The results of a class survey on whether students liked a new television show are as follows.

25 students liked the new show.

15 students disliked the new show.

5 students had no opinion on the new show.

On the graph below, each represents 5 students. Draw the correct number of faces to illustrate the results of the class survey.

= 5 students

Liked	
Disliked	
No Opinion	

Scoring Guide

Solution:

All categories correct.

In order for a category to be counted as correct, it must have the correct number of faces (but the eyes and mouth do not have to be drawn). The use of numbers rather than faces is an incorrect response.

Liked	
Disliked	
No Opinion	

Score & Description
Correct Correct response.
Incorrect #3 Appears as though each student is represented by one face.
Incorrect #2 Two categories correct.
Incorrect #1 Any incorrect response other than those described in 2 and 3.

*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

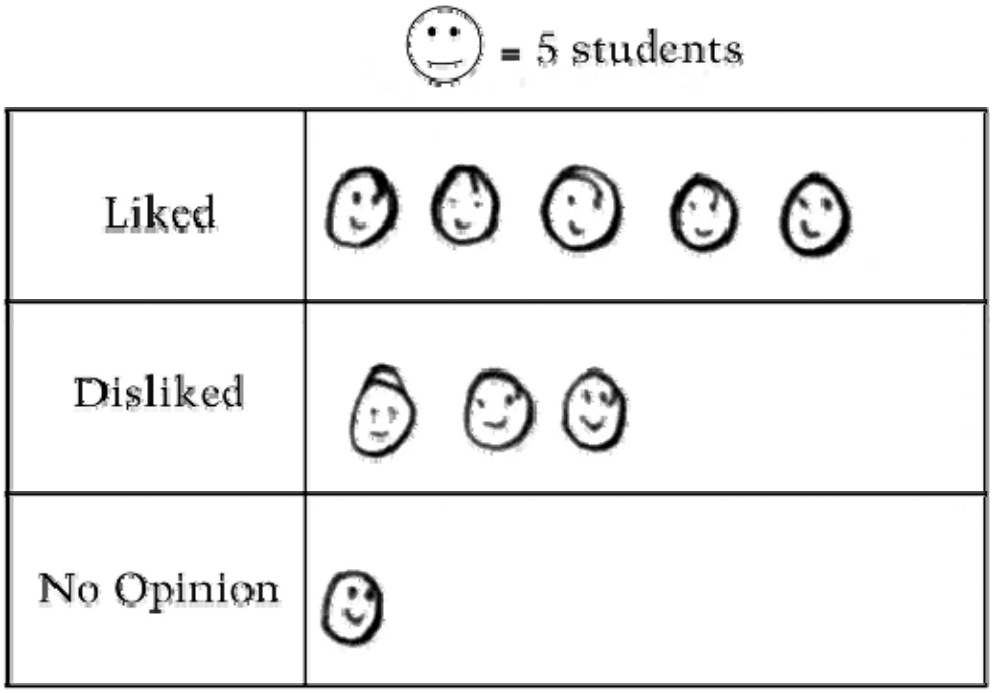
The results of a class survey on whether students liked a new television show are as follows.

25 students liked the new show.

15 students disliked the new show.

5 students had no opinion on the new show.

On the graph below, each  represents 5 students. Draw the correct number of faces to illustrate the results of the class survey.



Scorer Comments:
This response was scored as correct because the student drew the correct number of faces for each category.

