

WASHINGTON STATE LASER

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

SEPUP

Cell Biology & Disease

November 1, 2010

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 45	Aligned with modifications (see comments)	SG pp C-68-75; TG pp C-194-201	Teacher must be intentional about use of the terms system and subsystem.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 39	Aligned with modifications (see comments)	SG pp C-44, C-47; TG pp C-144-145	The teacher needs to intentionally take advantage of multiple opportunities to discuss cellular respiration and photosynthesis as a system

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 40	Aligned with modifications (see comments)	SG pp C-49-51; TG pp C-151-153	The teacher needs to intentionally take advantage of multiple opportunities to discuss the cell as a closed system.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 33	Aligned as designed	SG p C-17; TG p C-63	
Activity 33	Aligned as designed	SG p C-17; TG p C-63; Video: Matters of Life and Death	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 48	Aligned as designed	SG pp C-84-88; TG pp C-233-238	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 30	Aligned as designed	SG pp C-4 -5; TG pp C-6-7	
Activity 32	Aligned as designed	SG pp C-13-15; TG pp C-46-49	
Activity 39	Aligned as designed	SG pp C-44-47; TG pp C-140-145	
Activity 40	Aligned as designed	SG pp C-49-51; TG pp C-151-153	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 47	Aligned with modifications (see comments)	SG pp C-82-83; TG pp C-224-228	The teacher needs to be intentional about facilitating a discussion that links student hypothesis to their reasoning for the hypothesis.
Activity 48	Aligned as designed	SG pp C-84-88; TG pp C-233-238	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 30	Aligned as designed	SG pp C-5-7; TG pp C-7-11; TR 30.1 and 30.3; Student Sheet 30.2	
Activity 31	Aligned as designed	SG p C-8-11; TG pp C-25, C-28-31; T- 31.1; Student Sheet 31.1-31.3	This unit/lesson is a part of a conceptual sequence.
Activity 31	Aligned as designed	SG p C-8-11; TG pp C-25, C-28-31; TR 31.1; Student Sheet 31.1-31.3	This unit/lesson is a part of a conceptual sequence.
Activity 32	Aligned as designed	SG p C-13-15; TG pp C-46-47; TR 32.1a, 32.1b and 32.2; Students Sheet 32.1	This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 38	Aligned as designed	SG pp C-41-43; TG pp C-132-134	
Activity 39	Aligned as designed	SG pp C-44-47; TG pp C-140-145	
Activity 44	Aligned as designed	SG pp C-66-67; TG pp C-186-188; Student Sheet 44.1; TR 44.1	
Activity 46	Aligned as designed	SG pp C-78-80; TG pp C-212-215	This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 47	Aligned as designed	SG pp C-82-83; TG pp C-226-227	
Activity 48	Aligned as designed	SG pp C-84-88; TG pp C-233-238	
Activity 51	Aligned as designed	SG pp C-97-99; TG pp C-261-267; Student Sheet 51.2 and 51.3	
Activity 53	Aligned as designed	SG pp C-104-108; TG pp C-288-293; Student Sheet 53.1, 53.2, 53.3, 53.4	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 47	Aligned as designed	SG pp C-82-83; TG pp C-224-228	
Activity 48	Aligned with modifications (see comments)	SG pp C-84-88; TG pp C-233-238	Teacher must be intentional about use of the terms manipulated and responding variables.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 30	Aligned as designed	SG pp C-5-7; TG pp C-7-12; TR 30.2	
Activity 32	Aligned as designed	SG pp C-13-15; TG pp C-46-49	
Activity 39	Aligned as designed	SG pp C-45-47; TG pp C-141-144	
Activity 40	Aligned as designed	SG pp C-40-51; TG pp C-151-153	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 41	Aligned as designed	SG p C-53-54; TG pp C-156-158; TR 41.1	
Activity 48	Aligned as designed	SG pp C-84-88; TG pp C-233-238	
Activity 51	Aligned as designed	SG pp C-97-99; TG pp C-261-267	
Activity 53	Aligned as designed	SG pp C-104 and C-108; TG pp C-288-293	Students are asked to demonstrate their understanding of unit concepts.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Inquiry ~ INQF**

