San Diego Unified School District
Science Department

Grade 3 – Sun, Moon, and Stars

Earth Science

Unit of Study

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Science Vision for
San Diego Unified School District
Science is an integral part of the intellectual development of a child. Interest in science begins with attitudes and values established in the earliest years through daily experiences. Students graduating from high school must have a foundation in scientific knowledge and evidence based reasoning.

Updated versions of this unit of study can be found online at www.sandi.net/science.

San Diego Unified School District
Science Department

Grade 3 – Sun, Moon, and Stars
Module Overview

Overview of the Unit
The Sun, Moon, and Stars Module consists 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.

Grade 3 Earth Science Conceptual Flow

Concept #1
Objects in the sky move in regular and predictable patterns.

Subconcepts Investigation #1: The Sun	Subconcepts Investigation #2: The Moon	Subconcepts Investigation #3: The Stars
The Earth spins on its axis.	Objects in the night sky include the Moon, stars, and other planets.	The Sun is a star positioned a great distance from the Earth.
The Sun rises in the east and sets in the west every day.	Earth is one of several planets that orbit the sun in the solar system.	Groups of stars form patterns called constellations.
A compass is a tool used to determine directions (east, west, north, south).	The Moon orbits the Earth.	Stars (constellations) appear to move together across the night sky because Earth rotates.
Day happens when a location on Earth is facing toward the Sun.	The Moon can appear in the sky during both day and night.	Stars can be observed from Earth's surface only at night.
Night happens when a location on Earth is facing away from the Sun.	The Moon changes its appearance, or phase, in a regular pattern over 4 weeks.	Different constellations can be observed during different seasons because Earth revolves around the Sun.
The exact path of the Sun takes in the sky varies by season.	Moon phase is the portion of the illuminated half of the Moon that is visible from Earth.	Stars are different sizes and have different brightnesses.
		Telescopes make distant objects look closer and larger.

Grade 3 Earth Science Conceptual Flow (continued)

Concept #2
Light has a source and travels in a direction. (Physical Science)

Subconcepts **Investigation #1: The Sun**
Shadows are the areas of darkness created when an opaque object blocks light.
The shapes of shadows change over a day and depend on the position of the Sun in the sky.

3rd Grade Science Content Standards Addressed in this Module

Earth Sciences

ES4 Objects in the sky move in regular and predictable patterns. As a basis for understanding this concept:

- ES4a Students know the patterns of stars stay the same, although they appear to move across the sky nightly, and different stars can be seen in different seasons.
- ES4b Students know the way in which the Moon's appearance changes during the four-week lunar cycle.
- ES4c Students know telescopes magnify the appearance of some distant objects in the sky, including the Moon and the planets. The number of stars that can be seen through telescopes is dramatically greater than the number that can be seen by the unaided eye.
- ES4d Students know that Earth is one of several planets that orbit the Sun and that the Moon orbits Earth.
- ES4e Students know the position of the Sun in the sky changes during the course of the day and from season to season.

Physical Sciences

PS2 Light has a source and travels in a direction. As a basis for understanding this concept:

- PS2a Students know sunlight can be blocked to create shadows.

Investigation and Experimentation

I&E5 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- I&E5d Predict the outcome of a simple investigation and compare the result with the prediction.
- I&E5e Collect data in an investigation and analyze those data to develop a logical conclusion.

Pacing the Unit as a Whole

Pre-Test				
Day 1 Start Inv. 1 Part 1 A	**Day 2** A/W	**Day 3** R	**Day 4** Start Inv. 1 Part 2 A	**Day 5** A/W
Day 6 R	**Day 7** No Science Day	**Day 8** I-Check 1	**Day 9** No Science Day	**Day 10** Review
Day 11 Start Inv. 2 Part 1 A	**Day 12** No Science Day	**Day 13** A/W	**Day 14** No Science Day	**Day 15** R
Day 16 Start Inv. 3 Part 1 A	**Day 17** No Science Day	**Day 18** A/W	**Day 19** No Science Day	**Day 20** R
Day 21 Start Inv. 3 Part 2 A/W	**Day 22** No Science Day	**Day 23** R	**Day 24** No Science Day	**Day 25** R
Day 26 R	**Day 27** No Science Day	**Day 28** I-Check 3	**Day 29** No Science Day	**Day 30** Review
Day 31 Start Inv. 2 Part 2 A	**Day 32** A	**Day 33** W	**Day 34** R	**Day 35** **A**/R
Day 36 I-Check 2	**Day 37** No Science Day	**Day 38** Review	**Day 39** No Science Day	**Day 40** Benchmark Assessment