Incorrect #3 - Student Response

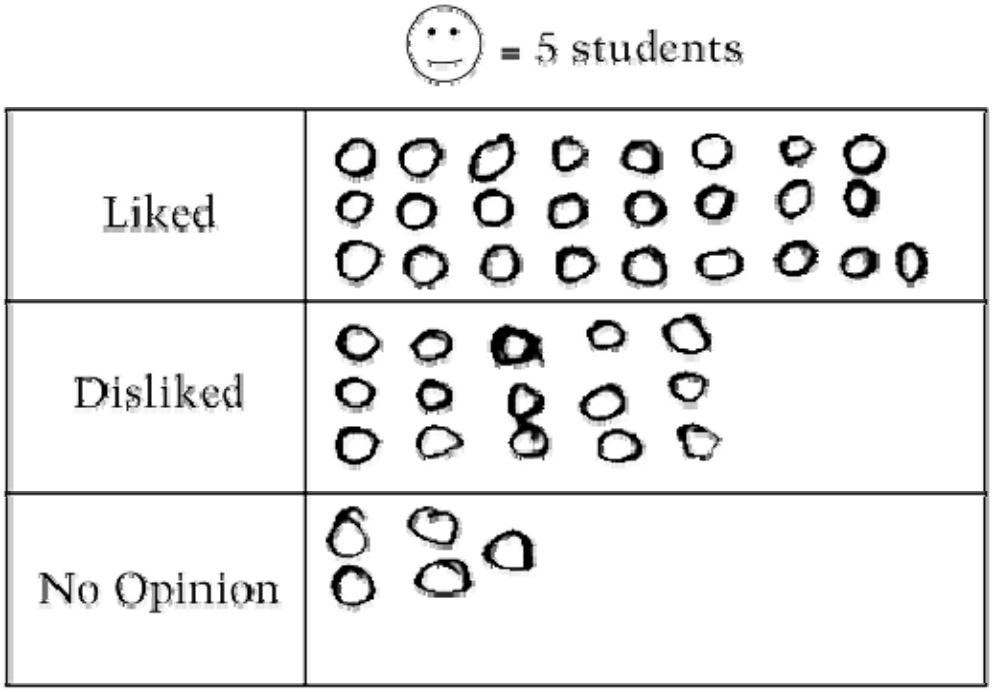
The results of a class survey on whether students liked a new television show are as follows.

25 students liked the new show.

15 students disliked the new show.

5 students had no opinion on the new show.

On the graph below, each  represents 5 students. Draw the correct number of faces to illustrate the results of the class survey.



Scorer Comments:

In this paper, the student drew a face for every person. This particular response was coded to gather data on common student errors, but the paper received no credit.

Incorrect #2 - Student Response

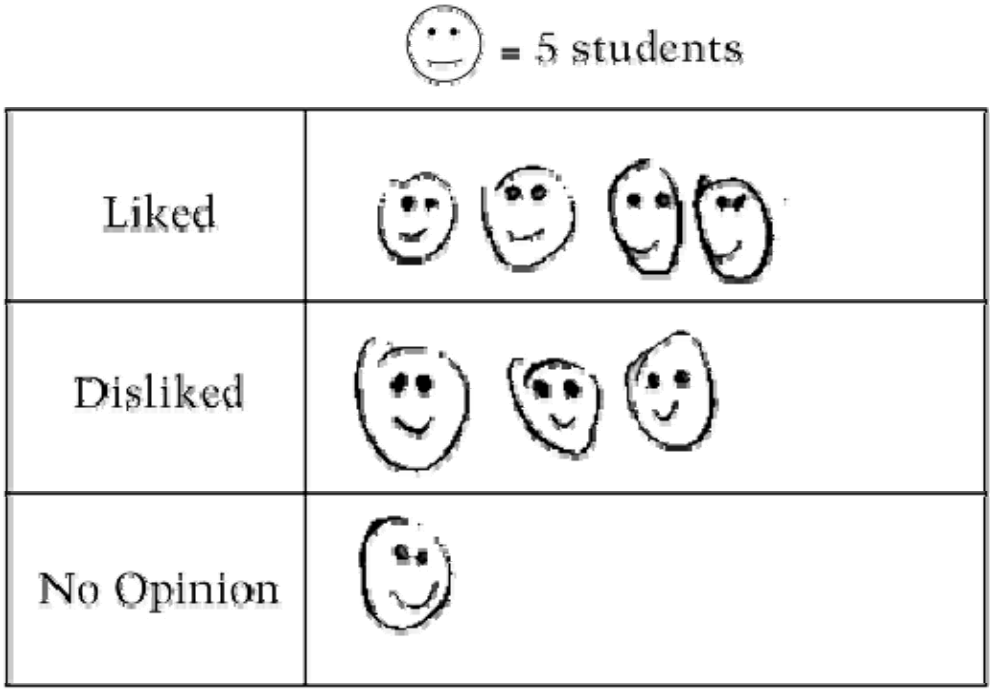
The results of a class survey on whether students liked a new television show are as follows.

