WASHINGTON STATE LASER

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

STC/MS

Properties of Matter

November 1, 2010

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 10	**Aligned with modifications (see comments)**	SG pp 87-95; Reading: Bicycle Ingredients, SG pp 96-97	Teacher needs to emphasize the bicycle as a system and the student selected object.

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 13	**Aligned as designed**	Inquiry 13.2 SG pp 114-115; Student Sheet 13.2 TG pp 150-151	
Lesson 15	**Aligned as designed**	Inquiry 15.2 pp 126-127; Student Sheet 15.2 TG p 168	
Lesson 16	**Aligned as designed**	Inquiry 16.1 SG pp 132-133	
Lesson 17	**Aligned as designed**	Inquiry 17.3 SG pp 144-145; TG p 190; Student Sheet 17.3	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 24	**Aligned as designed**	Getting Started TG p 297; Inquiry 24.1 SG pp 220-221	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 13	**Aligned as designed**	Inquiry 13.2 SG pp 114-115; Student Sheet 13.2 TG pp 150-151	
Lesson 16	**Aligned as designed**	Inquiry 16.1 SG pp 132-133	
Lesson 17	**Aligned as designed**	Inquiry 17.3 SG pp 144-145; TG p 190; Student Sheet 17.3	
Lesson 24	**Aligned as designed**	Getting Started TG p 297; Inquiry 24.1 SG pp 220-221	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Inquiry ~ INQC

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

Performance Expectation
- 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.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 13	**Aligned as designed**	Inquiry 13.2 SG pp 114-115; Student Sheet 13.2 TG pp 150-151	
Lesson 15	**Aligned as designed**	Inquiry 15.2 pp 126-127; Student Sheet 15.2 TG p 168	
Lesson 16	**Aligned as designed**	Inquiry 16.1 SG pp 132-133	
Lesson 17	**Aligned as designed**	Inquiry 17.3 SG pp 144-145; TG p 190; Student Sheet 17.3	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Inquiry ~ INQC

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

Performance Expectation
- 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.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 24	**Aligned as designed**	Getting Started TG p 297; Inquiry 24.1 SG pp 220-221	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 13	**Aligned as designed**	Inquiry 13.2 SG pp 114-115; Student Sheet 13.2 TG pp 150-151	
Lesson 15	**Aligned as designed**	Inquiry 15.2 pp 126-127; Student Sheet 15.2 TG p 168	
Lesson 16	**Aligned with modifications (see comments)**	Inquiry 16.1 SG pp 132-133	Have teacher make explicit the independent and dependent variables.

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Inquiry ~ INQF

Content Standard It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.

Performance Expectation
• 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.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 13	**Aligned as designed**	Inquiry 13.2 SG pp 114-115; Student Sheet 13.2 TG pp 150-151	
Lesson 15	**Aligned as designed**	Inquiry 15.2 pp 126-127; Student Sheet 15.2 TG p 168	
Lesson 16	**Aligned as designed**	Inquiry 16.1 SG pp 132-133; Reflections 4-5 TG p 177	
Lesson 17	**Aligned as designed**	Inquiry 17.3 SG pp 144-145; TG p 190; Student Sheet 17.3	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Inquiry ~ INQF

Content Standard It is important to distinguish between the results of a particular investigation and general conclusions drawn from these results.

