ACTIVITY 4

MATHia CONNECTION

- Writing an Expression from a Scenario, Table, or Graph
- Solving One-Step Equations Using Multiple Representations in Four Quadrants

An Interesting Day in South Dakota

HABITS OF MIND

- Model with mathematics.
- Use appropriate tools strategically.

An exciting day of temperature changes occurred in Rapid City, South Dakota, on January 22, 1943. The table shows the temperature changes that happened throughout the day.

Time	Temperature (°C)
10:30 A.M.	–6.7
10:35 A.M.	13.3
Noon	15.6
12:05 P.M.	–10.6
12:35 P.M.	–9.4
12:40 P.M.	10
2:20 P.M.	14.4
2:25 P.M.	–8.3

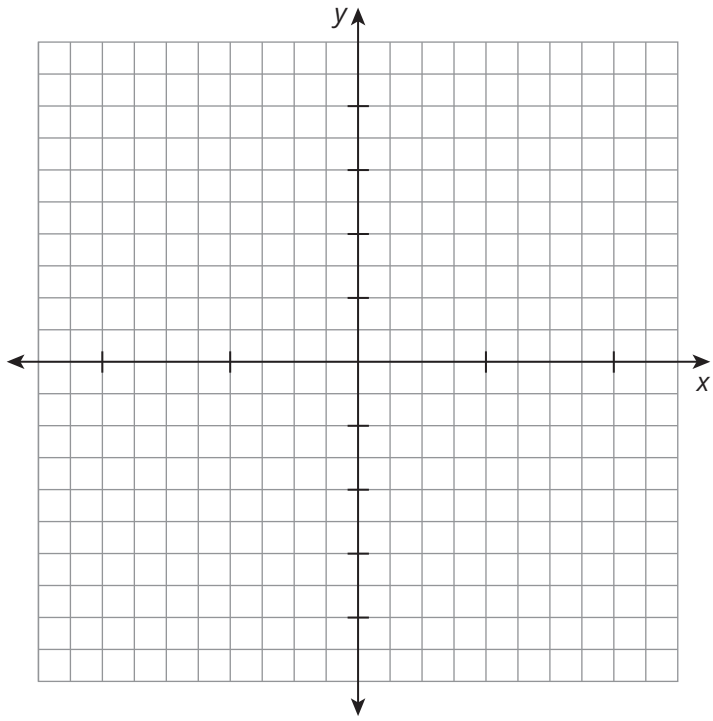
REMEMBER . . .

0°C is 32°F.

› Create a graph of the temperature changes.

1 Which quadrants do you need for your graph? **Explain your reasoning.**

2 Label the axes for the graph. Then, graph the data and connect consecutive points.



3 Between which two times was the temperature swing the greatest?

4 Describe the pattern. Why is this called an "interesting" day?

SUMMARY **Connecting the points on a graph may help to recognize patterns in the data.**

