|  |  |
| --- | --- |
| **NC.5.MD.2**  **Room Temperature** | |
| **Domain** | **Measurement and Data** |
| **Cluster** | **Represent and interpret data** |
| **Standard(s)** | **NC.5.MD.2** Represent and interpret data.  • Collect data by asking a question that yields data that changes over time.  • Make and interpret a representation of data using a line graph.  • Determine whether a survey question will yield categorical or numerical data, or data that changes over time. |
| **Materials** | Room Temperature handout, notebook paper |
| **Task** | **Room Temperature**  **(Note that this task will need to be completed over 2-3 school days).**  Scientists have identified 72° F as the temperature at which most people are the most comfortable. This temperature is often referred to as “room temperature.” Let’s collect data on the temperature of our classroom to see how close it is to room temperature throughout the day.  Day 1: Decide how you will collect, organize and record the data. You will need to begin on Day 2.   * When will data collection begin? * How often will data be collected? * What tools are needed? * How will you organize the data that you are collecting and recording?   Day 2: Record the room temperature as planned on Day 1.  Day 3: Represent and analyze the data.   * Create a line graph to represent the data. Remember your line graph should have a title, x-axis labels (horizontal), and y-axis labels (vertical). * Use your graph to answer the following questions on a sheet of notebook paper:   1. What do you notice about the data?   2. What parts of the day are the warmest? What parts of the day are the coolest?   3. At what times during the day is the room at room temperature? Above room temperature? Below room temperature? Is there a way you could highlight this on the graph?   4. How might this information be helpful to members of the classroom? Explain your thinking.   5. If you collected this same data at a different time of year, do you think the results would be the same? Why or why not? |

|  |  |  |
| --- | --- | --- |
| **Rubric** | | |
| **Level I**  **Not Yet** | 1. **Level II** 2. **Progressing** | **Level III**  **Meets Expectations** |
| * Student is not yet able to develop a plan for collecting and recording data. * Student is not yet able to represent data collected on a line graph without assistance. | * Student develops a plan to record data and follows through, but may organize or record in a way that is difficult to follow. * Students creates a line graph that may be missing some labels or have minor errors in plotting data on the graph. * Student is not yet able to use the data to respond to all questions on Day 3. | * Student develops a plan to record and organize data. Data is organized in a precise way that clearly communicates the data collected. * Student creates a line graph using the data collected with all of the following components:   + Main title that clearly identifies what data the graph is representing (IE Our Classroom Temperature Recorded every 30 minutes for 1 Day or Our Classroom Temperature on August 31).   + Horizontal axis with a main label (IE Time of Day) and time interval labels (8:00, 8:30, 9:00, 9:30….)   + Vertical axis with a main label (Temperature in Fahrenheit) and temperatures (68°, 70°, 72°, 74°, 76°, 78°,…) * Student provides reasonable answers to questions 1 to 5 based on the data collected. Examples:   1. I notice that our classroom is warmer than room temperature all day long.   2. It’s warmest at the very beginning of the day and in the afternoon. It is coolest between 9 and 11 am.   3. Our classroom is always above room temperature. We could draw a line using color at room temperature on the graph. Then you can see it is always above room temperature.   4. People in our classroom should know to wear clothes like ones with shorts or short sleeves because they might get hot because the room is warmer than most people like.   5. I think it might be colder than room temperature in the winter when the temperatures outside are colder. If the air conditioner doesn’t work well, the heat might not either. |
| **Standards for Mathematical Practice** | | | |
| 1. Makes sense and perseveres in solving problems. | | | |
| 2. Reasons abstractly and quantitatively. | | | |
| **3. Constructs viable arguments and critiques the reasoning of others.** | | | |
| **4. Models with mathematics.** | | | |
| **5. Uses appropriate tools strategically.** | | | |
| **6. Attends to precision.** | | | |
| 7. Looks for and makes use of structure. | | | |
| 8. Looks for and expresses regularity in repeated reasoning. | | | |

**Room Temperature**

**(Note that this task will need to be completed over 2-3 school days).**

Scientists have identified 72° F as the temperature at which most people are the most comfortable. This temperature is often referred to as “room temperature.” Let’s collect data on the temperature of our class room to see how close it is to room temperature throughout the day.

Day 1: Decide how you will collect, organize and record the data. You will need to begin on Day 2.

1. When will data collection begin?
2. How often will data be collected?
3. What tools are needed?
4. How will you organize the data that you are collecting and recording?

Day 2: Record the room temperature as planned on Day 1.

Day 3: Represent and analyze the data.

Create a line graph to represent the data. Remember your line graph should have a title, x-axis labels (horizontal), and y-axis labels (vertical).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Use your graph to answer the following questions on a sheet of notebook paper:

1. What do you notice about the data?

2. What parts of the day are the warmest? What parts of the day are the coolest?

3. At what times during the day is the room at room temperature? Above room temperature? Below room temperature? Is there a way you could highlight this on the graph?

4. How might this information be helpful to members of the classroom?

If you collected this same data at a different time of year, do you think the results would be the same? Why or why not?