

WASHINGTON STATE LASER

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

SEPUP

Genetics

November 1, 2010

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 63	Aligned with modifications (see comments)	SG pp D-41-47; TG pp D-108-110	Teacher must be intentional about use of the terms (vocabulary)system and subsystem.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 64	Aligned as designed	SG p D-49; TG p D-115	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 54	Aligned as designed	SG pp D-5-7; TG pp D-5-8; Student sheet 54.1 and TR	
Activity 58	Aligned as designed	SG pp D-22-26; TG pp D-44-48; Student Sheet 58.1, 58.2	
Activity 64	Aligned as designed	SG pp D-49-50; TG pp D-115-116, 119; Science Skills Sheet 5 - Elements of Experimental Design	
Activity 66	Aligned as designed	SG pp D-56-65; TG pp D-137-143; TR 66.1, 66.2 A, B; Student Sheet 66.1 A-C	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 69	Aligned as designed	SG pp D-73-77; TG pp D-188-190	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 54	Aligned as designed	SG pp. D-5-7; TG pp D-5-8; Student sheet 54.1 and TR	
Activity 59	Aligned as designed	SG pp 27-30; TG pp D-67, 69-70; Student Sheet 59.1	
Activity 60	Aligned as designed	SG pp D-32-34; TG pp D-81-82; TR 60.1	
Activity 61	Aligned as designed	SG pp D-36-38; TG pp D-86-91; Student Sheet 61.1 A, B	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 62	Aligned as designed	SG p D-40; TG pp D-99-100; Student Sheet 62.1	
Activity 64	Aligned as designed	SG pp D-49-50; TG pp D-115-116, 119; Transparency 64.1	
Activity 65	Aligned as designed	SG pp D-52-55; TG pp D-125-128; Student Sheet 65.1	
Activity 66	Aligned as designed	SG pp D-56-65; TG pp D-133-143; Student Sheet 66.1 A-C; TR 66.1, 66.2 A, B	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 68	Aligned as designed	SG pp D-70-72; TG pp D-169-173; Student Sheet 68.1, 68.2; Student Sheet Keys 68.1, 68.2	
Activity 69	Aligned as designed	SG pp D-70-77; TG pp D-183-190; Student Sheet 69.1-69.4; Transparency 69.1	
Activity 70	Aligned as designed	SG pp D-79-80; TG pp D-204-5; Student Sheet 70.1	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 62	Aligned with modifications (see comments)	SG p D-40; TG p D-100	The teacher needs to be intentional about discussing the standard concerning variations on outcomes.
Activity 64	Aligned as designed	SG pp D-49-50; TG pp D-115-116, 119; Science Skill Sheet 5 - Elements of Experimental Design	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 58	Aligned as designed	SG pp D-23-26; TG pp D-45-48; Student Sheet 58.1, 58.2	
Activity 59	Aligned as designed	SG pp 27-30; TG pp D-67, 69-70; Student Sheet 59.1	
Activity 61	Aligned as designed	SG pp D-36-38; TG pp D-86-91; Student Sheet 61.1 A, B	
Activity 65	Aligned as designed	SG pp D-52-55; TG pp D-125-128; Student Sheet 65.1	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 69	Aligned as designed	SG pp D-70-77; TG pp D-183-190; Student Sheet 69.1-69.4; Transparency 69.1	
Activity 70	Aligned as designed	SG pp D-79-80; TG pp D-204-5; Student Sheet 70.1	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 54	Aligned with modifications (see comments)	SG p D-7; TG p D-8; Student Sheet 54.1, 54.2, and TR	The unit/lesson contains opportunities for the use of terms inference but it requires the intentional use by teachers.
Activity 60	Aligned with modifications (see comments)	SG pp D-32-34; TG pp D-80-81	The teacher needs to be intentional about discussing the standard
Activity 70	Aligned as designed	SG pp D-79-80; TG pp D-204-5; Student Sheet 70.1	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 56	Aligned as designed	SG pp D-12, 14; TG pp D-29, 32; Video - How Do Your Genes Fit?	
Activity 67	Aligned as designed	SG pp D-166-169; TG pp D-157-163; Student Sheet 67.1; TR 67.1	
Activity 71	Aligned with modifications (see comments)	SG p D-78; TG pp D-211-212	The unit/lesson contains many opportunities to discuss ethical issues.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 56	Aligned as designed	SG pp D-12, 14; TG pp D-29, 32; Video - How Do Your Genes Fit?	
Activity 57	Aligned as designed	SG pp D-20-21; TG pp D-37-40	
Activity 71	Aligned with modifications (see comments)	SG p D-78; TG pp D-211-212;	The unit/lesson contains many opportunities to discuss ethical issues.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 57	Aligned with modifications (see comments)	SG p D-21 Extension	The teacher needs to intentionally take advantage of multiple opportunities to discuss tradeoffs associated with cloning.
Activity 68	Aligned with modifications (see comments)	SG pp D-70-72; TG p D-169-173	The teacher needs to be intentional about discussing the standard as using technology to solve problems.
Activity 69	Aligned as designed	SG p D-73; TG pp D-185-187	
Activity 70	Aligned as designed	SG p D-78; TG p D-203	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 71	Aligned with modifications (see comments)	SG p D-78; TG pp D-211-212	Teacher has multiple opportunities to reinforce the concept that technology isn't available everywhere.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
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 60	Aligned as designed	SG p D-31; TG pp D-78-79	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3B**

