

WASHINGTON STATE LASER

Alignment of Washington 6-8
Science Standards by Lesson Number for

SEPUP

Studying People Scientifically

November 1, 2010

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 01**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQB	Different kinds of questions suggest different kinds of scientific investigations.	<ul style="list-style-type: none"> • 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. 	SG pp A-4-7, Question 1, 3; TG pp A-4-8	Aligned as designed	
INQE	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.	<ul style="list-style-type: none"> • 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. 	SG pp A-4-7, Questions 3, 5; TG pp A-4-8	Aligned as designed	
APPE	Scientists and engineers often work together to generate creative solutions to problems and decide which ones are most promising.	<ul style="list-style-type: none"> • Collaborate with other students to generate creative solutions to a problem, and apply methods for making tradeoffs to choose the best solution. 	SG pp A-4-7, Question 2; TG pp A-4-8	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 01**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPF	Solutions must be tested to determine whether or not they will solve the problem. Results are used to modify the design, and the best solution must be communicated persuasively.	<ul style="list-style-type: none"> • Test the best solution by building a model or other representation and using it with the intended audience. Redesign as necessary. • Present the recommended design using models or drawings and an engaging presentation. 	SG pp A-4-7; TG pp A-4-8	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 02**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	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.	<ul style="list-style-type: none"> 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. 	SG pp A-8-10, Questions 1,2, 4; TG pp A-23-33	Aligned with modifications (see comments)	Teacher must be intentional about use of the terms manipulated, controlled and responding variable. The teacher needs to be intentional about discussing the standard.
INQH	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.	<ul style="list-style-type: none"> 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. 	SG pp A-8-10, Question 3; TG pp A-23-33	Aligned with modifications (see comments)	The teacher needs to be intentional about discussing the standard and focusing on Dr. Goldberger's reflection and evaluation process.
INQI	Scientists and engineers have ethical codes governing animal experiments, research in natural ecosystems, and studies that involve human subjects.	<ul style="list-style-type: none"> Demonstrate ethical concerns and precautions in response to scenarios of scientific investigations involving animal experiments, research in natural ecosystems, and studies that involve human subjects. 	SG pp A-8-10, Question 6; TG pp A-23-33	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 02**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPH	People in all cultures have made and continue to make contributions to society through science and technology.	<ul style="list-style-type: none"> Describe scientific or technological contributions to society by people in various cultures. 	SG pp A-8-10; TG pp A-23-33	Aligned with modifications (see comments)	The teacher needs to be intentional about discussing the standard in terms of underrepresented populations.

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 03**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	<ul style="list-style-type: none"> • 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. 	SG pp A-11-14, Questions 1, 4; TG pp A-44-48	Aligned as designed	
INQD	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.	<ul style="list-style-type: none"> • 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. 	SG pp A-11-14, Question 2; TG pp A-44-48	Aligned with modifications (see comments)	Teacher must be intentional about use of the terms manipulated, controlled and responding variables.
INQE	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.	<ul style="list-style-type: none"> • 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. 	SG pp A-11-14; TG pp A-44-48	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 03**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPF	Solutions must be tested to determine whether or not they will solve the problem. Results are used to modify the design, and the best solution must be communicated persuasively.	<ul style="list-style-type: none"> • Test the best solution by building a model or other representation and using it with the intended audience. Redesign as necessary. • Present the recommended design using models or drawings and an engaging presentation. 	SG pp A-11-14, Question 2; TG pp A-44-48	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 04**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	<ul style="list-style-type: none"> • 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. 	SG pp A-15-19, Question 7; TG pp A-57-63	Aligned as designed	
INQI	Scientists and engineers have ethical codes governing animal experiments, research in natural ecosystems, and studies that involve human subjects.	<ul style="list-style-type: none"> • Demonstrate ethical concerns and precautions in response to scenarios of scientific investigations involving animal experiments, research in natural ecosystems, and studies that involve human subjects. 	SG pp A-15-19, Questions 6, 8; TG pp A-57-63	Aligned as designed	
APPE	Scientists and engineers often work together to generate creative solutions to problems and decide which ones are most promising.	<ul style="list-style-type: none"> • Collaborate with other students to generate creative solutions to a problem, and apply methods for making tradeoffs to choose the best solution. 	SG pp A-15-19, Analysis Questions 6,8; TG pp A-57-63	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 05**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	<ul style="list-style-type: none"> • 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. 	SG pp A-20-24; TG pp A-68-73; SG p A-24 Questions 1-3; Student Sheet 5.1, 5.2	Aligned as designed	
INQD	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.	<ul style="list-style-type: none"> • 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. 	SG pp A-20-24; TG pp A-68-73; SG p A-24 Questions 3, 4	Aligned with modifications (see comments)	Teacher must be intentional about use of the terms controlled, manipulated and responding variables.
INQH	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.	<ul style="list-style-type: none"> • 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. 	SG pp A-20-24, Question 5; TG pp A-68-73	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 06**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
LS1C	Multicellular organisms have specialized cells that perform different functions. These cells join together to form tissues that give organs their structure and enable the organs to perform specialized functions within organ systems.	<ul style="list-style-type: none"> • Relate the structure of a specialized cell (e.g., nerve and muscle cells) to the function that the cell performs. • Explain the relationship between tissues that make up individual organs and the functions the organ performs (e.g., valves in the heart control blood flow, air sacs in the lungs maximize surface area for transfer of gases). • Describe the components and functions of the digestive, circulatory, and respiratory systems in 	SG pp A-25-29, Question 4; TG pp A-81-83; SG p A-29	Aligned as designed	Teacher must be intentional about use of the terms controlled, manipulated and responding variables.

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 08**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQA	Scientific inquiry involves asking and answering questions and comparing the answer with what scientists already know about the world.	<ul style="list-style-type: none"> • Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question. 	SG pp A-34-37; TG pp A-94-99; Student Sheet 1c	Aligned as designed	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	<ul style="list-style-type: none"> • 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. 	SG pp A-34-37; TG pp A-94-99; Student Sheet 1c	Aligned as designed	
INQC	Collecting, analyzing, and displaying data are essential aspects of all investigations.	<ul style="list-style-type: none"> • 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. 	SG pp A-34-37, questions 1, 2, 5, 6; TG pp A-94-99	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 08**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQD	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.	<ul style="list-style-type: none"> 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. 	SG pp A-34-37, Question 6; TG pp A-94-99; Student Sheet 1c	Aligned as designed	
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	<ul style="list-style-type: none"> 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. 	SG pp A-34-37, Questions 6-8; TG pp A-94-99; Student Sheet 1c	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Studying People Scientifically ~ Activity 10**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQH	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.	<ul style="list-style-type: none"> • 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. 	SG pp A-43-47, Questions 1-4; TG pp A-119-126; Student Sheet 10.1	Aligned as designed	
INQI	Scientists and engineers have ethical codes governing animal experiments, research in natural ecosystems, and studies that involve human subjects.	<ul style="list-style-type: none"> • Demonstrate ethical concerns and precautions in response to scenarios of scientific investigations involving animal experiments, research in natural ecosystems, and studies that involve human subjects. 	SG pp A-43-47, Questions 2,3; TG pp A-119-126; Student Sheet 10.1	Aligned as designed	
APPE	Scientists and engineers often work together to generate creative solutions to problems and decide which ones are most promising.	<ul style="list-style-type: none"> • Collaborate with other students to generate creative solutions to a problem, and apply methods for making tradeoffs to choose the best solution. 	SG pp A-43-47, Question 3; TG pp A-119-126; Student Sheet 10.2	Aligned as designed	