

FALMOUTH PUBLIC SCHOOLS

SCIENCE CURRICULUM

Unit Overview: Earth Science (ES) Amazing Air

Grade 2

Suggested time frame: 6 sessions + assessment(s)

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

Amazing Air introduces students to air and some of its fascinating properties; moreover, it provides hands-on experiments that enable students to see that air takes up space, has weight, exerts constantly changing pressure, and is always in motion.

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(adapted from lhsfoss.org)

Curriculum Standards and Enduring Understandings

ES2 Air is all around us.

- Air is a substance with physical properties that takes up space.

ES2 Recognize that air is a mixture of gases.

- Air is not a solid or a liquid, but rather a mixture of gases that can be defined by its physical properties.

ES2 Wind is moving air.

- Wind is moving air that can be measured.

Essential Questions

- What evidence supports or shows that air is all around us?
- How can you prove air is not a solid or a liquid, but rather a mixture of gases?
- What evidence demonstrates that air moves?
- How can understanding the way air moves be helpful to our world?

Unit Vocabulary

air
air pressure
balance
barometer
displace
prediction
properties
volume
wind
wind speed

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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
- ❖ (Choose) Section 2, Sheet A; or Section 2, Sheet B.
- ❖