

Moon Area School District
Curriculum Map
Updated 2021-2022

Course: Earth Science, Physical Science, Life Science

Grade Level: 4th

Content Area: Science

Frequency: Full-Year Course

Big Ideas

1. Earth and its moon move in a specific pattern.
2. There are different types of rock in Earth's surface; Earth's surface does change.
3. There are discernable differences between renewable and nonrenewable resources and differences in how those resources affect our Earth.
4. There are different properties of matter that can be described and measured.
5. There are similarities and differences between different forms of energy.
6. Living organisms grow and change as well as depend and interact with their environment.
7. Living organisms interact with their environment in different ways.

Essential Questions

1. How do Earth and its moon move?
2. How are rocks alike and different?
3. What are renewable and nonrenewable resources?
4. How do slow processes change Earth's surface?
5. What changes do volcanoes and earthquakes cause?

6. How can you describe and measure properties of matter?
7. What are physical and chemical changes?
8. How do forces act?
9. What is magnetism?
10. What are some forms of energy?
11. What is sound?
12. What is electricity?

13. How do plants grow and reproduce?
14. How do animals grow and change?
15. How do living things depend on their environment?
16. How do adaptations help living things survive?
17. How do living things interact with their environment?
18. How do the parts of an organism work together?

Primary Resource(s) & Technology:

Textbook Series, IXL online software,
Microsoft Teams, Promethean Boards, Student Laptops/iPads

Pennsylvania and/or focus standards referenced at:

www.pdesas.org
www.education.pa.gov

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Earth Science

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
Beginning of Year Activities: IXL, "What are you excited about for Science this year?", Discuss Earth Science, Physical Science, and Life Science similarities and differences, "What is a scientist?"			Week 1 (8/24)
BI: 1,2 EQ: 1	Standards: S4.D.3.1 Reference 3.4.4.D Eligible Content: S4.D.3.1.1 S4.D.3.1.2 S4.D.3.1.3	<ol style="list-style-type: none"> 1. Identify the movements of Earth and the moon. 2. Explain that the spin of Earth creates day and night. 3. Describe the orbit of Earth around the sun in a year. 4. Explain that Earth is tilted on its axis. 5. Identify the sun, other stars, and the moon as common objects in the sky. 	Week 2 (8/30)
BI: 1,2 EQ: 1-2	Standards: S4.D.3.1 Reference 3.4.4.D Eligible Content: S4.D.3.1.1 S4.D.3.1.2 S4.D.3.1.3	<ol style="list-style-type: none"> 1. Describe the motion of the moon around Earth. 2. Describe how humans organize time into units based on the natural motions of Earth. 3. Describe how cultural astronomers use science and technology to do their job. 	Week 3 (9/7)
BI: 1,2 EQ: 2	Standards: S4.D.1.1 Reference 3.5.4.A Eligible Content: S4.D.1.1.1 S4.D.1.1.2 S4.D.1.1.3	<ol style="list-style-type: none"> 1. Recognize that there are many different kinds of rocks. 2. Identify and compare properties of rocks and minerals. 3. Identify color and streak as properties of minerals 	Week 4 (9/13)
BI: 1,2 EQ: 2	Standards: S4.D.1.1 S4.D.1.2 Reference 3.5.4.B, 3.5.4.D, 4.2.4.B, 4.8.4.D Eligible Content: S4.D.1.1.1 S4.D.1.1.2 S4.D.1.2.3 S4.D.1.2.1 S4.D.1.2.2 S4.D.1.2.3	<ol style="list-style-type: none"> 1. Explain how igneous rock is formed. 2. Describe the properties of igneous rock and diamond. 3. Recognize how diamonds are used as a natural resource. 4. Describe how artists use science and technology in their careers. 	Week 5 (9/20)