Performance Expectation
• 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.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 24	**Aligned as designed**	Getting Started TG p 297; Inquiry 24.1 SG pp 220-221	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 13	**Aligned as designed**	Inquiry 13.2 SG pp 114-115; Student Sheet 13.2 TG pp 150-151	
Lesson 15	**Aligned as designed**	Inquiry 15.2 pp 126-127; Student Sheet 15.2 TG p 168	
Lesson 16	**Aligned as designed**	Inquiry 16.1 SG pp 132-133	
Lesson 24	**Aligned as designed**	Getting Started TG p 297; Inquiry 24.1 SG pp 220-221	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 01	**Aligned as designed**	SG p 3 "Getting Started" 4	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 07	**Aligned as designed**	Reading: Lost Wax Casting SG pp 71-73	
Lesson 10	**Aligned as designed**	SG pp 87-95; Reading: Bicycle Ingredients, SG pp 96-97	
Lesson 11	**Aligned as designed**	Reading: Perfect Teamwork SG pp 102-105	
Lesson 12	**Aligned as designed**	Reading: Dissolving History pp 110-111	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 22	**Aligned as designed**	Reading: Alchemy Into Chemistry SG pp 206-207	
Lesson 23	**Aligned as designed**	Reading: Making Metals by Mistake SG pp 216-217	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Application ~ APPD

Content Standard

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

Performance Expectation

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

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 03	**Aligned with modifications (see comments)**	Reading: Why Did the Titanic Float? SG pp 28-29	Emphasize questions 1 and 2.
Lesson 05	**Aligned as designed**	Reading: The Trans-Alaska Pipeline: Meeting Nature's Challenges SG pp 52-55	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 05	**Aligned as designed**	Reading: The Trans-Alaska Pipeline: Meeting Nature's Challenges SG pp 52-55	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 05	**Aligned as designed**	Reading: The Trans-Alaska Pipeline: Meeting Nature's Challenges SG pp 52-55	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
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
Lesson 05	**Aligned as designed**	Reading: Measuring Temperature by Degrees SG: 44-45	
Lesson 05	**Aligned as designed**	Reading: Measuring Temperature by Degrees SG: 44-45	
Lesson 07	**Aligned as designed**	Reading: Lost Wax Casting SG pp 71-73	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2A

Content Standard Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.

Performance Expectation • Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 02	**Aligned as designed**	Inquiry 2.2 SG p 18; Inquiry 2.3 SG p 19 Reflection Questions 1-2 SG p 20	
Lesson 02	**Aligned as designed**	Reading: Archimedes' Crowning Moment SG pp 22-23	
Lesson 03	**Aligned as designed**	Inquiry 3.1 SG p 26	
Lesson 04	**Aligned as designed**	Inquiry 4.1 SG p 33 Reading: Deadly Density SG p 34	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2A

Content Standard Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.

Performance Expectation • Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 05	**Aligned with modifications (see comments)**	Inquiry 5.1, 5.2, 5.3 SG pp 40-43 Student Sheet 5 TG pp 61-63; Reading: Just a Load of Hot Air SG pp 46-47	Teacher needs to connect changes in volume and density with motion of particles in the three states of matter.
Lesson 06	**Aligned as designed**	Inquiry 6.1 SG pp 58-60	
Lesson 06	**Aligned as designed**	Inquiry 6.1 SG pp 58-60; Reading: The Properties of Asbestos: The Pros and Cons SG pp 61-63	
Lesson 07	**Aligned as designed**	Inquiry 7.1 SG 66-67; Reading: Boiling Oil SG pp 68-70; Reading: Lost Wax Casting SG pp 71-73	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2A

Content Standard Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.

Performance Expectation • Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 08	**Aligned as designed**	Inquiry 8.1-8.2 SG pp 76-77	
Lesson 09	**Aligned as designed**	Inquiry 9.1; Student sheet 9 TG pp 105-109	
Lesson 10	**Aligned as designed**	SG pp 87-95; Reading: Bicycle Ingredients, SG pp 96-97	
Lesson 12	**Aligned as designed**	TG p 138; Inquiry 12.1 SG pp 108-109	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2A

Content Standard Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.

