Kindergarten Mystery Science Strand K.1 Weather Patterns Lesson Alignment and Support
Salt Lake City School District 2021-2022

Mystery Science Lesson Rationale:
Mystery Science Lessons seek to promote engagement and inspire excellence in students' mastery of science and engineering. The lessons support our vision and mission of equity and access in elementary science. The sequence of Mystery Science Lessons below support kindergarten students' sense-making with respect to weather using three-dimensional instruction. The sequenced Mystery Science Lessons support kindergarten teachers in implementing the new Utah SEEd Standards about Weather specifically in the District Pacing Guide. Lessons include a video focused on a weather-based phenomenon, a hands-on activity, and an assessment. The lessons are designed to take students approximately 60 minutes to complete. Most lessons use minimal materials, such as paper printouts and pencils. Additionally, most paper printouts can be downloaded individually from the Mystery Science Lessons websites in the form of an editable document that can be assigned through Canvas. Some lessons suggest markers, group work, or demonstrations. Teachers can make easy modifications to these lessons based on students' and teachers' resources.

Note: Use a Science Notebook or print the Mystery Science PDF Booklet for students to complete the lesson series below! You can also print individual lesson materials by following the links in the Materials per Student and Assessments.

Strand k.1 Weather Patterns
Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather to identify patterns over time. Weather scientists forecast severe weather so that communities can prepare for and respond to these events. Sunlight warms Earth's surface.

Standard K.1.1 Weather Patterns
Obtain, evaluate, and communicate information about local, observable weather conditions to describe patterns over time. Emphasize the students' collection and sharing of data. Examples of data could include sunny, cloudy, windy, rainy, cold, or warm. (ESS2.D)

Standard K.1.2 Human Response to Weather
Obtain, evaluate, and communicate information on the effect of forecasted weather patterns on human behavior. Examples could include how humans respond to local forecasts of typical and severe weather such as extreme heat, high winds, flash floods, thunderstorms, or snowstorms. (ESS3.B)

Standard K.1.3 Investigate Weather
Carry out an investigation using the five senses, to determine the effect of sunlight on different surfaces and materials. Examples could include measuring temperature, through touch or other methods, on natural and man-made materials in various locations throughout the day. (PS3.B)

Standard K.1.4 Design a Solution to Reduce Warming
Design a solution that will reduce the warming effect of sunlight on an area. Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs. (PS3.B, ETS1.A, ETS1.B, ETS1.C)

Mystery Science Lesson	Suggested Date and SEEd Alignment	Materials and Assessments	Remote Learning Modifications
Mystery Science Unit: Weather Watching	**September 7** SEEd Standard k.1.1 **Disciplinary Core Ideas:** ESS2.D (Weather and	**Materials per Student:** **Weather Drawing** worksheet Clipboard Crayons **Literature Connection:**	**Ready to Teach** ***Teaching in the classroom*** ● Have students do the activity solo.

Lesson 1: Have you ever watched a storm? In this Mystery, students start to notice changes in the weather. In the activity, be a Weather Watcher, they learn the different factors involved in the weather, then observe and draw the weather around them.	Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	Epic Books The Snowy Day Read Aloud Video Changing Weather Weather: The Weather's always changing Storms ReadWorks.org Weather Text Set Unite for Literacy BigStorms **Assessment:** Mystery 1 Assessment	● No supply adjustments. ***Teaching Online*** ● Have students do the activity at home. ● Send each student home with a copy of the Weather Drawing printout (or assign the digital version).
Mini Lesson: Why are tornadoes so hard to predict?	**September 13** SEEd Standard k.1.1 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** Science notebook or blank paper **Activity:** Most people try to get away from tornadoes. But the scientists known as storm chasers rush into storms to study them. Their cars keep them safe while they are there. If you were a storm chaser, what would you add to your car to make it safe in a tornado? How would you keep it from blowing away? How would you stop things from breaking the windows? Draw and label your special car. **Literature Connection:** Epic Books Weather: Tornados and Hurricanes Wild Weather ReadWorks.org Severe Storms Text Set **Assessment Questions:** 1. Why are tornadoes so hard to predict? 2. What did this lesson make you curious about? What other questions do you have about tornadoes?	**Ready to Teach** ***Teaching Online*** ● Send home supplies for students to complete the activity.

