WASHINGTON STATE LASER

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

FOSS/MS

Weather & Water

November 1, 2010

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 01

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.	• Given a system, identify subsystems and a larger encompassing system	Investigation 1 part 2 pp 48-56; Lab Notebook p 1	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) ex: air pressure, humidity are parts of the large weather system.
APPA	People have always used technology to solve problems. Advances in human civilization are linked to advances in technology.	• Describe how a technology has changed over time in response to societal challenges.	Investigation 1 part 1 and 2 pp 33-56; Scientific and Historical background pp 36-42; Resource book pp 3-5	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional in using weather issues (severe weather and its problems) to show how current technology improves our understanding of weather and therefore improves our society (ex: people can be evacuated ahead of severe weather). Students are asked to discuss things people have done to try to lessen hurricane damage in step 7 on p 45 in Conducting Part 1.
APPC	Science and technology are interdependent. Science drives technology by demanding better instruments and suggesting ideas for new designs. Technology drives science by providing instruments and research methods.	• Give examples to illustrate how scientists have helped solve technological problems (e.g., how the science of biology has helped sustain fisheries) and how engineers have aided science (e.g., designing telescopes to discover distant planets).	Investigation 1 part 1-2 pp 33-56; Resource book p 5; CD-ROM: Video Resources: "Weather Satellite"	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 02

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.	• Given a system, identify subsystems and a larger encompassing system	Investigation 2 part 2 pp 76-82; Lab Notebook page 5; CD-ROM: "Elevator to Space"; Resource book pp 8-11	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) ex: stratosphere, troposphere are part of the larger atmosphere system.
SYSB	The boundaries of a system can be drawn differently depending on the features of the system being investigated, the size of the system, and the purpose of the investigation.	• Explain how the boundaries of a system can be drawn to fit the purpose of the study (e.g., to study how insect populations change, a system might be a forest, a meadow in the forest, or a single tree).	Investigation 2 part 2 pp 76-82; Lab Notebook p 5; CD-ROM: "Elevator to Space"; Resource book pp 8-11	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) ex: different layers of the atmosphere each have boundaries, but are all part of the whole system.
SYSE	If the input of matter or energy is the same as the output, then the amount of matter or energy in the system won't change; but if the input is more or less than the output, then the amount of matter or energy in the system will change.	• Measure the flow of matter into and out of an open system and predict how the system is likely to change (e.g., a bottle of water with a hole in the bottom, an ecosystem, an electric circuit).	Investigation 2 part 1 pp 69-76	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) ex: when balloon pops the energy in the system changes because there was an output of matter.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 02

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.	• Generate a question that can be answered through scientific investigation. This may involve refining or refocusing a broad and ill-defined question.	Investigation 2 part 1 pp 57-75; Lab Notebook p 3	**Aligned as designed**	Students are asked to write three questions in step 5 on p 71.
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• 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.	Investigation 2 part 1 pp 57-75; Lab Notebook p 3	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional in using the terms given in the performance expectation.
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.	• 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.	Investigation 2 CD-ROM: "Gas in a Syringe"	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 02

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2A	The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations.	• Describe the composition and properties of the troposphere and stratosphere.	Investigation 2 part 2 pp 78-82; Lab Notebook pages 5; CD-ROM: Elevator to Space; Resource book pp 6-7 and 8-11	**Aligned as designed**	Part 2 is strong in meeting the standard. Part 1 is an integral part of a learning progression.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 03

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSF	The natural and designed world is complex; it is too large and complicated to investigate and comprehend all at once. Scientists and students learn to define small portions for the convenience of investigation. The units of investigation can be referred to as “systems.”	• Given a complex societal issue with strong science and technology components (e.g., overfishing, global warming), describe the issue from a systems point of view, highlighting how changes in one part of the system are likely to influence other parts of the system.	Investigation 3 parts 2-3 pp 97-110; Lab Notebook pp 9,11 and 13; Extending the Experience pp 111-112; CD -ROM: "Seasons", "Pacific Coast Daily", "Pacific Coast Sunset"	**Aligned as designed**	
INQC	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. • 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.	Investigation 3 part 1 pp 93-96; Lab Notebook p 7	**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.	• 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.	Investigation 3 parts 2-3 pp 97-110; Lab Notebook pp 9,11 and 13; Extending the Experience pp 111-112; CD-ROM: "Seasons", "Pacific Coast Daily", Pacific Coast Sunset"	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 03

