STANDARDS ALIGNMENT KEY

♦	Unit is aligned as is.
♦ V	Unit is aligned with the intentional use of vocabulary from the Washington Science Standards
♦ R	Unit is aligned with the intentional use of the STC Children's Book
♦ r	Unit is aligned with the intentional use of the readings within the unit.
♦ E	Unit is aligned with the intentional use of the lesson extensions
▲	Unit needs identified changes or additions to be aligned

CHANGES DEEP ALIGNMENT TO THE WASHINGTON STATE SCIENCE LEARNING STANDARDS

EALR	Grade Band	Code	Content Standard	Performance Expectation	Lesson Number	Alignment Symbol	Comments/Evidence
System	2-3	SYSA	A *system* is a group of interacting parts that form a whole.	Give examples of simple living and physical *systems* (e.g., a whole animal or plant, a car, a doll, a set of table and chairs). For each example, *explain how* different parts make up the whole.	Lesson 3, 4, 6, 9, and 11	♦V ▲	In Lesson 4, 6, and 11, the teacher needs to be intentional to use the term *system* when describing the shaker system and the filtration system. The water cycle is introduced in Lesson 3 but the teacher would need to be intentional about sharing the Teacher Background information on water cycles. Note: This is an abstract concept for primary aged students.
Systems	2-3	SYSB	A whole object, plant, or animal may not continue to *function* the same way if some of its parts are missing.	*Predict* what may happen to an object, plant, or animal if one or more of its parts are removed (e.g., a tricycle cannot be ridden if its wheels are removed). Explain how the parts of a system depend on one another for the system to function.	Lesson 6 and 11	♦V	In Lesson 6, teachers must engage students in a conversation about the parts of the filtration *system* and how the *system* will not *function* as intended if one of its parts is missing.
Systems	2-3	SYSC	A whole object, plant, or animal can do things that none of its parts can do by themselves.	Contrast the *function* of a whole object, plant, or animal with the *function* of one of its parts (e.g., an airplane can fly, but wings and propeller alone cannot; plants can grow, but stems and flowers alone cannot).	Lesson 6 and 11	♦V	The whole filtration *system* can *function* as intended when just one of its parts cannot.

System	2-3	SYSD	Some objects need to have their parts connected in a certain way if they are to *function* as a whole.	*Explain* why the parts in a *system* need to be connected in a specific way for the *system* to *function* as a whole (e.g., batteries must be inserted correctly in a flashlight if it is to produce light).	Lessons 6 and 11	♦V	The teacher must be intentional in describing the *filtration system* as a *system* that must be connected in a specific way for the it to *function* as designed.
System	K-1	SYSA	Living and nonliving things are made of parts. People give names to the parts that are different from the name of the whole object, plant, or animal.	Given an illustration of a whole object, plant, or animal, name at least five different parts. *Compare* a part of an object with the whole object, correctly using the words — whole, and part.	Lesson 3 and 9	▲	By including an illustration of the water cycle in Lesson 3 and 9, the teacher could be intentional about having students label the forms of water (solid, liquid, gas) and the different processes within a water cycle (condensation, precipitation, evaporation).

CHANGES DEEP ALIGNMENT TO THE WASHINGTON STATE SCIENCE LEARNING STANDARDS

EALR	Grade Band	Code	Content Standard	Performance Expectation	Lesson Number	Alignment Symbol	Comments/Evidence
Inquiry	2-3	INQA	Scientific investigations are *designed* to gain knowledge about the *natural world*.	Explain how observations can lead to new knowledge and new *questions* about the *natural world*.	Addressed throughout the unit.	♦	Multiple times in this unit, the students are asked to share their results and explain their thinking. The teacher should be intentional about asking students to explain how their observations, made throughout the unit, are leading to new knowledge and new questions.
Inquiry	2-3	INQB	A scientific investigation may include making and following a plan to accurately observe and *describe* objects, events, and *organisms*; make and record measurements: and *predict* outcomes.	Work with other students to make and follow a plan to carry out a scientific investigation. Actions may include accurately observing and describing objects, events, and *organisms*; measuring and recording data; and predicting outcomes.	Addressed throughout the unit.	♦	This unit includes student activity sheets which contain elements of a *plan* (Lesson 4 and Lesson 11). In Lessons 15 and16, the students develop a recipe to show a chemical change. Teachers should be intentional about asking students to create and follow their own plans as they become able to do so.
Inquiry	2-3	INQC	*Inferences* are based on *observations*.	Distinguish between direct *observations* and simple *inferences*.	Addressed throughout the unit.	♦V	Teachers must be intentional to use the term *inference* when asking students to make direct observations (what they can see) as well as simple inferences (conclusions) from those observations.

