Probability and Statistics
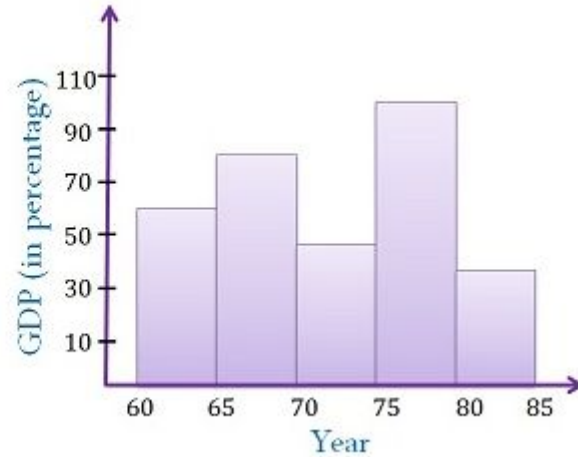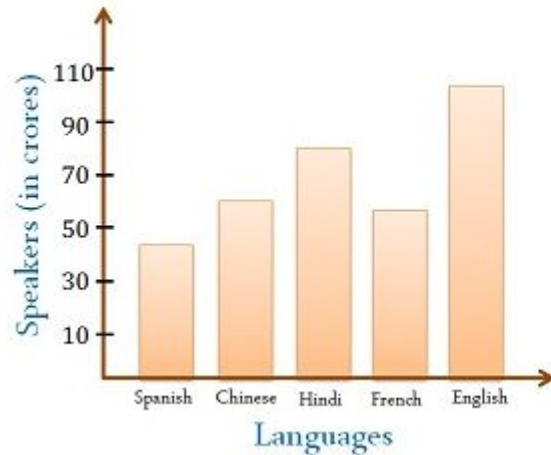Lesson: April 8

Learning Target:
Students will be able to create a histogram from a set of data or interpret the data presented in a histogram

Let's Get Started!

Below are two similar graphs. Look closely at the graphs and find 3 things that are DIFFERENT (besides the actual heights on the bars)
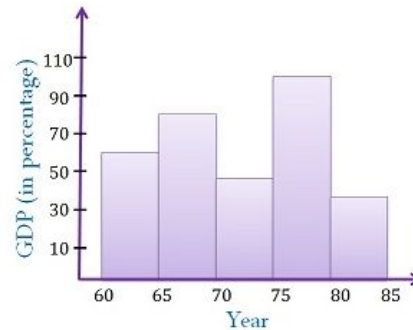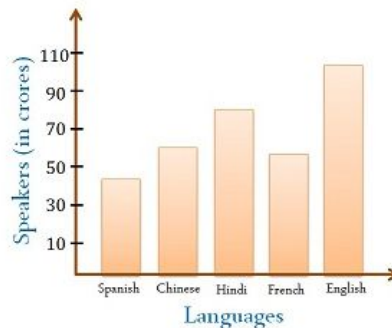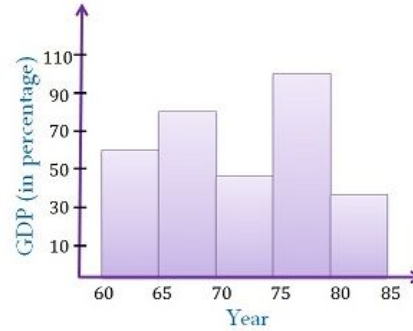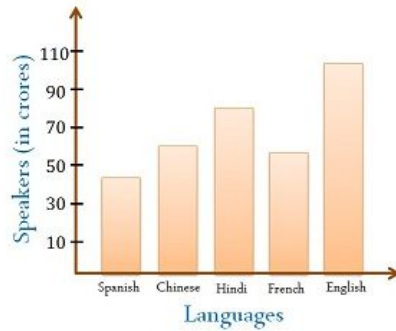
Lesson/Practice:
Watch this video
What is a Histogram?

1. Watch the video linked above for an overview of the characteristics of a histogram
2. Key points:
    a. A Histogram is used group numerical (not categories)
    b. The bars in a histogram MUST be touching
    c. Data is grouped into BINS (groups of numbers, not individual numbers)
    d. Bins must all contain the same range length
3. Quick Check -- which of the two examples from slide 2 (pictured below) is a histogram? How did you know? Check your answer on the next slide

Quick Check:

Quick Check -- which of the two examples from slide 2 (pictured below) is a histogram? How did you know?