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Investigation 3 pp 83-112; Lab Notebook pp 11-13; Resource book pp 12-19; CD-ROM "Water Cycles"," Seasons"	**Aligned as designed**	Investigation 3 is strong in "the sun is the major source of energy..." Investigation 3 parts 1 and 2 are an integral part of a learning progression.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 04

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.	• Given a system, identify subsystems and a larger encompassing system	Investigation 4 part 2 pp 131-140; Lab Notebook p 19	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) e.g., the inside vial is a subsystem of the larger beaker.
SYSF	The natural and designed world is complex; it is too large and complicated to investigate and comprehend all at once. Scientists and students learn to define small portions for the convenience of investigation. The units of investigation can be referred to as “systems.”	• Given a complex societal issue with strong science and technology components (e.g., overfishing, global warming), describe the issue from a systems point of view, highlighting how changes in one part of the system are likely to influence other parts of the system.	Investigation 4 parts 1-2 pp 113-140; Lab Notebook pp 14-19; Resource Book pp 22-26; CD-ROM: "Heat and Energy"	**Aligned as designed**	
INQC	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. • 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.	Investigation 4 parts 1-2 pp 121-139; Extending the experience p 140; Lab Notebook pp 14-19; CD-ROM: "Heat Capacity"	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 04

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.	• 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.	Investigation 4 part 1 pp 121-130; Lab Notebook pp 14-15	**Module/Unit requires changes (see comments)**	Teacher must be intentional about use of the terms (vocabulary) and modify the activity to include a control sample.
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.	• 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.	Investigation 4 CD-ROM: "Heat Capacity" and "Molecules in Solids Liquids and Gases", "Heat and Energy", "Thermometer"	**Aligned as designed**	
PS3C	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.	• Explain how various types of insulation slow transfer of heat energy based on the atomic-molecular model of heat (thermal energy).	Investigation 4 part 2 pp 131-140; Resource Book pp 22-26; Lab Notebook pp 17 and 19; CD-ROM: "Molecules in Solids, Liquids and Gases", "Thermometer"; Video Resources: "Conduction through Metals"	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 04

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Investigation 4 parts 1-2 pp 113-140; Lab Notebook pp 14-19; Resource Book pp 22-26; CD-ROM: Heat and Energy	**Aligned as designed**	Investigation 4 is strong in addressing that the energy from the sun the sun is a major source of energy for conduction. This investigation is an integral part of a learning progression.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 05

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSD	In an open system, matter flows into and out of the system. In a closed system, energy may flow into or out of the system, but matter stays within the system.	• Given a description of a system, analyze and defend whether it is open or closed.	Investigation 5 parts 2-3, pp 163-174; Lab Notebook pp 27, 29; CD-ROM: "Heat and Energy"; Resource book pp 32-33	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) e.g., vials represent closed systems and the convection chamber is a closed system.
SYSF	The natural and designed world is complex; it is too large and complicated to investigate and comprehend all at once. Scientists and students learn to define small portions for the convenience of investigation. The units of investigation can be referred to as “systems.”	• Given a complex societal issue with strong science and technology components (e.g., overfishing, global warming), describe the issue from a systems point of view, highlighting how changes in one part of the system are likely to influence other parts of the system.	Investigation 5 parts 1-3 pp 141-176	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• 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.	Investigation 5 part 2 pp 163-168; Lab Notebook p 27	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional about allowing the students to write their own investigation using the scientific method terms in the standard. Students should be given the opportunity to do the write-up independently, replacing the lab notebook p 27.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 05

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
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.	• 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.	Investigation 5 part 3 pp 169-176; CD-ROM: "Convection Chamber", Lab Notebook p 29	**Aligned as designed**	
INQF	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.	Investigation 5 part 2 pp 163-168; Lab Notebook p 27	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional in distinguishing between results and conclusion.
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• 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.	Investigation 5 part 2, pp 163-168; Lab Notebook p 27	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional in using the terms from the standard and providing students with the opportunity to independently create their own scientific report, replacing the Lab Notebook sheet.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 05

