HERITAGE MUSEUMS & GARDENS

School Visit Connections to the Massachusetts Curriculum Framework for Science and Technology/Engineering

Guided Visit Connections to Curriculum Frameworks

J.K. Lilly III Automobile Gallery

Learning Goals:

- Students will be able to compare and contrast early automobiles and modern cars.
- Students will be able to identify different forms of energy that power cars (steam and gasoline) and compare and contrast the pros and cons of each.

Standards:

- 2.K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same design problem to compare the strengths and weaknesses of how each object performs. Clarification Statements: • Data can include observations and be either qualitative or quantitative. • Examples can include how different objects insulate cold water or how different types of grocery bags perform.
- 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.
- PreK-PS2-1(MA). Using evidence, discuss ideas about what is making something move the way it does and how some movements can be controlled.

The McGraw Family Garden of the Senses

Learning Goals:

- Have students practice their own sense skills to identify and explore the natural setting of The Garden of the Senses.
- Introduce an example of how animals (in this case, a bat) use their senses to experience the world in a different way than people do.

Standards:

- PreK-LS1-2(MA). Explain that most animals have five senses they use to gather information about the world around them.
- PreK-LS1-3(MA). Use their five senses in their exploration and play to gather information.

- 1-LS1-1. Use evidence to explain that (a) different animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air, and (b) plants have roots, stems, leaves, flowers, and fruits that are used to take in water, air, and other nutrients, and produce food for the plant.
    - Clarification Statement: Descriptions are not expected to include mechanisms such as the process of photosynthesis.

McInnes Garden

Learning Goal:

- Students will be able to identify the reasons why plants need pollinators to reproduce and why pollinators need pollen from plants to survive.

Standards:

- 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
- K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment.
    - Clarification Statement: • Examples of plants and animals changing their environment could include a squirrel digging holes in the ground and tree roots that break concrete.
- 2-LS2-3(MA). 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.
    - Clarification Statement: • Animals need food, water, air, shelter, and favorable temperature; plants need sufficient light, water, minerals, favorable temperature, and animals or other mechanisms to disperse seeds.

Seed Science Activities

Learning Goal:

- Understand the role and importance of each plant part, plant survival, how plants adapt to their environment, and how plants benefit people.

Standards:

- PreK-LS1-1(MA). Compare, using descriptions and drawings, the external body parts of animals (including humans) and plants and explain functions of some of the observable body parts.

    - Clarification Statement: • Examples can include comparison of humans and horses: humans have two legs and horses four, but both use legs to move.

- K-LS1-1. Observe and communicate that animals (including humans) and plants need food, water, and air to survive. Animals get food from plants or other animals. Plants make their own food and need light to live and grow.
- K-LS1-2(MA). Recognize that all plants and animals grow and change over time.
- 2-LS2-3(MA). 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.
    - Clarification Statement: Animals need food, water, air, shelter, and favorable temperature; plants need sufficient light, water, minerals, favorable temperature, and animals or other mechanisms to disperse seeds.

American Art and Carousel Gallery

Learning Goals:

- How are the animals on the carousel physiologically different than humans? How are menagerie figures physically different from the animals they portray?

Standards:

- PreK-LS1-1(MA). Compare, using descriptions and drawings, the external body parts of animals (including humans) and plants and explain functions of some of the observable body parts.
    - Clarification Statement: Examples can include comparison of humans and horses: humans have two legs and horses four, but both use legs to move.
- 2-PS1-1. Describe and classify different kinds of materials by observable properties of color, flexibility, hardness, texture, and absorbency.