

## Lesson 2: Compost Is Hot!

**Grade Level:**

3rd Grade

**Concepts Taught:**

Temperature, reading a thermometer, mathematical symbols (<,>, and =)

**Activity Time:** 20-30 minutes

**Essential Questions:**

- What makes compost create heat energy?
- How hot does compost get?

**NC CORE/Essential Standards:**

ELA- Text Types and Purposes:  
2a,2b,2c,2d  
Math 3.NBT.1

**Materials:**

Copies of the worksheets A and B

**Objectives:**

- Students will investigate some of the properties of compost, including the relationship between temperature and active composting.

**Procedure:**

1. Review the teacher background section on what causes compost heat up.
2. Explain to students that when a compost pile begins to work and break down, the inside of the pile heats up. When the material breaks down, or decomposes, it releases energy in the form of heat. The heat is important because it **sterilizes**, or makes safe, the compost for people to use it later.
3. We use different tools to measure things. For weight, we use scales, for length, we use rulers, and for temperature, we use thermometers.
4. Review how to read a thermometer with students. The thermometer sheet below can either be used as an overhead for review or for individual student assessment.
5. The temperature of an active compost pile is usually about 140 degrees Fahrenheit, or about 60 degrees Celsius. Students will use the sheet below to practice reading a thermometer and making comparisons using <, >, and =.

**Extensions/Modifications:**

1. Students can use thermometers to measure various items in the classroom including soil in potted plants, water, and cups of ice. Are these things colder or hotter than a compost pile?
1. Students can make a bar graph of the items measured above to visually compare the data.

# Composting in the Classroom

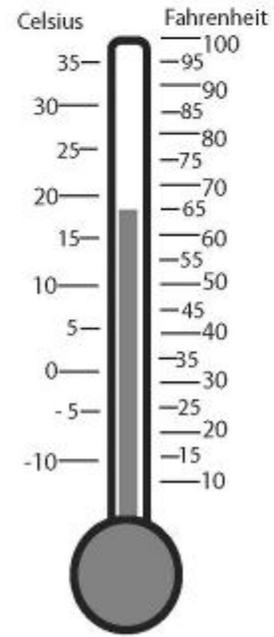
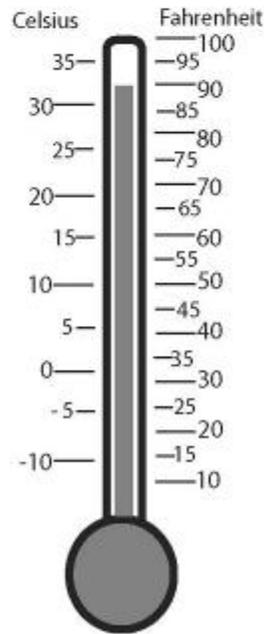
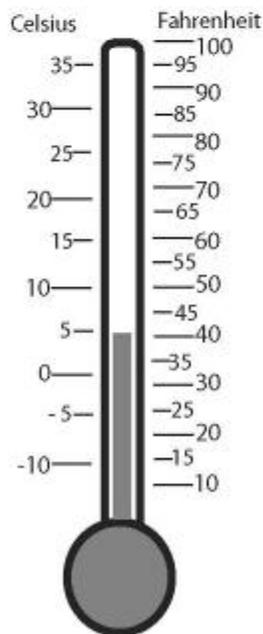
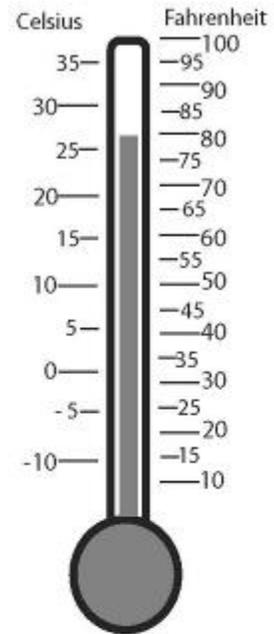
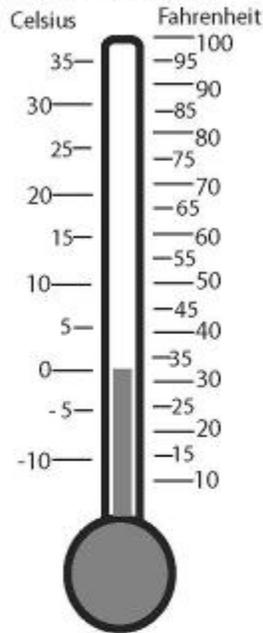
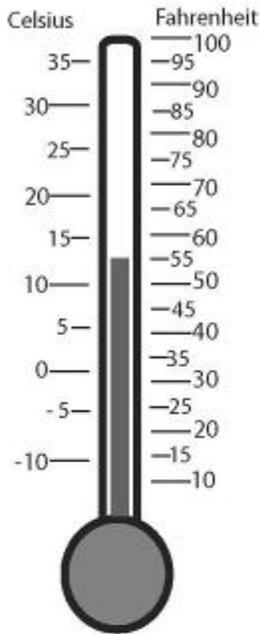
## Lesson 2—Worksheet A

Read the thermometer.

Write the temperature in Celsius on the space to the left.

Write the temperature in Fahrenheit on the space to the right.

Name \_\_\_\_\_



Compost gets hot! Look at the thermometers to see which of each group is hotter. The temperatures are in Fahrenheit. Write <, >, or = in the circle.

200° hot chocolate ○ snow 30°

122° compost pile ○ hot chocolate 200°

122° compost pile ○ dirt pile 76°

30° snow ○ compost pile 122°

122° compost pile ○ leaf pile 61°

38° rock pile ○ compost pile 122°

122° pizza ○ compost pile 122°

122° compost pile ○ hay pile 81°