Inquiry	2-3	INQD	Simple instruments, such as *magnifiers*, *thermometers*, and rulers provide more information than scientists can obtain using only their unaided senses.	Use simple instruments (e.g., metric scales or balances, thermometers, and rulers) to observe and make measurements, and record and display data in a table, bar graph, line plot, or pictograph.	Addressed throughout the unit.	♦	
Inquiry	2-3	INQF	Scientists develop explanations, using *observations (evidence)* and what they already know about the world. Explanations should be based on *evidence* from investigations.	Accurately *describe* results, referring to the graph or other data as *evidence*. Draw a conclusion about the *question* that motivated the study using the results of the investigation as *evidence*.	Addressed throughout the unit.	♦	Teachers should be intentional to make sure students are basing their explanations on evidence they gather from investigations.
Inquiry	2-3	INQG	Scientists make the results of their investigations public, even when the results contradict their expectations.	Communicate honestly about their investigations, describing how *observations* were made, and summarizing results.	Lessons 7, 8, and 16	♦	

Inquiry	K-1	INQA	Scientific investigations involve asking and trying to answer a *question* about the *natural world* by making and recording *observations*.	Ask *questions* about objects, *organisms*, and events in their *environment*. Follow up a *question* by looking for an answer through students' own activities (e.g., making *observations* or trying things out) rather than only asking an adult to answer the *question*. Observe patterns and *relationships* in the *natural world*, and record *observations* in a table or picture graph.	Addressed throughout the unit.	♦	
Inquiry	K-1	INQC	Scientists develop *explanations*, using recorded *observations* (*evidence*).	*Describe patterns* of data recorded, using tallies, tables, picture graphs, or bar-type graphs. Participate in a discussion of how the recorded data might help to *explain* the observations.	Addressed throughout the unit.	♦	
Inquiry	K-1	INQD	Scientists report on their investigations to other scientists, using drawings and words.	Report *observations* of simple investigations, using drawings and simple sentences. Listen to and use *observations* made by other students.	Lessons 7, 8, and 16	♦	Teachers should be intentional about asking students to share their observations with others. In several lessons, students are asked to discuss their observations with their partners and in Lesson 16, a more formal presentation is designed for students to share findings.

CHANGES DEEP ALIGNMENT TO THE WASHINGTON STATE SCIENCE LEARNING STANDARDS

Inquiry	K-1	INQE	*Observations* are more *reliable* if repeated, especially if repeated by different people.	State verbally or in writing a need to repeat *observations* to be certain the results are more *reliable*.	Addressed throughout the unit.	♦	Every investigation is completed by partner pairs to validate the observations. Teachers need to be intentional to point out the importance of *repeated trials* for *reliability*. They should also stress that *repeated trials* are occurring when multiple teams in the classroom are all conducting the same investigation and comparing results.
Inquiry	K-1	INQF	All scientific *observations* must be reported honestly and accurately.	Record *observations* honestly and accurately.	Addressed throughout the unit.	♦	Teachers should model honesty and accuracy of recording and reporting data. As students are collecting and communicating data, teachers need to be intentional about discussing the importance of *honesty* when they communicate with others the findings of their investigations.

