

Science Year at a Glance 2023-2024

Grade 2

| Building Blocks (What's the Matter with Trash?-Pilot) | | | | | |
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| Duration | Assessed Standards | Essential Question | Big Ideas | Possible Learning Checkpoints | End of Unit Assessment |
| 9 Learning Cycles 24-25 Days 750 minutes | 2-PS1-1 2-PS1-2 2-PS1-3 2-PS1-4 | What are the best materials to use to engineer a strong wall? | <ul style="list-style-type: none"> Different kinds of matter exist and many of them can be either solid or liquid, depending on the temperature. Objects and materials can be described by observable properties, and different properties are suited to different purposes. Some objects are made of parts, and a great variety of objects can be built from a small set of pieces. Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. | <ul style="list-style-type: none"> LC3 – Explain which materials can/cannot build a strong wall. LC4 – Describe materials best suited for mortar and their properties. LC5 – State opinion about reversibility of changes to all matter. LC6 - Explain how the pieces can be rearranged to create a new and different shape. LC7 - Compare the physical properties. LC8 – Explain how learning about mortar will help to build a stronger wall. | <ul style="list-style-type: none"> Students use the Engineering Design Process to plan, create, build, and test a wall. Students will collect data to determine the strength of their wall and will use the data to suggest ways to improve the mortar to make a stronger wall. Students complete the content post-assessment. |

| Sandy Situation | | | | | |
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| Duration | Assessed Standards | Essential Question | Big Ideas | Possible Learning Checkpoints | End of Unit Assessment |
| 9 Learning Cycles 20 Days 600 Minutes | 2-ESS1-1 2-ESS2-1 2-ESS2-2 2-ESS2-3 | How does the Earth's surface change over time? | <ul style="list-style-type: none"> Some changes to Earth's surface happen slowly, like river valleys, canyons, and sand dunes; and some happen quickly, like earthquakes and volcanoes. Slow changes from wind or water can be man-made or natural, and people can slow or stop them using the engineering process to develop a solution. Environmental engineers use the engineering design process to | <ul style="list-style-type: none"> LC2 – Use maps to describe bodies of water in America and Maryland. LC3 – Explain the understanding of landforms. LC4 - Describe how knowing the kind of land change will determine the design solution. LC5 – Determine if slow changes caused the changes to Miami Beach. | <ul style="list-style-type: none"> Students will follow the engineering design process to test their ideas for slowing Miami Beach's erosion. Students complete the content post-assessment. |

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| | | | design and test solutions to problems concerning slow changes to Earth's surface. | <ul style="list-style-type: none"> • LC6 - Identify which method will best slow the erosion at Miami Beach. • LC7 – Identify needed improvements in the structure. | |
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Bee an Engineer (Bee a Pollinator-Pilot)

| Duration | Assessed Standards | Essential Question | Big Ideas | Possible Learning Checkpoints | End of Unit Assessment |
|--|---|---|---|---|--|
| 9 Learning Cycles 17-18 Days 510-540 minutes | 2-LS2-1 2-LS2-2 2-LS4-1 | How can we help Mariana's plant grow berries? | <ul style="list-style-type: none"> • Plants depend on water and light to grow. • Many plants depend on animals for pollination. | <ul style="list-style-type: none"> • LC2 – Explain how the investigation will help solve Mariana's problem. • LC3 - Use evidence from the flower dissection to explain how it will help solve Mariana's problem. • LC4 - Describe the pollination process by creating a sequence chain. • LC5 – Identify the probable cause of Mariana's problem. • LC7 – Explain how engineers solve problems. • LC8 – Evaluate materials. | <ul style="list-style-type: none"> • Students will use information from the previous test of pollen carrying materials, and the Engineering Design Process, to design, build, test, and improve a tool to pollinate Mariana's ohelo flowers so that they will bear fruit. • Students complete the content post-assessment. |