Lesson 2: How can you get ready for a big storm	**September 20** SEEd Standard K.1.2 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** Weather Window worksheet **Literature Connection:** Epic Books Weather: Tornados and Hurricanes Wild Weather ReadWorks.org Severe Storms Text Set **Assessment:** Mystery 2 Assessment	**Ready to Teach** ***Teaching in the classroom*** ● Have students do the activity solo. ● No supply adjustments. ***Teaching Online*** ● Have students do the activity at home. ● Send each student home with a copy of the Weather Window printout (or assign the digital version).
Mini Lesson: What makes hurricanes so dangerous?	**September 27** SEEd Standard k.1.2 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** Science notebook or blank paper **Activity:** If you lived in an area with hurricanes, what could you do to protect your home? How could you make sure the windows don't break? How could you prevent the roof from flying off? How could you make sure it doesn't flood? Make a drawing of your home and all the things you could add to protect it from a hurricane. **Extension:** Mini Lesson: What's Worse a Hurricane or a tornado? **Literature Connection:** Epic Books Hurricanes! Spinning Wind and Water Hurricanes Hurricanes Natural Disasters Hurricanes Hurricanes Hurricanes ReadWorks.org Walt's class watches the weather **Assessment Questions:** 1. Describe what makes hurricanes so dangerous. 2. What did this lesson make you curious about? What other questions do you have about hurricanes?	**Ready to Teach** ***Teaching Online*** ● Send home supplies for students to complete the activity.

Lesson 3: What will the weather be like on your birthday? In this lesson, students use observations of the four classic seasons to spot patterns and thereby determine the seasons' order. In the activity, Circle of Seasons, students make observations of the four classic seasons of the temperate zone: snowy winter, warm spring, hot summer, and cool autumn with colorful leaves. Students spot patterns and determine the order of the seasons.	**October 4** SEEd Standard k.1.1 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** Circle of Seasons (Northern Hemisphere) printout Alternatively, you can print our Southern Hemisphere version. Seasons Sorting Cards printout Scissors **Literature Connection:** Epic Books What I see in Spring What I see in Winter What I see in Fall What I see in Summer Winter Spring Summer Fall I know the Seasons ReadWorks.org Seasons Paired Text The four seasons Unite for Literacy Here comes Winter Here comes Autumn **Assessment:** Mystery 3 Assessment	**Adjust Supplies** ***Teaching in the classroom*** ● Have students do the activity solo. ● Print out 2x as many Seasons Sorting Cards so that each student has a copy. ***Teaching Online*** ● Have students do the activity at home. ● Send each student home with a copy of the Seasons Sorting Cards (the digital version will not work).
Mini: Lesson: Why do leaves change color in the Fall? In this mini-lesson, students discover how and why some tree leaves change color when the weather starts to get colder. In the activity, Falling for Leaves, students make	**October 11** SEEd Standard k.1.1 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** Leaf Shapes (Grades K-2) printout Leaf Thanks Card (Grades K-2) printout Crayons Glue Stick Leaf Rulers Scissors Scrap paper **Literature Connection:** Epic Books What happens in Fall: Leaves in Fall What happens in Fall: weather in Fall Maple Trees Summer Green to Autumn Gold: Uncovering Leaves ReadWorks.org H	**Demo Activity** ***Teaching Online*** ● Send home supplies for students to complete the activity.

crayon rubbings of tree leaves, then take a closer look to observe the characteristics of leaves in their own neighborhood.		The Four Seasons Sky and Seasons Unite for Literacy Here comes Autumn **Assessment Questions:** 1.Why do leaves change color in the fall? 2.What did this lesson make you curious about? What other questions do you have about leaves?	
Lesson 4: How do you know what to wear for the weather? In this Read-Along lesson, Kevin becomes a weather detective to figure out why he keeps losing his warm clothes. The lessons includes a short exercise where students observe the weather and compare it to what they remember from earlier in the day. You can extend the lesson with the optional activity, Wind and Weather, in which students use poetry and observation to start noticing which way the wind is blowing, an important factor in how weather changes over time.	**October 18** SEEd Standard k.1.2 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** No materials required **Literature Connection:** Epic Books All Year Round ReadWorks.org Winter Text Set Unite for Literacy Winter, Winter, Spring **Assessment Questions:** Mystery 4 Assessment	**Ready to Teach** ***Teaching in the classroom*** ● Have students do the activity solo. ● No supply adjustments ***Teaching Online*** ● Have students do the activity at home. ● All supplies are digital.

