mosquitoes, then there will be a reduction in the number of people infected with the diseases that they spread. DCIs: LS2.C, LS4.C, LS4.D, ETS1.B<br>● The environment can influence an organism's physical traits. Consider the effects that living in space can have on an astronaut. Astronauts wear space suits to protect themselves from the extreme temperatures of outer space. But how does the low gravity of space affect our bodies? After a year of living in space, the low gravity of the environment causes a decrease in our arm strength, a reduction in our | **2. How do we know what dinosaurs looked like?**<br>**3. Can you outrun a dinosaur?**<br>**4. What kinds of animals might there be in the future?**<br>**5. Can selection happen without people?**<br>**6. Why do dogs wag their tails?**<br>**7. What's the best way to get rid of mosquitoes?**<br>**8. How long can people (and animals) survive in outer space?** |

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| | ability to balance, and even an increase in our height! DCIs: LS3.A, LS3.B | |
| | ***Acquisition*** | |
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# Evidence

| **Evaluation Criteria** | **Assessment Evidence** |
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| | **PERFORMANCE TASK(S):** |
| | **OTHER EVIDENCE:**<br><br>**Unit assessment** |
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# Learning Plan

***Summary of Key Learning Events and Instruction***