CHANGES DEEP ALIGNMENT TO THE WASHINGTON STATE SCIENCE LEARNING STANDARDS

EALR	Grade Band	Code	Content Standard	Performance Expectation	Lesson Number	Alignment Symbol	Comments/Evidence
Application	2-3	APPB	Scientific ideas and discoveries can be applied to solving problems.	Give an example in which the application of scientific knowledge helps solve a problem (e.g., use electric lights to see at night).	Lesson 2 Lesson 2 Extension #4 Lesson 10 Extension #4 Lesson 15 Extension #2	♦ ♦E ♦E ♦E	In Lesson 2, students develop a plan for melting an ice cube the fastest. In Lesson 2, Extension #4, students design an ice cube keeper to slow the melting rate of ice. In Lesson 10, Extension #4, students use chromatography to uncover the black ink pen that wrote a secret message. In Lesson 15, Extension #2, students design tools that will make bubbles of various sizes.
Application	2-3	APPD	Tools help scientists see more, measure more accurately, and do things that they could not otherwise accomplish.	Select appropriate *tools* and materials to meet a goal or solve a specific problem (e.g., build the tallest tower with wooden blocks, or longest bridge span) and *explain* the reason for those choices.	Lesson 4, 6, and 11	♦	Teachers need to be intentional about asking students to explain how some tools are better suited for some tests than others. In Lessons 4 and 6 a shaker and filtrations system are used as tools to separate components of a mixture. In Lesson 11, the mesh will not separate all parts of the mystery mixture, but using a coffee filter does.
Application	2-3	APPE	Successful *solutions* to problems often depend on selection of the best tools and materials and on previous experience.	Students can also *evaluate* how well it solved the problem and discuss what they might do differently the next time they have a similar problem.	Lesson 11 and 15	♦	Teachers must be intentional to ask students to *evaluate* how the tool helped to solve a problem and discuss what they might do differently given a similar problem. In Lesson 11, students develop a strategy to separate the components of an unknown mixture. In Lesson 15, they are developing a plan to explore a chemical change.

Application	K-1	APPB	Different materials are more suitable for some purposes than for other purposes.	Choose a material to meet a specific need (e.g., cardboard is better than paper for making a box that will stand up by itself) and explain why that material was chosen.	Lesson 2 Lesson 2 Extension #4 Lesson 10 Extension #4 Lesson 15 Extension #2	♦ ♦E ♦E ♦E	In Lesson 2, students develop a plan for melting an ice cube the fastest. In Lesson 2, Extension #4, students design an ice cube keeper to slow the melting rate of ice. In Lesson 10, Extension #4, students use chromatography to uncover the black ink pen that wrote a secret message. In Lesson 15, Extension #2, students design tools that will make bubbles of various sizes.
Application	K-1	APPC	A problem may have more than one acceptable *solution*.	Develop two possible s*olutions* to solve a simple problem (e.g., *design* a napping place for a favorite stuffed animal; *decide* on the best food to eat for lunch).	Lesson 2 Lesson 2 Extension #4 Lesson 15 Extension #2	♦ ♦E ♦E	In Lesson 2, students develop a plan for melting an ice cube the fastest. In Lesson 2, Extension #4, students design an ice cube keeper to slow the melting rate of ice. In Lesson 15, Extension #2, students design tools that will make bubbles of various sizes.

CHANGES DEEP ALIGNMENT TO THE WASHINGTON STATE SCIENCE LEARNING STANDARDS

EALR	Grade Band	Code	Content Standard	Performance Expectation	Lesson Number	Alignment Symbol	Comments/Evidence
Physical Science	2-3	PS2A	Objects have *properties*, including size, *weight*, hardness, color, shape, texture, and magnetism. Unknown substances can sometimes be identified by their *properties*.	Given an object, list several of its *properties*. Given several objects, select one that best matches a list of *properties*. Sort objects by their *functions*, shapes and the materials they are composed of.	Addressed throughout the unit.	♦	
Physical Science	2-3	PS2C	Water changes *state (solid, liquid, gas)* when the temperature of the water changes.	*Predict* what will happen to a sample of *liquid* water if it is put into a freezer (i.e., it will turn to ice) and if it is put into a pan and heated on the stove (i.e., it will turn to *steam* or *water vapor*).	Lesson 2 and 3	♦	In these lessons, the teacher should be intentional to discuss the states of water (solid, liquid, and gas). The reading, *A Snowman in July,* discusses the three states of water and how heat changes water from one state to the other

