WEATHER DEEP ALIGNMENT

EALR	Grade Band	Code	Content Standard	Performance Expectation	Lesson Number	Alignment Symbol	Comments/Evidence
Systems	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.	Addressed throughout the unit.	♦V	This unit contains many opportunities to discuss *systems* but the teacher must be intentional about the use of the term. For example, weather is a *system* with its different parts being precipitation, wind, sun. etc. Thermometers could also be considered *systems* with parts (tube filled with a colored liquid, numbered backing, housing …).
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.	Lessons 3, 4, 5, 6, 10, 11, 15 Addressed throughout the unit.	▲ ♦V	In these lessons, the teacher must intentionally discuss *parts of systems* such as the thermometer and rain gauge as being important to the function of the *whole system.* Students should be asked to *predict* what would happen if one or more of the parts of the *system* were missing. Throughout the unit, the teacher's intentional use of the term *system* is needed when talking about the *system* as a whole and its parts being important.
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).	Lessons 3, 4, 5, 6, 10, 11, 15	♦	In these lessons, the teacher should intentionally discuss the thermometer as a *system* that can take the temperature of water or air but any one of its parts cannot *function* the same as the whole *system* together.

Systems	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.	Lessons 2, 3, 4, 5, 6, 10	♦	Weather can be considered a *system* that has parts such as precipitation (rainfall), sun/clouds, wind/wind speed. These parts have different names. The same holds true with thermometers, rain gauges, and wind flags being *systems* with parts that have names that are different from the name of the whole *system*.
Systems	K-1	SYSB	Some objects can easily be taken apart and put back together again while other objects cannot be taken apart without damaging them (e.g., books, pencils, plants, and animals).	Given several *common* objects, identify which objects may be taken apart and put back together without damaging them (e.g., a jigsaw puzzle) and which objects cannot be taken apart without damaging them (e.g., books, pencils, plants, and animals).	Lessons 4, 5, 6, 10, 11, 15	♦	The thermometer and rain gauge could be taken apart but it may damage them enough that they would no longer function as a whole if put back together.

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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.	♦	
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.	Lessons 7, 8, 9, 11, 12	♦	
Inquiry	2-3	INQC	*Inferences* are based on *observations*.	Distinguish between direct *observations* and simple *inferences*.	Addressed throughout the unit.	♦V	Students are often asked to develop *inferences* about their weather observations throughout the unit. Teachers must be intentional to discuss the difference between a student's *observation* (what happened and was seen) and the *inferences* they draw (why it might have happened).
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.	Lessons 4, 7, 8, 9, 10	♦	
Inquiry	2-3	INQE	*Models* are useful for understanding *systems* that are too big, too small, or too dangerous to study directly.	Use a simple *model* to study a *system*. *Explain how* the *model* can be used to better understand the system.	Lessons 4, 6, 11	♦V	Teachers must intentionally point out that *models* are demonstrations of larger/more complex *systems.* In Lesson 4, the wind flag is a *model* for a wind sock, anemometer or weather vane *system*. In Lesson 6, a *model* thermometer *system* is made. In Lesson 11, a *model* puddle is studied.

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*.	Lessons 4, 7, 9, 12, 15	♦	As students make *observations* in each lesson, they are building a body of *evidence* to develop an explanation about weather.
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 8, 9, 11, 12, 15, 16	♦V	The final activities of these lessons should include students recording in their journal/science notebook and sharing publicly and participating in a facilitated discussion with their classmates about their findings and questions. To meet this standard, teachers must intentionally emphasize that honesty is an important trait scientists must possess even when they predict a different outcome or when the data does not support their prediction.
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.	Addressed throughout the unit.	♦	
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*.	Lessons 7, 8, 9, 12, 14, 15	♦V	The teacher needs to intentionally point out that throughout the unit, as students work with partners and compare results with other partner groups doing the same investigation, they *create repeated trials.*
Inquiry	K-1	INQF	All scientific *observations* must be reported honestly and accurately.	Record *observations* honestly and accurately.	Addressed throughout the unit.	♦V	Teachers must intentionally remind students throughout the unit not to change predictions or observation results even if they are contradictory.