The second graph is a histogram because:
- The numbers are grouped into bins of 5
- The bars are touching
- It is representing numbers (the first one is categories - languages)

Lesson/Practice:
Watch this video
Helpful Tips to Create Your Own Histogram

1. Watch the video linked above for an overview of how to make a histogram
2. Key points:
   a. Decide your bin size and list those intervals
   b. Tally how many data points are in each bin
   c. Label the bins along the x-axis
   d. Label the frequency along the y-axis
   e. Draw a bar for each bin the height of its frequency
3. Quick Check -- In the histogram below, what are the bins and the frequencies of each?
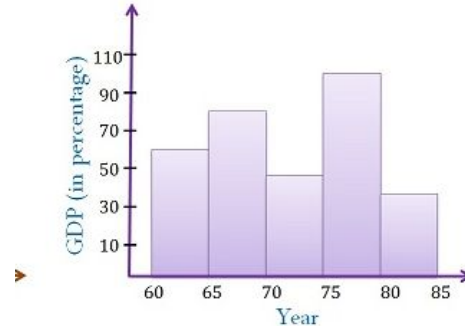
Quick Check:

Quick Check -- In the histogram below, what are the bins and the frequencies of each?
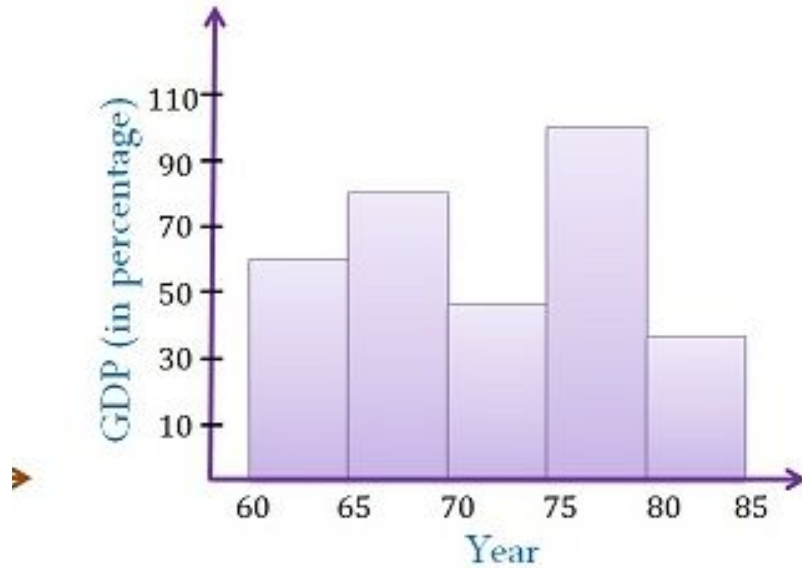
BINS	FREQ
60-64	60
65-69	80
70-74	50
75-79	100
80-84	40

Practice Problems:
Create a histogram for each set of data

You measure how many centimeters your dog grew over the first 10 weeks you had him. Here are your results:

5, 5, 3, 2, 0, 16, 1, 1, 6, 4

- What size will your bins be?
- How many are in each bin?
- Create the histogram

Your probability and statistics class ran a trial where they rolled two die and found their product. They did this 30 times. Below are the results
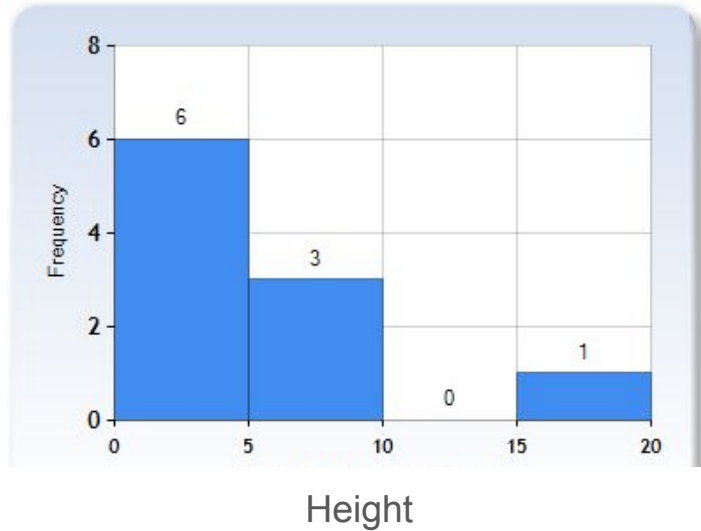
2, 8, 12, 15, 10, 1, 4, 9, 18, 25, 30, 24, 24, 16, 8, 18, 24, 18, 24, 25, 36, 30, 4, 2, 15, 16, 4, 15, 2, 30

