




1st Grade Weather Unit Unit Blueprint



Lesson	Essential & Unit Questions* (for conceptual benchmarks)	Benchmarks (Bolded sections indicate portion of benchmark addressed)	Assessments (Unless noted as a Summative Assessment, the assessments are formative and should be used to guide teaching and learning.)	Using Assessments to Monitor Student Learning
<p><u>Lesson 1:</u> <u>Sharing What We Know About Weather</u> (Pre-unit Assessment)</p> <p>Pacing Suggestions: Lesson to be taught at the beginning of the school year. See <i>Unit Calendar on Weather Home Page</i> for details.</p>	<p>Why is it important to keep accurate records or notes about things that are observed?</p>	<p>1B(K-2)#3: Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.</p>	<p><i>What Is the Weather Like Today</i> chart <i>Note: To address the benchmark, the teacher needs to emphasize the importance of accurate descriptions.</i></p>	<ul style="list-style-type: none"> • Do students identify basic weather features when describing the weather (precipitation, cloud cover...)? • Are students' observations detailed and accurate? Do students understand why this is important? <i>(Students' observations of the weather should improve over time.)</i>
	/	<p>12B(K-2)#1: Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.</p>	<p><i>Our Favorite Weather</i> graph and class discussion of number of students favoring each type of weather (See pages 15 & 16 in Teacher's Guide.)</p>	<ul style="list-style-type: none"> • Can students determine favorite types of weather from the class graph? • Are students able to express numerically how many students prefer each type of weather?


*Essential/Unit questions are major questions driving the unit. They are directly aligned with the benchmarks. No single lesson addresses each question in its entirety. By the end of the unit, students should be able to answer these core questions.


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Teacher Resources: 	How does the weather change from day to day? How does the weather change from month to month? How does the weather change from year to year?	4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low, or medium in the same months every year.	<i>How Do You Decide What to Wear to School Each Day?</i> class chart and discussion of the following question: What kinds of clothing do you wear for different types of weather? (See <i>Final Activities</i> , Step 2 on page 16 in Teacher’s Guide.) Class discussion of categories on <i>Our Favorite Weather</i> graph	<i>How Do You Decide What to Wear</i> chart & <i>Our Favorite Weather Graph</i> <ul style="list-style-type: none"> • Do students’ comments reflect their awareness that weather changes day to day? • Do students’ comments reflect an understanding that temperature can be grouped into high (hot), medium (warm), and low (cold)?


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<p><u>Lesson 2:</u> <u>Observing the Weather</u></p> <p>Pacing Suggestions: Lesson to be taught at the beginning of the school year. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources: </p>	<p>Why is it important to keep accurate records or notes about things that are observed?</p> <p>How can we use our senses to learn more about the weather?</p> <p>What tools can help us learn about the weather?</p>	<p>1B(K-2)#3: Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.</p> <p>6D(K-2)#1: People use their senses to find out about their surroundings and themselves. Different senses give different information. Sometimes a person can get different information about the same thing by moving closer to it or further away from it.</p> <p>1B(K-2)#2: Tools such as thermometers, magnifiers, rulers, or balances often give more information about things than can be obtained by just observing things without their help.</p>	<p><i>Record Sheet 2-A: Weather Observations</i></p> <p>Weather data collected and recorded on <i>Weather Observations</i> chart and discussions during sharing of data (See <i>Procedure Steps 5 & 6</i> on pages 23 & 24 in Teacher’s Guide.)</p> <p>Discussions of article about meteorologist Barbara McNaught (See <i>Final Activities</i>, Steps 2-4 on pages 24 & 25 and the reading on pages 26-29.)</p>	<p><i>Record Sheet 2-A & Weather Observations</i> chart</p> <ul style="list-style-type: none"> • Do students use multiple senses to describe the weather? Do they understand that different senses give different information? • Are students’ observations detailed and accurate? • Do students identify basic weather features when describing the weather (precipitation, cloud cover...)? <p>Discussion about meteorologist article</p> <ul style="list-style-type: none"> • Are students able to explain how McNaught uses her senses to observe the weather? • Are students able to identify technology as a means for finding out about the weather?


