

# FALMOUTH PUBLIC SCHOOLS

## SCIENCE CURRICULUM

Unit Overview: Life Science (LS) Animal Adaptations

Grade 4

### Science Curriculum Goals

1. SCIENTIFIC LITERACY. Provide all students with science experiences that are appropriate to their cognitive stages of development and serve as a foundation for more advanced ideas that prepare them for life in an increasingly complex scientific and technological world.
2. INSTRUCTIONAL EFFICIENCY. Provide all teachers with a comprehensive, flexible, attainable science curriculum based upon current research on learning; including collaborative learning, student discourse, and embedded assessment, and uses effective instructional methodologies including: hands-on active inquiry-based learning, integration of disciplines and content areas, and multisensory methods.
3. SYSTEMIC REFORM. Aligned to the Massachusetts State Curriculum Frameworks Science Standards and societal expectations that will prepare students with the knowledge, skills and understandings to succeed in the 21st century.

### Pedagogy

Young people need an understanding of basic scientific concepts and methods in order to comprehend the scientific issues that will shape their lives. It is equally important for students to develop and apply the concepts and process skills used in scientific inquiry so that they will be prepared to solve problems encountered in other areas of study and in dealings with the everyday world.

This unit emphasizes basic science concepts and skills presented through a range of engaging, inquiry-based, hands-on instructional experiences that focus on the processes and techniques of discovery. This unit is designed to promote scientific literacy and provide opportunities for students to satisfy their innate curiosity as they develop techniques for observing, questioning, and testing basic scientific concepts.

### Unit Summary

The Animal Adaptations unit introduces students to the interdependence of animals and their habitats and helps the children to develop an understanding of how animals adapt and live within a habitat that meets their needs. Through a variety of hands on activities and subject related reading material, the students will explore: the life cycles of various animals, what animals need to survive, how animals get their needs met, and how adaptations help animals to meet their needs.

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#### Curriculum Standards and Enduring Understandings

LS 3 Describe predictable life cycles of animals

- Every animal has a predictable life cycle.

LS 4 Explain major life cycle stages of the frog and butterfly

- Frogs and butterflies have predictable life cycle stages.

LS 6 Explain how characteristics may change over time as adaptations

LS 9 Recognize animals have characteristic behaviors, and animals can survive via seasonal behaviors

T/E 2.4 Compare natural systems with mechanical systems that are designed to serve similar purposes

- Structural and behavioral adaptations help animals survive over time.

#### Essential Questions

- How are various animals' life cycles different and alike?
- How do a butterfly's and a frog's life cycle help it fit into the natural world?
- How do animal adaptations help animals survive in a particular environment?

#### Unit Vocabulary

adaptation  
behavioral adaptation  
camouflage  
habitat  
instinct  
species  
life cycle  
mimicry  
structural adaptation  
trait  
variation

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### Evidence of Scientific Method within Instruction

- ✓ Reading (shared, guided, independent) – *share information, collaborate*
- ✓ KWL – *activate, predict, analyze, hypothesize*
- ✓ Think – Pair – Share – *share information, collaborate*
- ✓ Modeling – *share information, observe, experiment*
- ✓ Participating in experiments - *share information, procedure, measure, record, compare, sort & classify*

### Assessments

- ❖ Observations
- ❖ Anecdotal notes
- ❖ Class discussions
- ❖ Activity sheets
- ❖ Lab report(s)
- ❖ ORQ(s) \*from Essential Questions
- ❖ Performance Assessment
- ❖ Activity sheets pp. 68 and 69