Maps (Part 1)

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View the three videos for "Maps" and summarize here.

Video Title / topic

Video Title / topic

Video Title / topic

Maps Introduction

Summarize your understanding of each paragraph.

Here is something weird that you may not have thought about before. Of course, Earth is three-dimensions – approximately a sphere. But, maps of Earth are two-dimensions. Flat maps distort the size and relationship of continents and other features.

There are at least three ways to convert the globe into a flat map:
1. cylindrical projections ← most common
2. azimuthal projections
3. conic projections.

Let's take a quick look at cylindrical projections. Google Maps uses a specific type of cylindrical projection – the Mercator projection. Other cylinder projections are Transverse Mercator, Miller, and Pseudocylindrical. (*These words don't have to make sense yet*.)

The Mercator projection (e.g., the world map on your school wall) inflates the size of objects that are distant from the equator. Land features near the equator on these maps are shown proportionally correct. But, landmasses near the poles appear much too large.

Read/Summarize Text

1. **Read the passage.**
2. **Underline key expressions in each sentence.**
3. **Re-write each word (or expression) you underlined.**
4. **Summarize the passage.**

Mercator projection

The Mercator projection is a cylindrical map projection presented by Flemish geographer and cartographer Gerardus Mercator in 1569. It became the standard map projection for navigation because of its unique property of representing any course of constant bearing as a straight segment.

The Mercator projection inflates the size of objects away from the equator. This inflation is very small near the equator but accelerates with increasing latitude to become infinite at the poles. So, for example, landmasses such as Greenland and Antarctica appear far larger than they actually are relative to landmasses near the equator, such as Central Africa.

Extract from wikipedia.org "Mercator projection."

Re-write words you underlined

_____   _____   _____

_____   _____   _____

Using a complete sentence, summarize or rephrase the passage

Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

Cartography majors learn how to make maps. They study math, computer, and other techniques, including the interpretation of aerial photographs and remote-sensing data.

Cartographers and photogrammetrists collect, measure, and interpret geographic information in order to create and update maps and charts for regional planning, education, emergency response, and other purposes.

Work Environment

Although cartographers and photogrammetrists spend much of their time in offices, certain jobs require extensive travel to locations that are being mapped.

How to Become a Cartographer or Photogrammetrist

A bachelor's degree in cartography, geography, geomatics (the discipline that combines the science, engineering, math, and art of collecting and managing geographically referenced information), or surveying is the most common path of entry into this occupation. Cartographers and photogrammetrists must be licensed in some states.

Pay

The median annual wage for cartographers and photogrammetrists was $62,750 in May 2016.

Job Outlook

Employment of cartographers and photogrammetrists is projected to grow 29 percent from 2014 to 2024, much faster than the average for all occupations. The increasing use of maps for government planning should fuel employment growth. For this reason, job prospects are likely to be excellent.

Draw Illustration

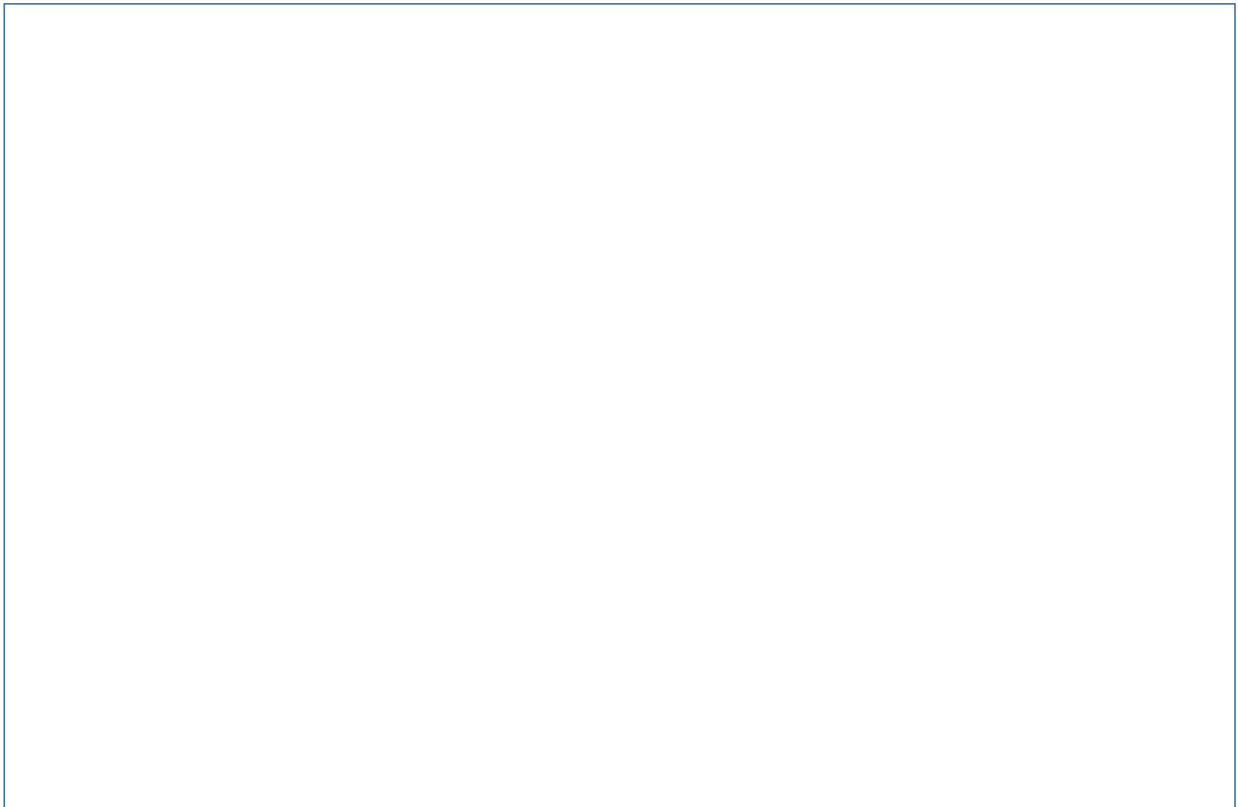**Copy the Illustration in the Space Provided**