25 students liked the new show.

15 students disliked the new show.

5 students had no opinion on the new show.

On the graph below, each represents 5 students. Draw the correct number of faces to illustrate the results of the class survey.



Scorer Comments:
In this paper, the student had two of the three categories correct. This particular response was coded to gather data on common student errors, but the paper received no credit.

Incorrect #1 - Student Response

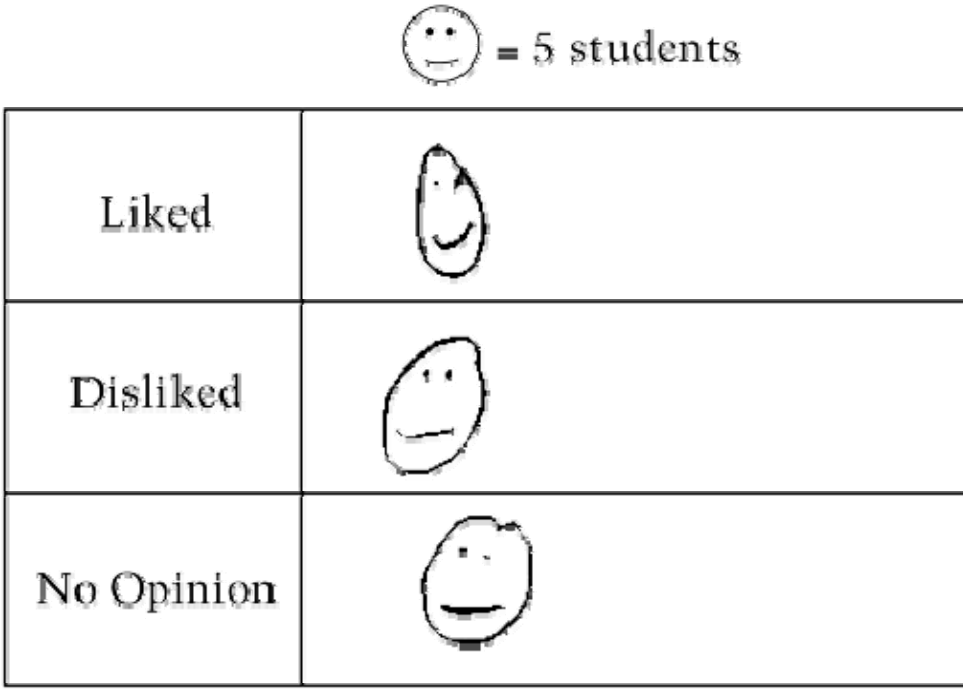
The results of a class survey on whether students liked a new television show are as follows.

25 students liked the new show.

15 students disliked the new show.

5 students had no opinion on the new show.

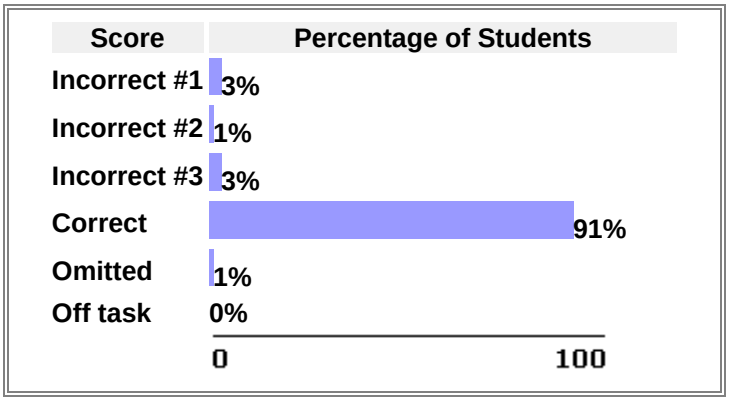
On the graph below, each  represents 5 students. Draw the correct number of faces to illustrate the results of the class survey.



Scorer Comments:

Papers scored as incorrect #1 received no credit and represent incorrect responses different than those described under incorrect #3 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 graph given a set of data	8th	Short Constructed Response	Easy