Analyze Temperature

Participant Name:	**Heather Chontosh**
District:	**Massena (Jefferson Elementary)**
Grade Level:	**Third**
Subject/Course:	**Technology**
Cross-curricular Link:	**Science and Math**
Approximate Time (IN MINUTES):	**2 weeks (30 minute sessions)**

CONTENT AND SKILLS

Learning Objectives Students will be able to:

1. **Remembering**: Students will define key terms such as temperature, data table, and line plot.
2. **Understanding**: Students will explain how temperature can vary throughout the day and week.
3. **Applying**: Students will record daily temperatures and compile them into a data table.
4. **Analyzing**: Students will compare and contrast their temperature data over the week.
5. **Evaluating**: Students will interpret their line plots to discuss trends and patterns.
6. **Creating**: Students will create a line plot using their recorded data. Could create the line plot online instead of on paper.

Essential Questions (optional):

- Why does temperature change over time?

Students' I can statements . . .

- I can record a daily temperature using a thermometer.
- I can explain why temperatures vary daily/weekly.
- I can compare and contrast temperature data.
- I can create a line plot based on recorded data.

How will you meet the needs of SWD and ELL/MLL students?

- Visuals
- Guidance when recording data and creating line plot.
- digital and non digital thermometers.

NYS COMPUTER SCIENCE AND DIGITAL FLUENCY STANDARDS

List all standards that authentically align (e.g., K-1.CT.4)

- **2-3.CT.3** Present the same data in multiple visual formats in order to tell a story about the data.

OTHER SPECIFIC STANDARDS (e.g., Content, SEL Benchmarks)

List all standards that authentically align

https://www.p12.nysed.gov/sss/documents/SELBenchmarks2022.pdf

Math

- **CCSS.MATH.CONTENT.3.MD.B.3**: Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.
- **CCSS.MATH.CONTENT.3.MD.A.1**: Tell and write time to the nearest minute and measure time intervals in minutes.

Science

- **3-ESS2-3.** Plan and conduct an investigation to determine the connections between weather and water processes in Earth systems.

INSTRUCTIONAL PLAN

List the steps of the lesson, including instructions for the students.
Add and highlight Standard Indicator next to activity that aligns

Lesson Overview

Students will engage in a hands-on exploration of temperature by recording outdoor temperatures over a week. They will organize their data into a table and create a line plot to visualize temperature trends. This lesson integrates math and science skills, fostering data literacy and analytical thinking.

Learning Outcomes

1. **Remembering**: Students will define key terms such as temperature, data table, and line plot.
2. **Understanding**: Students will explain how temperature can vary throughout the day and week.
3. **Applying**: Students will record daily temperatures and compile them into a data table.
4. **Analyzing**: Students will compare and contrast their temperature data over the week.
5. **Evaluating**: Students will interpret their line plots to discuss trends and patterns.
6. **Creating**: Students will create a line plot using their recorded data.

Common Core Standards

- **CCSS.MATH.CONTENT.3.MD.B.3**: Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.
- **CCSS.MATH.CONTENT.3.MD.A.1**: Tell and write time to the nearest minute and measure time intervals in minutes.

Materials Needed

- Thermometers
- Graph paper
- Rulers
- Pencils
- Monthly Recording logs
- Digital Weather log and chart template
- Tutorial - How to Use the Monthly recording logs

Lesson Activities

Day 1: Introduction to Temperature and Data Recording (30 minutes)

- **Objective**: Introduce students to the concept of temperature and how to measure it.
- **Lesson**: Discuss what temperature is and how it affects daily life. Demonstrate how to use a thermometer. What is Temperature | Science for Kids
- **Activity**: Begin recording the daily temperature in their Weather Recording Logs. Begin recording on Day 1. How to Read a Thermometer

Day 2-5: Data Collection

- **Objective**: Record and observe temperature changes over the week.
- **Day 2 (30 minutes)** : Students will measure and record the temperature outside and record it on day 2 of their weather recording logs. Engage in a brief daily discussion about the temperature and any changes they observe.
  Weather for Kids | What is weather, and how does it work?
- **Day 3 (15/20 minutes)** - Students will measure and record the temperature outside and record it on day 3 of their weather recording logs. Discuss with the class if they have noticed any weather changes and why they think this is happening.
- **Day 4 (15 minutes)** - Students will measure and record the temperature outside and record it on day 4 of their weather recording logs.
- **Day 5** - **(30 minutes) -** Students will measure and record the temperature outside and record it on day 5 of their weather recording logs. Discuss Condensation -
  Condensation: How it works

Day 6 - Creating a Data Table (30 minutes)

- **Objective**: Organize recorded data into a table. Use the digital weather log and chart template link listed above. In this link they will digitally enter their recorded temperatures from their weather logs they used to record temperatures throughout the week.
- **Activity**: Assign each student a copy of the digital weather log and chart template (through google classroom). Guide students to transfer their recorded temperatures into a data table. Discuss the importance of organizing data.

Day 7: Introduction to Bar Graphs/Construct a Bar Graph (30 Minutes)

- **Objective**: Understand how to create and interpret a bar graph.
  Bar Graphs for 2nd Grade Kids - Create your own Bar Graph
- **Activity**: Introduce students to bar graphs. Demonstrate creating a simple bar graph using sample data. In the digital weather log and chart template link there is a google sheet that allows the students to create a Bar graph.

Day 8: Introduction to Pie Chart/Construct a Pie Chart (30 minutes)

- **Objective**: Understand how to create and interpret a pie chart. What is a Pie Chart?
- **Activity**: Introduce students to pie charts. Demonstrate creating a simple pie chart using sample data. In the digital weather log and chart template link there is a google sheet that allows the students to create a pie chart.

Day 9: Analyzing and Interpreting Data (30 minutes)

- **Objective**: Analyze the bar graph/pie chart to identify trends and patterns.
- **Activity**: Facilitate a class discussion and jot ideas down on chart paper. Ask students to share observations and patterns they notice.

Day 10: Reflection and Presentation (30 minutes)

- **Objective**: Reflect on the learning process and present findings.
- **Activity**: Students will write a short reflection on what they learned about temperature and data. Select a few students to present their bar graph or pie chart and observations to the class. They can do this in their writer's journal or type up a report in google docs.

Assessment

- **Formative**: Observation of student participation during discussions and activities.
- **Summative**: Evaluation of completed data tables and line plots for accuracy and understanding.

Extensions

- **Science Integration**: Discuss the impact of weather on temperature, introducing concepts like climate and seasons.

- **Math Challenge**: Use the bar graph to calculate the average temperature over the week.

This lesson plan is designed to build students' skills in data collection, organization, and interpretation, fostering a deeper understanding of mathematical and scientific concepts.

SPECIFIC NEEDS: MATERIALS / RESOURCES / TECHNOLOGY

Add additional resources needed for this lesson such as instructional technology templates, images, videos, etc.

Materials

- Thermometers
- Graph paper
- Rulers
- Pencils
- Data recording sheets
- Chromebook (google sheets)
- Digital recording template and digital chart template (attached above)