BI: 3 EQ: 3	Standards: S4.D.1.2 Reference 3.5.4.B,3.5.4.D,4.2.4.B,4. 8.4.D Eligible Content: S4.D.1.2.1 S4.D.1.2.2 S4.D.1.2.3	<ol style="list-style-type: none"> 1. Identify renewable resources. 2. Define and identify natural resources. 3. Identify water as a renewable resource. 	Week 6 (9/27)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
BI: 3 EQ: 3-4	Standards: S4.D.1.1 Reference 3.5.4.A Eligible Content: S4.D.1.1.1 S4.D.1.1.2 S4.D.1.1.3	<ol style="list-style-type: none"> 1. Identify sunlight and air as renewable resources. 2. Identify nonrenewable resources and rocks, metals, soil, and fossil fuels as nonrenewable resources. 3. Identify and describe the components and properties of soil. 	Week 7 (10/4)
BI: 3 EQ: 4	Standards: S4.D.1.1 Reference 3.5.4.A Eligible Content: S4.D.1.1.1 S4.D.1.1.2 S4.D.1.1.3	<ol style="list-style-type: none"> 1. Identify ways humans affect Earth's natural resources. 2. Describe ways to help the environment, such as composting and preventing soil erosion. 3. Describe ways to help the environment (water conservation, recycling rock and mineral resources, lesser fossil fuels). 4. Define and identify natural resources. 	Week 8 (10/12)
BI: 2,3 EQ: 4	Standards: S4.D.1.1 Reference 3.5.4.A Eligible Content: S4.D.1.1.1 S4.D.1.1.2 S4.D.1.1.3	<ol style="list-style-type: none"> 1. Describe that Earth's surface can change slowly (weathering). 2. Identify the major landforms on Earth's surface. 3. Define physical weathering. 	Week 9 (10/18)
BI: 3 EQ: 4	Standards: S4.D.1.1 S4.D.2.1 Reference 3.5.4.A 3.5.4.C, 3.7.4.B, 3.2.4.B Eligible Content: S4.D.1.1.1 S4.D.1.1.2 S4.D.1.1.3 S4.D.2.1.1 S4.D.2.1.2 S4.D.2.1.3	<ol style="list-style-type: none"> 1. Describe and identify weathering by wind, water, plants, and ice. 2. Define erosion and deposition as well as by water and ice. 3. Identify how weathering, erosion, and deposition affect people and can cause sinkholes and landslides. 4. Identify plate movement as a cause of mountain building. 5. Explain why earthquakes happen. 6. Identify and describe how Earth's surface can changed rapidly. Explain why volcanoes occur. 	Week 10 (10/25)
BI: 3 EQ: 4	Standards: S4.D.2.1 Reference 3.5.4.C, 3.7.4.B, 3.2.4.B Eligible Content: S4.D.2.1.1 S4.D.2.1.2 S4.D.2.1.3	<ol style="list-style-type: none"> 1. Identify and describe how Earth's surface can change rapidly. 2. Describe how volcanologists might use science and technology in their work. 3. Explain that air surrounds us and takes up space. 4. Identify and describe the layers of the atmosphere. 5. Describe weather by measurable quantities. Describe how water exists in the air and how clouds form. 	Week 11 (11/1)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
BI: 3 EQ: 4-5	Standards: S4.D.1.3 Reference 3.5.4.D, 4.1.4.A, 4.1.4.D, 4.1.4.E Eligible Content: S4.D.1.3.1 S4.D.1.3.2 S4.D.1.3.3 S4.D.1.3.4	<ol style="list-style-type: none"> 1. Identify and describe weather changes and patterns by measurable quantities. 2. Identify and describe how cold/warm fronts affect weather. 3. Identify and describe weather patterns that affect the U.S. Discuss and identify characteristic of water cycles, water sheds, wetlands, pollutions and lotic/lentic.	Week 12 (11/8)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Physical Science

