



Revision Date	April 20, 2020
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Department of Curriculum & Instruction

First Grade Science

Unit	1 - 05 Investigating Objects in the Sky
Time Frame	1/19-2/12
Big Ideas	<ol style="list-style-type: none"> 1. We can observe and record how the Moon's appearance changes over time. 2. We can observe and record how the Sun appears to change position in the sky, such as during sunrise and sunset and through the changing location of an object's shadow during different times of the day. 3. Because of the brightness of our Sun during the day, we can observe and record stars only in the night sky.
Essential Questions	<ol style="list-style-type: none"> 1. What observations can we make of the changes in the Moon's appearance, the clouds, and the Sun's position during the day? 2. How can we record the changes in the Moon's appearance or the Sun's position during the day? 3. Why do we see stars at night and not during the day?

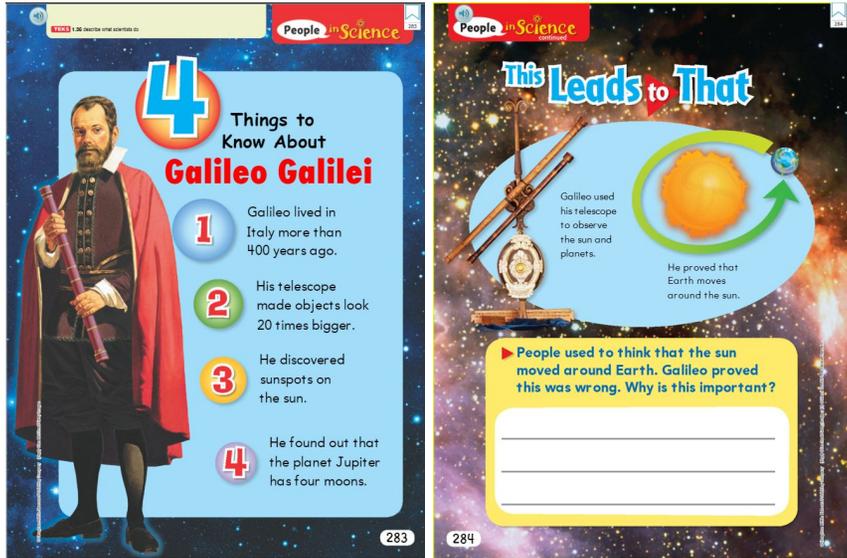
TEKS / Student Expectations	Skills	Concepts
<p>TEKS 1.8B Earth and space. The student knows that the natural world includes the air around us and objects in the sky. The student is expected to observe and record changes in the appearance of objects in the sky such as clouds, the Moon, and stars including the Sun;</p>	<p>Observe, Record</p>	<p>CHANGES IN THE APPEARANCE OF OBJECTS IN THE SKY Including, but not limited to:</p> <p>Moon</p> <ul style="list-style-type: none"> • Part of the Moon • Half of the Moon • Most of the Moon • All of the Moon <p>Stars (Sun)</p> <ul style="list-style-type: none"> • Possible examples may include: • Seen during the day • Seen during the night • Bright • Reddish <p>Types of record keeping may include:</p> <ul style="list-style-type: none"> • Notebooks • Calendars <p>Chart paper</p>



<p>TEKS 1.8C Earth and space. The student knows that the natural world includes the air around us and objects in the sky. The student is expected to identify characteristics of the seasons of the year and day and night; and</p>	<p>Identify</p>	<p>CHARACTERISTICS OF DAY AND NIGHT Including but not limited to:</p> <ul style="list-style-type: none"> • Appearance of the sky • The Sun's apparent movement from east to west • Light • Dark • Human activities • Daytime activities <p>Nighttime activities</p>
<p>TEKS 1.2(C) The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to collect data and make observations using simple tools.</p>	<p>Collect Make</p>	<p>The student will be required to collect data and learn how to appropriately use them.</p> <p>The students will be making observations using the tools such as measuring length with nontraditional measuring devices.</p>
<p>TEKS 1.2(D) The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to record and organize data and observations using pictures, numbers, and words.</p>	<p>Record Organize</p>	<p>Students should start learning how to record data, they can draw pictures, make tally marks, use picture graphs, use real world objects, numbers, words.</p>
<p>TEKS 1.3(C) The student knows that information and critical thinking are used in scientific problem solving. The student is expected to describe what scientists do.</p>	<p>describe</p>	<p>They should be able to describe the actions of a good scientist that are similar to the tasks that they do in the classroom. These tasks include:</p> <ul style="list-style-type: none"> • Questioning • Observing • Measuring • Classifying • Investigating • Predicting <p>Communicating</p>
<p>TEKS 1.4(A) The student uses age-appropriate tools and models to investigate the natural world. The student is expected to collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums.</p>	<p>Collect Record Compare</p>	<p>1st grade students should be able to collect data from sources such as a demonstration thermometer, wind sock, other weather instruments like a weather vane or anemometer. They will also be recording their finding into a scientific journal and comparing their data with other students.</p>

Tier I Instructional Strategies – Classroom Instruction for All Students

It would be a good idea to transition into people in science and talk about Galileo. The textbook (pg 283) has an introduction to him.



Talk about how scientists study the world around them and how Galileo studied also the solar system. It's though him that we have advanced to what we now know. They can be like Galileo, Help the students learn about making observations about their world. Talk about the objects in the sky: the sun, moon, stars and how they can change.

Discuss the moon's phase changes caused by the reflection of the sunlight. They only need to know the four major phases.



It will be difficult to discuss, but the stars also appear to move across the sky. A good picture of this is one using a camera focused on a fixed point – the north star.



This effect is caused by a long exposure on a camera on an infinite focus. There are many pictures of this online. You can show [this time lapse](#) video of the effect and talk about it with the students.

They can test how the sun appears to move by testing an effect caused by the sun – shadows. Take them outside on a sunny day, and place a long sheet of butcher paper on the ground. Have a student stand on it in the morning, and someone else traces their shadow. Record the time this happens. Go back out after a few hours and repeat the process. You could also do this with a homemade sundial



made from a paper plate and a pencil.

Critical Writing Prompts

1. You want to tell your friend everything you know about the moon. Write a short story about how it appears to change. Is the sun a star? Can you see it at night? Tell your pen pal about what you think.

Vocabulary



<p>Key Content Vocabulary:</p> <p>Earth – the third planet from the Sun</p> <p>Evening / night – the time that starts when the Sun goes down and ends when the Sun rises</p> <p>Moon – a natural object that orbits a planet; Earth’s Moon is the only natural satellite and Earth’s nearest neighbor in space</p> <p>Morning / day – the time that starts when the Sun comes up and ends when the Sun goes down</p> <p>Sky – the region of the atmosphere (and outer space) seen from the Earth</p> <p>Star – an object in space made up of gas and giving off light and heat</p>	<p>Sun – a huge ball of gases around which the Earth and other planets of our solar system revolve; the Sun is a star that provides Earth with most of its light and thermal energy</p> <p>Sunrise – the rise of the Sun above the horizon in the morning</p> <p>Sunset – the time in the evening when the Sun moves below the horizon and daylight fades</p> <p>All</p> <p>Cycle</p> <p>Daytime</p> <p>Half</p>	<p>Most</p> <p>Nighttime</p> <p>Part</p> <p>Pattern</p> <p>Repeating</p> <p>Shape</p>
Resources		
<p><i>*The suggested resources are one of many ways to address the TEKS student expectation.</i></p> <p>ThinkCentral textbook</p> <p>YouTube video of time-lapse of stars</p>		