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<p>Lesson 3: <u>Recording the Weather</u></p> <p>Pacing Suggestions: Lesson to be taught at the beginning of the school year. See <i>Unit Calendar</i> on <i>Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>How does the weather change from day to day? How does the weather change from month to month? How does the weather change from year to year?</p> <p>Why is it important to keep accurate records or notes about things that are observed?</p>	<p>4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low, or medium in the same months every year.</p> <p>1B(K-2)#3: Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.</p>	<p>Class <i>Weather Calendar</i> and discussions about weather data (Ongoing weather data collection throughout the school year—use <i>Student Weather Tally Sheet</i> on page 155. See “Teacher Tips” under “Teacher Resources” for additional information.)</p>	<p>Class <i>Weather Calendar</i></p> <ul style="list-style-type: none"> • Do students recognize the importance of recording weather information carefully and accurately on the calendar when it is their turn so that they can compare the information with that reported by different students on different days? • Do students recognize trends or patterns in the weather? • Are students able to determine from their observations that cloud cover and precipitation change from day to day?


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<p>Lesson 4: <u>Estimating Wind Speed</u></p> <p>Pacing Suggestions: Lesson to be taught at the beginning of the school year. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources;</p>  	<p>What tools can help us learn about the weather?</p>	<p>1B(K-2)#2: Tools often give more information about things than can be obtained by just observing things without their help.</p>	<p>Class discussion of usefulness/purpose of a wind scale</p>	<p>Do students' comments reflect an understanding that using a wind scale gives more specific/precise information about how hard the wind is blowing than just using words to describe the wind?</p>
	<p>If an experiment is run the same way as it was before, what should happen?</p> <p>Why is it important to keep accurate records or notes about things that are observed?</p>	<p>1A(K-2)#1: When a science experiment is done the way it was done before, we expect to get a very similar result.</p> <p>1B(K-2)#3: Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.</p>	<p>Class discussion of the following questions: If we all use the class wind scale, should we each get the same wind speed for that day? Why is this important?</p>	<ul style="list-style-type: none"> • Do students recognize that we should all get the same wind speed reading if measuring it at the same time, place, and way? • Do students understand the importance of using/reading the wind scale so that day-to-day observations of the wind can be compared?
	<p>How does the weather change from day to day?</p>	<p>12B(K-2)#1: Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.</p> <p>4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low, or medium in the same months every year.</p>	<p>Class <i>Weather Calendar</i> and discussions about wind speed recorded on calendar (established with comparisons of weather data over time—see “Teacher Tips” in the “Teacher Resources” section)</p> <p>Modified <i>Wind Record Sheet 4-A</i> (Use teacher-generated sheet available under “Items to Print” in the “Teacher Resources” section.)</p>	<p><i>Weather Calendar & Modified Wind Record Sheet 4A</i></p> <ul style="list-style-type: none"> • Can students complete the graph using numbers to represent wind data? • Do students determine from their graph & class calendar that wind changes from day to day?


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<p>Lesson 5: Reading a Thermometer</p> <p>Pacing Suggestions: Lesson to be taught at the beginning of the school year. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>What tools can help us learn about the weather?</p>	<p>1B(K-2)#2: Tools such as thermometers, magnifiers, rulers, or balances often give more information about things than can be obtained by just observing things without their help.</p>	<p>Class discussion about thermometers and <i>Thermometers in Our World</i> (See <i>Procedure Steps 1 & 2</i> on page 52 in Teacher’s Guide.)</p>	<ul style="list-style-type: none"> • Do students know that thermometers are tools used to measure temperature? • Do students mention various types of thermometers during the class discussion?
		<p>12B(K-2)#1: Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.</p>	<p><i>Recording the Temperature: Record Sheet 5A</i> (See <i>Final Activities</i> on page 54 in Teacher’s Guide.)</p>	<ul style="list-style-type: none"> • Do students’ recorded temperatures demonstrate an understanding of how to read a thermometer? (Is it to the nearest 2 and/or 10 degree mark?) • Can students explain how numerical temperature readings indicate how hot or cold it is? • Do students’ drawings of clothing indicate an understanding of the temperature recorded?

