

Lesson 1-8

Example 1

SPORTS The table shows the number of season wins for a high school baseball team over the period 1994–2004. Make a box-and-whisker plot for this data.

Number of Season Wins

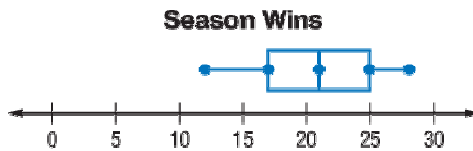
Year	Wins
1994	15
1995	18
1996	21
1997	19
1998	25
1999	22
2000	12
2001	17
2002	25
2003	23
2004	28

Solution

Arrange the data in numerical order and find the median. The median of the data is the second quartile. Identify the median of the lower half of the data, which is the first quartile. The median of the upper half of the data is the third quartile.

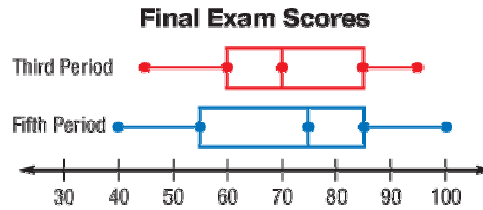


Above a number line, graph the median, the first and third quartiles, the least value, and the greatest value. Draw a box from the first quartile to the third quartile. Draw a vertical line at the median. Draw horizontal lines to connect the least value to the first quartile and the greatest value to the third quartile. The lines are called whiskers. Label the box-and-whisker plot.



Example 2

EDUCATION Mr. Stevens constructed box-and-whisker plots to represent the scores of his third period and fifth period biology classes on their final exam.



- In which class was the student with the highest score? In which class was the student with the lowest score?
- Which class had the higher median score?
- Which class had the greater range of scores?
- What range of scores included about 50% of the scores in the third period class?

Solution

- A student in the fifth period class had the highest score, 100. Another student in the fifth period class had the lowest score, 40.
- The fifth period class had the higher median score, 75.
- The fifth period class had a score range of $100 - 40 = 60$, while the third period class had a range of $95 - 45 = 50$, so the fifth period class had a greater range of scores.
- For the third period class, the first quartile was 60 and the third quartile was 85, so the score range 60–85 included about 50% of the scores.