| **Grade:** 4<br>**Subject:** Science | **Unit 2: Animals** |
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| **Big Idea/Rationale** | • This unit provides a deeper understanding of the diversity of life. It encourages students to explore the similarities and differences between animals. This exciting unit gives an opportunity to students explore the characteristics of animal groupings. It helps them understand that all living things are alike in many ways but also have unique characteristics. It focuses on communicating detailed observations of animals through reading, writing, drawing, and discussion. Finally, it helps the students to develop an appreciation for life's complexity and interconnectedness and understand that humans are organisms also. |
| **Enduring Understanding (Mastery Objective)** | • All the living and nonliving elements that surround an animal – such as other animals, plants, climate, water, air, and location – affect the life of that animal.<br>• One way scientists learn about animals is through close observation over an extended period of time.<br>• When conducting animal behavior research, scientists follow guidelines to ensure the accuracy of results.<br>• A habitat is the place where an animal finds the resources – food, water, shelter, and space – necessary to survive and reproduce.<br>• Each type of animal has specific needs, such as type of food, amount of water, and range of temperature.<br>• Certain behaviors and body structures enable animals to survive in a particular habitat.<br>• Humans are one of the only animals that can significantly change their behaviors to live in a variety of habitats<br>• Animals are classified by body structures. |
| **Essential Questions (Instructional Objective)** | • What are some living and nonliving elements that affect the life of an organism?<br>• How does observation help scientists to learn about organisms?<br>• What are some guidelines that scientists must follow to ensure accuracy?<br>• What is a habitat? What is a biome?<br>• What are the needs of specific warm-blooded and cold-blooded animals?<br>• What are some of the special body structures that allow it to thrive in certain environments?<br>• What affect can humans have upon the various environments to both harm and protect the natural environment?<br>• How are different types of animals put together in and grouped? |
| **Content (Subject Matter)** | Lesson 1<br>Classifying Animals:<br>• Students will understand how a classification system is used and distinguish between vertebrates and invertebrates |

Lesson 2
Amphibians and Reptiles:

- Students will classify and describe amphibians and reptiles by body temperature, body covering, breathing, and habitat.

Lesson 3
Birds, fish, and Mammals:

- Students will classify and describe birds, fish, and mammals by body covering, body temperature, breathing, and habitat

Lesson 4
Summarizing Information:

- Students will be able to read a chart and review vocabulary concepts

Lesson 5 Review

- Students will review chapter 13 concepts, vertebrates

Lesson 6

- Assessment: students will demonstrate an understanding of vertebrates

Lesson 7

- Arthropods: Students will classify and describe the body characteristics of arthropods and name the five major groups

Lesson 8
Subgroups of Arthropods:

- Students will be able to identify the characteristics of each group

Lesson 9
Other Invertebrates:

- Student will be able to identify the body characteristics of worms, mollusks, coral, jellyfish, and sponges.
- To explain how they protect themselves.
- To explain how they are used in nature.

Lesson 10
Summarizing Information:

- Students will be able to read a chart and review vocabulary

Lesson 11
Review:

- Students will review major concepts of invertebrates

Lesson 12

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| | Assessment:<br>• Students will demonstrate an understanding of invertebrates |
| **Skills/ Benchmarks (CCSS Standards)** | • **5.1.4. B.3:** Formulate explanations from evidence.<br>• **5.1.4. B.4:** Communicate and justify explanations with reasonable and logical arguments.<br>• **5.1.4.D.4:** Handle and treat organisms humanely, responsibly, and ethically<br>• **5.3.4. A.1:** Develop and use evidence-based criteria to determine if an unfamiliar object is living or nonliving.<br>• **5.3.4.A.2:** Compare and contrast structures that have similar functions in various organisms, and explain how those functions may be carried out by structures that have different physical<br>• **5.3.4.B.1:** Identify sources of energy (food) in a variety of settings (farm, zoo, ocean, forest)<br>• **5.3.4. B.2:** Describe the sources of the reactants of photosynthesis and trace the pathway to the products.<br>• **5.3.4. C.1:** Predict the biotic and abiotic characteristics of an unfamiliar organism's habitat.<br>• **5.3.4. C.2:** Explain the consequences of rapid ecosystem changes (e.g., flooding, windstorms, snowfall, volcanic eruptions), and compare them to consequences of gradual ecosystem change (e.g., gradual increase or decrease in daily temperatures, change in yearly rainfall).<br>• **5.3.4. D.1:** Compare the physical characteristics of the different stages of the life cycle of an individual organism, and compare the characteristics of life stages among species.<br>• **5.3.4. E.2:** Evaluate similar populations in an ecosystem with regard to their ability to thrive and grow. |
| **Materials and Resources** | • Student text *Journey's in Science*, Macmillan Publishing CO., 1988<br>• Assorted work sheets and assessments<br>• Reference materials for animal research |
| **Notes** | |