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<p><u>Lesson 6:</u> <u>Making a Model Thermometer</u></p> <p>Pacing Suggestions: Lesson to be taught at the beginning of the school year. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 		<p>Lesson addresses the use/reading of a thermometer. Ability to read and use a thermometer is necessary for understanding the larger idea of 1B(K-2)#2.</p>		


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<p>Lesson 7: <u>Comparing Inside and Outside Temperatures</u></p> <p>Pacing Suggestions: Lesson to be taught at the beginning of the school year and repeated after Winter Break, Spring Break and at the end of the school year. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>Why is it important to keep accurate records or notes about things that are observed?</p> <p>If an experiment is run the same way as it was before, what should happen?</p> <p>What warms the land, air and water?</p> <p>What tools can help us learn about the weather?</p> <p>How does the weather change from day to day?</p> <p>How does the weather change from month to month?</p> <p>How does the weather change from year to year?</p>	<p>1B(K-2)#3: Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.</p> <p>1A(K-2) #1: When a science investigation is done the way it was done before, we expect to get a very similar result.</p> <p>Introduce 4E(K-2)#1: The sun warms the land, air and water.</p> <p>1B(K-2)#2: Tools such as thermometers, magnifiers, rulers, or balances often give more information about things than can be obtained by just observing things without their help.</p> <p>4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low or medium in the same months every year.</p> <p>11C(K-2)#1: Things change in some ways and stay the same in some ways.</p> <p>4C(K-2) #2: Change is something that happens to many things.</p>	<p>Class discussion about correct use of thermometers and teacher observations of students using thermometers (See <i>Procedure Steps 1-3</i> on page 73 in Teacher’s Guide.)</p> <p>Class discussion of teacher demonstration experiment of thermometers placed in direct sunlight, on asphalt, and in shade (See “Teacher Tip” under “Teacher Resources” for additional information.)</p> <p>Classroom <i>Temperature Graph</i> and class discussion about the temperature changes/patterns observed—do they make sense in terms of the changes we observe with the seasons? (Have class monthly <i>Weather Calendar</i> and class <i>Temperature Graph</i> going year long. See “Teacher Tips” under “Teacher Resources” for additional information.)</p>	<ul style="list-style-type: none"> • Do students understand that correct use of the thermometer is necessary for accurate temperature readings? • Do students understand that the difference in temperature between the shade, asphalt, and sunlight section is due to the sun warming the land? • Do students understand the importance of taking the temperature in the same place and time each day? <ul style="list-style-type: none"> • As the school year progresses, do students see patterns emerging in the data? • From monthly <i>Weather Calendar</i>, do students see that the weather changes from day to day? • From the <i>Temperature Graph</i>, do students see that the temperature generally does not fluctuate much from day to day? Do they observe that the temperature is generally high, medium, or low for any given month?


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<p>Lesson 8: Measuring Water Temperature</p> <p>Pacing Suggestions: Lesson to be taught following Winter Break. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources: </p>	How can experiments in science sometimes teach more than just observing something?	1B(K-2)#1: People can often learn things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.	Class discussion of <i>Water-Mixing</i> experiment (See <i>Procedure</i> Steps 1 & 2 and <i>Final Activities</i> Step 3 on pages 80 and 84, respectively, in Teacher’s Guide.)	The key to having students appreciate the benchmark is comparing their predictions to their observations. Many students will be surprised by the results of the experiment. By discussing what they learned as a result of the experiment, students can begin to understand the value and need to sometimes experiment with objects,
	What tools can help us learn about the weather?	1B(K-2)#2: Tools such as thermometers, magnifiers, rulers, or balances often give more information about things than can be obtained by just observing things without their help.	Class discussion about “measuring” the temperature of the water by feeling it versus using a thermometer (See <i>Procedure</i> Steps 13 & 14 on page 82 in Teacher’s Guide.)	Do students know that the thermometer gives more precise and accurate information than just describing the water as hot, warm, or cold?
	/	12B(K-2)#1: Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.	Data recorded on <i>Mixed Water Place Mat</i> and discussion of class data on <i>Water-Mixing Experiment</i> class chart	Do students understand that the numbers they recorded on their mat and class chart represent the temperature?
	If an experiment is run the same way as it was before, what should happen?	1A(K-2)#1: When a science experiment is done the way it was done before, we expect to get a very similar result.	Class discussion of <i>Water-Mixing Experiment</i> results (Teams that used the same amount of hot and cold water should have similar results.)	Do students understand why the results between teams that used the same amount should be similar?