NOTE: Start Investigation 2 when the Moon is in first-quarter phase. Refer to Getting Ready for Investigation 2 for more about determining the start time for Moon study. Students need to observe the Moon for a month in Investigation 2, Part 1. That is why Investigation 2, Part 2 starts on day 31.

A – Active Investigation sessions include firsthand observations of objects in the sky, active thinking about the experiences, small group discussion, simulations, writing in science notebooks, learning new vocabulary in context, viewing a video, and completing written embedded assessments to inform instruction. (Approximately 60 minutes)

W – Wrap-up sessions are teacher-directed vocabulary reinforcement and science content review. (Approximately 30 minutes)

R – Reading sessions (*Science Resources* book) include individual and interactive reading, answering review questions, and discussing the reading to ensure that students integrate the information. (Approximately 30 minutes)

I-Checks are short summative assessments. Students respond to written prompts. (Approximately 30 minutes)

Grade 3 – Sun, Moon, and Stars
Pacing Guide – Investigation 1: The Sun

Investigation Overview

Investigation 1: The Sun
Concept: Objects in the sky move in regular and predictable patterns.
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.

Part 1: Follow the Sun	**Part 2: Shadow Tracking**
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.	Summary 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.
Subconcepts ▪ 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). ▪ Earth is a globe and spins on its axis.	Subconcepts ▪ Shadows are the areas of darkness created when an opaque object blocks light. ▪ The shapes of shadows change over a day and depend on the position of the Sun in the sky. ▪ Day happens when a location on Earth is facing toward the Sun. ▪ Night happens when a location on Earth is facing away from the Sun. ▪ The exact path the Sun takes in the sky varies by season.
Time Allocation Active Investigation: 2 days Reading: 1 day	Time Allocation Active Investigation: 2 days Reading: 1 day Assessment: 2 days
CA Science Standards ES4e, I&E5d, I&E5e	CA Science Standards ES4e, PS2a, I&E5d, I&E5e

Grade 3 – Sun, Moon, and Stars
Pacing Guide – Investigation 1: The Sun

Pacing Guide – Investigation 1: The Sun

Day 1		Day 2		Day 3	
Prep	Instruction	Prep	Instruction	Prep	Instruction
❑ Read "At a Glance" *TG p. 36-37* ❑ Read "Background for the Teacher" *TG p. 38-42* ❑ Read "Teaching Children About The Sun and Shadows" *TG p. 43* ❑ Watch Video demo of Inv. 1, Pt 1 ❑ Review "Materials" and "Getting Ready" *TG p. 44-48* ❑ Administer FOSS Grade 3 Earth Science Pretest	Guiding the Investigation ❑ "Part 1: Follow the Sun" Steps 1-8 *TG p. 49-52*		Guiding the Investigation ❑ "Part 1: Follow the Sun; Wrapping up Part 1" Steps 9-17 *TG p. 53-56* ❑ **Body of Evidence Prompt #1** ***TG p. 135***		Reading in Science Resources ❑ Steps 18-19 *TG p. 57* Student Reading: Science Resources p. 167-169

Pacing Guide – Investigation 1: The Sun (continued)