Physical Science	2-3	PS2D	The amount of water and other *liquids* left in an open container will decrease over time, but the amount of *liquid* in a closed container will not change.	*Predict* what will happen to a small quantity of water left in an open container overnight. *Predict* what will happen to the same quantity of water left in a closed container overnight. *Explain* where the *liquid* water goes when the amount decreases over time.	Lesson 2, 3, 6 and 9	♦ ▲	In Lesson 2's final activities, the teacher asks two teams to cover their Petri dishes for comparison to those that are uncovered. In Lesson 3, students compare the evaporated dishes to covered dishes. In Lesson 9, students observe evaporated salt water from Lesson 6. The teacher should be intentional to cover another Petri dish of salt solution for comparison.
Physical Science	2-3	PS3A	*Heat*, light, *motion*, electricity, and sound are all forms of energy.	Use the word *energy* to *explain* everyday activities (e.g., food gives people energy to play games). Give examples of different forms of energy as observed in everyday life: light, sound, and *motion*. *Explain how* light, sound, and *motion* are all energy.	Lesson 3, 8, 14	♦V	The term *heat energy* can be intentionally used when students use heat energy to melt ice cubes or when they prevent heat energy from melting the ice when they make ice cube keepers. In Lesson 8, hot water is used to dissolve the sugar more rapidly. The teachers should be intentional about using the term *heat energy* when observing how heat energy increases the rate of dissolving sugar. In Lesson 14, heat is released and able to be detected during a chemical reaction of the vinegar and steel wool. The teachers must be intentional to identify the energy being released as a form of *heat energy*.

CHANGES DEEP ALIGNMENT TO THE WASHINGTON STATE SCIENCE LEARNING STANDARDS

Earth & Space Science	2-3	ES2B	Water can be a *liquid* or *solid* and can go back and forth from one *form* to another. If water is turned into ice and then the ice is allowed to melt, the amount of water will be the same as it was before freezing. Water occurs in the *air* as rain, snow, hail, fog, and clouds.	*Describe* the various forms and places that water can be found on Earth as *liquids* and *solids* (e.g., as *liquid* in morning dew; in lakes, streams, and oceans; as solid ice at the North and South Poles, and on the tops of mountains; and in the *air* as clouds, fog, rain, hail, and snow). *Predict* that the *weight* of a sample of water will be nearly the same before and after it is frozen or melted. *Explain* why the *weight* will be almost the same.	Lessons 1, 2, 3	♦ ▲ ▲	In Lesson 1, the reading, *Changes All Around Us*, is about snow melting, rain falling and drying up. The teacher should intentionally discuss these changes and that these are forms of water. In Lesson 2, students observe water as it goes into the ice cube tray, see the solid ice and allow it to melt into water. In Lesson 3, students observe water evaporating. Teachers should intentionally talk about water as a solid and a liquid. while drawing parallels to those forms of water found on Earth. Teachers could integrate the water cycle into Lesson 3 to help accomplish this. In Lesson 2, students could *predict* that the *weight* of a sample of water will be nearly the same before and after it is frozen or melted and then weighing the sealed baggie with ice before and after melting. The teacher would also need to be intentional about asking student to *explain* why this is so.
Physical Science	K-1	PS2A	*Liquids* take the shape of the part of the container they occupy.	*Predict* the shape that water will take in a variety of different containers.	Lessons 1, 2, 3	♦	In Lesson 1, Procedure 3, the teacher should intentionally point out that items in the liquid column conform to the shape of the container they are in. In Lessons 1 and 2, the teacher should intentionally take advantage of the opportunity to point out that liquid water is conforming to the shape of the ice cube tray.

Physical Science	K-1	PS2B	*Solids* retain their shape regardless of the container they are in.	*Predict* that frozen water (i.e., ice) will retain its shape when moved among containers of different shapes (e.g., ice cubes in a tray). Given several substances, sort them into those that are liquid and those that are *solid*.	Lesson 2, 5,6, and 7	♦ ▲	In Lesson 2, the teacher should intentionally point out that the solid water, in the ice cube tray, now maintains its shape. In Lessons 5, 6, and 7, the teacher could intentionally point out the characteristics of solids and liquids being used in these lessons. .