Science Unit 1- Plan
Sun, Moon and Stars
Grade 3

Unit Length:

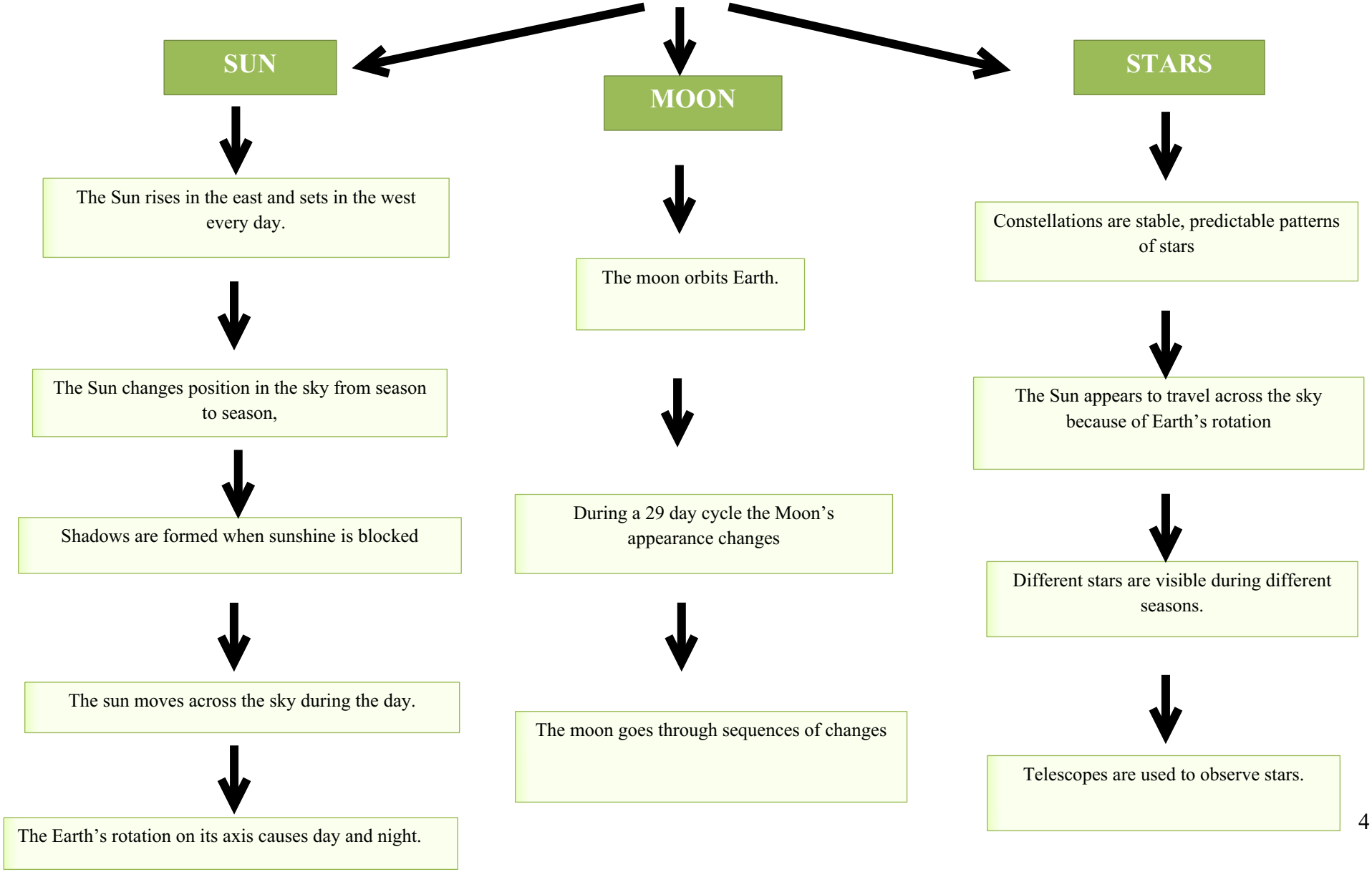
Grade 3
Sun, Moon and Stars

Table of Contents

CONCEPTUAL FLOW

Big Idea

Objects in the sky are observable and they move in regular and predictable



UNIT OVERVIEW

Sun, Moon and Stars Unit

Summary

The Sun, Moon, and Stars Module consist of three sequential investigations, each designed to introduce students to objects we see in the sky. Through outdoor observations made during the day and at night, active simulations, readings, videos, and discussions, students study the Sun, Moon, and stars to learn that these objects move in regular and predictable patterns that can be observed, recorded, and analyzed.

Enduring Understanding:	***Essential Questions: Overarching***
Earth systems can be broken down into individual components, which have observable measurable properties. Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth, regionally and globally. Technology enables us to better understand Earth's systems and the impact of Earth's systems on human activities. The Sun, Earth, and Moon have observable, predictable patterns of movement. Many people choose science as a career and devote their lives to studying it.	What predictable, observable patterns occur because of the interaction between the Earth, Moon, and Sun? What causes these patterns? How do the Sun, Moon, and Earth affect each other? What effects the changes in the sun, moon, and stars' systems? What are the characteristics of the sun, moon, and stars' systems that can be observed from earth?
Knowledge:	***Skills:***
Student will Know…. • The Moon changes its appearance is a predictable sequence each month. • The sequence of the moon phases and the regressive time of rising occurs because Earth rotates on its axis • The pattern the sun takes in the sky daily • Where the sun rises and sets daily • Major constellations • That constellations change with the season because of the orbit of the earth around the Sun.	***Students will be able to…*** • Obtain, Evaluate and Communicate Information • Ask Questions and Define Problems • Analyze and Interpret Data • Plan and Carry Out Investigations
Evidence of Understanding:	
