

**SELF-GUIDED EXPERIENCE**

At Heritage Museums & Gardens, we are committed to helping you meet the demands of Education Standards. Activities you participate in during your visit may be used to fulfill a multitude of standards across several disciplines. Listed below are examples of how the Self-Guided Experience can be used to meet current Massachusetts Curriculum Frameworks, Common Core Standards, Next Generation Science Standards, and 21st Century Skills.

**MASSACHUSETTS FRAMEWORKS 2017: MATHEMATICS**

- PK.CC.A.1 Know number names and the counting sequence. Listen to and say the names of numbers in meaningful contexts.
- PK.CC.B.1 Count to tell the number of objects. Understand the relationships between numerals and quantities up to 10.
- PK.CC.C.1 Count many kinds of concrete objects and actions up to ten, using one-to-one correspondence, and accurately count as many as seven things in a scattered configuration. Recognize the “one more,” “one less” patterns.
- PK.CC.C.2 Use comparative language, such as more/less than, equal to, to compare and describe collections of objects.
- PK.MD.A.1 Describe and compare measurable attributes. Recognize the attributes of length, area, weight, and capacity of everyday objects using appropriate vocabulary (e.g., long, short, tall, heavy, light, big, small, wide, narrow).
- PK.MD.B.1 Classify objects and count the number of objects in each category. Sort, categorize, and classify objects by more than one attribute.
- PK.G. A.1 Identify and describe shapes (squares, circles, triangles, rectangles). Identify relative positions of objects in space, and use appropriate language.
- K.CC.B.1 Count to tell the number of objects. Understand the relationship between numbers and quantities; connect counting to cardinality.
- K.CC.B.2 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
- K.MD.A.1 Describe and compare measurable attributes. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.
- K.G.A.1 Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
- 1.G.A.1 Reason with shapes and their attributes. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes that possess defining attributes.
- 1.MD.B.1 Tell and write time in hours and half-hours using analog and digital clocks.
- 2.MD.A. Measure and estimate lengths in standard units. Estimate lengths using units of inches, feet, centimeters, and meters.
- 2.MD.C.1 Work with time and money. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

**MASSACHUSETTS FRAMEWORKS 2016: SCIENCE AND  
TECHNOLOGY/ENGINEERING**

- PreK-ESS1-2(MA). Observe and use evidence to describe that the Sun is in different places in the sky during the day.
- PreK-ESS2-1(MA). Raise questions and engage in discussions about how different types of local environments (including water) provide homes for different kinds of living things.
- PreK-ESS2-2(MA). Observe and classify non-living materials, natural and human made, in the local environment.
- PreK-ESS3-1(MA). Engage in discussion and raise questions using examples about local resources (including soil and water) humans use to meet their needs.
- PreK-LS2-1(MA). Use evidence from animals and plants to define several characteristics of living things that distinguish them from non-living things.
- PreK-ESS3-2(MA). Observe and discuss the impact of people's activities on the local environment.
- PreK-LS2-3(MA). Using evidence from the local environment, explain how familiar plants and animals meet their needs where they live.
- PreK-LS1-3(MA). Use their five senses in their exploration and play to gather information.
- PreK-PS2-2(MA). Through experience, develop awareness of factors that influence whether things stand or fall.
- 1-ESS1-2. Analyze provided data to identify relationships among seasonal patterns of change, including relative sunrise and sunset time changes, seasonal temperature and rainfall or snowfall patterns, and seasonal changes to the environment.
- 1-LS3-1. Use information from observations (first-hand and from media) to identify similarities and differences among individual plants or animals of the same kind.
- 1-PS4-1. Demonstrate that vibrating materials can make sound and that sound can make materials vibrate.
- 1.K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change that can be solved by developing or improving an object or tool.\*
- 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 kinds 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.
- 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
- 4.3-5-ETS1-5(MA). Evaluate relevant design features that must be considered in building a model or prototype of a solution to a given design problem.\*

