Temperature

Levels

Grades K-4

Overview:

Alaska temperatures often drop below zero. In this activity, students will be introduced to positive and negative numbers as they relate to temperature.

Objectives:

The student will:

- understand positive and negative numbers;
- read a thermometer; and
- Level II students will use “greater than” and “less than” operators.

GLEs Addressed:

Science

- [3-4] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [3] MEA-4 The student demonstrates understanding of measurable attributes by selecting an appropriate unit of English, metric, or non-standard measurement to estimate the length, time, weight, or temperature (M2.1.3).

Materials:

- Thermometer
- Red crayons
- Display thermometer
- STUDENT WORKSHEET, Level I: “Hotter and Colder”
- STUDENT WORKSHEET, Level II: “Hotter and Colder”

Activity Procedure:

1. Ask students if it is hot or cold outside. Explain temperature is a measure of how hot or cold it is. Temperature is measured with a thermometer. Show students the display thermometer. Explain how to read the thermometer by looking at the red line and seeing where it stops. Demonstrate how the temperature is read.
3. Point out the zero in the middle of the thermometer and the numbers above it and below it. The numbers below zero are called negative numbers.
4. Explain even though 10 and -10 have the same numerals, the - in front means it is colder than the 10.
5. Explain the higher a number on the thermometer the warmer it is. However, if you look at the negative numbers, the colder it is the higher the number. Show an example: a. -20 is colder than -10 even though 20 is a larger number than 10.
6. Explain the sign < is used to show that one item is less than another. This sign is called “less than.” For example, 10<20. If you were to say this aloud, you would say 10 is less than 20. Make sure the small side of the symbol is pointing to the smaller number.
7. Explain the sign > is used to show that one item is more than another. This sign is called “greater than.” For example, 30>20. If you were to say this aloud, you would say 30 is greater than 20. Make sure the larger side of the symbol is pointed at the larger number.
8. Distribute the STUDENT WORKSHEET for Levels I and II: “Hotter and Colder.” As an example, work through the Level I questions with the students using the display thermometer or chalk/white board.
9. Instruct students to complete the remainder of the worksheet independently.

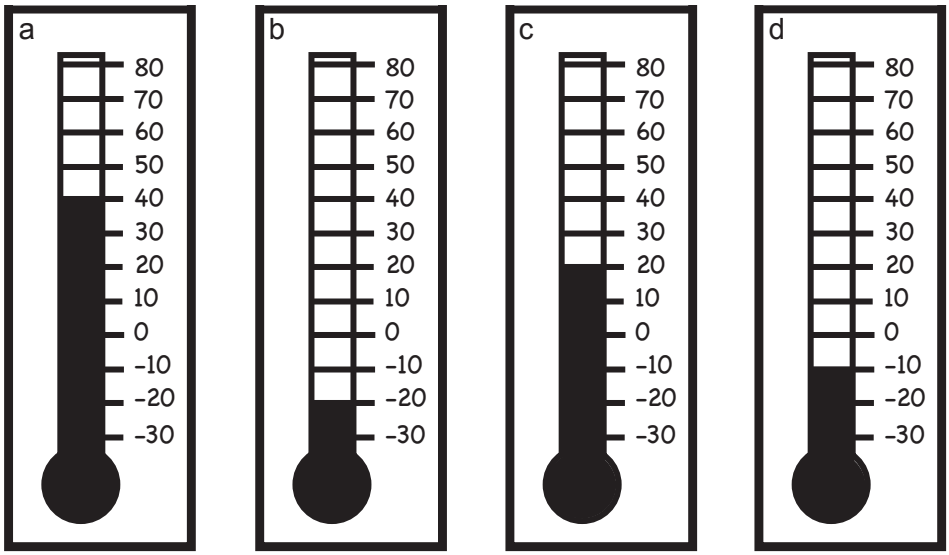
Language Links:

Alaska Native people have always been careful observers of the weather. Their languages are rich in words describing weather. Ask a local Native language speaker to provide the words in the local dialect for the weather phenomenon listed in the chart below. The local dialect for these words may differ from the examples provided. Share the words with students to build fluency in local terms related to weather. Include local words in songs, stories and games when possible.

English	Yupik	Inupiaq	Local Dialect
hot weather	sapeghhnaq	irrifubaa	
cold weather	uuqnarqug	uunaqtaq	

Answers:

Level I: 1.



