

4-7-17

Aim: SWBAT create and interpret box plots.

Do Now: Find the MAD.

1, 1, 2, 3, 3, 4, 5, 5

HW: Quiz Tuesday 4/18

Do Now: Find the MAD.

1, 1, 2, 3, 3, 4, 5, 5

$$\frac{1+1+2+3+3+4+5+5}{8} \rightarrow \frac{24}{8} \rightarrow 3 \text{ Mean}$$

Absolute
Deviations

$$\rightarrow \frac{2+2+1+0+0+1+2+2}{8} \rightarrow \frac{10}{8} \rightarrow 1.25$$

Part 4: Modeled Instruction **Lesson 36**

Read the problem below. Then explore how to analyze the data.

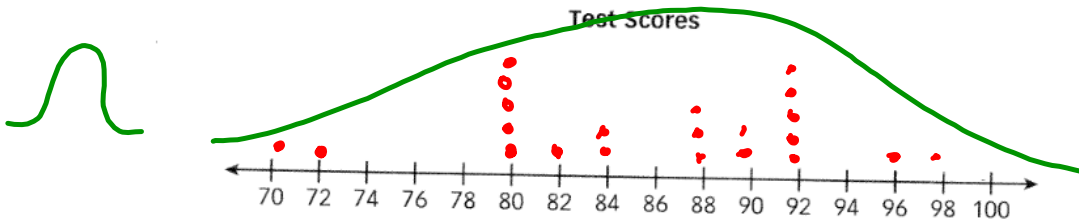
The test scores of students in a math class are listed below.

~~80, 72, 82, 80, 80, 80, 80, 88, 88, 84, 92, 92, 92, 96, 70, 90, 98, 92, 88, 92, 90, 80, 84~~

Construct a dot plot, histogram, and box plot to display and analyze the data.

Model It

You can display the data in a dot plot.



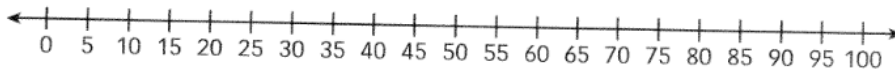
Model It

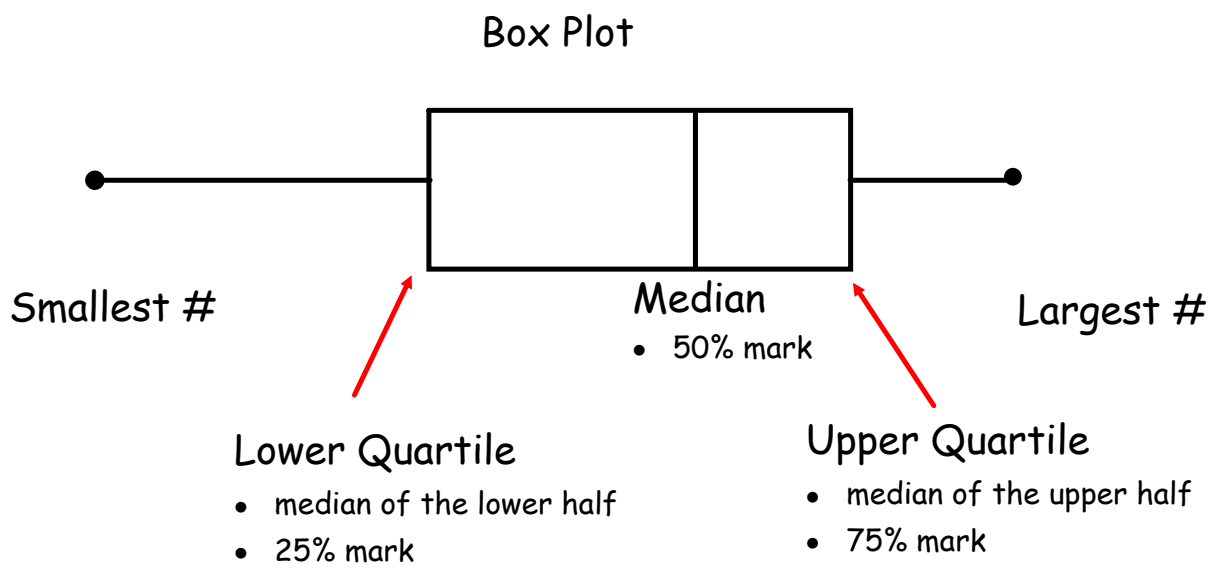
You can display the data in a histogram.



