

# WASHINGTON STATE LASER

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

SEPUP

Force & Motion

November 1, 2010

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Systems ~ SYSA**

**Content Standard**

Any system may be thought of as containing subsystems and as being a subsystem of a larger system.

**Performance Expectation**

- Given a system, identify subsystems and a larger encompassing system

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 83	Aligned with modifications (see comments)	SG pp E-45-48; TG pp E-89-93;	Teacher must be intentional about use of the terms (vocabulary) systems and subsystems. The unit/lesson contains many opportunities to discuss many subsystems within the main scenario system.
Activity 84	Aligned with modifications (see comments)	SG pp E-50-54; TG pp E-103-104; Student Sheet 84.1; Student Sheet 84.2	Teacher must be intentional about use of the terms (vocabulary) systems and subsystems. The unit/lesson contains many opportunities to discuss many subsystems within the main scenario system.
Activity 87	Aligned with modifications (see comments)	SG pp E-62-64; TG pp E-125-129; TR 87.1; Student Sheet 87.1	Teacher must be intentional about use of the terms (vocabulary) regarding systems and subsystems.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Systems ~ SYSB**

**Content Standard** The boundaries of a system can be drawn differently depending on the features of the system being investigated, the size of the system, and the purpose of the investigation.

**Performance Expectation** • Explain how the boundaries of a system can be drawn to fit the purpose of the study (e.g., to study how insect populations change, a system might be a forest, a meadow in the forest, or a single tree).

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 81	Aligned with modifications (see comments)	SG pp E-37-40; TG pp E-76-80	Teachers need to ask students to explain what the boundary of their systems are. Teachers need to emphasize that the table is included within the boundary of the system and its importance.
Activity 83	Aligned with modifications (see comments)	SG pp E-45-48; TG pp E-89-93;	Teacher must be intentional about use of the terms (vocabulary) systems and boundaries. The unit/lesson contains many opportunities to discuss boundaries and systems.
Activity 87	Aligned with modifications (see comments)	SG pp E-62-64; TG pp E-125-129; TR 87.1; Student Sheet 87.1	Teacher must be intentional about use of the terms (vocabulary) regarding systems and boundaries.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Systems ~ SYSC**

**Content Standard**

The output of one system can become the input of another system.

**Performance Expectation**

- Give an example of how output of matter or energy from a system can become input for another system

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 76	Aligned with modifications (see comments)	TG pp E-36, E-37, E-40, E-41	Teachers need to emphasize that two systems are present, the cart on the ramp and the block on the track with specific inputs and outputs. The output of the first system becomes the input of the second.
Activity 77	Aligned with modifications (see comments)	SG p E-20; TG p E-46	Teachers need to emphasize that two systems are present, the cart on the ramp and the block on the track with specific inputs and outputs. The output of the first system becomes the input of the second.
Activity 83	Aligned with modifications (see comments)	SG pp E-45-48; TG pp E-89-93; TR 83.1; Student Sheet 83.1	Teacher must be intentional about use of the terms (vocabulary) input and output, with particular attention to the relationship between the driver-car system and the car-road system.
Activity 84	Aligned with modifications (see comments)	SG pp E-50-54; TG pp E-103-104; Student Sheet 84.1; Student Sheet 84.2	Teacher must be intentional about use of the terms (vocabulary) input and output, with particular attention to the safety systems and their effect on the driver and car systems.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Systems ~ SYSD**

**Content Standard** In an open system, matter flows into and out of the system. In a closed system, energy may flow into or out of the system, but matter stays within the system.

**Performance Expectation** • Given a description of a system, analyze and defend whether it is open or closed.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 79	Aligned with modifications (see comments)	SG pp E-26-28; TG pp E-60-61	Teachers need to emphasize that prior to step 3 in the student procedure it is a closed system, and after step 3 it is open.
Activity 83	Aligned with modifications (see comments)	SG pp E-45-48; TG pp E-89-93	The unit/lesson contains many opportunities to discuss factors that affect open systems.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Systems ~ SYSF**

**Content Standard**

The natural and designed world is complex; it is too large and complicated to investigate and comprehend all at once. Scientists and students learn to define small portions for the convenience of investigation. The units of investigation can be referred to as “systems.”