Content Standard Every organism contains a set of genetic information (instructions) to specify its traits. This information is contained within genes in the chromosomes in the nucleus of each cell.

Performance Expectation • Explain that information on how cells are to grow and function is contained in genes in the chromosomes of each cell nucleus and that during the process of reproduction the genes are passed from the parent cells to offspring.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 54	Aligned with modifications (see comments)	SG p D-7; TG pp D-1, 5, 7-8	The unit/lesson is an integral part of a learning progression.
Activity 55	Aligned as designed	SG p D-10; TG p D-21	The unit/lesson is an integral part of a learning progression.
Activity 56	Aligned as designed	SG pp D-13-14; TG pp D-27-28; Video - How Do Your Genes Fit?	
Activity 63	Aligned as designed	SG pp D-41-47; TG pp D-106-110	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3B**

Content Standard Every organism contains a set of genetic information (instructions) to specify its traits. This information is contained within genes in the chromosomes in the nucleus of each cell.

Performance Expectation • Explain that information on how cells are to grow and function is contained in genes in the chromosomes of each cell nucleus and that during the process of reproduction the genes are passed from the parent cells to offspring.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 64	Aligned as designed	SG pp D-48,50; TG pp D-113-119	This unit/lesson is a part of a conceptual sequence.
Activity 67	Aligned as designed	SG pp D-166-169; TG pp D-159-163	Teacher must make use of information found in Activity 56.
Activity 69	Aligned as designed	SG pp D-70-77; TG pp D-183-190; Student Sheet 69.1- 69.4; TR 69.1	The Unit/Lesson is an integral part of the learning progression students are asked to demonstrate conceptual understanding of standards in Lessons/Unit.
Activity 70	Aligned with modifications (see comments)	SG pp D-78-80; TG pp. D-204-205; Student Sheet 70.1	The Unit/Lesson is an integral part of the learning progression students are asked to demonstrate conceptual understanding of standards in Lessons/ Unit.

**Alignment of Washington 6-8 Science Standards with
STC/MS Genetics
Life Science ~ LS3B**

Content Standard Every organism contains a set of genetic information (instructions) to specify its traits. This information is contained within genes in the chromosomes in the nucleus of each cell.

Performance Expectation • Explain that information on how cells are to grow and function is contained in genes in the chromosomes of each cell nucleus and that during the process of reproduction the genes are passed from the parent cells to offspring.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 71	Aligned with modifications (see comments)	TG pp D-213; SG p D-82	The Unit/Lesson is an integral part of the learning progression students are asked to demonstrate conceptual understanding of standards in Lessons/Unit.
Activity 71	Aligned with modifications (see comments)	SG p D-78; TG pp D-211-213	Students are asked to evaluate an ethical issue based on their understanding genetic concepts.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3C**

Content Standard

Reproduction is essential for every species to continue to exist. Some plants and animals reproduce sexually while others reproduce asexually. Sexual reproduction leads to greater diversity of characteristics because offspring inherit genes from both parents.

Performance Expectation

- Identify sexually and asexually reproducing plants and animals.
- Explain why offspring that result from sexual reproduction are likely to have more diverse characteristics than offspring that result from asexual reproduction.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 57	Aligned as designed	SG pp D-15-21; TG pp D-34-40	
Activity 58	Aligned as designed	SG pp D-23-26; TG pp D-45-46, 48; TR 58.1-58.4; Student Sheet 58.1 A, B, 58.2	
Activity 63	Aligned as designed	SG pp D-42-44; TG pp D-106-109	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3D**

Content Standard

In sexual reproduction the new organism receives half of its genetic information from each parent, resulting in offspring that are similar but not identical to either parent. In asexual reproduction just one parent is involved, and genetic information is passed on nearly unchanged.

Performance Expectation

• Describe that in sexual reproduction the offspring receive genetic information from both parents, and therefore differ from the parents. • Predict the outcome of specific genetic crosses involving one characteristic (using principles of Mendelian genetics). • Explain the survival value of genetic variation.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 55	Aligned as designed	SG p D-10; TG pp D-18-19	The unit/lesson is an integral part of a learning progression.
Activity 56	Aligned as designed	SG p D-13; TG pp D-31-32	This unit/lesson is a part of a conceptual sequence.
Activity 57	Aligned as designed	SG pp D-15-21; TG pp D-34-40	
Activity 58	Aligned as designed	SG pp.= D-23-26; TG pp D-45-46, 48; TR 58.1-58.4; Student Sheet 58.1 A, B, 58.2	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3D**

Content Standard

In sexual reproduction the new organism receives half of its genetic information from each parent, resulting in offspring that are similar but not identical to either parent. In asexual reproduction just one parent is involved, and genetic information is passed on nearly unchanged.

Performance Expectation

• Describe that in sexual reproduction the offspring receive genetic information from both parents, and therefore differ from the parents. • Predict the outcome of specific genetic crosses involving one characteristic (using principles of Mendelian genetics). • Explain the survival value of genetic variation.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 59	Aligned as designed	SG pp D-27-30; TG pp D-65-70; TR 59.1-59.2; Student Sheet 59.1	
Activity 60	Aligned as designed	SG pp D-32-34; TG pp D-80-82; TR 60.1	
Activity 61	Aligned as designed	SG pp D-35-38; TG pp D-85-91; Student Sheet 61.1 A, B	
Activity 62	Aligned as designed	SG pp D-40; TG pp D-99-101; Student Sheet 62.1	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3D**

Content Standard

In sexual reproduction the new organism receives half of its genetic information from each parent, resulting in offspring that are similar but not identical to either parent. In asexual reproduction just one parent is involved, and genetic information is passed on nearly unchanged.

Performance Expectation

• Describe that in sexual reproduction the offspring receive genetic information from both parents, and therefore differ from the parents. • Predict the outcome of specific genetic crosses involving one characteristic (using principles of Mendelian genetics). • Explain the survival value of genetic variation.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 65	Aligned as designed	SG pp D-51-55; TG pp D-125-128; Student Sheet 65.1	
Activity 66	Aligned with modifications (see comments)	SG pp D-56-65; TG pp D-134-143; Student Sheet 66.1 A-C; TR 66.1 A, B	The unit/lesson contains many opportunities to discuss genetic variations observed in pedigrees.
Activity 66	Aligned as designed	SG pp D-56-65; TG pp D-134-143; Student Sheet 66.1 A-C; TR 66.1, 66.2 A, B	The unit/lesson contains many opportunities to discuss genetic variations observed in pedigrees.
Activity 67	Aligned with modifications (see comments)	SG pp D-166-169; TG pp D-159-163	The unit/lesson is consistently used to ensure students understand genetic information is contributed from both parents.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3D**

Content Standard

In sexual reproduction the new organism receives half of its genetic information from each parent, resulting in offspring that are similar but not identical to either parent. In asexual reproduction just one parent is involved, and genetic information is passed on nearly unchanged.

Performance Expectation

• Describe that in sexual reproduction the offspring receive genetic information from both parents, and therefore differ from the parents. • Predict the outcome of specific genetic crosses involving one characteristic (using principles of Mendelian genetics). • Explain the survival value of genetic variation.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 68	Aligned with modifications (see comments)	SG pp D-70-72; TG pp D-171-173; Student Sheet 68.1, 68.2, Student Key 68.1, 68.2	The Unit/Lesson is an integral part of the learning progression students are asked to demonstrate conceptual understanding of standards in Lessons/Unit.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics
Life Science ~ LS3E**

Content Standard Adaptations are physical or behavioral changes that are inherited and enhance the ability of an organism to survive and reproduce in a particular environment.

Performance Expectation • Give an example of a plant or animal adaptation that would confer a survival and reproductive advantage during a given environmental change.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Activity 64	Aligned with modifications (see comments)	SG pp D-48, 50; TG pp D-113-115, 117-119	Teacher must be intentional about use of the terms (vocabulary) nurture and how it relates to adaptation.