Pre- Assessment Notebook and Journal Entries Performance Assessments Reading Prompt Student Observation/Anecdotal Notes Homework Checkpoint Assessments I-Check Assessments Unit Assessments	***Data Due to District*** ***Investigation 1*** Pre Assessment Notebook Investigation Entry Part 1 I-Check 1 ***Investigation 2*** I Check 2 Student Observation/ Anecdotal Notes ***Investigation 3*** I Check 3 Unit Assessment
Preconception /Misconceptions	
Sun	

The surface of the sun is without visible features.
The sun's size makes it unique; the stars of night are tiny objects.
The sun rises exactly in the east and sets exactly in the west every day.
The sun is always directly south at 12:00 PM each day.
We experience seasons because the earth's changing distance from the sun.
Everyone on earth shares the same seasons on the same dates.
The movement of the Sun and stars is very slow.

List other that you discover in your class:

_____
_____
_____
_____

Moon

The moon can only be seen during the night.
The moon is visible in the sky every night that it's clear.
The moon does not rotate on its axis as it revolves around the earth.
The moon's only has one motion -- that due to the earth's rotation.
The phases of the moon are caused by shadows cast on its surface by other objects in the solar system, especially the earth.
The phases of the moon are caused by the moon moving into the sun's shadow.
The shape of the moon always appears the same.
The moon can be found in the same place in the sky from night to night

List other that you discover in your class:

_____
_____
_____
_____

Stars

Stars and constellations appear in the same place in the sky each night.
All stars rise and set.
All stars set at sunrise and rise at sunset.
All stars are the same distance from the earth.
The constellations form patterns clearly resembling people, animals, and objects.
Constellations are merely star patterns, not regions of the sky.
The North Star is the brightest star in the sky.
Stars leave the sky during the day.
Constellations are the same the world over.

List other that you discover in your class:

_____
_____
_____
_____

Materials Sheet

Be aware that the classroom teacher or school site must supply a few items. Here is a summary of supplies not included in the kit.