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
PS2A	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.	• Use characteristic intrinsic properties such as density, boiling point, and melting point to identify an unknown substance.	Investigation 5 part 1 pp 144-162; Extending the Experience p 175; Lab Notebook pp 21-23; Resource book pp 27-31; CD-ROM Video Resources: "Density of Gases" (Extension)	**Aligned as designed**	Investigation 5 part 1 is strong in density.
PS3B	Conduction, radiation, and convection, or mechanical mixing, are means of energy transfer.	• 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.	Investigation 5 part 2-3 pp 165-174; CD-ROM: "Heat and Energy"; Resource book pp 32-33; Lab Notebook pp 27, 29	**Aligned as designed**	Investigation 5 is strong in meeting the standard.
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Investigation 5 parts 2-3 pp 164-174; Resource book pp 32-33; Lab Notebook book pp 27, 29; CD-ROM: "Heat and Energy", "Convection Chamber"	**Aligned as designed**	Investigation 5 is an integral part of a learning progression. Investigation 5 is a part of a conceptual sequence. Investigation is strong in how energy drives the water cycle.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 05

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2C	In the water cycle, water evaporates from Earth's surface, rises and cools, condenses to form clouds and falls as rain or snow and collects in bodies of water.	• Describe the water cycle and give local examples of where parts of the water cycle can be seen.	Investigation 5 part 2-3 pp 163-176; Lab Notebook pp 27, 29; CD-ROM: "Heat and Energy" and "Convection Chamber"; Resource book pp 32-33	**Aligned as designed**	All parts of investigation 5 are part of a conceptual sequence that lead up to the water cycle.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 06

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSC	The output of one system can become the input of another system.	• Give an example of how output of matter or energy from a system can become input for another system	Investigation 6 part 2 pp 194-199; Lab Notebook p 31	**Aligned with modifications (see comments)**	This investigation contains opportunities to address the standards but the teacher must be intentional in using the terms input and output; for example: when addressing the output of water vapor in evaporation as an input to the air (humidity).
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• 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.	Investigation 6 part 1 pp 192-193	**Aligned with modifications (see comments)**	Teacher must be intentional about sharing how questions drive types of investigations.
INQC	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. • 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.	Investigation 6 part 1 pp 190-193	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 06

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
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.	• 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.	Investigation 6 part 4 pp 206-213; Lab Notebook p 37; CD-ROM Video Resources: "Cloud in a Bottle"; Resource book p 80	**Aligned as designed**	
INQF	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.	Investigation 6 part 1 pp 190-193	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional in distinguishing between results and conclusion.
APPC	Science and technology are interdependent. Science drives technology by demanding better instruments and suggesting ideas for new designs. Technology drives science by providing instruments and research methods.	• Give examples to illustrate how scientists have helped solve technological problems (e.g., how the science of biology has helped sustain fisheries) and how engineers have aided science (e.g., designing telescopes to discover distant planets).	Investigation 6 part 5 pp 214-220; Lab Notebook pp 39, 40, 41; CD-ROM: Atmospheric Data: Weather Balloon; Resource book pp 43-44, 81	**Aligned as designed**	The investigation contains many opportunities to discuss how science drives technology by demanding better instruments and suggesting ideas for new designs(switching from kite to weather balloon).

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 06

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2C	In the water cycle, water evaporates from Earth's surface, rises and cools, condenses to form clouds and falls as rain or snow and collects in bodies of water.	• Describe the water cycle and give local examples of where parts of the water cycle can be seen.	Investigation 6 parts 1-3, pp 192-213; Lab Notebook pp 31, 35 and 37; CD-ROM Video Resources: "Cloud in a Bottle"; Resource book pp 34-36, 37-42, 79, 80	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 07