- What size will your bins be?
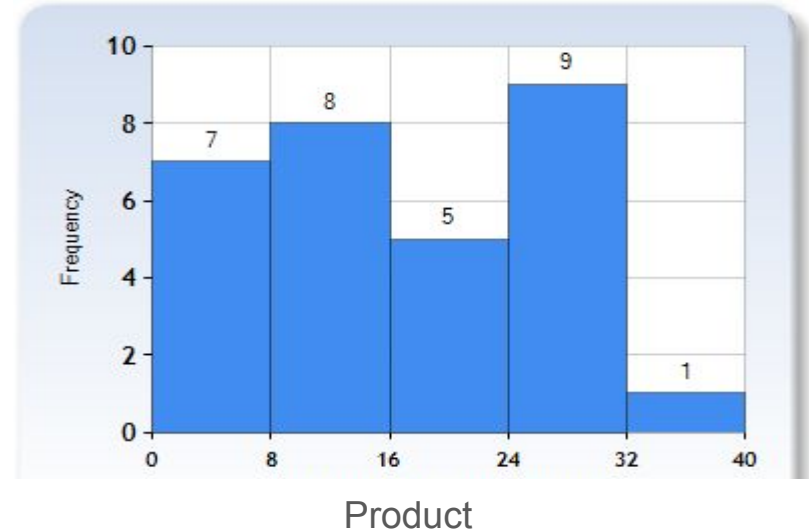- How many are in each bin?
- Create the histogram

Answer Key
Your histograms may vary slightly if you chose different bin sizes.
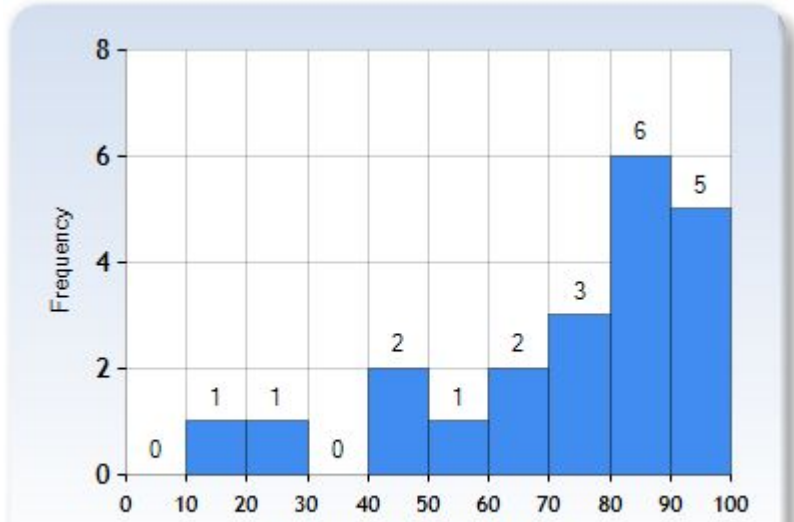
5, 5, 3, 2, 0, 16, 1, 1, 6, 4

2, 8, 12, 15, 10, 1, 4, 9, 18, 25, 30, 24, 24, 16, 8, 18, 24, 18, 24, 25, 36, 30, 4, 2, 15, 16, 4, 15, 2, 30

Height

Product

Practice Problems:

Use the histogram shown below to answer the questions

Unit F Test Percentages

How many bins did this person use the make their histogram?
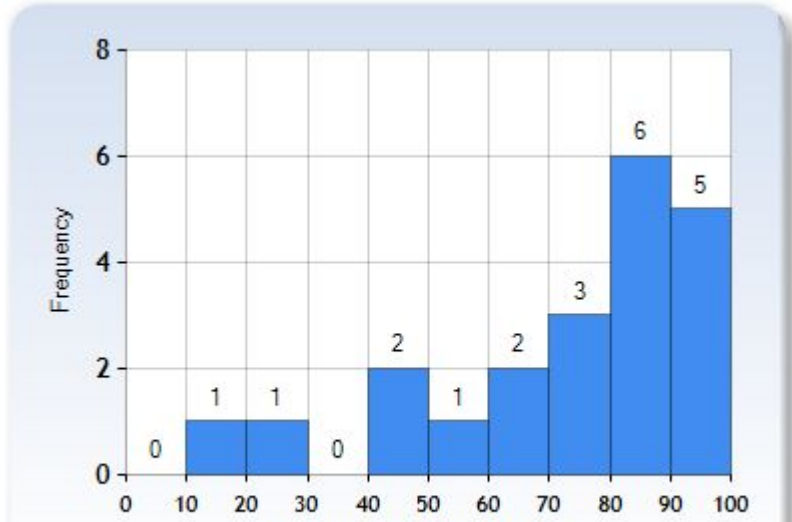
What size are the bins?

How many total students are represented?

What is the frequency of people who scored between a 10-19%?

What is the frequency of people who scored between a 90-99%?

Practice Problems:
Answer Key

Unit F Test Percentages

How many bins did this person use the make their histogram?   10

What size are the bins? 10

How many total students are represented? 21

What is the frequency of people who scored between a 10-19%?   1

What is the frequency of people who scored between a 90-99%?   5

Additional Resources:
Click on the links below to get additional resources on histograms

[Differences between a Histogram and a Bar Graph](#)

[Extra Histogram Practice](#)