

Grade 6 - Statistical Questions and Data Displays

- Answer Key

Common Core 6.SP.A.1, 6.SP.A.2, 6.SP.B.4, 6.SP.B.5a, 6.SP.B.5b · maths-pdf.fr/en/

Check each answer here. The solutions count dots or bar heights, describe the shape, center, and spread, and give the final answer in bold. Dot plots and histograms are included for several problems.

Grade 6 · Common Core State Standards: **6.SP.A.1, 6.SP.A.2, 6.SP.B.4, 6.SP.B.5a, 6.SP.B.5b**

Exercise 1 - Statistical question?

The answer can be different for each student, so the data vary.

Yes, it is a statistical question because it expects many different answers.

Exercise 2 - Not statistical

There is only one answer (Maya's height), so there is no variability.

No, it is not a statistical question.

Exercise 3 - Write a question

Sample: "How many minutes does it take students to eat lunch?" Collect the number of minutes for each student; the values will vary.

Answers vary: the question must expect different answers.

Exercise 4 - Count observations

Count the dots: $1+2+3+4+2+2+1=15$ (the values 0, 1, 2, 3, 4, 5, and 9).

15 students

Exercise 5 - Most common value

The tallest stack of dots is at 3, with 4 dots.

3 pets

Exercise 6 - Range

Greatest: 9. Least: 0.

Range: $9 - 0 = 9$.

range 9 pets

Exercise 7 - At least 4 pets

Dots at 4, 5, and 9: $2 + 2 + 1 = 5$.

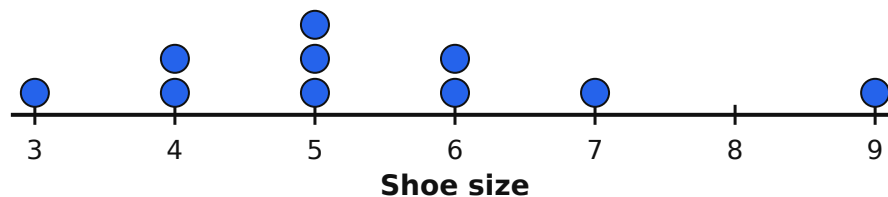
Fraction: $\frac{5}{15} = \frac{1}{3}$.

5 students, or one third

Exercise 8 - Make a dot plot

Draw a number line from 3 to 9 and put one dot above each value. Sizes 4 has 2 dots, 5 has 3 dots, 6 has 2 dots, and 3, 7, 9 each have 1 dot.

See the dot plot (10 dots).



Shoe sizes of 10 students.

Exercise 9 - Frequency table

Count each value: 2: 1, 3: 3, 4: 4, 5: 2, 6: 1, 8: 1.

The frequencies add to 12.

2:1, 3:3, 4:4, 5:2, 6:1, 8:1

Books	2	3	4	5	6	8
Students	1	3	4	2	1	1

The frequencies add to 12.

Exercise 10 - Read a histogram

Add the bar heights: $2+4+5+4+3+2=20$.

20 students

Exercise 11 - Tallest bar

The bars: 0-9: 2, 10-19: 4, 20-29: 5, 30-39: 4, 40-49: 3, 50-59: 2.

20-29 has the most students: 5

Exercise 12 - Combine intervals

Add the intervals 30-39, 40-49, and 50-59: $4+3+2=9$.

$$\frac{9}{20}$$

9 students; nine twentieths

Exercise 13 - Describe the shape

The data cluster between 1 and 5 with a peak at 3. The right side has a long tail to 9. The value 9 is far from the others.

Peak at 3, clustered from 0 to 5, with an outlier at 9

Exercise 14 - Find an outlier

Most values are between 5 and 10, but 35 is far from the rest.

35 is an outlier.



The value 35 stands apart.

Exercise 15 - Attribute and unit

Attribute: plant height. Unit: centimeters. Number of observations: 20 (one per plant).

height; cm; 20 observations

Exercise 16 - How the data were gathered

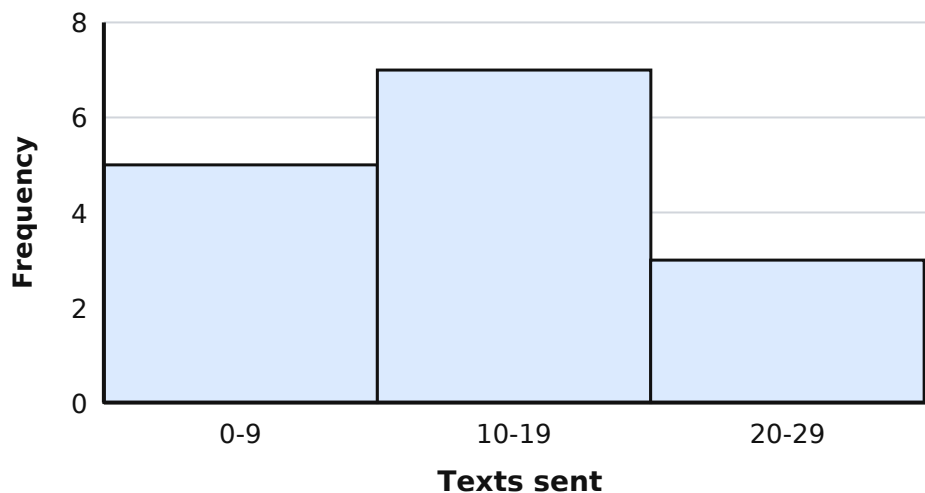
Attribute: time to finish the quiz. Unit: minutes. Measured by reading the classroom clock for each student; 25 observations.

time in minutes; 25 observations

Exercise 17 - Make a histogram

Count each interval: 0-9: 5, 10-19: 7, 20-29: 3.

0-9: 5; 10-19: 7; 20-29: 3



The bars have heights 5, 7, and 3.

Exercise 18 - More spread out

Class A range: $10 - 6 = 4$. Class B range: $10 - 2 = 8$.

Class B has the greater spread (range 8 compared with 4).

Exercise 19 - Estimate the center

The middle values are 5 and 5 (the 5th and 6th of the ordered data), and most dots are near 5.

About 5

Exercise 20 - Percent at least 30

Values 30 or more: 30, 32, 35, 38, 40, 45, 45, 50, 55, which is 9 values.

$$\frac{9}{20} = 0.45 = 45\%$$

45%

Exercise 21 - Choose the better display

With many different values, a dot plot would be crowded. A histogram groups the scores into intervals such as 0-9, 10-19, and so on.

A histogram