Performance Expectation • Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 13	**Aligned as designed**	Getting Started TG p 146; Inquiry 13.1 SG p 114; Inquiry 13.2 SG pp 114-115	
Lesson 15	**Aligned as designed**	Getting Started SG pp 123-124; Inquiry 15.2 pp 126-127	
Lesson 16	**Aligned as designed**	Inquiry 16.1 SG pp 132-133; Reading: Getting Taken to the Cleaners SG pp 134-135; Reading: Mixing Colorful Coverings SG pp 136-139	
Lesson 18	**Aligned as designed**	Inquiry 18.1, 18.2, 18.3 SG pp 152-157; Reading: The Samurai's Sword SG pp 158-159; Reading: Ice Cream in the Old Days SG pp 160-161	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2A

Content Standard Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.

Performance Expectation • Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 19	**Aligned as designed**	Inquiry 19.1 Reading: Panning For Gold SG pp 165-167; Student Sheet 19.2; TG pp 216-222	
Lesson 20	**Aligned as designed**	Inquiry 20.1 SG pp 172-177; Student Sheet 20.1 TG pp 237-239; Reading: The Properties of Hydrogen and the Death of an Airship SG pp 180-182; Reading: Extracting Aluminum SG pp 183-185	
Lesson 21	**Aligned as designed**	Inquiry 21.1 SG pp 188-194; Reading: Dmitry's Card Game SG pp 195-197	
Lesson 22	**Aligned as designed**	Inquiry 22.1	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2A

Content Standard Substances have characteristic intrinsic properties such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.

Performance Expectation • Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 23	**Aligned as designed**	Inquiry 23.1 23.2 SG pp 210-213; Reading: Reactivity and Free Metals SG pp 214-215; Reading: Making Metals by Mistake SG pp 216-217	
Lesson 25	**Aligned as designed**	Student Sheet 25 Review for Compounds Elements and Chemical Reactions TG pp 311-312	
Lesson 26	**Aligned as designed**	Inquiry 26.1 SG pp 232-235; Student Sheet 26.1 TG pp 319-320; Student Sheet 26 TG pp 321-331	
Lesson 26	**Aligned as designed**	Inquiry 26.1 SG pp 232-235; Student Sheet 26.1 TG pp 319-320; Student Sheet 26 TG pp 321-331	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2B

Content Standard

Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.

Performance Expectation

• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture.
• Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 11	**Aligned as designed**	SG pp 98-100; Inquiry 11.1 SG pp 100-101; Reading: Perfect Teamwork SG pp 102-105	
Lesson 12	**Aligned as designed**	TG p 138; Inquiry 12.1 SG pp 108-109	
Lesson 12	**Aligned as designed**	TG p 138; Inquiry 12.1 SG pp 108-109	
Lesson 13	**Aligned as designed**	Getting Started TG p 146; Inquiry 13.1 SG p 114; Inquiry 13.2 SG pp 114-115	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2B

Content Standard

Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.

Performance Expectation

• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture.
• Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 15	**Aligned as designed**	Inquiry 15.1 SG pp 124-125; Inquiry 15.2 pp 126-127; Reading: Separating Solutions and the Salty Sea SG pp 128-129	
Lesson 17	**Aligned as designed**	Inquiry 17.1, 17.2, 17.3 SG pp 142-145; Reading: Separation Science at the FBI SG pp 146-149	
Lesson 18	**Aligned as designed**	Inquiry 18.1, 18.2, 18.3 SG pp 152-157; Reading: The Samurai's Sword SG pp 158-159; Reading: Ice Cream in the Old Days SG pp 160-161	
Lesson 19	**Aligned as designed**	Inquiry 19.1 Reading: Panning For Gold SG pp 165-167; Student Sheet 19.2; TG pp 216-222	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2B

Content Standard Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.

Performance Expectation
• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture.
• Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 20	**Aligned as designed**	Inquiry 20.1 SG pp 172-177; Student Sheet 20.1; TG pp 237-239	
Lesson 22	**Aligned as designed**	Inquiry 22.2; Reading: Synthesizing New Materials SG pp 204-205	
Lesson 23	**Aligned as designed**	Inquiry 23.2 SG pp 211-213; Reading: Making Metals by Mistake SG pp 216-217	
Lesson 23	**Aligned as designed**	Inquiry 23.1 23.2 SG pp 210-213; Reading: Reactivity and Free Metals SG pp 214-215; Reading: Making Metals by Mistake SG pp 216-217	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2B

Content Standard

Mixtures are combinations of substances whose chemical properties are preserved. Compounds are substances that are chemically formed and have different physical and chemical properties from the reacting substances.

