

CHECKLIST OF CA SCIENCE STANDARDS SUN, MOON, AND STARS

PURPOSE

The checklist is

- A sequential listing of instructional activities through each module.
- A place to document teaching and coverage of CA standards.
- A correlation tool showing where each CA standard is addressed.

Instructional sequence. The Checklist displays the sequence of instruction as the module progresses through 1) active investigation, 2) reading, and 3) assessment. The chart is broken out by investigation, part, and session number.

Most sessions start with active investigation, which may include teacher demonstration, hands-on activity, recording/writing in notebooks, class discussion, teacher explanation, and vocabulary reinforcement. Next students read, answer review questions, and discuss the reading. Finally, embedded assessments are completed, reviewed, and self-assessed. FOSS Teacher Guide and *Science Resources* book pages where CA standards are addressed are referenced through the instructional sequence.

Documentation of teaching and coverage. The Checklist helps teachers keep track of the class's progress through the module. Teachers can copy the Checklist and record the date of each instruction session. The completed Checklist can serve as a planning tool for teaching the module a second time.

Correlation with CA standards. The Checklist allows teachers to identify all the places in the teacher guide and *Science Resources* book where any specific CA standard is addressed. Teachers can quickly find the page references for any point in the instruction. The Checklist provides a table of evidence showing where the CA standards are addressed through multiple exposures and with a minimum of 20-25% hands-on activities integrated cohesively into the instruction.



FOSS AND CALIFORNIA STANDARDS

The **Sun, Moon, and Stars Module** supports the following Physical and Earth Sciences Content Standards for grade 3.*

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.

The **Sun, Moon, and Stars Module** supports the following Investigation and Experimentation Content Standards for grade 3.*

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.

*Science Content Standards for California Public Schools: Kindergarten through Grade Twelve (Sacramento: California Department of Education, 2000).



Checklist of CA Science Standards for Sun, Moon, and Stars Investigation 1

Content Standard Focus	Investigation 1: The Sun	Teacher Guide (Science Resources) pages
ES4e, I&E5d, I&E5e	Part 1: Follow the Sun—3 sessions	44–57 (167–169)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led discussion	49–50
	Hands-on with compasses inside	50
	Teacher presentation	50–51
	Hands-on with compasses outdoors	51–52
	Teacher-led class discussion	52
DATE OF INSTRUCTION	SESSION 2	
	Teacher presentation	53
	Hands-on with recording Sun location	54
	Writing in notebook (Where’s the Sun?)	54
	Teacher-led class discussion	55
	Vocabulary instruction and content review	56
DATE OF INSTRUCTION	SESSION 3	
	Student reading with discussion questions	57 (167–169)
	Writing in notebook	57
ES4e, PS2a, I&E5d, I&E5e	Part 2: Shadow Tracking—5 sessions	58–69 (170–185)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion	60
	Teacher presentation	60
	Teacher-led class discussion	60–61
	Hands-on with tracing AM shadows outdoors	61
	Hands-on with shadow challenges	61–62
	Teacher-led class discussion	62
	Hands-on with tracing PM shadows outdoors	62
	Teacher-led class discussion	62–63
	Teacher presentation	63–64
	Teacher-led class discussion	65
	Vocabulary instruction and content review	66
DATE OF INSTRUCTION	SESSION 2	
	Student reading with discussion questions	67 (170–174)
	Writing in notebook	67
DATE OF INSTRUCTION	SESSION 3	
	Student summary reading with questions	68 (175–185)
	Writing in notebook	68
DATE OF INSTRUCTION	SESSIONS 4–5	
	Assess Progress—I-Check 1 and review	69



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FOSS Checklist of CA Science Standards for Sun, Moon, and Stars Investigation 2

Content Standard Focus	Investigation 2: The Moon	Teacher Guide (Science Resources) pages
ES4b, ES4d, I&E5e	Part 1: Night-Sky Observations—3 sessions	79–88 (180–184)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led discussion	82
	Hands-on with daytime sky observations	82
	Teacher presentation	82–84
	Teacher-led class discussion	84
	Hands-on with night sky observations	84
	Writing in notebook (Night-Sky Log)	84
	Teacher-led class discussion	85–86
	Vocabulary instruction and content review	87
DATE OF INSTRUCTION	SESSION 2	
	Student reading with discussion questions	88 (180–184)
	Writing in notebook (The Night Sky Review)	88
ES4b, ES4d, I&E5e	Part 2: Phases of the Moon—7 sessions	89–98 (185–200)
DATE OF INSTRUCTION	SESSIONS 1–2	
	Teacher-led class discussion	92
	Teacher presentation	92–93
	View and discuss video (<i>All about the Moon</i>)	93
DATE OF INSTRUCTION	SESSION 3	
	Teacher presentation	93–94
	Hands-on with Moon-phase models	94
	Teacher-led class discussion	94–95
	Writing in notebook (Phases of the Moon)	95
	Vocabulary instruction and content review	96
DATE OF INSTRUCTION	SESSION 4	
	Student reading with discussion questions	97 (185–195)
	Writing in notebook	97
DATE OF INSTRUCTION	SESSION 5	
	Student summary reading with questions	98 (196–200)
	Writing in notebook	98
DATE OF INSTRUCTION	SESSIONS 6–7	
	Assess Progress—I-Check 2 and review	98



Checklist of CA Science Standards for Sun, Moon, and Stars Investigation 3

Content Standard Focus	Investigation 3: The Stars	Teacher Guide (Science Resources) pages
ES4a	Part 1: <i>Star Patterns</i>—3 sessions	112–123 (201–205)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led discussion	115
	Teacher presentation	115–117
	Hands-on with drawing constellations	117
	Teacher presentation	118
	Small group discussion	118
	Teacher-led class discussion	118
	Hands-on with star movement simulation	119
DATE OF INSTRUCTION	SESSION 2	
	Teacher presentation	120–121
	Vocabulary instruction and content review	122
DATE OF INSTRUCTION	SESSION 3	
	Student reading with discussion questions	123 (201–205)
	Writing in notebook (Stargazing Review)	123
ES4a, ES4c	Part 2: <i>More About Stars</i>—5 sessions	124–130 (206–218)
DATE OF INSTRUCTION	SESSION 1	
	Teacher-led class discussion	126
	Teacher presentation	126
	Writing in notebook (<i>All About the Stars</i>)	127
	Viewing and discussing video (<i>All About Stars</i>)	127
	Vocabulary instruction and content review	128
DATE OF INSTRUCTION	SESSION 2	
	Student reading with discussion questions	129 (206–212)
	Writing in notebook	129
DATE OF INSTRUCTION	SESSION 3	
	Student summary reading with questions	130 (213–218)
	Writing in notebook	130
DATE OF INSTRUCTION	SESSIONS 4–5	
	Assess Progress—I-Check 3 and review	130
	Assessment: Posttest	130