Investigation 1: The Sun	Investigation 2: The Moon	Investigation 3: The Stars
Flip Chart or chart paper Globe 9-12 Inch Marking Pen Masking tape Overhead Projector Paper fastener (optional) Scissors Transparency Transparent Tape	Flip chart or chart paper (optional) Glue (optional) Overhead Projector Overhead Transparency Marker 32 Scissors Transparency Transparent Tape VCR and Monitor	Extension Cord (optional) Globe 9-12 inch Overhead projector 4 Transparencies VCR and Monitor

New Jersey Common Core Standards

5.1 Science Practices	All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.
Strand A	**Understand Scientific Explanations: Students understand core concepts and principles of science and use measurement and observation tools to assist in categorizing, representing, and interpreting the natural and designed world. Who, what, when, where, why, and how questions form the basis for young learners' investigations during sensory explorations, experimentation, and focused inquiry**
5.1.4.A.1	Fundamental scientific concepts and principles and the links between them are more useful than discrete facts.
5.1.4.A.2	Outcomes of investigations are used to build and refine questions, models, and explanations.
Strand B	**Generate Scientific Evidence Through Active Investigations: Observations and investigations form young learners' understandings of science concepts.**
5.1.4.B.2	Tools and technology are used to gather, analyze, and communicate results.
5.1.4.B.3	Evidence is used to construct and defend arguments
5.1.4.B.4	Reasoning is used to support scientific conclusions.
Stand C	**Reflect on Scientific Knowledge: Interacting with peers and adults to share questions and explorations about the natural world builds young learners' scientific knowledge.**
5.1.4.C.1	Scientific understanding changes over time as new evidence and updated arguments emerge.
5.1.4.C.2	Revisions of predictions and explanations occur when new arguments emerge that account more completely for available evidence.
Strand D	**Participate Productively in Science: Science practices include drawing or "writing" on observation clipboards, making rubbings, or charting the growth of plants.**
5.1.4.D.1	Science has unique norms for participation. These include adopting a critical stance, demonstrating a willingness to ask questions and seek help, and developing a sense of trust and skepticism.
5.1.4.D.2	In order to determine which arguments and explanations are most persuasive, communities of learners work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories (e.g., scientific argumentation and representation).
5.1.4.D.3	Instruments of measurement can be used to safely gather accurate information for making scientific comparisons of objects and events.
5.4 Earth Science	All students will understand that Earth operates as a set of complex, dynamic, and interconnected systems, and is a part of the all-encompassing system of the universe.
Strand A	Objects in the Universe: Our universe has been expanding and evolving for 13.7 billion years under the influence of gravitational and nuclear forces. As gravity governs its expansion, organizational patterns, and the movement of celestial bodies, nuclear forces within stars govern its evolution through the processes of stellar birth and death. These same processes governed the formation of our solar system 4.6 billion years ago.
5.4.2.A.1	The Sun is a star that can only be seen during the day. The Moon is not a star and can be seen sometimes at night and sometimes during the day. The Moon appears to have different shapes on different days.
5.4.4.A.1	Objects in the sky have patterns of movement. The Sun and Moon appear to move across the sky on a daily basis. The shadows of an object on Earth change over the course of a day, indicating the changing position of the Sun during the day.
5.4.4.A.2	The observable shape of the Moon changes from day to day in a cycle that lasts 29.5 days
5.4.4.A.3	Earth is approximately spherical in shape. Objects fall towards the center of the Earth because of the pull of the force of gravity.
5.4.4.A.4	Earth is the third planet from the Sun in our solar system, which includes seven other planets.

Next Generation Science Standards

Performance Expectations

5-ESS1-1 Support an argument that the apparent brightness of the sun and stars is due to their relative distances from Earth.
5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky

NGSS Science and Engineering Practices

Planning and Carrying Out Investigations: To answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions.

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered. (3-5-ETS1-3)

Analyzing and Interpreting Data: Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.

- Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. (5-ESS1-2)

Asking Questions and Defining Problems In 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships.

- Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost. *(3-5-ETS1.1)*.