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.	• Given a system, identify subsystems and a larger encompassing system	Investigation 7 parts 1 and 2 pp 223-244; Lab Notebook p 43; CD-ROM: "Water Cycle"	**Aligned with modifications (see comments)**	The investigation contains opportunities to address the standards in discussing the water cycle, but the teacher must be intentional in using the terms system and subsystems. Example: the water cycle is a larger system with smaller subsystems such as water into soil, into plants and transpiration.
SYSC	The output of one system can become the input of another system.	• Give an example of how output of matter or energy from a system can become input for another system	Investigation 7 parts 1 and 2 pp 223-244; Lab Notebook p 35; CD-ROM: "Water Cycle"	**Aligned with modifications (see comments)**	The investigation contains opportunities to address the standards but the teacher must be intentional in using the terms input and output for example when addressing the output of water in transpiration as an input to condensation.
SYSD	In an open system, matter flows into and out of the system. In a closed system, energy may flow into or out of the system, but matter stays within the system.	• Given a description of a system, analyze and defend whether it is open or closed.	Investigation 7 parts 1 and 2 pp 232-244; Lab Notebook p 43; Multimedia game; CD-ROM: "Water Cycle"; Resource book pp 82-83	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) e.g., water cycle is a closed system.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 07

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSF	The natural and designed world is complex; it is too large and complicated to investigate and comprehend all at once. Scientists and students learn to define small portions for the convenience of investigation. The units of investigation can be referred to as “systems.”	• Given a complex societal issue with strong science and technology components (e.g., overfishing, global warming), describe the issue from a systems point of view, highlighting how changes in one part of the system are likely to influence other parts of the system.	Investigation 7 parts 1-2 pp 223-244	**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.	• 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.	Investigation 7 parts 1 and 2 pp 232-244; Lab Notebook p 43; Multimedia game CD-ROM: "Water Cycle"; Resource book pp 82-83	**Aligned as designed**	
APPB	Scientists and technological designers (including engineers) have different goals. Scientists answer questions about the natural world; technological designers solve problems that help people reach their goals.	• Investigate several professions in which an understanding of science and technology is required. Explain why that understanding is necessary for success in each profession.	Investigation 7 part 1 pp 234-239, Video: "Water Works: Careers in Hydrology"	**Aligned as designed**	

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 07

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
ES2C	In the water cycle, water evaporates from Earth's surface, rises and cools, condenses to form clouds and falls as rain or snow and collects in bodies of water.	• Describe the water cycle and give local examples of where parts of the water cycle can be seen.	Investigation 7 part 1-2 pp 223-244; CD ROM: "Cycles: Water Cycle"; Lab Notebook p 43; Resource book pp 45-47	**Aligned as designed**	
ES2D	Water is a solvent. As it passes through the water cycle, it dissolves minerals and gases and carries them to the oceans.	• Distinguish between bodies of saltwater and fresh water and explain how saltwater became salty.	Investigation 7 part 1 pp 234-239; Resource book pp 45-47	**Module/Unit requires changes (see comments)**	Teacher needs to design activities to support the concept of how dissolved minerals are transported by water molecules to oceans to form saltwater. Investigation 7 is strong in fresh water and salt water distribution on earth.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 08

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSD	In an open system, matter flows into and out of the system. In a closed system, energy may flow into or out of the system, but matter stays within the system.	• Given a description of a system, analyze and defend whether it is open or closed.	Investigation 8 part 1 pp 258-264; Lab Notebook page 45; CD-ROM: "Gas in a Syringe"; Resource book pp 48-52	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms (vocabulary) ex: Both the Pressure Indicator and Gas in Syringe are a closed systems. Barometers discussed in the reading are open systems.
SYSF	The natural and designed world is complex; it is too large and complicated to investigate and comprehend all at once. Scientists and students learn to define small portions for the convenience of investigation. The units of investigation can be referred to as “systems.”	• Given a complex societal issue with strong science and technology components (e.g., overfishing, global warming), describe the issue from a systems point of view, highlighting how changes in one part of the system are likely to influence other parts of the system.	Investigation 8 parts 1-4 pp 245-280	**Aligned as designed**	
INQB	Different kinds of questions suggest different kinds of scientific investigations.	• 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.	Investigation 8 part 1 pp 260-264; Lab Notebook p 45	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional about allowing the students to write their own investigation using the scientific method terms in the standard. Students should be given the opportunity to do the write-up independently, replacing the lab notebook p 45.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 08

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQC	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. • 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.	Investigation 8 parts 2-4 pp 265-280; CD-ROM: "Local Wind"; Lab notebook pp 48-49, and 53	**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.	• 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.	Investigation 8 parts 1-4 pp 245-280; CD-ROM: "Gas in a Syringe", "Weather-Balloon Launch", "Elevator to Space", "Local Wind"; Lab Notebook pp 50-51, 53; Resource book p 54 (image)	**Aligned as designed**	
INQF	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.	Investigation 8 parts 2 and 3 pp 265-275; Lab Notebook pp 48-49	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional in distinguishing between results and conclusion.