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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).	Lessons 9, 12	♦ ♦ ♦r12	In Lesson 9, the teacher must be intentional about asking students to *apply* their learning of the impact of fabric color to making a clothing choice based on weather conditions. In Lesson 12, students test fabrics and use their knowledge to solve the problem of which fabric would make the best raincoat. Lesson 12 reading selection-*A Coat to Keep You Dry*
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.	Lessons 9, 12	♦	Using the right *tools* such as the flag or the thermometer will help students see more accurately. Without those tools, they would not be able to know the windspeed or the real temperature.
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.	Lessons 9, 12	♦ ♦ ♦r	In Lesson 9, the teacher must be intentional about asking students to *apply* their learning of the impact of fabric color to making a clothing choice based on weather conditions and explain that choice. In Lesson 12, students test fabrics and use their knowledge to choose the most suitable fabric for a raincoat. Teachers should be intentional to ask students to explain their choice. Lesson 12 reading selection-*A Coat to Keep You Dry*

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Physical Science	2-3	PS1A	*Motion* can be described as a change in position over a period of time.	Give an example to illustrate *motion* as a change in position over a period of time (e.g., if a student stands near the door and then moves to his/her seat, the student is "in *motion"* during that time).	Lesson 13	♦V	Teachers should be intentional about discussing the motion of clouds and the change of position of those clouds across the sky.
Physical Science	2-3	PS1B	There is always a *force* involved when something starts moving or changes its *speed* or direction of *motion*.	Identify the *force* that starts something moving or changes its *speed* or direction of *motion* (e.g., when a ball is thrown or when a rock is dropped).	Lesson 4	♦V	Teachers should be intentional about using the term *force* when talking about wind speed.
Physical Science	2-3	PS1C	A greater *force* can make an object move faster and farther.	Give examples to illustrate that a greater *force* can make an object move faster than a lesser *force* (e.g., throwing a ball harder, or hitting it harder with a bat, will make the ball go faster).	Lesson 4	♦V	Teachers should be intentional about using the term *force* when talking about wind speed.
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*).	Addressed throughout the unit Lesson 13	♦V ♦E	The teacher should be intentional throughout the unit to discuss the *states of water* (solid, liquid, gas) as they occur. Extension 1 of Lesson 13 demonstrates for students how solid water (ice) can be boiled to create liquid water which then changes into steam or water vapor.
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 11	▲	In this lesson, the addition of a closed container would provide the opportunity for the teacher to ask students to predict what would happen in each situation (closed and open container).

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 3, 10, 11, 13, 14, 15	♦V	This standard can be met if the teacher intentionally uses the concepts of water existing in solid, liquid, and vapor states when talking about clouds, rain and fog in the indicated lessons.
Earth & Space Science	2-3	ES2C	*Weather* changes from day to day and over the seasons. *Weather* can be described by measurable quantities, such as *temperature* and *precipitation*.	Measure and record changes in weather (e.g., inches of rain using a *rain gauge*, depth of snow using a ruler, and temperature using a *thermometer*). Interpret graphs of weather conditions to *describe* with measurements how weather changes from season to season.	Addressed throughout the unit.	♦V	The ending lessons in this unit ask students to examine weather over a period of time which should show changes from day to day. But to record changes in weather through the seasons, the teacher should intentionally have students continue collecting data all year.
Earth & Space Science	K-1	ES1A	Many things can be seen in the sky. Some change minute by minute, while others move in *patterns* that can be seen if they are observed day after day.	Observe and communicate the many things that can be seen in the sky that change minute by minute (e.g., birds, airplanes, and clouds) and those that change their shape or position in observable *patterns* day after day (e.g., apparent shape of the moon).	Lessons 2, 13, 14	♦	