Mini Lesson: Why does it get cold in the Winter?	**October 25** SEEd Standard k.1.2 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** No materials required **Activity:** You can safely study how the Sun moves by watching shadows. On a sunny day, find an object in your home that is in full sunlight. Look to see if it's making a shadow. Then, use two stickers to mark the edges of the shadow. Wait an hour. Look again. Where is the shadow now? Where are the stickers? If you have time, check the shadow every hour to see what happens! **Literature Connection:** Epic Books 100 Snowflakes: A Winter Counting book Winter's coming ReadWorks.org Sunlight in Winter Unite for Literacy It's Winter **Assessment Questions:** 1. Why does it get cold in winter? 2. What did this lesson make you curious about? What other questions do you have about the winter?	**Ready to Teach** ***Teaching Online*** ● Send home stickers or sticky notes to watch the sun move.
Mini Lesson: What's the Coldest Place on Earth?	**November 1** SEEd Standard k.1.2 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	**Materials per Student:** No materials required **Activity:** Can you find the coldest place in your home? Start by visiting each room in your home. Sit in each room for at least two minutes. Which room feels coldest? Once you decide which room is the coldest, find the coldest spot in that room. If you have a thermometer, you can use it to help you measure the temperature! Do you have any ideas about why that room feels coldest? **Extension:** Mini Lesson: Where do bugs go in the Winter?	**Ready to Teach** ***Teaching Online*** ● No supplies required

		Literature Connection: Epic Books Snow Day! The many kinds of cold Hot or cold What feels cold? Unite for Literacy A Blanket of Snow **Assessment Questions:** 1. What is the coldest place on Earth? 2. What did this lesson make you curious about? What other questions do you have?	
Lesson 5: How could you warm up a frozen playground? In this lesson, students think about their experiences with hot and cold weather and learn about a real city where the sun never shines in winter. In the activity, Chill City, students experiment with different types of materials (opaque, transparent, and reflective) to figure out how to reflect light. They use this to bring light and warmth to an imaginary paper town.	**November 8** SEEd Standard k.1.3 **Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Planning and carrying out an investigation **Crosscutting Concept:** Patterns	**Materials per Student:** Chill City printout Draw Chill City worksheet Rulers Aluminum foil Black construction paper Clear plastic report covers Colored construction paper Dot stickers Envelopes Index cards (3 x 5) **Literature Connection:** Epic Books Temperature First Science What does Sunlight do? Keeping cool in Summer ReadWorks.org Cloudy and Sunny **Assessment:** Mystery 5 Assessment	**Adjust Supplies** ***Teaching in the classroom*** ● Have students do the activity solo. ● You will need 2x as many supplies as the supply list indicates. ***Teaching Online*** ● Send each student home with an envelope containing: 1 piece of aluminum foil, 1 sheet of construction paper, 1 plastic report cover, 1 index card and 2 dot stickers. ● Each student will a also need a copy of the Chill City and Draw Chill City printouts.
Lesson 6: How could you walk barefoot across hot	**November 15** SEEd Standard k.1.4	**Materials per Student:** **Literature Connection:** Epic Books ReadWorks.org	**Ready to Teach** ***Teaching in the classroom*** ● Have students do the activity solo.

pavement without burning your feet? In this Read-Along lesson, Keya needs to find a way to get from the swimming pool to the ice cream truck without burning her bare feet on the hot pavement. This lesson includes a short exercise where students practice mapping a cool path across the hot pavement, and then act it out. You can extend the lesson with the optional activity, Where Is It Hot? Where Is It Not? where students examine a photo and look for sunny hot spots and shady cool spots.	**Disciplinary Core Ideas:** ESS2.D (Weather and Climate) Science and **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information **Crosscutting Concept:** Patterns	Keeping cool Unite for Literacy **Assessment:** Mystery 6 Assessment	● No supply adjustments. ***Teaching Online*** ● Have students do the activity at home. ● Instead of sending each student home with a copy of the Find a Cool Path for Keya printout, have students think about and discuss aloud how they would get to the ice cream truck.