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 30	Aligned as designed	SG p C-7; TG pp C-11-12; Student Sheet 30.1	
Activity 32	Aligned as designed	SG pp C-15; TG pp C-48-49; TR 32.1a, 32.1b and 32	
Activity 39	Aligned as designed	SG p C-47 Analysis Question 2d; TG pp C-144-145	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 39	Aligned as designed	SG pp C-47; TG pp C-144-145	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 32	Aligned with modifications (see comments)	SG p C-15 Analysis questions 5-7; TG pp C-48-49	The unit/lesson contains many opportunities to discuss the ethical issues associated with transmission of infection.
Activity 50	Aligned as designed	SG pp C-95-96; TG pp C-254-257; Student Sheet 50.1	
Activity 53	Aligned as designed	SG pp C-104-108; TG pp C-288-293	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Inquiry ~ INQI**

Content Standard Scientists and engineers have ethical codes governing animal experiments, research in natural ecosystems, and studies that involve human subjects.

Performance Expectation • 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.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 34	Aligned as designed	SG pp C-19-20; TG pp C-68-70	
Activity 50	Aligned with modifications (see comments)	SG pp C-95-96; TG pp C-254-257; Student Sheet 50.1	Teacher must be intentional about sharing ethical concerns when experimenting with animal subjects.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 35	Aligned as designed	SG pp C-21-26; TG pp C-75-78; Student Sheet 35.1, 35.2a 35.2b, 35.3	The unit/lesson is an integral part of a learning progression. Students learn to work with the microscope.
Activity 36	Aligned with modifications (see comments)	SG pp C-27-29; TG pp C-95-96	The unit/lesson is an integral part of a learning progression. Students learn to work with the microscope.
Activity 49	Aligned as designed	SG pp C-89-94; TG pp C-243-246	
Activity 50	Aligned as designed	SG pp C-95-96; TG pp C-254-257	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Application ~ APPC**

Content Standard Science and technology are interdependent. Science drives technology by demanding better instruments and suggesting ideas for new designs. Technology drives science by providing instruments and research methods.

Performance Expectation • Give examples to illustrate how scientists have helped solve technological problems (e.g., how the science of biology has helped sustain fisheries) and how engineers have aided science (e.g., designing telescopes to discover distant planets).

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 37	Aligned as designed	SG pp C-31-39; TG pp C-101-105; TR 37.1; Student Sheet 37.2	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 32	Aligned as designed	SG pp C-12, C-15; Analysis Questions 1-4	
Activity 34	Aligned as designed	SG pp C-19-20; TG pp C-67-70; Student Sheet 34.1	
Activity 49	Aligned as designed	SG pp C-89-94; TG pp C-243-246; Student Sheet 49.2	
Activity 53	Aligned as designed	SG pp C-104-108; TG pp C-288-293; Student Sheet 53.5	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Application ~ APPF**

Content Standard 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.

Performance Expectation

- 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.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 48	Aligned as designed	SG pp C-84-88; TG pp C-233-238	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Application ~ APPG**

Content Standard

The benefits of science and technology are not available to all the people in the world.

Performance Expectation

- Contrast the benefits of science and technology enjoyed by people in industrialized and developing nations.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 53	Aligned with modifications (see comments)	SG pp C-104-108; TG pp C-288-293	The unit contains many opportunities to address the standards but the teacher must be intentional in presenting the differences in developed, developing and under developed nations.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
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 34	Aligned with modifications (see comments)	SG pp C-19-20; TG p C-68	Teachers need to emphasize to importance of contributions of scientist.
Activity 37	Aligned as designed	SG pp C-31-39; TG pp C-101-105; TR 37.1; Student Sheet 37.2	
Activity 37	Aligned as designed	SG pp C-31-39; TG pp C-101-105; TR 37.1; Student Sheet 37.2	Students are asked to use content in a Role Play, TG pp C-11-127.
Activity 50	Aligned as designed	SG pp C-95-96; TG pp C-254-257	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Life Science ~ LS1A**

Content Standard

All organisms are composed of cells, which carry on the many functions needed to sustain life.

Performance Expectation

- Draw and describe observations made with a microscope showing that plants and animals are made of cells, and explain that cells are the fundamental unit of life.
- Describe the functions performed by cells to sustain a living organism (e.g., division to produce more cells, taking in nutrients, releasing waste, using energy to do work, and producing materials the organism needs).