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<p><u>NEW LESSON: 8.1 Observing the Effect of Sun on Temperature</u></p> <p>Pacing Suggestions: Lesson to be taught following Spring Break. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>What warms the land, air and water?</p>	<p>4E(K-2)#1: The sun warms the land, air and water.</p>	<p>Class discussion of experiment results (Thermometers measuring temperature of cups of land [dirt], water, and air [empty cup] placed in the sun and shade.) See “Teacher Tips” under “Teacher Resources” section for specific information on new lesson.</p>	<ul style="list-style-type: none"> • Do students know that the sun warms the land, air, and water? • Do students understand why there is a difference in temperature between the items placed in the sun and the ones placed in the shade?


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<p>Lesson 9: <u>Experimenting with Color and Temperature</u></p> <p>Pacing Suggestions: Lesson to be taught following Spring Break. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>What warms the land, air and water?</p>	<p>Related to 4E(K-2)#1: The sun warms the land, air and water.</p> <p>12B(K-2)#1: Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.</p>	<p>Class discussion about reason for difference in temperature between white and black bags (See <i>Final Activities</i> Step 2 on page 94 in Teacher’s Guide)</p> <p>Experiment and <i>Modified Recording Temperatures Record Sheet 9-A</i></p>	<p>While the activity is loosely related to the benchmark, the lesson applies the concept to an everyday situation—clothing. Do students connect the experiment to clothing choices on a hot day?</p> <ul style="list-style-type: none"> • Are students becoming more successful in reading the thermometer and recording data? • Do students understand that the numbers represent the temperature?


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<p>Lesson 10: <u>Making a Rain Gauge</u></p> <p>Pacing Suggestions: Lesson to be taught following Spring Break. See <i>Unit Calendar on Weather Home Page</i> for details.</p>	<p>What tools can help us learn about the weather?</p>	<p>1B(K-2)#2: Tools such as thermometers, magnifiers, rulers, or balances often give more information about things than can be obtained by just observing things without their help.</p>	<p>Class discussion about the purpose/usefulness of a rain gauge (See <i>Procedure</i> Steps 1 & 2 and <i>Final Activities</i> Steps 3 & 4 on pages 101-02 in Teacher’s Guide.)</p>	<ul style="list-style-type: none"> • Do students understand the rain gauge provides specific, numerical data about the amount of rain that has fallen?
	<p>How does the weather change from day to day?</p>	<p>4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low or medium in the same months every year.</p>	<p>Discussion of <i>Our Rainfall Graph</i> and discussions about short-term changes and long-term patterns in rainfall (See <i>Mathematics Extension</i> on page 103 in Teacher’s Guide.)</p>	


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<p>Lesson 11: Exploring Puddles</p> <p>Pacing Suggestions: Lesson to be taught following Spring Break. See <i>Unit Calendar</i> on <i>Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>What happens to water left out in the open, such as puddles?</p>	<p>4B(K-2)#: Water left in an open container disappears, but water in a closed container does not disappear.</p>	<p><i>My Puddle Book</i> (See <i>Preparation</i> on page 110 and <i>Procedure Steps 4 & 5</i> on page 111 in Teacher’s Guide.)</p> <p>Class discussion about students “puddles” and observations (See <i>Final Activities</i> on page 11 in Teacher’s Guide.)</p>	<p><i>My Puddle Book</i></p> <ul style="list-style-type: none"> • Do students’ pictures reflect a day-to-day reduction in the amount of water in the “puddle”? • Do students’ written explanation of what happens to the water include the idea that the water disappeared? (Note: Read <i>Helpful Teacher Tips</i> available under “Teacher Resources” and the <i>Misconceptions</i> document available on the <i>Weather Home Page</i> for background information on students’ understanding of evaporation.)


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<p>Lesson 12: Testing Rainy Day Fabrics</p> <p>Pacing Suggestions: Lesson to be taught following Spring Break. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>How can experiments in science sometimes teach more than just observing something?</p>	<p>1B(K-2)#1: People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.</p>	<p>Discussion about experiment/data that helped students decide which fabric would keep them driest</p>	<p>Just as in Lesson 8, do students recognize that they've learned something new that could not be uncovered just by observing the different kinds of fabrics?</p>
		<p>4D(K-2)#1: Objects are described in terms of the materials they are made of (clay, cloth, paper, etc.) and their physical properties (color, size, weight, texture, flexibility, etc.).</p>	<p>Students describe their observations of the fabric to the class (See <i>Procedure</i> Step 9 on page 123 in Teacher's Guide.)</p>	<p>Are students able to describe the physical properties of the fabrics and the degree of saturation?</p>