Day 4		Day 5		Day 6	
Prep	Instruction	Prep	Instruction	Prep	Instruction
❑ Watch Video demo of Inv. 1, Pt 2 ❑ Review "Materials" and "Getting Ready" *TG p. 58-59*	Guiding the Investigation ❑ "Part 2: Shadow Tracking" Steps 1-8 *TG p. 60-62* ❑ "Part 2: Shadow Tracking" Step 9 ***PLEASE NOTE: STEP 9 MUST BE DONE ON THE SAME DAY AS STEP 8; 3-4 HOURS LATER*** *TG p. 62-63*		Guiding the Investigation ❑ "Part 2: Shadow Tracking; Wrapping up Part 2" Steps 10-14 *TG p. 63-66*		Reading in Science Resources ❑ Step 15-19 *TG p. 67-68, 184-185* ❑ **Body of Evidence Prompt #2** ***TG p. 136*** Student Reading: Science Resources p. 170-178

Day 7		Day 8		Day 9	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	No Science Day		Concluding Investigation 1 ❑ I-Check 1 Step 20 *TG p. 69, 210-215, 233-235*		No Science Day

Day 10	
Prep	Instruction
	❑ Review ❑ Interdisciplinary Extensions *TG p. 70-72* Student Reading: Science Resources p. 179

Grade 3 – Sun, Moon, and Stars
Pacing Guide – Investigation 2: The Moon

Investigation Overview

Investigation 2: The Moon
Concept: Objects in the sky move in regular and predictable patterns.
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.

Part 1: Night-Sky Observations	**Part 2: Phases of the Moon**
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 everyday 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.	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.
Subconcepts ▪ Objects in the night sky include the Moon, stars, and other planets. ▪ Earth is one of several planets that orbit the Sun in the solar system. ▪ The Moon orbits Earth. ▪ The moon can appear in the sky during both night and day.	Subconcepts ▪ 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.
Time Allocation Active Investigation: 2 days Reading: 1 day	Time Allocation Active Investigation: 1 day Video: 1 day Reading: 2 days Assessment: 2 days
CA Science Standards ES4b, ES4d, I&E5e	CA Science Standards ES4b, ES4d, I&E5e

Grade 3 – Sun, Moon, and Stars
Pacing Guide – Investigation 2: The Moon

Pacing Guide – Investigation 2: The Moon

Day 11		Day 12		Day 13	
Prep	Instruction	Prep	Instruction	Prep	Instruction
❑ Read "At a Glance" *TG p. 74-75* ❑ Read "Science Background" *TG p. 76-77* ❑ Read "Teaching Children About The Moon" *TG p. 78* ❑ Watch Video demo of Inv. 2, Pt 1 ❑ Review "Materials" and "Getting Ready" *TG p. 79-81*	Guiding the Investigation ❑ "Part 1: Night-Sky Observations" Steps 1-6 *TG p. 82-84*		No Science Day	❑	Guiding the Investigation ❑ "Part 2: Night-Sky Observations; Wrapping up Part 1" Steps 7-11 *TG p. 85-87* ❑ **Body of Evidence Prompt #3** ***TG p. 137***

Note: Refer to "Getting Started" for Investigation 2 for more about determining the start time for Moon study. Students need to observe the Moon for a month in Investigation 2, Part 1. That is why Investigation 2, Part 2 starts on day 31. Begin day 16 with Investigation 3, Part 1 (page 13 of Unit of Study).

Day 14		Day 15		Day 31	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	No Science Day		Reading in Science Resources ❑ Steps 12-14 *TG p. 88, 186-187* ❑ **Body of Evidence Prompt #4** ***TG p. 138*** Student Reading: Science Resources p. 180-184	❑ Watch Video demo of Inv. 2, Pt 2 ❑ Review "Materials" and "Getting Ready" *TG p. 89-91*	Guiding the Investigation ❑ "Part 2: Phases of the Moon" Steps 1-4 *TG p. 92-93*

Pacing Guide – Investigation 2: The Moon (continued)