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
BI: 4 EQ: 6-8	Standards: S4.C.1.1 Reference 3.4.4.A, 3.2.4.B Eligible Content: S4.C.1.1.1 S4.C.1.1.2	<ol style="list-style-type: none"> 1. Understand that all objects and substances in the world are made of matter. 2. Recognize that matter has properties that can be observed through the senses. 3. Recognize that matter takes up space and has mass. 4. Recognize that some properties of an object are dependent on the conditions of the object exists. 5. Understand that 2 objects cannot occupy the same place at the same time. 	Week 13 (11/15)
BI: 4 EQ: 6-8	Standards: S4.C.1.1 Reference 3.4.4.A, 3.2.4.B Eligible Content: S4.C.1.1.1 S4.C.1.1.2	<ol style="list-style-type: none"> 1. Classify types of materials or mixtures of substances by using their characteristic properties. 2. Observe, distinguish, describe mixtures and solutions and their properties. 3. Understand that measurements can be made with standard metric units and nonstandard units. 4. Describe and compare the volume of objects using a graduated cylinder. 	Week 14 (11/22)
BI: 4 EQ: 6-8	Standards: S4.C.1.1 Reference 3.4.4.A, 3.2.4.B Eligible Content: S4.C.1.1.1 S4.C.1.1.2	<ol style="list-style-type: none"> 1. Recognize that matter has properties that can be observed through the senses. 2. Recognize that matter has properties that can be observed through the senses. 	Week 15 (11/30)
BI: 4 EQ: 8-11	Standards: S4.C.1.1 Reference 3.4.4.A, 3.2.4.B Eligible Content: S4.C.1.1.1 S4.C.1.1.2	<ol style="list-style-type: none"> 1. Explain how matter can change from one state to another by heating and cooling. 2. Compare and contrast the states of matter. 3. Understand that, when a new material is made by combining two or more materials, it has properties that are different from the original materials. 4. Observe and describe changes in the properties of materials or objects. 	Week 16 (12/6)
BI: 4-5 EQ: 8-11	Standards: S4.C.1.1 S4.C.3.1 Reference 3.4.4.A, 3.2.4.B, 3.4.4.C, 3.6.4.C, 3.2.4B Eligible Content: S4.C.1.1.1 S4.C.1.1.2 S4.C.3.1.1 S4.C.3.1.2 S4.C.3.1.3	<ol style="list-style-type: none"> 1. Explain that the greater the force applied to an object, the greater the change in an object's motion. 2. Explain that objects can move in different ways. 3. Explain that the speed of an object depends on the time it takes the object to move a certain distance. 4. Define friction as a force that slows motion when objects are touching. 5. Identify gravity as a force that pulls objects toward the center of Earth. 	Week 17 (12/13)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
BI: 4-5 EQ: 8-11	Standards: S4.C.3.1 Reference 3.4.4.C, 3.6.4.C, 3.2.4.B Eligible Content: S4.C.3.1.1 S4.C.3.1.2 S4.C.3.1.3	1. Recognize how different scientists' work has contributed to general scientific understanding.	Week 18 (12/20)
BI: 4-5 EQ: 8-11	Standards: S4.C.3.1 Reference 3.4.4.C, 3.6.4.C, 3.2.4.B Eligible Content: S4.C.3.1.1 S4.C.3.1.2 S4.C.3.1.3	<ol style="list-style-type: none"> 1. Identify magnets and how they function in everyday life. 2. Describe that magnets can attract magnetic materials. 3. Explain that the force of magnetism decreases as distance increases. 4. Describe the effects of a magnetic field. 	Week 19 (1/3)
BI: 4-5 EQ: 8-11	Standards: S4.C.2.1 Reference 3.4.4.B, 3.4.4.C Eligible Content: S4.C.2.1.1 S4.C.2.1.2 S4.C.2.1.3 S4.C.2.1.4	<ol style="list-style-type: none"> 1. Define energy at the source of motion or change. 2. Identify and describe mechanical energy as a form of energy. 3. Describe that heat flows between objects until they are both the same temperature. 4. Identify and describe light as a form of energy. 	Week 20 (1/10)
BI: 5 EQ: 8-11	Standards: S4.C.2.1 Reference 3.4.4.B, 3.4.4.C Eligible Content: S4.C.2.1.1 S4.C.2.1.2 S4.C.2.1.3 S4.C.2.1.4	<ol style="list-style-type: none"> 1. Explain that energy can change from one form to another. 2. Understand that energy exists in various forms, including sound. 	Week 21 (1/18)
BI: 5 EQ: 11-12	Standards: S4.C.2.1 Reference 3.4.4.B, 3.4.4.C Eligible Content: S4.C.2.1.1 S4.C.2.1.2 S4.C.2.1.3 S4.C.2.1.4	<ol style="list-style-type: none"> 1. Understand the relationship between volume and vibrations 2. Understand that pitch is caused by vibrations. The faster the vibrations, the higher the pitch. 3. Recognize that vibrating objects make sound, and sound can make things vibrate. 	Week 22 (1/24)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
BI: 5 EQ: 11-12	Standards: S4.C.2.1 Reference 3.4.4.B, 3.4.4.C Eligible Content: S4.C.2.1.1 S4.C.2.1.2 S4.C.2.1.3 S4.C.2.1.4	<ol style="list-style-type: none"> 1. Understand that electric circuits may produce or use light, heat, sound, and magnetic energy. 2. Compare and contrast series and parallel circuits. 3. Understand that magnets and electricity produce related forces. 4. Understand that electric circuits may produce or use light, heat, sound, motion, and magnetic energy. 	Week 23 (1/31)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Life Science