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 37	Aligned as designed	SG pp C-31-34; TG p C-102; TR 37.1; Student Sheet 37.2	
Activity 39	Aligned as designed	SG pp C-44-47; TG pp C-140-145	
Activity 40	Aligned as designed	SG pp C-48, C-51; TG pp C-152-154	
Activity 41	Aligned as designed	SG p C-54, Analysis Questions; TG pp C-156-158	This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Life Science ~ LS1B**

Content Standard

One-celled organisms must contain parts to carry out all life functions.

Performance Expectation

• Draw and describe observations made with a microscope showing that a single-celled organism (e.g., paramecium) contains parts used for all life functions.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 36	Aligned as designed	SG pp C-27-29; TG pp C-94-96; TR 36.1	
Activity 38	Aligned as designed	SG pp C-41-43; TG pp C-132-124; TR 38.1	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Life Science ~ LS1D**

Content Standard

Both plant and animal cells must carry on life functions, so they have parts in common, such as nuclei, cytoplasm, cell membranes, and mitochondria. But plants have specialized cell parts, such as chloroplasts and cell walls, which provide plants their overall structure.

Performance Expectation

- Use labeled diagrams or models to illustrate similarities and differences between plant and animal cell structures and describe their functions (e.g., both have nuclei, cytoplasm, cell membranes, and mitochondria, while only plants have chloroplasts and cell walls).

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 38	Aligned as designed	SG pp C-41-43; TG pp C-132-134; TR 38.1	
Activity 42	Aligned as designed	SG pp C-56-61; TG pp C-163-167; Student Sheet 42.3	
Activity 46	Aligned as designed	SG p C-80; TG p C-215	This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Life Science ~ LS1E**

Content Standard

In classifying organisms, scientists consider both internal and external structures and behaviors.

Performance Expectation

• Use a classification key to identify organisms, noting use of both internal and external structures as well as behaviors.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 44	Aligned as designed	SG pp C-66-67; TG pp C-185-188; Student Sheet 44.1; TR 44.1	
Activity 45	Aligned as designed	SG pp C-68-75; TG pp C-194-201	This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Life Science ~ LS1F**

Content Standard Lifestyle choices and living environments can damage structures at any level of organization of the human body and can significantly harm the whole organism.

Performance Expectation • Evaluate how lifestyle choices and environments (e.g., tobacco, drug, and alcohol use, amount of exercise, quality of air, and kinds of food) affect parts of the human body and the organism as a whole.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 30	Aligned as designed	SG pp C-5-7; TG pp C-7-11; TR 30.1 and 30.3; Student Sheet 30.2	This unit/lesson is a part of a conceptual sequence.
Activity 31	Aligned as designed	SG p C-8-11; TG pp C-25, C-28-31; TR 31.1; Student Sheet 31.1-31.3	This unit/lesson is a part of a conceptual sequence.
Activity 33	Aligned as designed	SG pp C-16-17; TG pp C-62-64; Video: Matters of Life and Death	
Activity 37	Aligned as designed	SG pp C-34-39; TG pp C-101-105; TR 37.1; Student Sheet 37.2	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Life Science ~ LS1F**

Content Standard Lifestyle choices and living environments can damage structures at any level of organization of the human body and can significantly harm the whole organism.

Performance Expectation • Evaluate how lifestyle choices and environments (e.g., tobacco, drug, and alcohol use, amount of exercise, quality of air, and kinds of food) affect parts of the human body and the organism as a whole.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 48	Aligned as designed	SG pp C-84-88; TG pp C-233-238	
Activity 49	Aligned as designed	SG pp C-89-94; TG pp C-243-246	
Activity 51	Aligned as designed	SG pp C-97-99; TG pp C-261-267; Student Sheet 51.1	
Activity 52	Aligned as designed	SG pp C-100-103; TG pp C-281-283; Student Sheet 51.1	

**Alignment of Washington 6-8 Science Standards with
SEPUP Cell Biology & Disease
Life Science ~ LS1F**

Content Standard Lifestyle choices and living environments can damage structures at any level of organization of the human body and can significantly harm the whole organism.

Performance Expectation • Evaluate how lifestyle choices and environments (e.g., tobacco, drug, and alcohol use, amount of exercise, quality of air, and kinds of food) affect parts of the human body and the organism as a whole.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 53	Aligned as designed	SG pp C-104, C-108; TG pp C-288-293	Students are asked to demonstrate their understanding of unit concepts.