**Performance Expectation**

- Given a complex societal issue with strong science and technology components (e.g., overfishing, global warming), describe the issue from a systems point of view, highlighting how changes in one part of the system are likely to influence other parts of the system.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 83	<b>Aligned with modifications (see comments)</b>	SG pp E-45-48; TG pp E-89-93	The unit/lesson contains many opportunities to discuss the social and scientific factors involved in driving a car safely.
Activity 85	<b>Aligned as designed</b>	SG pp E-55-57; TG pp E-112-115	
Activity 87	<b>Aligned with modifications (see comments)</b>	SG pp E-62-64; TG pp E-125-129; TR 87.1; Student Sheet 87.1	The unit/lesson contains many opportunities to discuss the social and scientific aspects of this issue.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 81	Aligned with modifications (see comments)	SG pp E-37-39; TG pp E-77-78	The teacher needs to intentionally take advantage of multiple opportunities to have students ask and refine questions.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 86	Aligned with modifications (see comments)	SG p E-61	The teacher needs to be intentional about discussing the standard using the Extension.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Inquiry ~ INQC**

**Content Standard**

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

- Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative.

**Performance Expectation**

- 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 74	Aligned as designed	SG pp E-9, E-10; TG pp E-15, E-16	
Activity 76	Aligned as designed	SG p E-17; TG p E-39	
Activity 77	Aligned as designed	SG p E-20; TG p E-47	
Activity 78	Aligned as designed	SG pp E-22-24; TG pp E-51-53	Students are asked to analyze but not collect data.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Inquiry ~ INQC**

**Content Standard**

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

- Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative.

**Performance Expectation**

- 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 79	<b>Aligned as designed</b>	Student Sheet 79.1	
Activity 81	<b>Aligned with modifications (see comments)</b>	SG pp E-38-40; TG pp E-77-79	The teacher needs to be intentional about discussing the standard and encouraging careful observations.
Activity 82	<b>Aligned as designed</b>	SG p E-42; TG p E-83	
Activity 83	<b>Aligned as designed</b>	SG pp E-45-48; TG pp E-89-93; TR 83.1; Student Sheet 83.1	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Inquiry ~ INQC**

**Content Standard**

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

- Communicate results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative.

**Performance Expectation**

- 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 86	<b>Aligned with modifications (see comments)</b>	SG p E-59; TG p E-120	Teachers need to emphasize careful observations and repeat trials.
Activity 87	<b>Aligned as designed</b>	SG pp E-62-64; TG pp E-125-129; TR 87.1; Student Sheet 87.1	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 70	Aligned with modifications (see comments)	SG pp E-26-27; TG pp E-60-61	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.
Activity 74	Aligned with modifications (see comments)	SG pp E-8-10; TG p E-15	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.
Activity 76	Aligned with modifications (see comments)	SG pp E-17-18; TG pp E-39-40	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.
Activity 77	Aligned with modifications (see comments)	SG p E-20	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards. The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 78	Aligned with modifications (see comments)	SG pp E-22-24; TG pp E-51-53	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.
Activity 82	Aligned with modifications (see comments)	SG pp E-41-43; TG pp E-82-83	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.
Activity 86	Aligned with modifications (see comments)	SG p E-59; TG p E-120	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 74	Aligned with modifications (see comments)	SG p E-10	Teachers need to emphasize this investigation is a model of a car.
Activity 76	Aligned with modifications (see comments)	SG p E-18; TG p E-41	Teachers need to emphasize this investigation is a model of a car.
Activity 77	Aligned with modifications (see comments)	SG p E-20	Teachers need to emphasize this investigation is a model of a car. The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.
Activity 78	Aligned as designed	SG pp E-23-24; TG pp E-52-53; TR 78.1	Teachers need to emphasize this investigation is a mathematical model.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 79	<b>Aligned with modifications (see comments)</b>	SG p E-28; TG pp E-61-62	Teachers need to emphasize this investigation is a model of a car.
Activity 82	<b>Aligned as designed</b>	SG pp E-41-44; TG pp E-83-85	
Activity 83	<b>Aligned as designed</b>	SG p E-46; TG p E-90; TR 83.1; Student Sheet 83.1	Teachers need to emphasize this investigation is a mathematical model.
Activity 85	<b>Aligned as designed</b>	SG pp E-55-57; TG pp E-112-115	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 86	Aligned with modifications (see comments)	SG pp E-59, E-60-61; TG pp E-120-122	Teachers need to emphasize that this is a model.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Inquiry ~ INQG**

**Content Standard**

Scientific reports should enable another investigator to repeat the study to check the results.