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
BI: 6 EQ: 13-14	Standards: S4.B.1.1 Reference 3.3.4.A, 3.3.4.B, 4.3.4.A, 4.3.4.C, 4.6.4.A Eligible Content: S4.B.1.1.3 S4.B.1.1.4 S4.B.1.1.5	<ol style="list-style-type: none"> 1. Identify the major structures of a seed plant and relate them to their functions. 2. Describe the parts of a flower. 	Week 24 (2/7)
BI: 6 EQ: 13-14	Standards: S4.B.1.1 Reference 3.3.4.A, 3.3.4.B, 4.3.4.A, 4.3.4.C, 4.6.4.A Eligible Content: S4.B.1.1.3 S4.B.1.1.4 S4.B.1.1.5	<ol style="list-style-type: none"> 1. Describe the main processes of seed and fruit formation and flowering plants. 2. Describe the importance of honeybees in the pollination of flowering plants. 3. Compare and contrast the life cycles of flowering plants and conifers, 4. Identify individual differences in organisms of the same time. 	Week 25 (2/14)
BI: 6 EQ: 13-14	Standards: S4.B.1.1 Reference 3.3.4.A, 3.3.4.B, 4.3.4.A, 4.3.4.C, 4.6.4.A Eligible Content: S4.B.1.1.3 S4.B.1.1.4 S4.B.1.1.5	<ol style="list-style-type: none"> 1. Compare and contrast the similarities and differences among offspring of different animal life cycles. 	Week 26 (2/22)
BI: 6-7 EQ: 13-14	Standards: S4.B.1.1 Reference 3.3.4.A, 3.3.4.B, 4.3.4.A, 4.3.4.C, 4.6.4.A Eligible Content: S4.B.1.1.1 S4.B.1.1.2 S4.B.1.1.3	<ol style="list-style-type: none"> 1. Describe the different life cycles of animals and identify the different stages of these life cycles. 2. Describe animal behaviors that result from hereditary. 3. Describe animal behaviors that result from learning. 	Week 27 (2/28)
BI: 6-7 EQ: 13-14	Standards: S4.B.2.1 Reference 4.7.4.B Eligible Content: S4.B.2.1.2 S4.B.2.1.2	<ol style="list-style-type: none"> 1. Identify the needs of living things. 2. Identify examples of consumers as either herbivores or carnivores. 3. Distinguish predators from prey. 4. Describe how energy passes from one living this to another in a community. 	Week 28 (3/7)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline (Weeks)
BI: 6-7 EQ: 14-16	Standards: S4.B.2.1 Reference 4.7.4.B Eligible Content: S4.B.2.1.2	<ol style="list-style-type: none"> 1. Recognize how adaptations are important to the survival of living things. 2. Recognize examples of parasites and their hosts. 3. Describe forest, prairie, tundra, and ocean environments, and the types of animals they support. 	Week 29 (3/14)
BI: 6-7 EQ: 14-16	Standards: S4.B.2.1 Reference 4.7.4.B Eligible Content: S4.B.2.1.1 S4.B.2.2.2	<ol style="list-style-type: none"> 1. Explain how adaptations for movement can help a living thing survive. 2. Recognize adaptations that animals use to attract prey. 3. Distinguish between an adaptation and a variation. 4. Identify the importance of adaptations for sensing. 	Week 30 (3/22)
BI: 6-7 EQ: 14-16	Standards: S4.B.2.1 Reference 4.7.4.B Eligible Content: S4.B.2.1.1 S4.B.2.2.2	<ol style="list-style-type: none"> 1. Explain how flowers, seeds, and fruits, are adaptations for plant reproduction. 2. Explain how scientists use fossils in the study of Earth's history. 3. Recognize ways that plants and animals can change the environment. 	Week 31 (3/28)
BI: 7 EQ: 14-16	Standards: S4.B.3.1, S4.B.3.2, S4.B.3.3 Reference 4.6.4.A, 4.2.4.C, 4.3.4.C, 4.6.4.C, 4.3.4.B, 4.4.4.B, 4.5.4.C, 3.8.4.C Eligible Content: S4.B.3.1.1 S4.B.3.2.2 S4.B.3.2.1 S4.B.3.2.2 S4.B.3.2.3 S4.B.3.3.1 S4.B.3.3.2 S4.B.3.3.3 S4.B.3.3.4 S4.B.3.3.5	<ol style="list-style-type: none"> 1. Give examples of how plants change based on the seasons. 2. Describe how plants can harm an environment. 3. Describe how animals can harm the environment. 4. Recognize that humans depend on their environments to meet their needs. 5. Explain that humans can change the environment. 	Week 32 (4/4)
BI: 7 EQ: 17-18	Standards: S4.B.1.1 Reference 3.3.4.A, 3.3.4.B, 4.3.4.A, 4.3.4.C, 4.6.4.A Eligible Content: S4.B.1.1.1	<ol style="list-style-type: none"> 1. Explain that humans and other living things have different body parts that help them get what they need to survive 2. Describe the major organs of the circulatory, digestive, and respiratory system. 	Week 33 (4/18)

**Moon Area School District
Curriculum Map
Updated 2021-2022**

BI: 7 EQ: 17-18	Standards: S4.B.1.1 Reference 3.3.4.A, 3.3.4.B, 4.3.4.A, 4.3.4.C, 4.6.4.A Eligible Content: S4.B.1.1.1	1. Describe the major organs of the skeletal, muscular, and nervous systems.	Week 34 (4/25)
2021-2022 Math/Science PSSAs			Week 35 (5/2)
2021-2022 Math/Science PSSAs			Week 36 (5/9)
End of Year Activities: IXL, "What was your favorite part of science this year? Why?"			Week 37 (5/16)
End of Year Activities: IXL, "Which unit of science was your favorite?" Why?"			Week 38 (5/23)
End of Year Activities: IXL, Fun science experiments			Week 39 (5/31)