Science Learning Packet
Grade 3 Reader
Weather and Climate: Seeing the World Through Numbers

Suggested science learning activities for SPS students during the COVID-19 school closure.

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Due to the COVID-19 closure, teachers were asked to provide packets of home activities. This is not intended to take the place of regular classroom instruction but will help supplement student learning and provide opportunities for student learning while they are absent from school. Assignments are not required or graded. Because of the unprecedented nature of this health crisis and the District’s swift closure, some home activities may not be accessible.

If you have difficulty accessing the material or have any questions, please contact your student’s teacher.
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1. Teachers should see that the pupil’s name is clearly written in ink in the spaces above in every book issued.
2. The following terms should be used in recording the condition of the book: New; Good; Fair; Poor; Bad.
Seeing the World Through Numbers
by Andrew Falk
illustrated by Jeffrey Ebbeler
Materials to be used solely for remote learning due to COVID-19

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Developed by the Learning Design Group at the University of California, Berkeley’s Lawrence Hall of Science. Amplify Science Elementary is based on the Seeds of Science/Roots of Reading® approach, which is a collaboration between a science team led by Jacqueline Barber and a literacy team led by P. David Pearson.

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Grade 3
Seeing the World Through Numbers
ISBN: 978-1-939787-17-0
When you first see a number, it can just look like lines on a page.
As you start to learn where different numbers come from and what they mean, they can help you learn more about the world. What do you think this number says about the world?

Liz - 128 cm
Sometimes you see a number by itself. That can tell you about one thing in the world. When numbers are put together, like in this line plot, they can tell you about patterns in the world.

What do you think these numbers say about the world?

What about this one?
Numbers can help us learn about things we can see. They can also help us learn about things we can feel.

What do you think this number helps us learn about the world?
What do you think the numbers in this line plot help us learn about the world? Do you notice a pattern?

May Daily High Temperatures Where I Live in Degrees Fahrenheit (°F)

65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85
You can record the **temperature** every day for a month. If you make a line plot of all the temperatures, you can see the hottest and coldest temperatures, plus everything in between. That’s the **range** of temperatures for the month. You find the range by finding the highest number and the lowest number in a group of numbers.

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**May Daily High Temperatures Where I Live**

<table>
<thead>
<tr>
<th>in Degrees Fahrenheit (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85</td>
</tr>
</tbody>
</table>

Range = 77°F to 85°F
The temperature changed from day to day in May. Even so, the temperature stayed within a particular range, from 77°F to 85°F. It was very warm every day in May. There were no cold days.

Sometimes patterns in numbers can help us predict what the world will be like in the future. What if there were still one more day in May? What could you predict about the weather on that day?

The temperatures in May were between 77°F and 85°F. You can predict that the temperature on the last day in May would probably be between 77°F and 85°F. It would probably be in the same range.
Different places can have very different weather patterns. Let’s say your cousin makes her own line plot of temperatures for the month of May. Your cousin lives far away. This line plot shows the temperatures in the place where your cousin lives. What do you notice about the numbers in her line plot?
When you look at both line plots together, what do they tell you about the May weather in these places? Which place would you go if you wanted to be warmer in May?
May Daily High Temperatures Where I Live

in Degrees Fahrenheit (°F)

Range = 77°F to 85°F

May Daily High Temperatures

Where My Cousin Lives

Range = 65°F to 73°F
Temperatures aren’t the only numbers that tell us what it feels like outside. People use rain gauges to measure rainfall in millimeters. What do you think these numbers say about the world? How rainy was the month of May?
Materials to be used solely for remote learning due to COVID-19
It’s hard to think about 31 different numbers at the same time. One way to make sense of a group of numbers is to add them together. Adding up a group of numbers gives you the total. For example, you can add up all the daily rain numbers to get the total for the month. This number tells you how much rain fell during the entire month.

<table>
<thead>
<tr>
<th>Date</th>
<th>Rainfall amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 1</td>
<td>15 mm</td>
</tr>
<tr>
<td>May 2</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 3</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 4</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 5</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 6</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 7</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 8</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 9</td>
<td>3 mm</td>
</tr>
<tr>
<td>May 10</td>
<td>8 mm</td>
</tr>
<tr>
<td>May 11</td>
<td>4 mm</td>
</tr>
<tr>
<td>May 12</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 13</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 14</td>
<td>12 mm</td>
</tr>
<tr>
<td>May 15</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 16</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 17</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 18</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 19</td>
<td>35 mm</td>
</tr>
<tr>
<td>May 20</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 21</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 22</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 23</td>
<td>9 mm</td>
</tr>
<tr>
<td>May 24</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 25</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 26</td>
<td>2 mm</td>
</tr>
<tr>
<td>May 27</td>
<td>11 mm</td>
</tr>
<tr>
<td>May 28</td>
<td>6 mm</td>
</tr>
<tr>
<td>May 29</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 30</td>
<td>0 mm</td>
</tr>
<tr>
<td>May 31</td>
<td>0 mm</td>
</tr>
<tr>
<td>Total</td>
<td>105 mm</td>
</tr>
</tbody>
</table>
Totals are easy to compare, because the total is just one number. You can compare the total rainfall in one month to the total rainfall in a different month. You can also compare the totals from two different places.

May total rainfall
where I live: 105 mm

May total rainfall
where my cousin lives: 56 mm
When you stop and look, there are numbers all around you. What do these numbers tell you about the world?
Glossary

**line plot**: a type of graph that shows data along a number line

**pattern**: something we observe to be similar over and over again

**predict**: to use what you already know to decide what you think might happen

**range**: the span between the lowest and highest numbers in a group

**temperature**: how hot or cold something is

**weather**: what is happening outside with the air and sky, including precipitation, temperature, and wind
Books for *Weather and Climate*:
Sky Notebook
Seeing the World Through Numbers
What’s Going On with the Weather?
Dangerous Weather Ahead
World Weather Handbook

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What can numbers tell you about the world?

Numbers can tell you so many things about the world, like how tall someone is or whether you need a sweater to go outside. Explore different ways of presenting a group of numbers: as part of a line plot, as a range, or as a total. Learn what these numbers mean and what they can teach you about the world.