CURRICULUM FRAMEWORKS CONNECTIONS

At Heritage Museums & Gardens, we are committed to helping you meet the demands of Education Standards. Each of our programs may be used to fulfill a multitude of standards across several disciplines. Listed below are examples of how the ***Soil to Seed to Plant*** program can be used to meet current Massachusetts Curriculum Frameworks, Common Core Standards, and the Next Generation Science Standards.

Soil to Seed to Plant
Discovery Workshop

Grades K-2

Massachusetts Curriculum Frameworks

2-LS2-3 Develop and use models to compare how plants and animals depend on their surroundings and other living things to meet their needs in the places they live
2-LS4-1 Use texts, media, or local environments to observe and compare (a) different kinds of living things in an area, and (b) differences in the kids of living things living in different types of areas
2-PS1-1 Describe and classify different kinds of materials by observable properties of color, flexibility, hardness, texture, and absorbency
2.MD.1 Measure the lengths of an object by selecting appropriate tools
2.MD.4 Measure to determine how much longer one object is than another
2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object
RI.2.1 Ask and answer such questions as *who, what, when, where, why* and *how* to demonstrate understanding of key details in a text
RI.2.5 Know and use various text features to locate key facts or information in a text efficiently
RI.2.7 Explain how specific images contribute to and clarify a text
SL.1.a Follow agreed upon rules for discussion
SL.1.b Build on other's talk in conversations by linking their comments to the remarks of others
SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or though other media
SL.2.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue

Common Core Standards

CCSS.ELA.Literacy.CCRA.SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on other's ideas and expressing their own clearly and persuasively
CCSS.ELA.Literacy.CCRA.SL.2 Integrate and evaluate information presented in diverse media and formats
CCSS.ELA.Literacy.CCRA.SL.4 Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience
CCSS.ELA.Literacy.CCRA.R.1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text
CCSS.ELA.Literacy.CCRA.R.2 Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas
CCSS.ELA.Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words
CCSS.ELA.Literacy.SL.2.1.A Follow agreed-upon rules for discussion
CCSS.ELA.Literacy.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others
CCSS.ELA.Literacy.SL.2.1.C Ask for clarification and further explanation as needed about the topics and texts under discussion
CCSS.ELA.Literacy.SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media
CCSS.ELA.Literacy.SL.2.4 Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences
CCSS.ELA.Literacy.RI.2.1 Ask and answer such questions as *who, what, where, when, why* and *how* to demonstrate understanding of key details
CCSS.ELA.Literacy.RI.2.3 Describe the connection between a series of historical events. Scientific ideas or concepts, or steps in technical procedures in a text
CCSS.ELA.Literacy.RI.2.5 Know and use various text features to locate key facts or information in a text efficiently
CCSS.ELA.Literacy.RI.2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe
CCSS.MATH.CONTENT.2.MD.A.1 Measure the lengths of an object by selecting appropriate tools
CCSS.MATH.CONTENT.2.MD.A.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen
CCSS.MATH.CONTENT.2.MD.A.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit
CCSS.MATH.CONTENT.2.MD.D.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object

Next Generation Science Standards
2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties

2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grown
1-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants
2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats

Grades 3-5

Massachusetts Frameworks 2011: Mathematics

3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot
4.MD.1 Know relative sizes of measurement units within one system of units. Within a single system of measurements, express measurements in a larger unit in terms of a smaller unit

Massachusetts Frameworks 2016: Science and Technology/Engineering

3-LS1-1 Use simple graphical representations to show that different types of organisms have unique and diverse life cycles. Describe that all organisms have birth, growth, reproduction, and death in common but there are a variety of ways in which these happen

- Plant life cycles should focus on those of flowering plants

3-LS3-1 Provide evidence, including through the analysis of data, that plants and animals have traits inherited from parents and that variation of these traits exist in a group of similar organisms.

- Examples of inherited traits that vary can include the color of fur, shape of leaves, length of legs, and size of flowers

3-LS3-2 Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Give examples of characteristics of living organisms that are influenced by both inheritance and the environment.
3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction
3-LS4-5 Provide evidence to support a claim that the survival of a population is dependent upon reproduction
4-ESS2-1 Make observations and collect data to provide evidence that rocks, soils, and sediments, are broken into smaller pieces through mechanical weathering and moved around through erosion
4-LS1-1 Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction

- Plant structures can include leaves, roots, stems, bark, branches, flowers fruits, and seeds

5-LS1-1 Ask testable questions about the process by which plants use air, water, and energy from sunlight to produce sugars and plant materials needed for growth and reproduction

5-LS2-1 Develop a model to describe the movement of matter among producers, consumers, decomposers, and the air, water, and soil in the environment
5-LS2-2 (MA) Compare at least two designs for a composter to determine which is most likely to encourage decomposition of materials

Massachusetts Frameworks 2011: English Language Arts & Literacy

SL.3-5.1 Engage effectively in a range of collaborative discussions
SL.3.2 Determine the main ideas and supporting details of information presented in diverse media and formats
SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail
SL.3.6 Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification
SL.4.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats
SL.4.3 Identify the reasons and evidence a speaker provides to support particular points
SL.5.2 Summarize information presented in diverse media and formats
SL.5.3 Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence

Common Core: Mathematics

CCSS.MATH.CPNTENT. 4.MD.A.1 Know relative sizes of measurement units within one system of units. Within a single system of measurements, express measurements in a larger unit in terms of a smaller unit

Common Core: English Language Arts

CCSS.ELA.Literacy.CCRA.SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on other's ideas and expressing their own clearly and persuasively
CCSS.ELA.Literacy.CCRA.SL.2 Integrate and evaluate information presented in diverse media and formats
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CCSS.ELA.Literacy.CCRA.R.1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text
CCSS.ELA.Literacy.CCRA.R.2 Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas
CCSS.ELA.Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words
CCSS.ELA-Literacy.SL.4.1 Engage effectively in a range of collaborative sicsussions
CCSS.ELA-Literacy.SL.4.1.B Follow agreed upon rules for discussions and carry out assigned roles

CCSS.ELA-Literacy.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others
CCSS.ELA-Literacy.SL.4.3 Identify the reasons and evidence a speaker provides to support particular points
CCSS.ELA-Literacy.RF.4.3 Know and apply grade-level phonics and word analysis skills in decoding works

Next Generation Science Standards

4-ESS3-1 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment
4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction