

WASHINGTON STATE LASER

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

SEPUP

Genetics

November 1, 2010

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 54**

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 D-5-7; TG pp D-5-8; Student sheet 54.1 and TR	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. D-5-7; TG pp D-5-8; Student sheet 54.1 and TR	Aligned as designed	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	<ul style="list-style-type: none"> • 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. 	SG p D-7; TG p D-8; Student Sheet 54.1, 54.2, and TR	Aligned with modifications (see comments)	The unit/lesson contains opportunities for the use of terms inference but it requires the intentional use by teachers.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 54**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
LS3B	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.	<ul style="list-style-type: none"> • 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. 	SG p D-7; TG pp D-1, 5, 7-8	Aligned with modifications (see comments)	The unit/lesson is an integral part of a learning progression.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 55**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
LS3B	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.	<ul style="list-style-type: none"> • 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. 	SG p D-10; TG p D-21	Aligned as designed	The unit/lesson is an integral part of a learning progression.
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG p D-10; TG pp D-18-19	Aligned as designed	The unit/lesson is an integral part of a learning progression.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 56**

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 D-12, 14; TG pp D-29, 32; Video - How Do Your Genes Fit?	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 D-12, 14; TG pp D-29, 32; Video - How Do Your Genes Fit?	Aligned as designed	
LS3B	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-13-14; TG pp D-27-28; Video - How Do Your Genes Fit?	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 56**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG p D-13; TG pp D-31-32	Aligned as designed	This unit/lesson is a part of a conceptual sequence.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 57**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
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 D-20-21; TG pp D-37-40	Aligned as designed	
APPA	People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.	<ul style="list-style-type: none"> • Describe how a technology has changed over time in response to societal challenges. 	SG p D-21 Extension	Aligned with modifications (see comments)	The teacher needs to intentionally take advantage of multiple opportunities to discuss tradeoffs associated with cloning.
LS3C	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-15-21; TG pp D-34-40	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 57**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
<p>LS3D</p>	<p>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.</p>	<ul style="list-style-type: none"> • 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. 	<p>SG pp D-15-21; TG pp D-34-40</p>	<p>Aligned as designed</p>	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 58**

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 D-22-26; TG pp D-44-48; Student Sheet 58.1, 58.2	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 D-23-26; TG pp D-45-48; Student Sheet 58.1, 58.2	Aligned as designed	
LS3C	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-23-26; TG pp D-45-46, 48; TR 58.1-58.4; Student Sheet 58.1 A, B, 58.2	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 58**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp.= D-23-26; TG pp D-45-46, 48; TR 58.1-58.4; Student Sheet 58.1 A, B, 58.2	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 59**

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 27-30; TG pp D-67, 69-70; Student Sheet 59.1	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 27-30; TG pp D-67, 69-70; Student Sheet 59.1	Aligned as designed	
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-27-30; TG pp D-65-70; TR 59.1-59.2; Student Sheet 59.1	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 60**

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 D-32-34; TG pp D-81-82; TR 60.1	Aligned as designed	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	<ul style="list-style-type: none"> • 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. 	SG pp D-32-34; TG pp D-80-81	Aligned with modifications (see comments)	The teacher needs to be intentional about discussing the standard
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 p D-31; TG pp D-78-79	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 60**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
<p>LS3D</p>	<p>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.</p>	<ul style="list-style-type: none"> • 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. 	<p>SG pp D-32-34; TG pp D-80-82; TR 60.1</p>	<p>Aligned as designed</p>	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 61**

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 D-36-38; TG pp D-86-91; Student Sheet 61.1 A, B	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 D-36-38; TG pp D-86-91; Student Sheet 61.1 A, B	Aligned as designed	
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-35-38; TG pp D-85-91; Student Sheet 61.1 A, B	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 62**

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 p D-40; TG pp D-99-100; Student Sheet 62.1	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 p D-40; TG p D-100	Aligned with modifications (see comments)	The teacher needs to be intentional about discussing the standard concerning variations on outcomes.
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-40; TG pp D-99-101; Student Sheet 62.1	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 63**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSA	Any system may be thought of as containing subsystems and as being a subsystem of a larger system.	<ul style="list-style-type: none"> Given a system, identify subsystems and a larger encompassing system 	SG pp D-41-47; TG pp D-108-110	Aligned with modifications (see comments)	Teacher must be intentional about use of the terms (vocabulary)system and subsystem.
LS3B	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.	<ul style="list-style-type: none"> 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. 	SG pp D-41-47; TG pp D-106-110	Aligned as designed	
LS3C	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.	<ul style="list-style-type: none"> 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. 	SG pp D-42-44; TG pp D-106-109	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 64**

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 p D-49; TG p D-115	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 D-49-50; TG pp D-115-116, 119; Science Skills Sheet 5 - Elements of Experimental Design	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 D-49-50; TG pp D-115-116, 119; Transparency 64.1	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 64**

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 D-49-50; TG pp D-115-116, 119; Science Skill Sheet 5 - Elements of Experimental Design	Aligned as designed	
LS3B	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.	<ul style="list-style-type: none"> 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. 	SG pp D-48,50; TG pp D-113-119	Aligned as designed	This unit/lesson is a part of a conceptual sequence.
LS3E	Adaptations are physical or behavioral changes that are inherited and enhance the ability of an organism to survive and reproduce in a particular environment.	<ul style="list-style-type: none"> Give an example of a plant or animal adaptation that would confer a survival and reproductive advantage during a given environmental change. 	SG pp D-48, 50; TG pp D-113-115, 117-119	Aligned with modifications (see comments)	Teacher must be intentional about use of the terms (vocabulary) nurture and how it relates to adaptation.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 65**

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 D-52-55; TG pp D-125-128; Student Sheet 65.1	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 D-52-55; TG pp D-125-128; Student Sheet 65.1	Aligned as designed	
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-51-55; TG pp D-125-128; Student Sheet 65.1	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 66**

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 D-56-65; TG pp D-137-143; TR 66.1, 66.2 A, B; Student Sheet 66.1 A-C	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 D-56-65; TG pp D-133-143; Student Sheet 66.1 A-C; TR 66.1, 66.2 A, B	Aligned as designed	
LS3D	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.	<ul style="list-style-type: none"> 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. 	SG pp D-56-65; TG pp D-134-143; Student Sheet 66.1 A-C; TR 66.1 A, B	Aligned with modifications (see comments)	The unit/lesson contains many opportunities to discuss genetic variations observed in pedigrees.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 66**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-56-65; TG pp D-134-143; Student Sheet 66.1 A-C; TR 66.1, 66.2 A, B	Aligned as designed	The unit/lesson contains many opportunities to discuss genetic variations observed in pedigrees.

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 67**

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 D-166-169; TG pp D-157-163; Student Sheet 67.1; TR 67.1	Aligned as designed	
LS3B	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-166-169; TG pp D-159-163	Aligned as designed	Teacher must make use of information found in Activity 56.
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-166-169; TG pp D-159-163	Aligned with modifications (see comments)	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 ~ Activity 68**

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 D-70-72; TG pp D-169-173; Student Sheet 68.1, 68.2; Student Sheet Keys 68.1, 68.2	Aligned as designed	
APPA	People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.	<ul style="list-style-type: none"> • Describe how a technology has changed over time in response to societal challenges. 	SG pp D-70-72; TG p D-169-173	Aligned with modifications (see comments)	The teacher needs to be intentional about discussing the standard as using technology to solve problems.
LS3D	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.	<ul style="list-style-type: none"> • 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. 	SG pp D-70-72; TG pp D-171-173; Student Sheet 68.1, 68.2, Student Key 68.1, 68.2	Aligned with modifications (see comments)	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 ~ Activity 69**

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 D-73-77; TG pp D-188-190	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 D-70-77; TG pp D-183-190; Student Sheet 69.1-69.4; Transparency 69.1	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 D-70-77; TG pp D-183-190; Student Sheet 69.1-69.4; Transparency 69.1	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 69**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPA	People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.	<ul style="list-style-type: none"> Describe how a technology has changed over time in response to societal challenges. 	SG p D-73; TG pp D-185-187	Aligned as designed	
LS3B	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.	<ul style="list-style-type: none"> 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. 	SG pp D-70-77; TG pp D-183-190; Student Sheet 69.1- 69.4; TR 69.1	Aligned as designed	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 ~ Activity 70**

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 D-79-80; TG pp D-204-5; Student Sheet 70.1	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 D-79-80; TG pp D-204-5; Student Sheet 70.1	Aligned as designed	
INQF	It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.	<ul style="list-style-type: none"> • 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. 	SG pp D-79-80; TG pp D-204-5; Student Sheet 70.1	Aligned as designed	

**Alignment of Washington 6-8 Science Standards with
SEPUP Genetics ~ Activity 70**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
APPA	People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.	<ul style="list-style-type: none"> Describe how a technology has changed over time in response to societal challenges. 	SG p D-78; TG p D-203	Aligned as designed	
LS3B	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.	<ul style="list-style-type: none"> 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. 	SG pp D-78-80; TG pp. D-204-205; Student Sheet 70.1	Aligned with modifications (see comments)	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 ~ Activity 71**

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 p D-78; TG pp D-211-212	Aligned with modifications (see comments)	The unit/lesson contains many opportunities to discuss ethical issues.
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 p D-78; TG pp D-211-212;	Aligned with modifications (see comments)	The unit/lesson contains many opportunities to discuss ethical issues.
APPG	The benefits of science and technology are not available to all the people in the world.	<ul style="list-style-type: none"> • Contrast the benefits of science and technology enjoyed by people in industrialized and developing nations. 	SG p D-78; TG pp D-211-212	Aligned with modifications (see comments)	Teacher has multiple opportunities to reinforce the concept that technology isn't available everywhere.

**Alignment of Washington 6-8 Science Standards with
STC/MS Genetics ~ Activity 71**

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
<p>LS3B</p>	<p>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.</p>	<ul style="list-style-type: none"> • 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. 	<p>TG pp D-213; SG p D-82</p>	<p>Aligned with modifications (see comments)</p>	<p>The Unit/Lesson is an integral part of the learning progression students are asked to demonstrate conceptual understanding of standards in Lessons/Unit.</p>
<p>LS3B</p>	<p>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.</p>	<ul style="list-style-type: none"> • 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. 	<p>SG p D-78; TG pp D-211-213</p>	<p>Aligned with modifications (see comments)</p>	<p>Students are asked to evaluate an ethical issue based on their understanding genetic concepts.</p>