

# FALMOUTH PUBLIC SCHOOLS

## SCIENCE CURRICULUM

### Unit Overview: Earth Science (ES) Solar System

Grade 3

Suggested time frame:

#### 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

Solar System\*\*\*\*\*.

(adapted from lhsfoss.org)

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#### Curriculum Standards and Enduring Understandings

E13 Earth is part of the Solar System (planets, Earth's axis, revolution, rotation and four phases of the moon).

- Earth is part of the Solar System.

ES14 Earth orbits the sun in a year's time and rotates on its axis in approximately 24 hours.

- Each day Earth rotates on its axis causing day/night. Each year Earth orbits the sun once..

ES15 The rotation of the Earth, day/night, and apparent movements of the sun, moon and stars are connected. .

- The apparent movement of the sun, stars and moon are connected.

#### Essential Questions

- How does the Earth's rotation result in day and night?
- How does the Earth's orbit around the sun result in a year?
- How are the apparent movements of the sun, stars and moon connected?
- How do the movements of the moon affect its appearance?

#### Unit Vocabulary

planets alphabetical solar system phase constellation inner planets outer planets

Earth

sun

moon

stars

rotation

revolution

axis

orbit

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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
- ❖ Alien project