Obtaining, Evaluating, and Communicating Information in 3-5 builds on K-2 experiences and progresses to evaluating the merit and accuracy of ideas and methods.

* Obtain and combine information from books and other reliable media to explain phenomena.

Disciplinary Core Ideas

- The Sun is a Star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from the Earth. **ESS1.A**
- The orbit of Earth around the sun and of the moon around Earth together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night, daily changes in the length and the direction of shadows, and different positions of the sun moon and stars at different times of the day, month and year. 5-ESS1-2

Cross Cutting Concepts

Patterns. Observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them.
Systems: Defining the system under study—specifying its boundaries and making explicit a model of that system—provides tools for understanding and testing ideas that are applicable throughout science and engineering.
Cause and Effect, Mechanism and Explanation: Events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts.

Common Core State Standards

CCSS: English Language Arts	
Reading Informational Text	
RI.2.10	By the end of the year read and comprehend informational texts, including science and technical texts, in the grades 2-3 text complexity band proficiently, with scaffolding as needed at the high end of the range
CCSS: Writing-	
W.1.8	With guidance and support from adults, recall information from the experiences to gather information from provided sources to answer a question.
W.2.2	Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points and provide a concluding statement or section.
CCSS: Speaking and Listening:	
SL.1.5.	Add drawing or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
SL.2.1.	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and large groups
CCSS: Mathematics	
2.MD.10	Measurement and data: Represent and interpret data: Draw a picture graph and a bar graph (with single unit scale) to represent a data set with up to four categories.

Before beginning unit administer pretest.

Check that all materials are available, usable, and ready

Investigation 1
"The Sun"

Summary

Students use a compass to study the position of the Sun in the sky at different times during the day. They **observe** the Sun's position, record, make predictions, and make new observations later in the day to check their predictions. Students explore shadows created by blocking sunlight on the schoolyard. They trace shadows; predict where shadows will be later in the day, and return to check their predictions. Students read about the changing position of the Sun in the sky.

Core Conceptual Ideas

- The Sun is a Star that appears larger and brighter than other stars because it is closer.
- Stars range greatly in their distance from the Earth. 5.4.A
- Patterns of motion of the sun, moon, and stars in the sky can be observed, described, and predicted. **ESS1.**
- Seasonal patterns of sunrise and sunset can be observed, described, and predicted. **ESS1.B**

New Vocabulary

Cardinal directions, compass, day east, night, north, predictable, season shadow, south, Sun, west

Assessments	***Assessments Data Due for District Analysis***
Pre- Assessment	Pre Assessment
Notebook Investigation Entry(s) Part 1 &2	Notebook Investigation Entry Part 1
Reading: Foss Student text(s)	I-Check 1
Writing Prompt: Review(s)	I-Check 2
Journal Entry (s)	I-Check 3
Student Observation/ Anecdotal Notes	Unit Post Assessment
Individual Work	

Investigation 1
Part 1 - "Following the Sun"

Summary

Students begin observing objects they can see in the sky, especially the Sun. They are introduced to the compass as a tool to determine directions, east, west, north, and south. They use the compass to find and label these directions in their classroom. Students go outside and use the compass to orient themselves on the schoolyard. They point toward the Sun while a partner draws their pointing figure. They repeat the process later in the day, discovering that the position of the Sun has changed. They predict where the Sun will travel during the rest of the day and where it will set. Students read about how the Sun's position in the sky changes during a day.

Core Ideas/Understandings	*S&E Practices Alignment*	*CC Concepts Alignment*
• The Sun rises in the east and sets in the west every day. • A compass is a tool used to determine directions (east, west, north, and south. • The exact path the Sun takes in the sky varies by season. • Earth is one of several planets that orbit the Sun in the solar system. • Earth rotates on its axis, causing day and night. • Day happens when a location on Earth is facing the Sun, and night happens when a location is facing away from the Sun.	***NGSS*** Engage in Argument from Evidence (5 ESS1-1)	***NGSS*** Scale, Proportion, and Quantity (5ESS1-1)

Focus Questions

- How does the Sun move from sunrise to sunset?
- Why do you have a shadow and how does it change?

