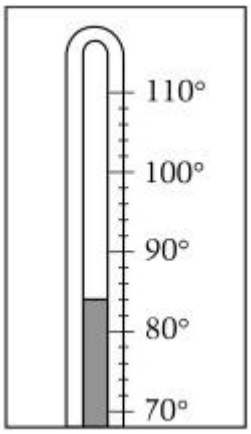

What is the temperature reading shown on the thermometer?

Answer: _____ degrees

Scoring Guide

Solution:
84 or 84°

Score & Description
Correct Correct response
Incorrect #2 82°
Incorrect #1 Any incorrect response other than 82°

In this question the student needed to read the temperature from a thermometer scale with each mark representing 2 degrees.

*The use of more than one incorrect category in this question enabled NAEP to gather data on common student errors. Any response that fell into one of the incorrect categories earned no credit.

Correct - Student Response

What is the temperature reading shown on the thermometer?

84

Incorrect #2 - Student Response

What is the temperature reading shown on the thermometer?

82°F

Incorrect #1 - Student Response

What is the temperature reading shown on the thermometer?

85°

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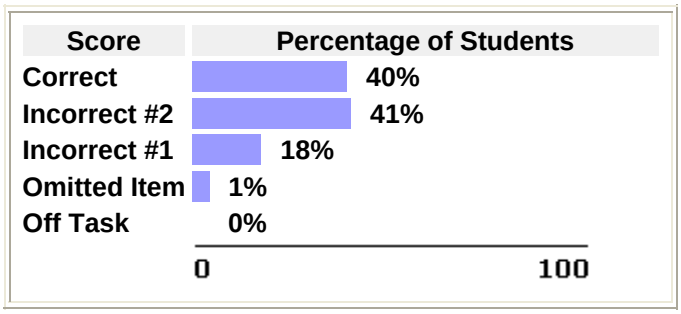

Note:

- These results are for public and nonpublic school students.
- Percentage may not add to 100 due to rounding.

Mathematical Content Area

Measurement

This question was classified in the measurement content area. This content area focuses on students' understanding of the process of measurement and on the use of numbers and measures to describe and compare mathematical and real-world objects. Students are asked to identify attributes, select appropriate units and tools, apply measurement concepts, and communicate measurement-related ideas. Students at grade 4 should understand and be able to use the measurement attributes of time, money, temperature, length, perimeter, area, capacity, weight/mass, and angle measure. At grades 8 and 12, in addition to these topics, students will also be expected to understand and demonstrate knowledge of volume and surface area, and they will be expected to solve problems that involve proportional thinking, combining or translating shapes, and applications that involve the use of complex measurement formulas. For some questions, measurement is assessed with real measuring devices.

Mathematical Ability

Procedural knowledge

This question measures students' procedural knowledge. Students demonstrate procedural knowledge in mathematics when they select and apply appropriate procedures correctly; verify or justify the correctness of a procedure using concrete models or symbolic methods; or extend or modify procedures to deal with factors inherent in problem settings. Procedural knowledge encompasses the abilities to read and produce graphs and tables, execute geometric constructions, and perform noncomputational skills such as rounding and ordering. Procedural knowledge is often reflected in a student's ability to connect an algorithmic process with a given problem situation, to employ that algorithm correctly, and to communicate the results of the algorithm in the context of the problem setting.