Performance Expectation

• Separate a mixture using differences in properties (e.g., solubility, size, magnetic attraction) of the substances used to make the mixture.
• Demonstrate that the properties of a compound are different from the properties of the reactants from which it was formed.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 25	**Aligned as designed**	Student Sheet 25 Review for Compounds Elements and Chemical Reactions TG pp 311-312	
Lesson 26	**Aligned as designed**	Student Sheet 26 TG pp 321-331	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2C

Content Standard All matter is made of atoms. Matter made of only one type of atom is called an element.

Performance Expectation • Explain that all matter is made of atoms, and give examples of common elements—substances composed of just one kind of atom.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 20	**Aligned with modifications (see comments)**	Inquiry 20.1 SG pp 172-177; Student Sheet 20.1; TG pp 237-239	The unit/lesson contains opportunities for the use of ATOMS but it requires the intentional use by teachers.
Lesson 21	**Aligned as designed**	Inquiry 21.1 SG pp 188-194; Reading: Dmitry's Card Game SG pp 195-197	
Lesson 22	**Aligned as designed**	Inquiry 22.1, 22.2 SG pp 200-203	
Lesson 25	**Aligned with modifications (see comments)**	Student Sheet 25 Review for Compounds Elements and Chemical Reactions TG pp 311-312	The unit/lesson contains opportunities for the use of terms ATOMS but it requires the intentional use by teachers.

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2D

Content Standard Compounds are composed of two or more kinds of atoms, which are bound together in well-defined molecules or arrays.

Performance Expectation • Demonstrate with a labeled diagram and explain the relationship among atoms, molecules, elements, and compounds.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 20	**Aligned as designed**	Inquiry 20.1 SG pp 172-177; Student Sheet 20.1; TG pp 237-239	
Lesson 22	**Aligned as designed**	Inquiry 22.2 SG pp 201-203	
Lesson 23	**Aligned as designed**	Inquiry 23.2 SG pp 211-213; Reading: Making Metals by Mistake SG pp 216-217	
Lesson 24	**Aligned as designed**	Getting Started TG p 297	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2D

Content Standard Compounds are composed of two or more kinds of atoms, which are bound together in well-defined molecules or arrays.

Performance Expectation • Demonstrate with a labeled diagram and explain the relationship among atoms, molecules, elements, and compounds.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 25	**Aligned as designed**	Student Sheet 25 Review for Compounds Elements and Chemical Reactions TG pp 311-312	
Lesson 26	**Aligned as designed**	Student Sheet 26 TG pp 321-331	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2E

Content Standard

Solids, liquids, and gases differ in the motion of individual particles. In solids, particles are packed in a nearly rigid structure; in liquids, particles move around one another; and in gases, particles move almost independently.

Performance Expectation

• Describe how solids, liquids, and gases behave when put into a container (e.g., a gas fills the entire volume of the container). Relate these properties to the relative movement of the particles in the three states of matter.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 01	**Aligned as designed**	Reading: What is Matter SG pp 8-9	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2F

Content Standard When substances within a closed system interact, the total mass of the system remains the same. This concept, called conservation of mass, applies to all physical and chemical changes.

