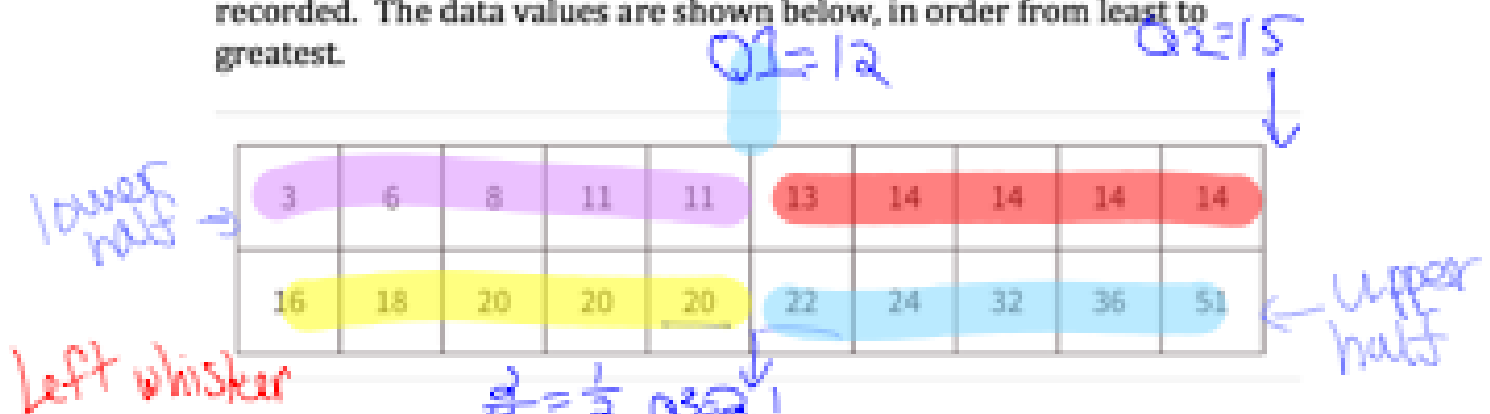


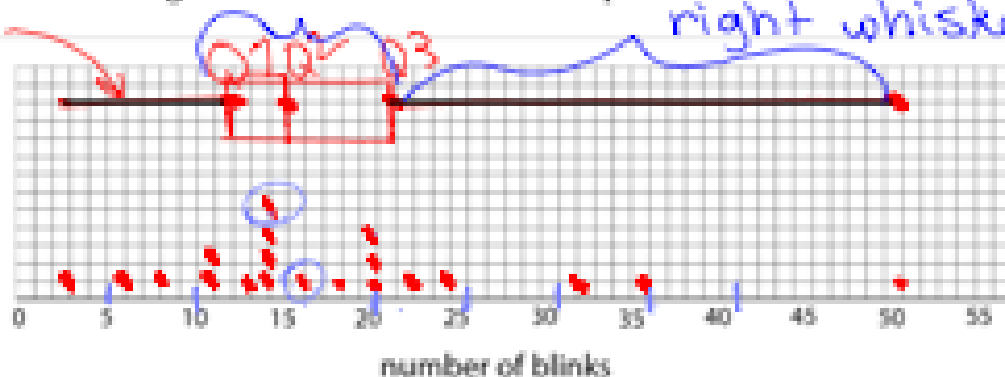
Name _____ Date _____

Constructing Box Plots

Twenty people participated in a study about blinking. The number of times each person blinked while watching a video for one minute was recorded. The data values are shown below, in order from least to greatest.



- Use the grid and axis below to make a dot plot of this data set.



- Find the median ($Q2$) and mark its location on the dot plot.

$14 \ 15 \ 16 \quad Q2 = \text{median} = 15$

- Find the first quartile ($Q1$) and the third quartile ($Q3$). Mark its location on the dot plot.

$11 \ 12 \ 13$

$Q1 = 12$

$Q3 = 21$

$20 \ 21 \ 22$

- What are the minimum and maximum values?

$\text{min} = 3$

$\text{max} = 51$

NOTES: CC.6.SP.4

5. Record the five values you have just identified. They are the five-number summary of the data.

Minimum: 3 Q1: 12 Q2: 15 Q3: 21 Maximum: 51

6. A box plot can be used to represent the five-number summary graphically. On the grid, above the dot plot:

Drawing the Box:

- ✓ Draw a box that extends from the first quartile (Q1) to the third quartile (Q3). Label the quartiles.
- ✓ At the median (Q2), draw a vertical line from the top of the box to the bottom of the box. Label the median.

Drawing the Whiskers:

- ✓ From the left side of the box (Q1), draw a horizontal line (a whisker) that extends to the minimum of the data set. On the right side of the box (Q3), draw a similar line that extends to the maximum of the data set.

Interpreting the Data:

1. What fraction of the data values are represented by each of these elements of the box plot?

◆ The left whisker?

$\frac{1}{4}$

◆ The box?

$\frac{2}{4} = \frac{1}{2}$

◆ The right whisker?

$\frac{1}{4}$

2. Determine the range and the IQR.

$$\begin{aligned} \text{Range} &= \text{Max} - \text{Min} \\ &= 51 - 3 = 48 \end{aligned}$$

$$\text{IQR} = \text{Q3} - \text{Q1} = 21 - 12 = 9$$

Range = 48
IQR = 9

Spread of the data.