Day 32		Day 33		Day 34	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	Guiding the Investigation ❑ "Part 2: Phases of the Moon" Steps 5-11 *TG p. 93-95* ❑ **Body of Evidence Prompt #5** ***TG p. 139***		Guiding the Investigation ❑ "Wrapping up Part 2" Steps 12-13 *TG p. 96*		Reading in Science Resources ❑ Steps 14-15 *TG p. 97, 188-189* Student Reading: Science Resources p. 185-195
Day 35		**Day 36**		**Day 37**	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	Concluding Investigation 2 ❑ Steps 16-17 *TG p. 98* Student Reading: Science Resources p. 196-199		Concluding Investigation 2 ❑ I-Check 2 Step 18 *TG p. 98, 216-219, 236-237*		No Science Day
Day 38		**Day 39**		**Day 40**	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	❑ Review ❑ Interdisciplinary Extensions *TG p. 99-101* Student Reading: Science Resources p. 200		No Science Day		❑ Administer DISTRICT Grade 3 Earth Science Benchmark Assessment

Grade 3 – Sun, Moon, and Stars
Pacing Guide – Investigation 3: The Stars

Investigation Overview

Investigation 3: The Stars

Concept: Objects in the sky move in regular and predictable patterns.

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.

Part 1: Star Patterns	**Part 2: More About Stars**
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.	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.
Subconcepts ▪ Stars are suns positioned at great distances from Earth. ▪ Groups of stars form patterns 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.	Subconcepts ▪ Telescopes make distant objects look closer and larger. ▪ Stars are located at different distances from Earth. ▪ Stars have different sizes and have different brightnesses.
Time Allocation Active Investigation: 2 days Reading: 1 day	Time Allocation Video: 1 day Reading: 2 days Assessment: 2 days
CA Science Standards ES4a	CA Science Standards ES4a, ES4c

Grade 3 – Sun, Moon, and Stars
Pacing Guide – Investigation 3: The Stars

Pacing Guide – Investigation 3: The Stars

Day 16		Day 17		Day 18	
Prep	Instruction	Prep	Instruction	Prep	Instruction
❑ Read "At a Glance" *TG p. 104-105* ❑ Read "Science Background" *TG p. 106-110* ❑ Read "Teaching Children About the Stars" *TG p. 111* ❑ Watch Video demo of Inv. 3, Pt 1 ❑ Review "Materials" and "Getting Ready" *TG p. 112-114*	Guiding the Investigation ❑ "Part 1: Star Patterns" Steps 1-9 *TG p. 115-119*		No Science Day	❑	Guiding the Investigation ❑ "Part 1: Star Patterns; Wrapping up Part 1" Steps 10-13 *TG p. 120-122*
Day 19		**Day 20**		**Day 21**	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	No Science Day		Reading in Science Resources ❑ Steps 14-16 *TG p. 123, 190-191* ❑ **Body of Evidence Prompt #6** ***TG p. 141*** Student Reading: Science Resources p. 201-205	❑ Watch Video demo of Inv. 3, Pt 2 ❑ Review "Materials" and "Getting Ready" *TG p. 124-125*	Guiding the Investigation ❑ "Part 2: More About Stars; Wrapping up Part 2" Steps 1-7 *TG p. 126-128* ❑ **Body of Evidence Prompt #7** ***TG p. 142***

Pacing Guide – Investigation 3: The Stars (continued)

Day 22		Day 23		Day 24	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	No Science Day		Reading in Science Resources ❑ Steps 8-9 *TG p. 129* Student Reading: Science Resources p. 206-209		No Science Day
Day 25		**Day 26**		**Day 27**	
Prep	Instruction	Prep	Instruction	Prep	Instruction
	Reading in Science Resources ❑ Steps 10 *TG p. 129* Student Reading: Science Resources p. 210-212		Concluding Investigation 3 ❑ Steps 11-12 *TG p. 130* Student Reading: Science Resources p. 213-216		No Science Day
Day 28		**Day 29**		**Day 30**	
Prep	Prep	Prep	Instruction	Prep	Instruction
	Concluding Investigation 3 ❑ I-Check 3 Step 13 *TG p. 130, 220-225, 238-240*		No Science Day		❑ Review ❑ Interdisciplinary Extensions *TG p. 131-133* Student Reading: Science Resources p. 217-218

Note: Return to Investigation 2, Part 2, for day 31 of instruction (on Page 10 of Unit of Study).