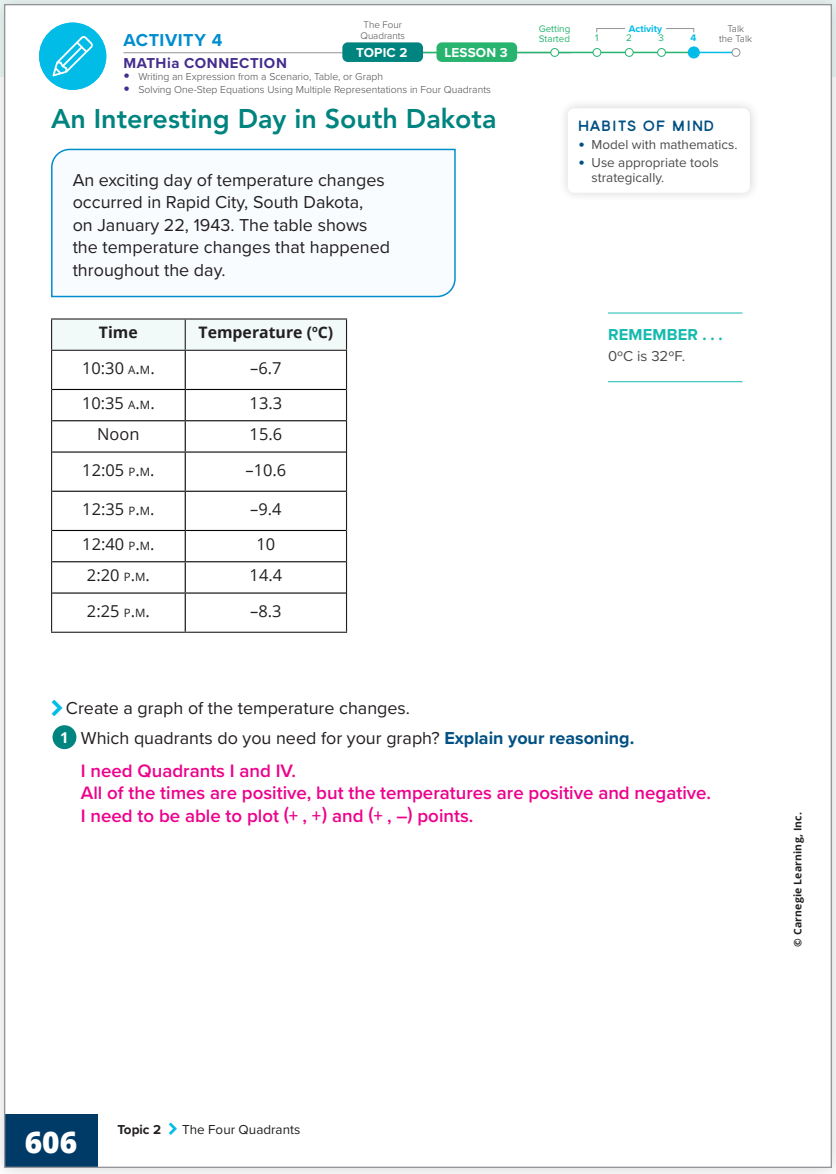
Chunking the Activity

- **Read and discuss the situation**
- **Group students to complete the activity**
- **Share and summarize**

Student Look-Fors

Whether students are demonstrating proficiencies related to these Habits of Mind:

- Model with mathematics.
- Use appropriate tools strategically.



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The Four Quadrants: TOPIC 2 LESSON 3 — Getting Started — Activity 1 2 3 4 — Talk the Talk

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REMEMBER . . .
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› Create a graph of the temperature changes.

1 Which quadrants do you need for your graph? **Explain your reasoning.**

I need Quadrants I and IV.
All of the times are positive, but the temperatures are positive and negative.
I need to be able to plot (+ , +) and (+ , –) points.

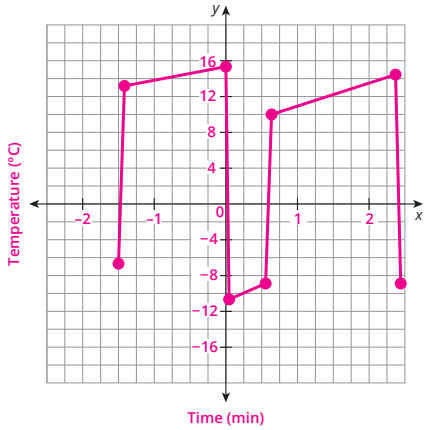
606 Topic 2 › The Four Quadrants

Questions to Support Discourse

		TYPE
Situation	• How is this table different from the one in the previous activity?	Gathering

ACTIVITY 4 Continued

2 Label the axes for the graph. Then, graph the data and connect consecutive points.



3 Between which two times was the temperature swing the greatest?

The temperature swing was the greatest in the 5-minute intervals that look almost like vertical lines. The longest near-vertical line is between 12:00 P.M. and 12:05 P.M.

4 Describe the pattern. Why is this called an "interesting" day?

The temperature was mostly in the teens, but there were short periods when the temperature would drop drastically. From the graph, it appears that the drops in temperature did not last very long.

Questions to Support Discourse

		TYPE
2	• How did you label the *x*-axis for the times? • What is the advantage of connecting the points?	Probing
3	• What absolute value expression can you use to calculate the temperature swing?	Probing

NOTES

DIFFERENTIATION STRATEGY

See page 610B to support students who struggle with 2.

TOPIC 2