**Performance Expectation**

• Prepare a written report of an investigation by clearly describing the question being investigated, what was done, and an objective summary of results. The report should provide evidence to accept or reject the hypothesis, explain the relationship between two or more variables, and identify limitations of the investigation.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 74	Aligned with modifications (see comments)	SG pp E-8-10	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.
Activity 77	Aligned with modifications (see comments)	SG p E-20; TG pp E-46-47	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 73	Aligned with modifications (see comments)	SG p E-6	Teachers need to ask students to explain their ideas using logical arguments and evidence.
Activity 74	Aligned with modifications (see comments)	TG pp E-14, E-15	Teacher must make use of information found in teacher guide on page 14 and 15 to help students evaluate flaws in data.
Activity 79	Aligned with modifications (see comments)	TG p E-60	Teachers need to emphasize factors that may influence the outcome that are uncontrollable variables.
Activity 85	Aligned as designed	SG pp E-56-57; TG p E-115	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 87	<b>Aligned with modifications (see comments)</b>	SG pp E-63-64; TG pp E-126-129; Student Sheet 87.1	The teacher needs to be intentional about discussing the standard and probing students' thinking.
Activity 88	<b>Aligned as designed</b>	SG pp E-65-68; TG pp E-136-139; TR 88.1; Student Sheet 88.1; Student Sheet 88.2	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 84	Aligned as designed	SG pp E-50-54; TG pp E-103-104; Student Sheet 84.1; Student Sheet 84.2	
Activity 85	Aligned as designed	SG pp E-55-57; TG pp E-112-115	Teachers need to emphasize crash testing is a technological solution to a human problem.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Application ~ APPB**

**Content Standard** Scientists and technological designers (including engineers) have different goals. Scientists answer questions about the natural world; technological designers solve problems that help people reach their goals.

**Performance Expectation** • Investigate several professions in which an understanding of science and technology is required. Explain why that understanding is necessary for success in each profession.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 73	<b>Aligned with modifications (see comments)</b>	TG p E-4	Teachers need to emphasize the different goals and points of view involved in designing or choosing a vehicle.
Activity 84	<b>Aligned as designed</b>	SG pp E-50-54; TG pp E-103-104; Student Sheet 84.1; Student Sheet 84.2	The unit contains many opportunities to address the standards but the teacher must be intentional in using the terms science and technological design.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Application ~ APPD**

**Content Standard**

The process of technological design begins by defining a problem and identifying criteria for a successful solution, followed by research to better understand the problem and brainstorming to arrive at potential solutions.

**Performance Expectation**

- Define a problem that can be solved by technological design and identify criteria for success.
- Research how others solved similar problems.
- Brainstorm different solutions.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
<b>Activity 73</b>	<b>Aligned as designed</b>	SG pp E-4-6; TG pp E-2-7	Teacher must be intentional about use of the terms (vocabulary) such as technological design.
<b>Activity 85</b>	<b>Aligned as designed</b>	SG pp E-55-57; TG pp E-112-115; Issues and Physical Science page of the SEPUP web site	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
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 85	Aligned as designed	SG pp E-55-57; TG pp E-112-115	
Activity 88	Aligned with modifications (see comments)	SG pp E-65-68; TG pp E-136-139; TR 88.1; Student Sheet 88.1; Student Sheet 88.2	Teachers need to emphasize the scientific and social aspects of the solutions to this problem.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Physical Science ~ PS1A**

**Content Standard**

Average speed is defined as the distance traveled in a given period of time.

**Performance Expectation**

- Measure the distance an object travels in a given interval of time and calculate the object's average speed, using  $S = d/t$ . (e.g., a battery-powered toy car travels 20 meters in 5 seconds, so its average speed is 4 meters per second).
- Illustrate the motion of an object using a graph, or infer the motion of an object from a graph of the object's position vs. time or speed vs. time.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
<b>Activity 74</b>	<b>Aligned as designed</b>	SG pp E-7, E-9; TG pp E-11, E-14, E-17	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.
<b>Activity 75</b>	<b>Aligned as designed</b>	TG pp E-21-25; SG pp E-12-15; Student Sheet 75.1 and 75.2	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Physical Science ~ PS1B**

**Content Standard** Friction is a force that that can help objects start moving, stop moving, slow down or can change the direction of the object's motion.

