

2

Universe, Earth, Environment

(Earth Science)

Essential Question: How are changes in the sky predictable?

Enduring Knowledge	Science Concepts	GE	Evidence of Understanding
<p><u>Solar System:</u> The universe, earth and all earth systems have undergone change in the past, continue to change in the present and predicted to continue changing in the future.</p>	<p>a. The moon looks slightly different every day, but looks the same again about every four weeks. b. The moon can be seen sometimes at night and sometimes during the day.</p>	<p>44</p>	<p>Observing and describing qualitatively how the sky looks at different times Keeping a journal record of the shape of the moon each night for a month</p>
<p><u>Scale, Distances, Star Formation, Theories, Instrumentation:</u> The universe, earth and all earth systems have undergone change in the past, continue to change in the present and predicted to continue changing in the future.</p>	<p>a. There are more stars in the sky than anyone can easily count, but they are not scattered evenly; and they are not all the same in brightness or color.</p>	<p>45</p>	<p>Drawing a picture of stars in the night sky</p>

Universe, Earth, Environment
(Earth Science)

2

Focusing Questions	Potential Inquiries/Activities	Resources/Notes
<p>What moon changes do we observe?</p> <ul style="list-style-type: none"> - The moon does not give off its own light. - The moon reflects the sun's light. - We always see the same side of the moon because the moon rotates one time on its axis every 4 weeks. - We only see the lighted side of the moon. - The whole moon is always in the sky but only the lighted part is visible. - There is a repeating cycle to the shape of the moon that is viewed (phases). It's a pattern! - The moon rise and moon set are predictable. - The moon does not define nighttime because s 	<p>How does the moon change? Record moon phases on a calendar for 1 month or longer.</p>	
<p>What do you observe in the night sky?</p> <ul style="list-style-type: none"> - The number of stars in the sky is too many to count. - The stars are in a random configuration in the sky. - Stars vary in color, brightness and size. - A star is a sphere. 	<p>What do you observe in the night sky? Show pictures of stars - note differences. Students draw a picture of the night sky.</p>	<ul style="list-style-type: none"> - Visit a planetarium - Use a star constellation globe

2

Universe, Earth, Environment (Earth Science)

Essential Question: What is the effect of soil on food production?

Enduring Knowledge	Science Concepts	GE	Evidence of Understanding
<p><u>Earth Materials and the Rock Cycle:</u> The universe, earth and all earth systems have undergone change in the past, continue to change in the present and predicted to continue changing in the future.</p>	<p>a. Earth materials are solid rocks and soils. b. Soils and rocks have properties of color and texture; in addition, some soils retain different amounts of water.</p>	46	<p>Observing, describing and comparing color and texture of different types of rocks and soils Conducting tests on how different types of soils retain water</p>
<p><u>Natural Resources:</u> The universe, earth and all earth systems have undergone change in the past, continue to change in the present and predicted to continue changing in the future.</p>	<p>a. Most food comes from farms either directly as crops or through the animals that eat the crops.</p>	49	<p>Identifying the natural sources of the food that is consumed on a daily basis (e.g., Bread--wheat —flour; Sap —maple syrup; Pasture—meat and dairy)</p>

Universe, Earth, Environment
(Earth Science)

2

Focusing Questions	Potential Inquiries/Activities	Resources/Notes
<p>What are some ways you could classify rocks or soil?</p> <ul style="list-style-type: none"> - Rocks and soil are earth materials. - Properties of soil are color, texture, and ability to retain water. - Soil has living and non-living components. - Not all soils have exactly the same components. - A soil's composition determines its ability to retain water. - Two of the properties of rocks are color and texture. - Rocks are various sizes, ranging from tiny grains of sand to huge boulders. - Small particles of rock are an important non-living component of soil. 	<p>I wonder how many different kinds of rocks are on our playground? Collect and sort rocks by color and texture. I wonder where we could go to find different kinds of soil. Locate kinds of soil around your school (nature walk). Students bring in soil samples from home, examine the soil with magnifying lenses, and identify components. Test soils for their ability to retain water.</p>	<ul style="list-style-type: none"> - Slate museum - Four Winds Science
<p>What is the connection between food and plants/animals?</p> <ul style="list-style-type: none"> - Natural resources come from the earth. - Plants are the origin of food for all animals. - A plant's form is often changed to become food. - Farms are a primary source of food. - Animals are food for other animals. 	<p>Trace the origins of one of your daily meals.</p>	<p>Write letters to a farmer. Visit a farm. Visit a sugar house. Visit Merck Forest.</p>