ELIZABETH PUBLIC SCHOOLS
Every child, Achieving Excellence

| Marking Period 1 (MP1) | Science Curriculum Pacing Guide Grade 4 |
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| **MP1**<br><br>**Standards for Science Content** | 3-5-ETS1-1 Define a simple design problem that includes specified criteria and constraints. (U1L1/U3L1)<br><br>3-5-ETS1-2 Generate and compare multiple possible solutions to a problem. (U1L1/U3L4)<br><br>3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (U1L1)<br><br>4-PS3-1 Use evidence to construct an explanation relating the speed of an object to the energy of that object. (U3L2)<br><br>4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. (U3L1)<br><br>4-PS3-3 Ask questions and predict outcomes about the changes in energy that occur when objects collide. (U3L2)<br><br>4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. (U3L1)<br><br>4-PS4-1 Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. (U3L3)<br><br>4-PS4-3 Generate and compare multiple solutions that use patterns to transfer information. (U3L4) |
| **MP1**<br><br>**Topics** | Unit 1-Engineering and Technology<br>Unit 3- Energy and Communication |
| **MP1**<br><br>**Skills/Concepts** | ▪ Different proposals for solutions can be compared. (U1)<br>▪ Research on a problem should be carried. Testing solutions involves investigating performance. Tests are designed to identify failure points. (U1)<br>▪ Solutions need to be tested to find which solves the problem. (U1)<br>▪ People's needs and wants change over time. Engineers improve existing technologies or develop new ones. (U1)<br>▪ The faster a given object is moving, the more energy it possesses. (U3L1)<br>▪ Energy is present whenever there are moving objects, sound, light, or heat. (U3L1)<br>▪ The expression "produce energy" typically refers to the conversion of stored energy. (U3L1)<br>▪ Possible solutions to a problem are limited by available materials and resources. (U3L1)<br>▪ The faster a given object is moving, the more energy it possesses. (U3L2)<br>▪ Energy is present whenever there are moving objects, sound, light, or heat. (U3L2)<br>▪ When objects collide, the contact forces transfer energy so as to change the objects' motions. (U3L2)<br>▪ Waves, which are regular patterns of motion, can be made in water by disturbing the surface. When waves move across the surface of deep water, the water goes up and down in place; there is no net motion in the direction of the wave except when the water meets a beach. (U3L3)<br>▪ Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks). (U3L3)<br>▪ Digitized information is transmitted over long distances without significant degradation. (U3L4)<br>▪ Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. (U3L4) |
| **MP1**<br><br>**Core Materials** | HMH Into Science |

| Marking Period 2 (MP2) | Science Curriculum Pacing Guide Grade 4 |
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| **MP2**<br><br>**Standards for Science Content** | 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.<br><br>4-ESS2-1 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.<br><br>4-ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. |
| **MP2**<br><br>**Topics** | Unit 3 Lesson 4- Energy and Communication<br>Unit 4- Shaping Landforms |
| **MP2**<br><br>**Skills/Concepts** | Digitized information is transmitted over long distances without significant degradation. (U3L4)<br>Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. (U3L4)<br>Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. (U4L1)<br>Living things affect the physical characteristics of their regions. (U4L1)<br>Science assumes consistent patterns in natural systems. (U4L2)<br>Cause and effect relationships are routinely identified, tested, and used to explain change.(U4L2)<br>Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. (U4L3)<br>Patterns can be used as evidence to support an explanation. (U4L3) |
| **MP2**<br><br>**Core Materials** | HMH Into Science |

| Marking Period 3 (MP3) | Science Curriculum Pacing Guide Grade 4 |
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| **MP3**<br><br>**Standards for Science Content** | 4-ESS3-1 Obtain and combine information to describe that energy, and fuels are derived from natural resources and their uses affect the environment.<br><br>4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth's features.<br><br>4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processeson humans.<br><br>4-PS3-4 Apply scientific ideas to design, test and refine a device that converts energy.<br><br>3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. |
| **MP3**<br><br>**Topics** | Unit 5 - Earth's Features and Resources |
| **MP3**<br><br>**Skills/Concepts** | The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between continents and oceans. Major mountain chains form inside the continents or near their edges. Maps can help locate the different land and water features of Earth. (L1)<br>A variety of hazards result from natural processes (e.g., earthquakes, tsunamis, volcanic eruptions). Humans cannot eliminate the hazards but can take steps to reduce their impacts. (L2)<br>Testing a solution involves investigating how well it performs under a range of likely conditions. (L2)<br>Energy and fuels that humans use affect the environment. Some resources are renewable over time, and others are not. (L3)<br>The expression "produce energy" typically refers to the conversion of stored energy into a desired form for practical use.<br>Testing solutions involves investigating performance. (L3) |
| **MP3**<br><br>**Core Materials** | HMH Into Science |

| Marking Period 4 (MP4) | Science Curriculum Pacing Guide Grade 4 |
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| **MP4**<br><br>**Standards for Science Content** | 4-LS1-1 Construct an argument that plants, and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. (U2L1/L3)<br><br>4-LS1-2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (U2L3)<br><br>4-PS4-2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. (U2L3) |
| **MP4**<br><br>**Topics** | Unit 2- Plant and Animal Structure and Function |
| **MP4**<br><br>**Skills/Concepts** | Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (U2)<br>Animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (U2)<br>Plants and animals have structures that serve various functions. (U2)<br>Different sense receptors are specialized for particular kinds of information. Animals use their perceptions and memories to guide their actions. (U2)<br>An object can be seen when light reflected from its surface enters the eyes. (U2) |
| **MP4**<br><br>**Core Materials** | HMH Into Science |