Performance Expectation • Apply the concept of conservation of mass to correctly predict changes in mass before and after chemical reactions, including reactions that occur in closed containers, and reactions that occur in open containers where a gas is given off.*a

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 08	**Aligned as designed**	Inquiry 8.1-8.2 SG pp 76-77	
Lesson 09	**Aligned as designed**	Student sheet 9 TG pp 105-109	
Lesson 14	**Aligned as designed**	Inquiry 14.1 SG pp 119-120; Inquiry 14.2 SG pp 120-121	
Lesson 19	**Aligned as designed**	Student Sheet 19.2; TG pp 216-222	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS2F

Content Standard When substances within a closed system interact, the total mass of the system remains the same. This concept, called conservation of mass, applies to all physical and chemical changes.

Performance Expectation • Apply the concept of conservation of mass to correctly predict changes in mass before and after chemical reactions, including reactions that occur in closed containers, and reactions that occur in open containers where a gas is given off.*a

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 25	**Aligned as designed**	Getting Started SG p 225; Inquiry 25.1 SG pp 226-227; Reading: The Mass of Matter SG pp 228-229; SS 25 TG pp 311-312	
Lesson 26	**Aligned as designed**	Inquiry 26.1 SG pp 232-235; Student Sheet 26.1 TG pp 319-320; Student Sheet 26 TG pp 321-331	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS3A

Content Standard Energy exists in many forms: heat, light, chemical, electrical, motion of objects, and sound. Energy can be transformed from one form to another and transferred from one place to another.

Performance Expectation
• List different forms of energy (e.g., thermal, light, chemical, electrical, kinetic, and sound energy).
• Describe ways in which energy is transformed from one form to another and transferred from one place to another (e.g., chemical to electrical energy in a battery, electrical to light energy in a bulb).

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 20	**Aligned as designed**	Reading: Car Battery or Chemical Factory? SG pp 178-179	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS3B

Content Standard Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.

Performance Expectation • Use everyday examples of conduction, radiation, and convection, or mechanical mixing, to illustrate the transfer of energy from warmer objects to cooler ones until the objects reach the same temperature.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 05	**Aligned as designed**	Reading: Density Creates Currents SG pp 48-51	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS3C

Content Standard Heat (thermal energy) consists of random motion and the vibrations of atoms and molecules. The higher the temperature, the greater the atomic or molecular motion. Thermal insulators are materials that resist the flow of heat.

Performance Expectation • Explain how various types of insulation slow transfer of heat energy based on the atomic-molecular model of heat (thermal energy).

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 05	**Aligned with modifications (see comments)**	Inquiry 5.1, 5.2, 5.3 SG pp 40-43; Student Sheet 5 TG pp 61-63; Reading: Just a Load of Hot Air SG pp 46-47	Teacher needs to connect changes in volume and density with motion of particles in the three states of matter.

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Physical Science ~ PS3E

Content Standard Energy from a variety of sources can be transformed into electrical energy, and then to almost any other form of energy. Electricity can also be distributed quickly to distant locations.

Performance Expectation • Illustrate the transformations of energy in an electric circuit when heat, light, and sound are produced. Describe the transformation of energy in a battery within an electric circuit.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 20	**Aligned as designed**	Reading: Car Battery or Chemical Factory? SG pp 178-179	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Earth Science ~ ES2A

Content Standard The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations.

Performance Expectation • Describe the composition and properties of the troposphere and stratosphere.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 04	**Aligned as designed**	Reading: Air heads SG pp 35-37	

Alignment of Washington 6-8 Science Standards with
STC/MS Properties of Matter
Earth Science ~ ES2F

Content Standard The crust is composed of huge crustal plates on the scale of continents and oceans which move centimeters per year, pushed by convection in the upper mantle, causing earthquakes, volcanoes, and mountains.

Performance Expectation
• Draw a labeled diagram showing how convection in the upper mantle drives movement of crustal plates.
• Describe what may happen when plate boundaries meet (e.g., earthquakes, tsunami, faults, mountain building), with examples from the Pacific Northwest.

Lesson Number	Alignment	Evidence of Alignment	AlignmentComments
Lesson 05	**Aligned as designed**	Reading: Density Creates Currents SG pp 48-51	