From memory draw these states:

CA, OR, WA, TX, NM, ID, OK, KS, AR, LA, FL, & ME.

Check your attempt from a search. How close did you come?

Interpret a Graph

Write the title of the graph _____

Circle the type of chart this represents
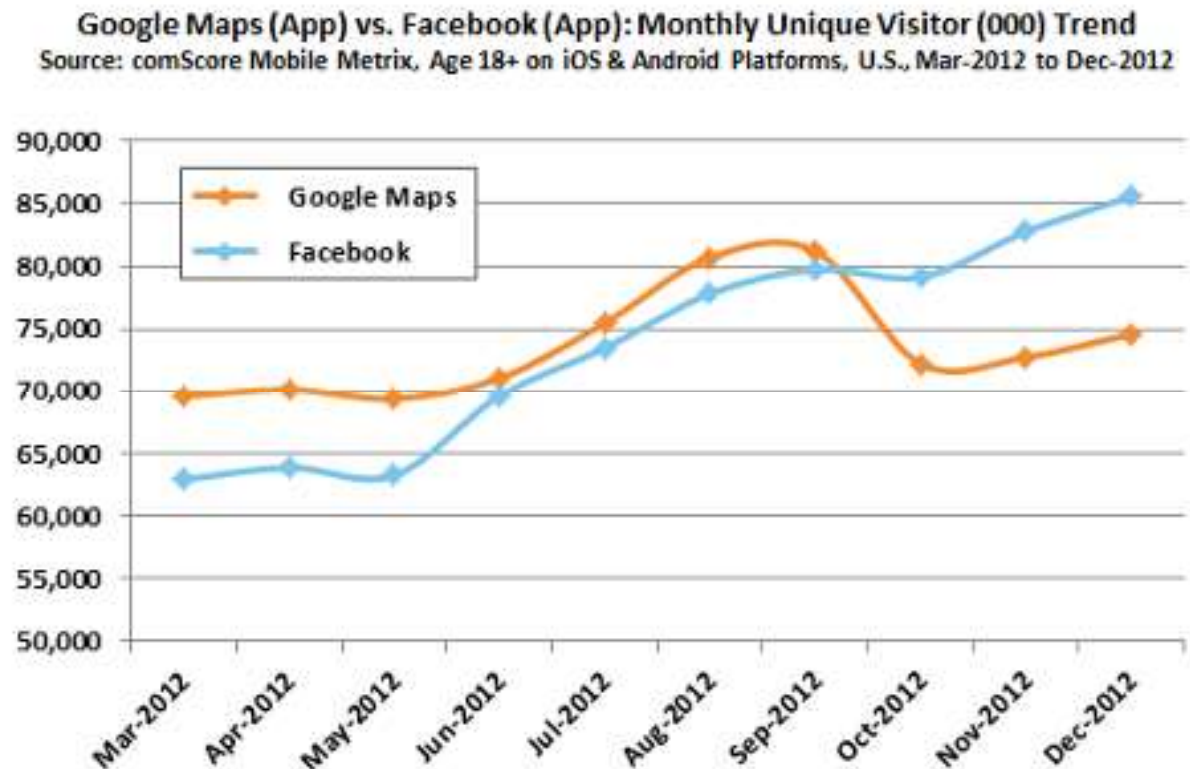> Bar Chart   Line Chart   Pie Chart   Other

If applicable,
> What does the X-axis represent _____

> What does the Y-axis imply _____

Summarize what this graph represents or conveys

_____

Google Maps (App) vs. Facebook (App): Monthly Unique Visitor (000) Trend
Source: comScore Mobile Metrix, Age 18+ on iOS & Android Platforms, U.S., Mar-2012 to Dec-2012

Show-Off Your Smarts!

Q1. How can this information about maps be applied to your life?

Q2. How does this information apply to (or impact) communities?

Q3. When do scientists need to apply this information? How?

Q4. How would a person from 100 years ago view this information?

Q5. How does this topic connect to other science topics or math?

Write down five cool words you encountered in this introduction.

1.
2.
3.
4.
5.

Draw a "Personal Map"

In the space provided here, create/draw a map of the area you live. Include a North arrow, a scale, label a few features such as names of streets, or house numbers. You can instead draw a map of your school.