**MASSACHUSETTS FRAMEWORKS 2017: ENGLISH LANGUAGE ARTS & LITERACY**

- SL.PreK.1. Participate in collaborative conversations with diverse partners during daily routines and play.
- SL.PreK.1.a Observe and use appropriate ways of interacting in a group.
- SL.PreK.1.b Continue a conversation through multiple exchanges.
- L. PreK.1.a Demonstrate the ability to speak in complete sentences and to form questions using frequently occurring nouns, verbs, question words, and prepositions; name and use in context numbers 0–10.
- L.PreK.4 Ask and answer questions about the meanings of new words and phrases introduced through books, activities, and play.
- L.PreK.5.a Demonstrate understanding of concepts by sorting common objects into categories.
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.
- L.K. 1.Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; retain and further develop language skills learned previously.
- W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
- SL.1.1 a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.1.1 b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
- SL.1.1 c. Ask questions to clear up any confusion about the topics and texts under discussion.
- SL.1.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
- SL.1.4 Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly and using appropriate vocabulary.
- SL.1.6 Produce complete sentences when appropriate to task and situation.
- L.1.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; retain and further develop language skills learned in previous grades.
- SL.2.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- SL.2.1.a.Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.b.Build on others' talk in conversations by linking their comments to the remarks of others.
- SL.2.1.c. Ask for clarification and further explanation as needed about the topics and texts under discussion.
- 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.
- SL.2.6 Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.
- L.2.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- W.3.8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
- SL.3-5.1 Engage effectively in a range of collaborative discussions.
- SL.3.6 Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.
- L.3-5.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; retain and further develop language skills learned in previous grades.
- L.3-5.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- W.5.1.b Provide logically ordered reasons that are supported by facts and details.
- W.5.1.c Link opinion and reasons using words, phrases, and clauses (e.g., consequently, specifically).

## **COMMON CORE: ENGLISH LANGUAGE ARTS**

- 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.CCRA.SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
- CCSS.ELA-LITERACY.CCRA.SL.2 Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- CCSS.ELA-LITERACY.CCRA.SL.3 Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.
- CCSS.ELA-LITERACY.W.K.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- CCSS.ELA-LITERACY.W.2.8 Recall information from experiences or gather information from provided sources to answer a question.
- CCSS.ELA-LITERACY.SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- CCSS.ELA-LITERACY.SL.K.1.A Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).
- CCSS.ELA-LITERACY.SL.K.1.B Continue a conversation through multiple exchanges.
- CCSS.ELA-LITERACY.SL.K.2 Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
- CCSS.ELA-LITERACY.SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
- CCSS.ELA-LITERACY.SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.
- CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
- CCSS.ELA-LITERACY.SL.1.1.A Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- CCSS.ELA-LITERACY.SL.1.1.B Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
- CCSS.ELA-LITERACY.SL.1.1.C Ask questions to clear up any confusion about the topics and texts under discussion.
- CCSS.ELA-LITERACY.SL.1.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
- CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under 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.L.K.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts.
- CCSS.ELA-LITERACY.L.1.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- CCSS.ELA-LITERACY.L.1.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., because).
- CCSS.ELA-LITERACY.L.2.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- CCSS.ELA-LITERACY.L.2.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- CCSS.ELA-LITERACY.CCRA.SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
- CCSS.ELA-LITERACY.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
- 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.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- CCSS.ELA-LITERACY.SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
- CCSS.ELA-LITERACY.SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
- CCSS.ELA-LITERACY.SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

**COMMON CORE: MATHEMATICS**

- CCSS.MATH.CONTENT.K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality.
- CCSS.MATH.CONTENT.K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.
- CCSS.MATH.CONTENT.K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
- CCSS.MATH.CONTENT.K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- CCSS.MATH.CONTENT.K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
- CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
- CCSS.MATH.CONTENT.1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
- CCSS.MATH.CONTENT.2.OA.C.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
- CCSS.MATH.CONTENT.2.MD.A.3 Estimate lengths using units of inches, feet, centimeters, and meters.

**NEXT GENERATION SCIENCE STANDARDS**

- K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
- 2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
- K-2- ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- K-2- ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- K-2- ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
- 3-5- ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-LS2-1. Construct an argument that some animals form groups that help members survive.
- 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.