

WASHINGTON STATE LASER

Alignment of Washington 6-8
Science Standards by EALR/Domain for

SEPUP

Earth in Space

November 1, 2010

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Inquiry ~ INQA**

Content Standard Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.

Performance Expectation • Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 71	Aligned with modifications (see comments)	SG pp F-4-9; TG pp F-4-5; Student Sheet 71.a, 71.b	Teacher needs to ask students to explain what questions they would ask and how they would test them. The unit/lesson is an integral part of a learning progression.
Activity 72	Aligned with modifications (see comments)	SG pp F-11-12; TG pp F-16-18	Students are not technically generating a question. Good discussion opportunity. The unit/lesson is an integral part of a learning progression.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Inquiry ~ INQB**

Content Standard

Different kinds of questions suggest different kinds of scientific investigations.

Performance Expectation

- Plan and conduct a scientific investigation (e.g., field study, systematic observation, controlled experiment, model, or simulation) that is appropriate for the question being asked.
- Propose a hypothesis, give a reason for the hypothesis, and explain how the planned investigation will test the hypothesis.
- Work collaboratively with other students to carry out the investigations.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 71	Aligned with modifications (see comments)	SG pp F-11; TG pp F-5-9	The unit/lesson contains many opportunities to discuss different kinds of scientific investigations. This unit/lesson is a part of a conceptual sequence.
Activity 72	Aligned with modifications (see comments)	SG pp F-11-13; TG pp F-14-16	When students are designing their investigation they need to ask a question that can be answered scientifically and develop a hypothesis to test that question.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Inquiry ~ INQC**

Content Standard

Collecting, analyzing, and displaying data are essential aspects of all investigations.

Performance Expectation

- Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative.
- Recognize and interpret patterns – as well as variations from previously learned or observed patterns – in data, diagrams, symbols, and words.
- Use statistical procedures (e.g., median, mean, or mode) to analyze data and make inferences about relationships.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 71	Aligned with modifications (see comments)	SG pp F-5-9; TG pp F-5-9	Must use discussion guides from TG. The teacher needs to intentionally take advantage of multiple opportunities to discuss how scientists work.
Activity 72	Aligned as designed	SG p F-12; TG pp F-16-17	Recommend using scoring material from TG section TR 162-4.
Activity 75	Aligned as designed	SG pp F24-25; TG pp F-51-52	This unit/lesson is a part of a conceptual sequence. Students are asked to complete a graph based on existing data, and analyze the trends.
Activity 81	Aligned with modifications (see comments)	SG p F-50 Question 3, 5	Students are asked to analyze and explain understanding using pictures as well as words. The unit/ lesson contains opportunities for the use of terms related to the Moon's phases, but it requires the intentional use by teachers.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Inquiry ~ INQD**

Content Standard

For an experiment to be valid, all (controlled) variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded. If a variable cannot be controlled, it must be reported and accounted for.

Performance Expectation

• Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables. Determine which variables should be kept the same (controlled), which (independent) variable should be systematically manipulated, and which responding (dependent) variable is to be measured and recorded. Report any variables not controlled and explain how they might affect results.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 72	Aligned with modifications (see comments)	SG pp F-11-12; TG pp F-16-17	Teacher must be intentional about use of the terms (vocabulary) responding, manipulated, and controlled variables.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Inquiry ~ INQE**

Content Standard Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations.

Performance Expectation • Create a model or simulation to represent the behavior of objects, events, systems, or processes. Use the model to explore the relationship between two variables and point out how the model or simulation is similar to or different from the actual phenomenon.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 73	Aligned with modifications (see comments)	SG pp F-14-16; TG pp F-29-30	Teacher must make use of information found in TG about modeling and how to present the model for this section.
Activity 76	Aligned as designed	SG pp F-27-29; TG pp F-62-63	
Activity 77	Aligned as designed	SG pp F-32-34; TG pp F-73-75	
Activity 81	Aligned with modifications (see comments)	SG pp F-48-50; Student Sheet 71.1b	Students are asked to use an existing computer model. They also compare it to the demonstration from Activity 80.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Inquiry ~ INQE**

Content Standard It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.

- Generate a scientific conclusion from an investigation using inferential logic, and clearly distinguish between results (e.g., evidence) and conclusions (e.g., explanation).
- Describe the differences between an objective summary of the findings and an inference made from the findings.

Performance Expectation

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 71	Aligned with modifications (see comments)	TG p F-7, Follow up Question 4	Teacher must be intentional about sharing that Tyler has not stated a conclusion, but is using inferential logic and evidence from his experiment.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Inquiry ~ INQH**

Content Standard

Science advances through openness to new ideas, honesty, and legitimate skepticism. Asking thoughtful questions, querying other scientists' explanations, and evaluating one's own thinking in response to the ideas of others are abilities of scientific inquiry.

Performance Expectation

- Recognize flaws in scientific claims, such as uncontrolled variables, over generalizations from limited data, and experimenter bias.
- Listen actively and respectfully to research reports by other students. Critique their presentations respectfully, using logical argument and evidence.
- Engage in reflection and self-evaluation.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 71	Aligned with modifications (see comments)	SG p F-4; TG p F-5	Talking it over and Analysis questions are very important to proper development. Teacher may be guided by TG in these discussions.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Application ~ APPA**

Content Standard People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.

Performance Expectation • Describe how a technology has changed over time in response to societal challenges.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 74	Aligned as designed	SG Reading selection pp F-19-21	The unit/lesson contains many opportunities to discuss how advances in human civilization are linked to advances in technology.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Application ~ APPE**

Content Standard Scientists and engineers often work together to generate creative solutions to problems and decide which ones are most promising.