Teacher Preparation	Body Of Evidence	Est. Time
• Send Letter to Parents Home (Teacher Master p.157) • Read TE "At A Glance", "Background for the Teacher" &"Teaching "Children About the Sun and Shadows" • Watch Video Demonstration of Inv. 1 Part1 • Review " Materials" "Getting Ready" & "Guiding the Investigation" • Prepare materials	• Pre- Assessment • Notebook Investigation Entry • Reading: Foss Student text *Sunrise and Sunset* pgs.1-3 • Writing Prompt: Review Questions p.3 • Journal Entry • Student Observation/ Anecdotal Notes Individual Work Scores sent to District Data to be recorded in Genesis	3 Sessions

Homework/Center Activities/Extra Practices

- Rising Readorium (20 min/night),
- Spelling City(vocab);
- FOSS Digital Resources: eBook, Audio Stories
- Suggested websites
- Word wall activities
- Cross Curriculum Extensions
- Informational Text -Reading

Investigation 1
Part 2 - Shadow Tracking

Students explore what makes shadows. They go outside and trace the shadows their bodies make on the schoolyard in the morning. After they draw this shadow, they predict where they will find their shadow when they observe it midday and just before the end of the school day. They relate the change in their shadows' position to the change in the Sun's position in the sky. Students read an article that explains how the Sun's position in the sky changes with the seasons.

Core Ideas/Understandings	*S&E Practices Alignment*	*CC Concepts Alignment*
• Shadows change (length and direction) during the day because the position of the Sun changes in the sky. • Shadows are the areas of darkness created when an opaque object blocks light.	***NGSS*** Analyze and Interpret Data (5 ESS1-2)	***NGSS*** Patterns (5ESS1-2)

Focus Questions

When you are outdoors on a sunny day, why do you have a shadow?
How do shadows change during a day and what does that tell us about the Sun?

Teacher Preparation	Body Of Evidence	Est. Time
• Watch Video Demo of Inv.1 Part 2 • Review "Materials" and "Getting Ready" **Note: STEP 9 MUST BE DONE 3-4 HOURS AFTER STEP 8 (ON THE SAME DAY)**	• Notebook Investigation Entry • Reading: FOSS Student text *Changing Shadows* pgs. 4-8 • Writing Prompt: Review Questions p.8 • Journal Entry • I Check 1 – Step 20 • Student Observation/Anecdotal Notes	3 sessions

Homework/Center Activities/Extra Practices

- Rising Readorium (20 min/night),
- Spelling City(vocab);
- FOSS Digital Resources: eBook, Audio Stories
- Suggested websites
- Word wall activities
- Cross Curriculum Extensions
- Informational Text -Reading

Culminating Activity

TBA

Investigation 2 ***"The Moon"***	
Summary Students observe the Moon in the sky during the day and night for a period of 4 weeks. They record the appearance of the moon and analyze the data to discover a sequence of changes, the lunar cycle. Students learn the names of the Moon phases and how to predict the next step in the sequence. Concepts are reinforced through simulations, readings, a video, and writing.	
Concepts: Objects in the sky move in regular and predictable patterns. The Moon orbits earth and can appear in the sky during both day and night. Telescopes are useful in studying the solar system as they make distant objects look closer and larger.	
New Vocabulary Investigation 2 Moon, cycle, star, satellite, repeating, pattern, natural	
Assessments Notebook Investigation Entry Part 2 Reading: Foss Student text Night Sky pgs. 14-17 Writing Prompt: Review Questions p.3 Journal Entry Student Observation/ Anecdotal Notes Individual Work	***Assessments Data Due for District Analysis*** I Check 2 Student Observation/ Anecdotal Notes

Investigation 2
Part 1: Night-Sky Observations

Summary

Students take a mini-field trip to the schoolyard to look for the moon. After recording the Moon's appearance, the class starts a Moon Calendar, on which they will record the Moon's appearance every day for a month. After observing the day Moon, students begin 4 days of night-sky observations at home. The observations include the nighttime appearance of the Moon and stars. The night observations of the Moon become the first four data entries in the Moon. Calendar. At the end, students read an expository article about the night sky.