Alignment of Washington 6-8 Science Standards with
FOSS/MS Weather & Water ~ Investigation 08

Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
INQG	Scientific reports should enable another investigator to repeat the study to check the results.	• 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.	Investigation 8 part 1 pp 258-264; Lab notebook p 45	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standards but the teacher must be intentional about allowing the students to write their own investigation using the scientific method terms in the standard. Students should be given the opportunity to do the write-up independently, replacing the lab notebook p 45.
ES2B	The Sun is the major source of energy for phenomena on Earth's surface, such as winds, ocean currents, and the water cycle.	• Connect the uneven heating of Earth's surface by the Sun to global wind and ocean currents. • Describe the role of the Sun in the water cycle.	Investigation 8 part 2 pp 267-270; Lab Notebook pp 48-49; CD-ROM: "Climate Factors, Local Wind"; Resource Book pp 53-56 and 57-62	**Aligned as designed**	Investigation 8 part 2 is strong in "sun is the major source for phenomena on Earth's surface, such as winds". Investigation 8 part 1 is a part of a conceptual sequence.

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Standard	Content Standard	Performance Expectation	Evidence of Alignment	Alignment	Alignment Comments
SYSE	If the input of matter or energy is the same as the output, then the amount of matter or energy in the system won't change; but if the input is more or less than the output, then the amount of matter or energy in the system will change.	• Measure the flow of matter into and out of an open system and predict how the system is likely to change (e.g., a bottle of water with a hole in the bottom, an ecosystem, an electric circuit).	Investigation 9 part 4 pp 315-320; Lab Notebook p 43; CD-ROM: "Water Cycle"; Resource book pp 63-66	**Aligned with modifications (see comments)**	Teacher must be intentional about use of the terms in the standard e.g., with heat being reemitted by greenhouse gases, the balance of the earth's system is changing (more heat input into the earth system). Investigation 9 part 4 contains the opportunity to discuss predictions of how the system is likely to change in step 7 p 318.
SYSF	The natural and designed world is complex; it is too large and complicated to investigate and comprehend all at once. Scientists and students learn to define small portions for the convenience of investigation. The units of investigation can be referred to as "systems."	• Given a complex societal issue with strong science and technology components (e.g., overfishing, global warming), describe the issue from a systems point of view, highlighting how changes in one part of the system are likely to influence other parts of the system.	Investigation 9 part 4 pp 315-320; Lab Notebook p 43; CD-ROM: "Water Cycle"; Resource Book pp 63-66	**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.	• 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.	Investigation 9 parts 1, 2, and 4 pp 296-302, 303-310, 315-320; CD-ROM: "Solar Balloon", "Weather and Land forms", and "Water Cycle"; Lab Notebook pp 55 and 57, 59; Resource book pp 84-88	**Aligned as designed**	

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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.	• Describe how a technology has changed over time in response to societal challenges.	Investigation 9 Extension 3 Extending the Experience p 320	**Aligned with modifications (see comments)**	The extension 3 contains a great opportunity to apply how technology can be used to solve problems in urban areas. Teachers must be intentional about sharing technology advances in roofing and paving that helps solve urban heat island issues. (See http://www.epa.gov/hiri/mitigation/index.htm) for technology ideas.
APPD	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.	• Define a problem that can be solved by technological design and identify criteria for success. • Research how others solved similar problems. • Brainstorm different solutions.	Investigation 9 part 4 pp 315-320; Resource book pp 63-66	**Aligned with modifications (see comments)**	The investigation contains many opportunities to address the standard but the teacher must be intentional extending the learning to give the students opportunities to brainstorm potential solutions to global warming.