Grade 3 – Sun, Moon, and Stars
Recommended Body of Evidence

Overview

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.

Download samples of proficient work at https://eteams.sandi.net/sites/sbrc

Recommended Body of Evidence – Grade 3 Earth Science

Concept #1 Objects in the sky move in regular and predictable patterns. (CA Standards ES4a, ES4b, ES4c, ES4d, ES4e)
Prompt 1: **(I&E) FOSS: Sun, Moon, and Stars: Investigation I -- The Sun – Part 1: Follow the Sun** **(*TG p. 135* Where's the Sun? – No. 1 – Science Notebook)** a. Work with a partner. One person is the pointer. The other person is the observer. B. You will go outside. The pointers and observers for each pair will stand in a certain position. The pointer will point at the Sun with one finger on one hand. C. The observer draws the pointer's arm on the armless figure on the notebook sheet. Be sure to get the angle of the pointer's arm just right. D. Write the time of day next to the arm. E. After you draw the arm and record the time, switch places. Te person who was recording now points at the Sun. The new observer draws the arm and writes the time next to it. ***Prompt 2:*** **(I&E) FOSS: Sun, Moon, and Stars: Investigation 1 -- The Sun – Part 2: Shadow Tracking** **(*TG p. 136* Sun and Shadows – No. 2 – Science Notebook)** 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:*** **(I&E) FOSS: Sun, Moon, and Stars: Investigation 2 -- The Moon At A Glance – Part 1: Night-Sky Observations** **(*TG p. 137* Night-Sky Log – No. 3 – Science Notebook)** a. Record the date and time of your observation. B. Record a few comments about your observation of the sky. Can you see stars, planets, or the Moon? C. If you can see the Moon, record what it looks like in the circle. D. Bring your log back to school on Friday. ***Prompt 4:*** **(I&E) FOSS: Sun, Moon, and Stars: Investigation 2 -- The Moon At A Glance – Part 1: Night-Sky Observations** **(*TG p. 138* The Night Sky Review – No. 4 – Science Notebook)** 1. What are some of the objects you can see in the night sky that you can't see during the day? Which object is the brightest object in the night sky? 3. What star is the closest to planet Earth? 4. Look at the picture of the crescent Moon on page 184 of the *Science Resources* book. What is the other bright object you can see in the night sky?

Recommended Body of Evidence – Grade 3 Earth Science (continued)

Prompt 5: **(I&E) FOSS: Sun, Moon, and Stars: Investigation 2 -- The Moon At A Glance – Part 2: Phases of the Moon**
(*TG p. 139* Phases of the Moon – No. 5 – Science Notebook)
The Moon orbits Earth during a 4-week lunar cycle. Place in each box the phase of the Moon we see from Earth during the cycle and name the phase. Note where the Sun is.

Prompt 6: **FOSS: Sun, Moon, and Stars: Investigation 3 -- The Stars – Part 1: Star Patterns**
(*TG p. 141* Stargazing Review – No. 7 – Science Notebook)
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**
(*TG p. 142* All About the Stars – No. 8 – Science Notebook)
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?

Grade 3 – Sun, Moon, and Stars
Module Materials and Equipment

Materials Provided
The FOSS kit comes with most of the supplies that are needed to teach the unit. The kits will be delivered to the school site prior to the start of the 12-week unit of instruction. At the end of the 12-weeks, the kit will be returned to the Science Resource Center where it will be refurbished and prepared for its next use. Please review the refurbishment calendar for kit drop-off and return dates. Kits must be returned according to the refurbishment calendar to ensure that all kits are checked and restocked with consumable materials.

Materials Supplied by the Teacher or School Site
Be aware that the classroom teacher or school site must supply a few items. These are indicated in the materials list for each part of the investigation with an asterisk (*). Here is a summary of those items.

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