Core Ideas/Understandings	*S&E Practices Alignment*	*CC Concepts Alignment*
• The Moon can be observed both day and night, but the Sun only during the day. • Moon phase is the portion of the illuminated half of the Moon that invisible from Earth. • Objects in the night sky include the Moon, stars, and other planets.	***NGSS*** Analyze and Interpret Data (5 ESS1-2)	***NGSS*** Patterns (5ESS1-2)

Focus Questions

- What natural objects can you see in the night sky?
- Do the stars and moon change position or stay the same place?
- How does the shape of the moon change over four weeks?

Teacher Preparation	Body Of Evidence	Est. Time
• **Read TE** • "At A Glance", "Background for the Teacher"& • "Teaching Children About The Moon" • **Watch** Video Demonstration of Inv. 2 Part1 • **Review** • " Materials" "Getting Ready" &"Guiding the Investigation" • Prepare materials	• Notebook Investigation Entry • Reading: FOSS Student text *Night Sky* pgs. 14-17 • Writing Prompt: Review Questions p. 18 • Journal Entry • Student Observation/Anecdotal Notes • Journal Entry	3sessions

Homework/Center Activities/Extra Practices

- Rising Readorium (20 min/night)
- Spelling City(vocab);
- FOSS Digital Resources: eBook, Audio Stories
- Suggested websites
- Word wall activities
- Cross Curriculum Extensions
- Informational Text -Reading

Investigation 2
Part 2 - Phases of the Moon

Summary

When 4 weeks of Moon observations are on the Moon calendar, students analyze the data to discover the sequence of changes. Students learn the names of the four specific phases: new Moon, first-quarter Moon, full moon, and third-quarter Moon. They learn the vocabulary used to describe the intermediate phases: waxing and waning for increasing and decreasing in apparent size and crescent and gibbous for phases that are smaller and larger than a quarter moon. Students use a light source and sphere to simulate an Earth/Moon/Sun system to explore the cause of Moon phases. The concepts are reinforced with a video, an interactive notebook sheet, and an expository reading

Core Ideas/Understandings	***S&E Practices Alignment***	***CC Concepts Alignment***
• The Moon changes its appearance, or phase, in a regular pattern over 4 weeks. • Moon phase is the portion of the illuminated half of the Moon that is visible from Earth.	***NGSS*** Analyze and Interpret Data (5 ESS1-2)	***NGSS*** Patterns (5ESS1-2)

Focus Questions

- What causes the length of a day, week, month, season and year?

Teacher Preparation	**Body Of Evidence**	**Est. Time**
• Watch Video Demo of Inv.2 Part 2 • Review "Materials" and "Getting Ready"	• Reading: FOSS Student text *Changing Moon* pgs. 19-28 & Summary 30-32 • Writing Prompt: Review Questions pg. 29, Summary questions pg 33 • Notebook Investigation Entry • Journal Entry • Student Observation/Anecdotal Notes • I Check 2: Step 18 • Homework (Suggestions) • Cross Curriculum Extensions Interdisciplinary Extensions	*4 sessions*

Homework/Center Activities/Extra Practices

- Rising Readorium (20 min/night)
- Spelling City(vocab);
- FOSS Digital Resources: eBook, Audio Stories
- Suggested websites
- Word wall activities
- Cross Curriculum Extensions
- Informational Text -Reading

Suggested Center Activities: *Spelling City, Foss suggested websites, word wall activities, extensions, additional supporting Science Activities,*

Culminating Activity: Continue to work on projects.