2. a, 40˚ F

Level II: 1a. 60˚ F
b. 35˚ F
c. -5˚ F
d. -20˚ F

2. b

3a. <
b. >
c. >
d. >

Name:_____

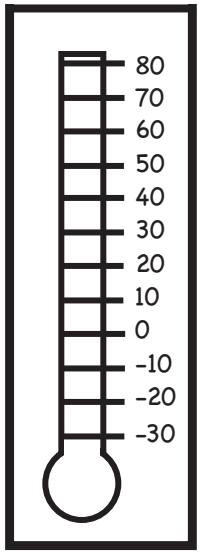
Level I

Hotter and Colder

Student Worksheet

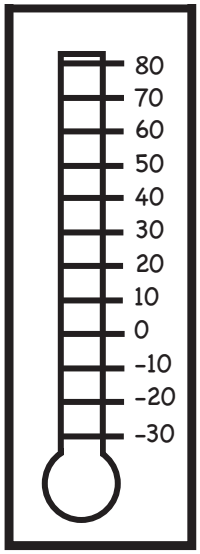
1. Use a red crayon to fill in the thermometers below so that they show the correct temperature.

a.



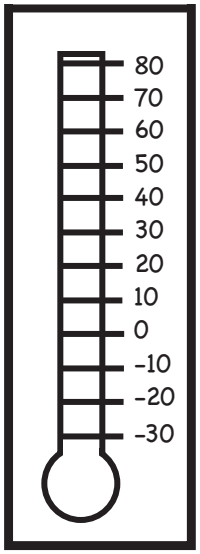
40° F

b.



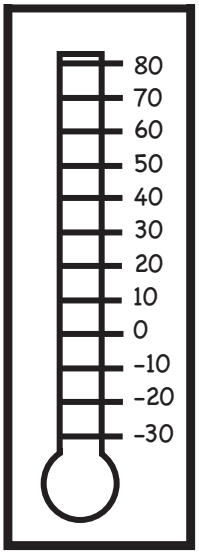
-20° F

c.



20° F

d.



-10° F

2. Circle the thermometer above that has the warmest temperature.

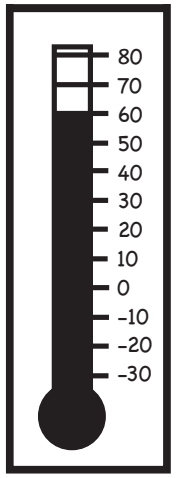
Name:_____

Level II

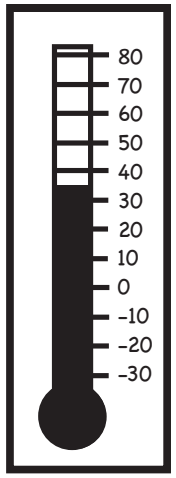
Hotter and Colder

Student Worksheet

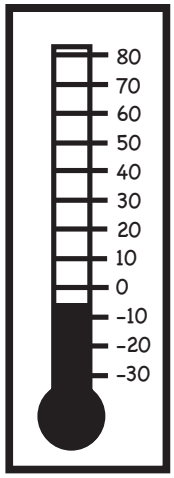
1. Fill in the blanks below each thermometer with the correct temperature shown.

a. 

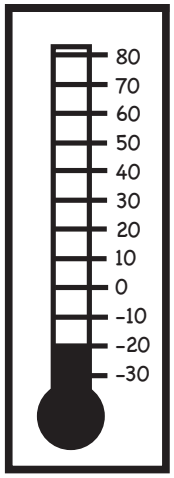
_____° F

b. 

_____° F

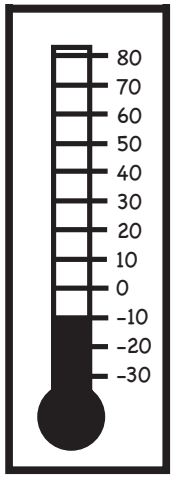
c. 

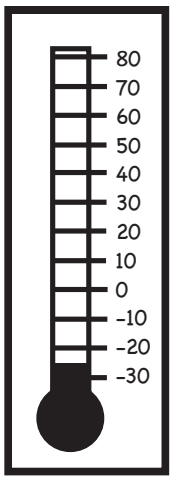
_____° F

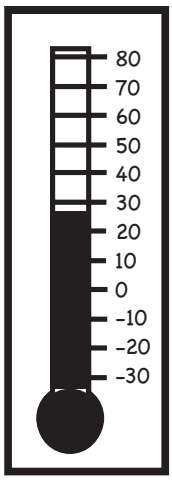
d. 

_____° F

2. Which thermometer below has the coldest temperature? _____

a. 

b. 

c. 

3. Fill in the blanks with the less than (<) or greater than (>) sign to show which temperature is hotter or colder.

a. 20° F ____ 30° F

b. 40° F ____ 10° F

c. -20° F ____ 20° F

d. -10° F ____ -5° F