Performance Expectation • Collaborate with other students to generate creative solutions to a problem, and apply methods for making tradeoffs to choose the best solution.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 93	Aligned as designed	SG pp 39-40, TG p 76	Students are asked to work collaboratively to determine the the shape of the surface of a "planet" simulating the use of technical tool (engineer) while also seeking to understand the formations found on planets (scientists).

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Application ~ APPH**

Content Standard People in all cultures have made and continue to make contributions to society through science and technology.

Performance Expectation • Describe scientific or technological contributions to society by people in various cultures.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 74	Aligned as designed	SG reading p F-19; Extension p F-22; TG p F-43	The unit/lesson contains many opportunities to discuss/research how people in all cultures make contributions to society through science and technology.
Activity 83	Aligned as designed	SG pp F-55-63; TG pp F-127-137	

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Earth Science ~ ES1A**

Content Standard

The Moon's monthly cycle of phases can be explained by its changing relative position as it orbits Earth. An eclipse of the Moon occurs when the Moon enters Earth's shadow. An eclipse of the Sun occurs when the Moon is between the Earth and Sun, and the Moon's shadow falls on the Earth.

Performance Expectation

- Use a physical model or diagram to explain how the Moon's changing position in its orbit results in the changing phases of the Moon as observed from Earth.
- Explain how the cause of an eclipse of the Moon is different from the cause of the Moon's phases.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 79	Aligned with modifications (see comments)	SG p F-42; TG pp F-86-90; Transparency 19.1; Student Sheet 79.1, 79.2	The unit/lesson has intentional use of terms, but teacher must make sure to use and check for understanding. Student sheet 79.1 should be distributed at the start of the unit. Do not wait until this lesson. Eclipse not covered.
Activity 80	Aligned with modifications (see comments)	SG pp F-45-50; TG pp F-97-105	Teacher must be intentional about sharing and modeling information about a lunar eclipse. See TG pp F-101 (last paragraph)- F-102.
Activity 81	Aligned with modifications (see comments)	SG p F-48; TG p F-108; TG pp F-109-11; SG p F-50 extension	Teacher must make use of information found in the extension to cover needed information about eclipses of the Sun and Moon.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Earth Science ~ ES1C**

Content Standard Most objects in the Solar System are in regular and predictable motion. These motions explain such phenomena as the day, the year, phases of the moon, and eclipses.

Performance Expectation • Use a simple physical model or labeled drawing of the Earth-Sun-Moon system to explain day and night, phases of the Moon, and eclipses of the Moon and Sun.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 71	Aligned as designed	SG p F-10, TG pp F-5-7	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence and provides a base for conceptually understanding the movement of bodies in the solar system.
Activity 72	Aligned as designed	SG pp F-12-13, TG p F-19, pp F-23-25	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence and provides a base for conceptually understanding the movement of bodies in the solar system.
Activity 73	Aligned with modifications (see comments)	SG. p F-16; TG pp F-32; Student sheet 73.1-73.3	The unit/lesson is an integral part of a learning progression and makes specific reference to the length of earth's day. Teachers need to emphasize Analysis question 3 to connect to learning from previous lessons.
Activity 74	Aligned with modifications (see comments)	SG pp F-17-19; TG pp F-42-44	This unit/lesson is a part of a conceptual sequence. Teachers need to ask students to explain their current understanding of the day/night cycle. Analysis 6 is a good discussion source.

**Alignment of Washington 6-8 Science Standards with
SEPUP Earth in Space
Earth Science ~ ES1C**

Content Standard Most objects in the Solar System are in regular and predictable motion. These motions explain such phenomena as the day, the year, phases of the moon, and eclipses.

Performance Expectation • Use a simple physical model or labeled drawing of the Earth-Sun-Moon system to explain day and night, phases of the Moon, and eclipses of the Moon and Sun.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 75	Aligned with modifications (see comments)	SG p F-25; TG pp F51-53; Student Sheet 75.1b	The unit/lesson contains opportunities for the use of terms "year," "seasons," and "predictable motion" but it requires the intentional use by teachers when discussing patterns in the student graphs and the discussion questions.
Activity 78	Aligned with modifications (see comments)	SG pp F-35-40; TG pp F-79-81; Student Sheet 78.1	The unit/lesson contains many opportunities to discuss what students understand about the day/night cycle and the yearly cycle.
Activity 79	Aligned as designed	SG pp F-42-44; Student sheet 79.1; TG pp F-86-90	The unit/lesson has intentional use of terms, but teacher must make sure to use and check for understanding. Student sheet 79.1 should be distributed at the start of the unit. Do not wait until this lesson.
Activity 80	Aligned as designed	SG pp F-45-50; TG pp F-97-105	

**Alignment of Washington 6-8 Science Standards with
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Earth Science ~ ES1C**

Content Standard Most objects in the Solar System are in regular and predictable motion. These motions explain such phenomena as the day, the year, phases of the moon, and eclipses.

Performance Expectation • Use a simple physical model or labeled drawing of the Earth-Sun-Moon system to explain day and night, phases of the Moon, and eclipses of the Moon and Sun.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 81	Aligned with modifications (see comments)	SG p F-48; TG p F-108; TG pp F-109-11; SG p F-50 extension	Teacher must make use of information found in the extension to cover needed information about eclipses of the Sun and Moon.
Activity 82	Aligned with modifications (see comments)	SG pp F-51-54; TG pp F-113-125	This unit/lesson is a part of a conceptual sequence and the concept of the predictable motion of tides will later connect to unit G when students explore gravitational force. See Background information, TG pp F-114 to F-115.
Activity 83	Aligned as designed	SG pp F-55-63; TG pp F-127-137	
Activity 84	Aligned as designed	SG pp F-64-66; TG pp F-139-149; Student Sheet 84.1; TR 84.1	Students are asked to apply concepts of the unit to new imaginary planets.