Investigation 3
The Stars

Summary

Students look to the night sky to observe the stars and are introduced to the constellations people have named. Students engage in simulations to understand why the stars appear to move across the sky during the night and why different stars can be seen from Earth at different seasons. Students read about the role of telescopes in astronomy research and about star scientists.

Concepts

- Objects in the sky move in regular and predictable patterns.
- Stars are suns positioned are great distances from earth.
- Stars form groups called constellations that appear to move together across the sky at night.

New Vocabulary Investigation 3

Astronomer, constellation, magnify, star, rotate, telescope

Assessments	***Assessments Data Due for District Analysis***
Notebook Investigation Entry Part 2 Reading: Foss Student text Night Sky pgs. 14-17 Writing Prompt: Review Questions p.3 Journal Entry Student Observation/ Anecdotal Notes Individual Work	I Check 3 Unit Assessment

Investigation 3
Part 1: Star Patterns

Summary

Students are introduced to constellations as groups of stars in predictable patterns. They model the process of identifying images in patterns of stars and providing names. Students then engage in a simulation of Earth's rotation. While rotating, they observe the appearance of stars rising in the east, traveling across the sky, and setting in the west. Finally, students observe a demonstration of the relationships and orientations of Earth, the Sun, and the Milky Way that produce the phenomenon of different stars visible in different seasons. Students read about stargazing and learn about stars and constellations.

Core Ideas/Understandings	***S&E Practices Alignment***	***CC Concepts Alignment***
• Stars are suns positioned at great distances from Earth. • Groups of stars form patterns are called constellations. • Stars (constellations) appear to move together across the night sky because Earth rotates. • Stars can be observed from Earth's surface only at night. • Different constellations can be observed during different seasons because Earth revolves around the Sun.	***NGSS*** Analyze and Interpret Data (5 ESS1-2)	***NGSS*** Patterns (5ESS1-2)

Focus Questions

- What groups of stars can we see in the night sky?
- If you stay out all night, you see groups of stars rise in the east, travel across the sky and set in the west. Why is that?
- Why do we see different groups of stars in the sky in winter and summer?
- How do telescopes help us study the stars?

Teacher Preparation	**Body Of Evidence**	**Est. Time**
• Read TE • "At A Glance", "-Background for the Teacher"&"Teaching Children About Stars" • Watch Video Demonstration of Inv. 3 Part1 • Review • " Materials" "Getting Ready" &"Guiding the Investigation" • Prepare materials	• Reading: FOSS Student text *Stargazing* pgs. /Looking through Telescopes pg. 40-43 • Writing Prompt: Review Questions pg. 43 • Notebook Investigation Entry • Journal Entry • Student Observation/Anecdotal Notes	3 sessions

Homework/Center Activities/Extra Practices

- Rising Readorium (20 min/night)
- Spelling City(vocab);
- FOSS Digital Resources: eBook, Audio Stories
- Suggested websites
- Word wall activities
- Cross Curriculum Extensions
- Informational Text -Reading

Investigation 3: ***Part 2. More About Stars***		
Summary Students watch a video that shows how star brightness, distance, and alignment converge to produce constellations. It also discusses telescopes and their important role in acquiring information about stars, planets, and the Moon. Students read about the role of telescopes in astronomy research and read short biographies of three star scientists who have built diverse careers studying and teaching about stars.		
Core Ideas/Understandings	***S&E Practices Alignment***	***CC Concepts Alignment***
• Telescopes make distant objects look closer and larger. • Stars are located at different distances from Earth. • Stars have different sizes and have different brightnesses..	***NGSS*** Analyze and Interpret Data (5 ESS1-2)	***NGSS*** Patterns (5ESS1-2)
Focus Question Why do constellations appear to move across the night sky? Why do we see different constellations in summer and winter?		
Teacher Preparation	**Body Of Evidence**	**Est. Time**
• *Watch Video Demo of Inv.2 Part 2* • *Review "Materials" and "Getting Ready"*	• Writing: Summary questions pg 50 • *Notebook Investigation Entry* • *Journal Entry* • Reading: FOSS Student text *Star Scientists* pgs. 47-49 and Summary Stars pgs. 47-49 • *Student Observation/Anecdotal Notes* • *Homework* • *Cross Curriculum Extensions* • *I Check 3: Step 13* • *Unit Assessment*	*4 sessions*
Homework/Center Activities/Extra Practices		
• Rising Readorium (20 min/night) • Spelling City(vocab); • FOSS Digital Resources: eBook, Audio Stories • Suggested websites	• Word wall activities • Cross Curriculum Extensions • Informational Text -Reading	

