

Plot It Out

Show data with dots, bars, and boxes.

GRADE 6 • 6.SP.B.4

CCSS.Math.Content.6.SP.B.4 "Display numerical data in plots on a number line, including dot plots, histograms, and box plots."

NAME _____

DATE _____

CHOOSE A DATA PLOT

A dot plot places one dot above a number for each time that value appears. A histogram groups data into equal-size intervals and uses bar heights to show frequencies. A box plot shows the minimum, Q1, median, Q3, and maximum.

WORKED EXAMPLE

Make a dot plot for the data: 30, 31, 31, 34, 36.

1. Order the data: 30, 31, 31, 34, 36.
2. Place one dot above 30, 34, and 36.
3. Stack two dots above 31 because it appears twice.

Answer: 30: • 31: •• 32: 0 dots 33: 0 dots 34: • 35: 0 dots 36: •

PRACTICE 6 problems

- 1** Make a dot plot for the data: 2, 3, 3, 5, 6.

ANSWER _____

- 2** This dot plot shows the number of goals scored in several games. 7: •• 8: • 9: ••• 10: • Which number of goals occurred most often?

ANSWER _____

- 3** Make a histogram using the intervals 10-12, 13-15, and 16-18 for this data: 10, 11, 11, 13, 14, 15, 15, 15, 16, 18.

ANSWER _____

- 4** A histogram has these bar heights. 0-2 books: 2 3-5 books: 5 6-8 books: 4 How many data values are shown altogether?

ANSWER _____

- 5** Make a box plot for the data: 1, 2, 4, 7, 8, 10, 12. First find the five-number summary.

ANSWER _____

- 6** A box plot has a minimum of 4, Q1 of 9, a median of 12, Q3 of 17, and a maximum of 25. What is the interquartile range?

ANSWER _____

APPLY IT Show your work

- 1** A gaming club records the length, in minutes, of 10 matches: 18, 19, 20, 21, 21, 22, 23, 24, 25, 25. Make a histogram using the intervals 18-20, 21-23, and 24-26. Which interval has the most matches?

WORK SPACE

ANSWER _____

- 2** Kai tracks minutes spent practicing a song on 11 days: 3, 5, 6, 8, 9, 10, 12, 15, 17, 18, 22. Make a box plot for the data and give its five-number summary.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Make box plots for Data Set A and Data Set B. Then decide which set has the greater overall spread and explain why. Data Set A: 4, 5, 6, 7, 8, 9, 10 Data Set B: 1, 5, 6, 7, 8, 9, 13

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Make a dot plot for the data: 2, 3, 3, 5, 6.	2: • 3: •• 4: 0 dots 5: • 6: •
2	This dot plot shows the number of goals scored in several games. 7: •• 8: • 9: ••• 10: • Which number of goals occurred most often?	9 goals
3	Make a histogram using the intervals 10-12, 13-15, and 16-18 for this data: 10, 11, 11, 13, 14, 15, 15, 15, 16, 18.	10-12: ### (3) 13-15: ##### (5) 16-18: ## (2)
4	A histogram has these bar heights. 0-2 books: 2 3-5 books: 5 6-8 books: 4 How many data values are shown altogether?	11
5	Make a box plot for the data: 1, 2, 4, 7, 8, 10, 12. First find the five-number summary.	Five-number summary: 1, 2, 7, 10, 12. The box goes from 2 to 10, the median line is at 7, and the whiskers go to 1 and 12.
6	A box plot has a minimum of 4, Q1 of 9, a median of 12, Q3 of 17, and a maximum of 25. What is the interquartile range?	8

PART 2 • APPLY IT

- 18-20: ### (3) 21-23: ##### (4) 24-26: ### (3) The interval with the most matches is 21-23 minutes.** Count the values in each equal-size interval. The middle interval contains 21, 21, 22, and 23, so it has 4 matches.
- Five-number summary: 3, 6, 10, 17, 22. The box goes from 6 to 17, the median line is at 10, and the whiskers go to 3 and 22.** The middle value is 10. The median of the five values below it is 6, and the median of the five values above it is 17.

CHALLENGE

Data Set A five-number summary: 4, 5, 7, 9, 10. Data Set B five-number summary: 1, 5, 7, 9, 13. Data Set B has the greater overall spread because its range is 12, while Data Set A has a range of 6.

Accept correctly drawn dot plots, histograms, and box plots that match the listed frequencies and five-number summaries. For an odd number of data values, exclude the overall median when finding Q1 and Q3.