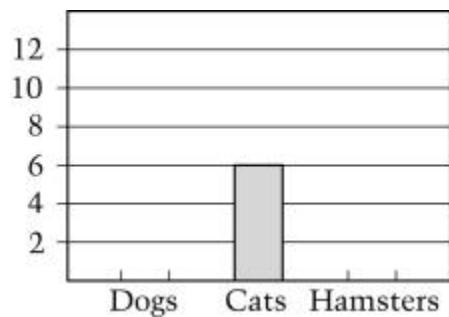


Draw bars on the graph below so that the number of dogs is twice the number of cats and the number of hamsters is one-half the number of cats.



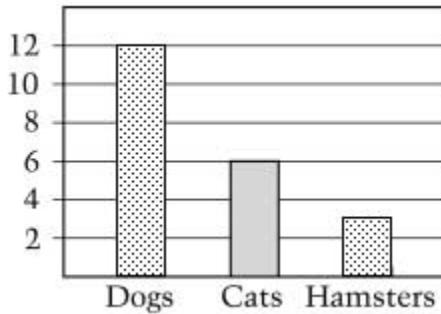
Scoring Guide

Solution:

Both dog and hamsters correct.

Any type of shading bars is acceptable. (no shading is also acceptable.)

Top edge of hamsters should fall between 2 and 4 (anywhere) but not 2 or 4.



Note: Vertical lines that are the same length as the appropriate bars are acceptable.

Score & Description

Correct

Correct response

Incorrect #3

Only bar for hamsters correct.

Incorrect #2

Only bar for dogs correct.

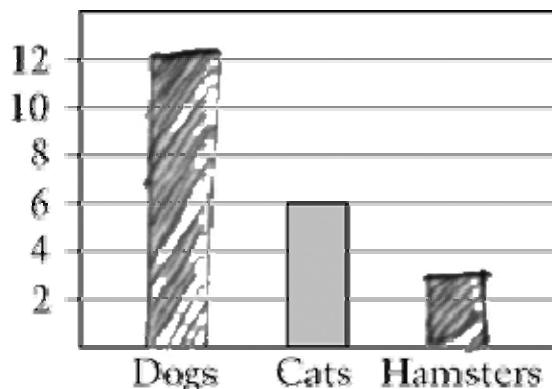
Incorrect #1

Incorrect response – no bars correct.

*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

Draw bars on the graph below so that the number of dogs is twice the number of cats and the number of hamsters is one-half the number of cats.

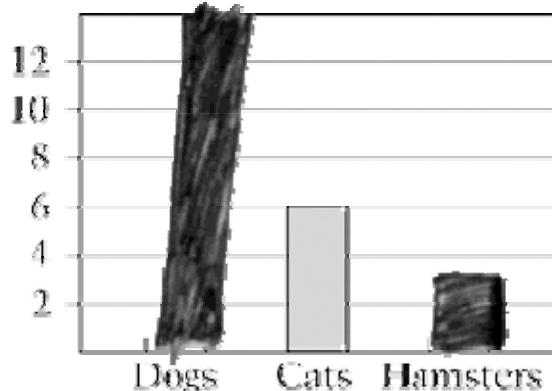


Scorer Comments:

This paper was scored as correct because the student correctly added the bars for the number of dogs and hamsters.

Incorrect #3 - Student Response

Draw bars on the graph below so that the number of dogs is twice the number of cats and the number of hamsters is one-half the number of cats.

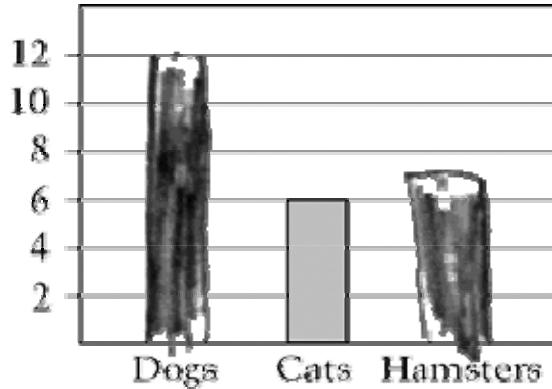


Scorer Comments:

In this paper, the student correctly added the bar for the number of hamsters, but the bar for the number of dogs is not correct. This particular response was coded to gather data on common student errors, but the paper received no credit.

