

Harvard LTER Schoolyard Program

**Teacher Developed Lessons and Documents
that integrate Harvard Forest Schoolyard
Ecology Themes into curriculum**



- Lesson Title: *Connections to the Common Core, Massachusetts Frameworks and Next Generation Science Standards for HF Schoolyard Ecology Buds, Leaves and Global Warming* study.
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- School: Overlook Middle School
- Level: Middle School-Grade 7

Connections to the Common Core, Massachusetts Frameworks and Next Generation Science Standards

*Mass. Curriculum Framework for Mathematics Incorporating the Common Core
State Standards, March 2011*

- 7.NS.1 (The Number System) "Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram."

- 7.EE (Expressions and Equations) "Solve real-life and mathematical problems using numerical and algebraic expressions and equations."
- 7.SP (Statistics and Probability) "Use random sampling to draw inferences about a population." and "Draw informal comparative inferences about two populations."

***Mass. Curriculum Framework for English Language Arts and Literacy
Incorporating the Common Core State Standards, March 2011***

- RST.3 (Reading Standards for Literacy in Science and Technical Subjects 6-12) "Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks."
- RST.7 "Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph or table.)"
- WHST.1b. (Writing Standards for Science and Technical Subjects 6-12) "Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources."

Massachusetts Science and Technology/Engineering Curriculum Framework

May 2001 Life Science (Biology) Grades 6-8

- #16. "Recognize that producers (plants that contain chlorophyll) use the energy from sunlight to make sugars from carbon dioxide and water through a process called photosynthesis. This food can be used immediately, stored for later use, or used by other organisms."

- #17. Identify ways in which ecosystems have changed throughout geologic time in response to physical conditions, interactions among organisms, and the actions of humans. Describe how changes may be catastrophes such as volcanic eruptions or ice storms.

***Massachusetts (Draft Revised) Science and Technology/Engineering Standards
(Next Generation Standards) October 2013 (Grade 6-8 Standards)***

- MS-LS2-4 (Ecosystems: Interactions, Energy, and Dynamics) "Analyze data to provide evidence that disruptions (natural or human-made) to any physical or biological component of an ecosystem can lead to shifts in all its populations.
- MS-ESS3-5 (Earth and Human Activity) "Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century."