**Performance Expectation** • Demonstrate and explain the frictional force acting on an object with the use of a physical model.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 79	Aligned with modifications (see comments)	TG p E-61	Teachers need to emphasize that friction is the force slowing down the marble.
Activity 80	Aligned as designed	SG pp E-31-32; TG pp E-69; Student Sheet 80.1	
Activity 81	Aligned as designed	SG p E-40; TG pp E-76, E-78, E-79	
Activity 82	Aligned as designed	SG pp E-41-44; TG pp E-81, E-83-85	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Physical Science ~ PS1B**

**Content Standard** Friction is a force that that can help objects start moving, stop moving, slow down or can change the direction of the object's motion.

**Performance Expectation** • Demonstrate and explain the frictional force acting on an object with the use of a physical model.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 83	<b>Aligned with modifications (see comments)</b>	SG pp E-46-48; TG pp E-89, E-92-93; Student Sheet 83.1	Teachers need to emphasize that different road conditions have different coefficients of friction.
Activity 84	<b>Aligned as designed</b>	SG pp E-50-51; TG pp E-103-104; Student Sheet 84.2	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Physical Science ~ PS1C**

**Content Standard** Unbalanced forces will cause changes in the speed or direction of an object's motion. The motion of an object will stay the same when forces are balanced.

- Performance Expectation**
- Determine whether forces on an object are balanced or unbalanced and justify with observational evidence.
  - Given a description of forces on an object, predict the object's motion.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 77	<b>Aligned with modifications (see comments)</b>	SG pp E-19-20; TG p E-45	This unit/lesson is a part of a conceptual sequence. Teacher must be intentional about use of the terms (vocabulary), in particular balanced and unbalanced force(s).
Activity 79	<b>Aligned as designed</b>	SG pp E-26-28; TG pp E-59-62; Student Sheet 79.1	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.
Activity 80	<b>Aligned as designed</b>	SG pp E-33-36; TG pp E-69-72; Student Sheet 80.1	
Activity 81	<b>Aligned as designed</b>	SG pp E-37-40; TG pp E-76-80	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Physical Science ~ PS1C**

**Content Standard** Unbalanced forces will cause changes in the speed or direction of an object's motion. The motion of an object will stay the same when forces are balanced.

- Performance Expectation**
- Determine whether forces on an object are balanced or unbalanced and justify with observational evidence.
  - Given a description of forces on an object, predict the object's motion.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 83	Aligned with modifications (see comments)	SG pp E-46-48; TG pp E-89-93;	Teachers need to emphasize that different road conditions provide different frictional forces that affect motion.
Activity 84	Aligned as designed	SG pp E-50-53; TG pp E-103-104; Student Sheet 84.2	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Physical Science ~ PS1D**

**Content Standard** The same unbalanced force will change the motion of an object with more mass more slowly than an object with less mass.

**Performance Expectation** • Given two different masses that receive the same unbalanced force, predict which will move more quickly.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 77	Aligned with modifications (see comments)	SG pp E-19-20; TG p E-45	This unit/lesson is a part of a conceptual sequence. Teacher must be intentional about use of the terms (vocabulary), in particular balanced and unbalanced force(s).
Activity 78	Aligned with modifications (see comments)	SG pp E-22-24; TG pp E-50-53	Teacher must be intentional about use of the terms (vocabulary) according to the Washington State Science Learning Standards. Students are asked to use acceleration during this activity, which goes beyond the Washington State Science Learning Standards for grades 6-8.
Activity 79	Aligned as designed	SG pp E-26-28; TG pp E-59-62; Student Sheet 79.1	The unit/lesson is an integral part of a learning progression. This unit/lesson is a part of a conceptual sequence.
Activity 80	Aligned as designed	SG pp E-34-36; TG pp E-69-72; Student Sheet 80.1	

**Alignment of Washington 6-8 Science Standards with  
SEPUP Force & Motion  
Physical Science ~ PS1D**

**Content Standard** The same unbalanced force will change the motion of an object with more mass more slowly than an object with less mass.

**Performance Expectation** • Given two different masses that receive the same unbalanced force, predict which will move more quickly.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 87	Aligned with modifications (see comments)	TG p E-125	Teacher must be intentional about sharing the mass data in order to meet the standard.