Incorrect #2 - Student Response

Draw bars on the graph below so that the number of dogs is twice the number of cats and the number of hamsters is one-half the number of cats.

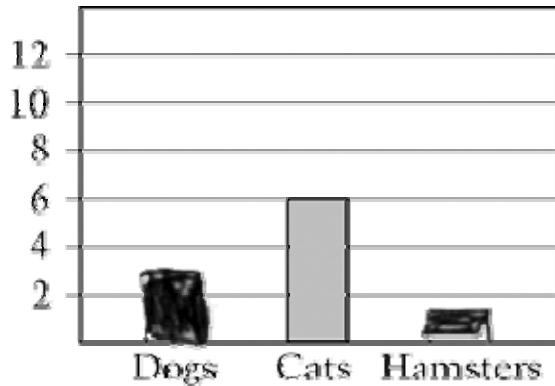


Scorer Comments:

In this paper, the student correctly added the bar for the number of dogs, but the bar for the number of hamsters is not correct. This particular response was coded to gather data on common student errors, but the paper received no credit.

Incorrect #1 - Student Response

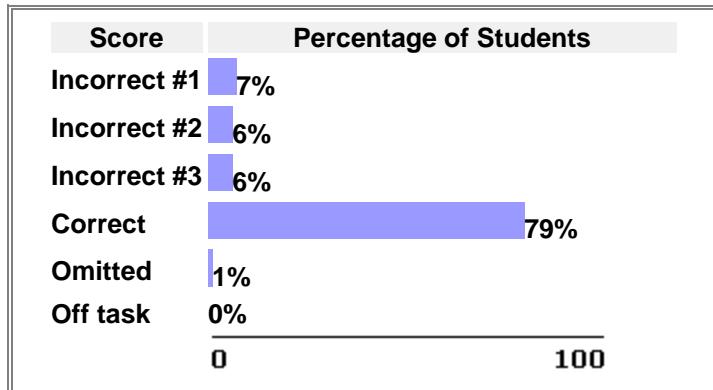
Draw bars on the graph below so that the number of dogs is twice the number of cats and the number of hamsters is one-half the number of cats.



Scorer Comments:

Papers scored as incorrect #3 received no credit and represent incorrect responses different than those described under incorrect #1 and incorrect #2.

2005 National Performance Results



Note:

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

Mathematical Content Area: Data analysis and probability (Sub content classification:)
Mathematical Complexity: Low Complexity

Mathematical Content Area

Data analysis and probability

This content area focuses on students' skills in four areas: data representation, characteristics of data sets, experiments and samples, and probability. At grade 4, students are expected to use standard statistical measures such as the median, range, or mode, and to compare sets of related data; at grades 8 and 12, they are also expected to show understanding of other statistical concepts such as the impact of outliers and the line of best fit in a scatterplot. By grade 8, students are expected to have some knowledge of experiments and samples, such as being able to recognize possible sources of bias in sampling and identify random versus nonrandom sampling, and by grade 12 they are also expected to make inferences from sample results. Students at all grades are expected to use statistics and statistical concepts to analyze and communicate interpretations of data. Students may be asked to solve problems that address appropriate methods of gathering data, the visual exploration of data, ways to represent data, or the development and evaluation of arguments based on the analysis of data. Probability is assessed informally at grade 4 and more formally at grades 8 and 12.

Mathematical Complexity

Low Complexity

This category relies heavily on the recall and recognition of previously learned concepts and principles. Items typically specify what the student is to do, which is often to carry out some procedure that can be performed mechanically. It is not left to the student to come up with an original method or solution.

Description	Grade	Type	Difficulty
Complete a bar graph from a description of data	8th	Short Constructed Response	Easy