Unit ends 11/14/2014. The Unit takes an estimated 20 session and there are 25 sessions scheduled. (3 additional science days built in)
Session = 45 minutes

Body of Evidence

This guide is intended to support the collection of a Body of Evidence. A student's Body of Evidence should, at a minimum, include work form the listed prompts and in-class investigations that demonstrate a student's level of proficiency. The FOSS pre-assessment given at the beginning of the unit, the I-checks given after each investigation and Grade 3 DISTRICT Earth Science Benchmark Assessment given at the end of the unit (Post-assessment) may also be included in the body of evidence.

Writing Prompts Overview

These prompts support the investigations and can be used with their journaling.

Prompt 1: FOSS: Sun, Moon, and Stars: Investigation I -- The Sun – Part 1: Follow the Sun
1. Where is the Sun?
2. How does the Sun move from sunrise to sunset?

Prompt 2: FOSS: Sun, Moon, and Stars: Investigation 1 -- The Sun – Part 2: Shadow Tracking
1. What two ways does the Sun's position in the sky change?
2. What are shadows, and what causes them?
3. What causes shadows to change size and direction during a day?
4. Describe the Sun's change of position in the sky during 1 day.
5. Describe the Sun's change of position in the sky during 1 year

Prompt 3: FOSS: Sun, Moon, and Stars: Investigation 2 -- The Moon At A Glance – Part 1: Night-Sky Observations
1. Can you see stars, planets, or the Moon?
2. What natural objects can you see in the night sky?
3. Do the stars and moon change position or stay in the same place every night?

Prompt 4: FOSS: Sun, Moon, and Stars: Investigation 2 -- The Moon At A Glance – Part 1: Night-Sky Observations
1. What are some of the objects you can see in the night sky that you can't see during the day?
2. Which object is the brightest object in the night sky?
3. What star is the closest to planet Earth?

Prompt 5: FOSS: Sun, Moon, and Stars: Investigation 2 -- The Moon At A Glance – Part 2: Phases of the Moon
1. How does the shape of the Moon change over 4 weeks?

Prompt 6: FOSS: Sun, Moon, and Stars: Investigation 3 -- The Stars – Part 1: Star Patterns
1. Why do stars move across the night sky?
2. What is a constellation?
3. Why are the constellations seen in the summer sky different than those seen in the winter sky?
4. Imagine you could see stars during the daytime. What constellation would you see at noon in the winter? Why do you think so?

Prompt 7: FOSS: Sun, Moon, and Stars: Investigation 3 -- The Stars – Part 2: More About Stars
1. How many stars are there?
2. What is the name of star closes to Earth?
3. What happens to stars at the end of their lives?
4. What is a constellation?
5. What is the Milky Way?
6 What does a telescope do?
7. Why are telescopes put on top of mountains or in space?

Unit Resources:

Content books-

- FOSS Student Book with Unit
- See Reading Extensions in TE
- FOSS Reading Supplemental Books
- Sun, Moon and Stars Series

FOSS Website:
www.fossweb.com (additional resources and web sites found there)

Spelling City:
www.spellingcity.com

United Streaming Videos
http://www.discoveryeducation.com//?ref=streaming&returnUrl=http%3A%2F%2Fstreaming%2Ediscoveryeducation%2Ecom%2Findex%2Ecfm

Brainpop (see if your school has license for this)
http://www.brainpopjr.com/