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<p>Lesson 13: Observing Clouds</p> <p>Pacing Suggestions: Lesson to be taught following Winter Break. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>How can clouds be described?</p> <p>What happens to clouds over time?</p>	<p>4D(K-2)#1: Objects are described in terms of the materials they are made of (clay, cloth, paper, etc.) and their physical properties (color, size, weight, texture, flexibility, etc.).</p> <p>4C(K-2) #2: Change is something that happens to many things.</p>	<p>Class web describing clouds; (See <i>Procedure</i> Steps 1 & 3 on page 132 in Teacher’s Guide.)</p>	<ul style="list-style-type: none"> • Do students use words describing the color, size, and shape of the clouds observed? • Do students observe that clouds come in many shapes and sizes? • Do students observe that clouds change over time?

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<p>Lesson 14: Classifying Clouds</p> <p>Pacing Suggestions: Lesson to be taught following Winter Break. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 	<p>How does the weather change from day to day?</p> <p>What happens to clouds over time?</p> <p>How can clouds be described?</p>	<p>4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low or medium in the same months every year.</p> <p>11C(K-2)#1: Things change in some ways and stay the same in some ways.</p> <p>11B(K-2)#3: One way to describe things is to say how it is like something else.</p> <p>4D(K-2)#1: Objects are described in terms of the materials they are made of (clay, cloth, paper, etc.) and their physical properties (color, size, weight, texture, flexibility, etc.).</p>	<p>Class discussion of group cloud classification schemes and class Cloud Classification Chart (See <i>Procedure Steps 1-3</i> and <i>Final Activities Steps 1-3</i> on page 139 in Teacher’s Guide.)</p>	<ul style="list-style-type: none"> • Do students know that the cloud formations change from day to day? • Do students use words describing the color, size, and shape of the clouds observed? • Do students observe that clouds come in many shapes and sizes?

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<p><u>Lesson 15:</u> <u>Comparing Forecasts to Today's Weather</u></p> <p>Pacing Suggestions: Lesson can be flexibly scheduled. See <i>Unit Calendar on Weather Home Page</i> for details.</p> <p>Teacher Resources:</p> 		<p>No benchmark match but lesson is considered valuable—it relates students' work/observations with scientists' work/predictions</p>		

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<p><u>Lesson 16:</u> <u>Monthly Summary of Weather Observations</u></p> <p>Pacing Suggestions: Lesson to be taught at the end of September.</p> <p>Teacher Resources: </p>	<p>How does the weather change from day to day?</p>	<p>4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low or medium in the same months every year.</p> <p>12B(K-2)#1: Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.</p>	<p>Discussion about temperature, wind, or precipitation patterns that follow a seasonal trend—use <i>Class Temperature Graph</i> and <i>Class Weather Calendar</i></p> <p><i>Record Sheet 16-A, Student Weather Tally</i> (See page 155 in Teacher’s Guide and “Teacher Tips.”) and ongoing discussion of <i>Class Weather Calendar</i></p>	<p>Class Discussion</p> <ul style="list-style-type: none"> • Do students identify a trend or pattern in temperature data that makes sense when compared to what they know about the seasons? <p><i>Record Sheet 16-A</i></p> <ul style="list-style-type: none"> • Do student accurately tally weather data? • Can students use tallied data to summarize the weather?

Lesson	Essential & Unit Questions* (for conceptual benchmarks)	Benchmarks (Bolded sections indicate portion of benchmark addressed)	Assessments (Unless noted as a Summative Assessment, the assessments are formative and should be used to guide teaching and learning.)	Using Assessments to Monitor Student Learning
<p><u>Summative Assessment</u></p> <p>Pacing Suggestions: Lesson to be taught at the end of the year.</p> <p>Teacher Resources:</p> 	<p>How does the weather change from day to day?</p>	<p>4B(K-2)#1: Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low or medium in the same months every year.</p> <p>12B(K-2)#1: Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.</p>	<p>Summative Assessment: <i>Temperature Graph Questions</i></p>	<p>Summative Assessment</p> <ul style="list-style-type: none"> • Do students understand what a particular temperature reading means? This should be reflected in their drawings. • Are students able to articulate patterns found in the temperature graph? • Do students understand that the daily temperature has a yearly cycle?