Model It

You can display the data in a box plot.





Finding Lower and Upper Quartiles

If there is one number in the middle, it separates the data in to a lower half and an upper half.

$$\left[1, 2 \right] \textcircled{3} \left[4, 5 \right]$$

$$\frac{1+2}{2} = 1.5 \qquad \frac{4+5}{2} = 4.5$$

If there are two numbers in the middle, the lesser number is part of the lower half and the greater number is part of the upper half.

$$\left[1 \textcircled{2}, 3, 4 \textcircled{5} \right] 6$$

$$\frac{3+4}{2}$$

$$\textcircled{3.5}$$



Part 4: Guided Instruction

Lesson 36



Connect It

Now you will compare the three data displays on the previous page.

- 14 Which graph is best for finding out the most common test score? Explain.

The dot plot because it shows individual results and where the results peak.

- 15 How does drawing a dot plot help order the data values from least to greatest?

The data is plotted on a number line which is already in numerical order

- 16 Explain which graph is best if you want to know how many people scored a B on the test. (In the students' math class, a B is a score from 80 to 89.)

The histogram because the interval 80-89 already shows the frequency.

- 17 Explain which graph is best for a teacher who wants to know the range of scores for the bottom 25%, the middle 50%, and the top 25%.

Box plot because it chunks the data into the percentages listed above.

- 18 Why is it important to display data in different ways?

Different displays highlight different features of the data.



Try It

Use what you just learned about analyzing data to solve this problem. Show your work on a separate sheet of paper.

- 19 Brittany asked her classmates: How much time, in minutes, do you spend reading each day? Here are the results: 10, 20, 20, 20, 30, 30, 30, 30, 30, 30, 40, 40, 40, 60, 60, 60.

Display the data in a dot plot, a histogram, and a box plot. Next to each graph, write down something you notice about the data.

Textbook Pg. 656 #3

Creating a Box Plot

- Order the data from least to greatest
- Find the following using the ordered list
 - smallest number
 - largest number
 - median
 - lower quartile
 - upper quartile
- Use a ruler to create a number line. Make sure to use a proper interval and that each segment is equally spaced.

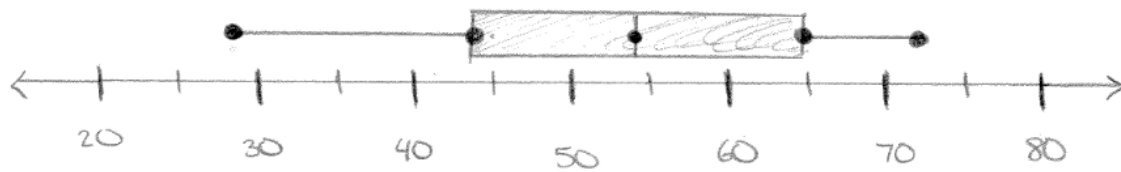
Pg. 656 # 3 and 5

(In dollars)

- ③ ~~67~~, ~~53~~, ~~41~~, ~~33~~, ~~52~~, ~~28~~, ~~70~~, ~~56~~, ~~54~~, ~~48~~, ~~65~~, ~~72~~, ~~44~~, ~~54~~, ~~62~~

~~28~~, ~~33~~, ~~41~~, (44), ~~48~~, ~~52~~, ~~53~~, (54), ~~56~~, ~~59~~, ~~62~~, (65), ~~67~~, ~~70~~, ~~72~~

Minimum: 28 Median: 54 Upper Quartile: 65
 Lower Quartile: 44 Maximum: 72



- ⑤ (In meters)

~~26~~, ~~389~~, ~~878~~, ~~144~~, ~~515~~, ~~404~~, ~~423~~, ~~357~~, ~~421~~, ~~593~~

(~~26~~, ~~144~~), (357), ~~389~~, (404), (421), ~~423~~, (515), ~~593~~, ~~878~~ $\frac{404 + 421}{2} = 412.5$

Minimum: 26 Median: 412.5 Upper Quartile: 515
 Lower Quartile: 357 Maximum: 878

