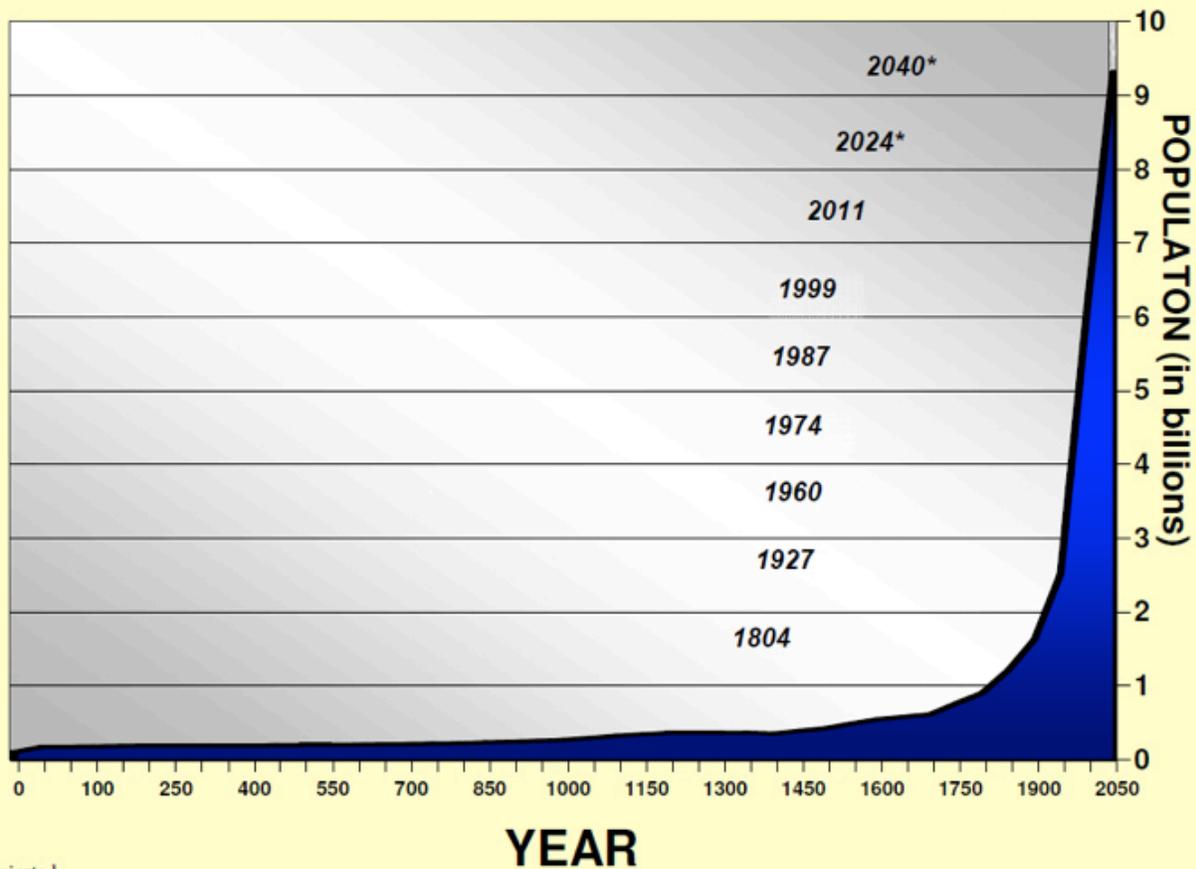


You read about climate and climate change for your last assignment. This week I want you to practice analyzing data related to climate change. Each page has a figure or graph with questions related to analyzing the graph. The printed version will be in black and white but the colored version will be posted on Google Classroom.

Hope you all are doing well!

Ms. Wiesen

## Human Population 1 CE - 2050 CE



\*Projected

Q1. The graph starts in the year 1 C.E. How many years did it take for population to reach 1 billion people?

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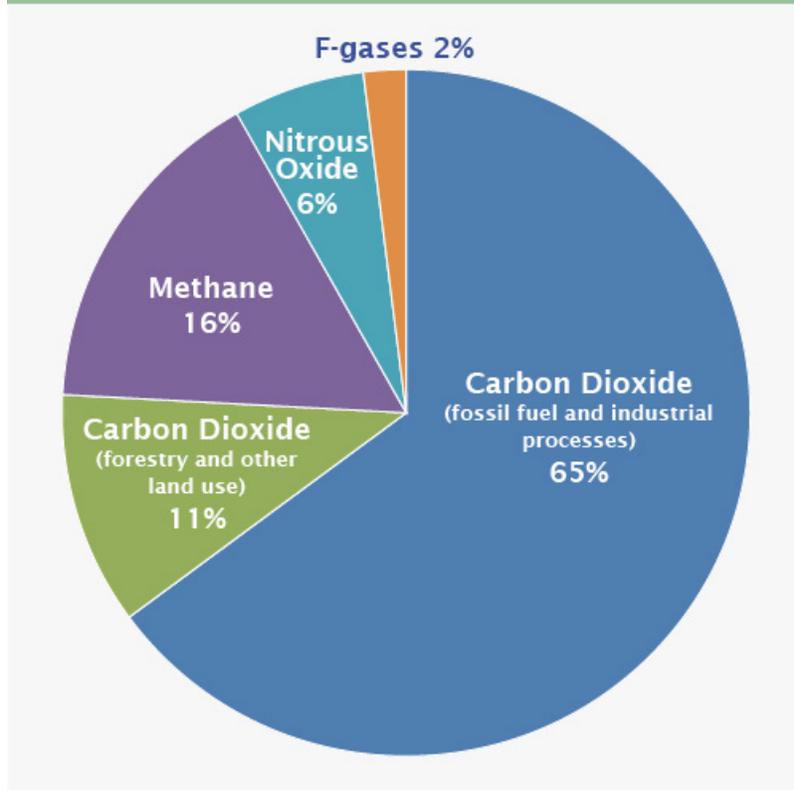
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Q2. It took 123 years to grow from 1 billion to 2 billion people. How long did it take to get from 6 billion to 7 billion people? What does this mean about the rate of population growth?

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## Global Greenhouse Gas Emissions by Gas



Source: EPA

Circle the title of the graph.

Q1. What type of greenhouse gas is the most prevalent worldwide?

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Q2. What human activities contribute CO<sub>2</sub> to the atmosphere (hint: look at the graph for clues)?

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Q3. Is a pie graph a good way to represent this data? Why or why not?

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Source: NASA

This graph, based on the comparison of atmospheric samples contained in ice cores and more recent direct measurements, provides evidence that atmospheric CO<sub>2</sub> has increased since the Industrial Revolution. (Credit: Vostok ice core data/J.R. Petit et al.; NOAA Mauna Loa CO<sub>2</sub> record.)

Q1. Which greenhouse gas is being graphed?

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Q2. What time period is represented by this graph?

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Q3. What is the graph's main take-away?

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Q4. Is this a compelling piece of information? Why or why not?

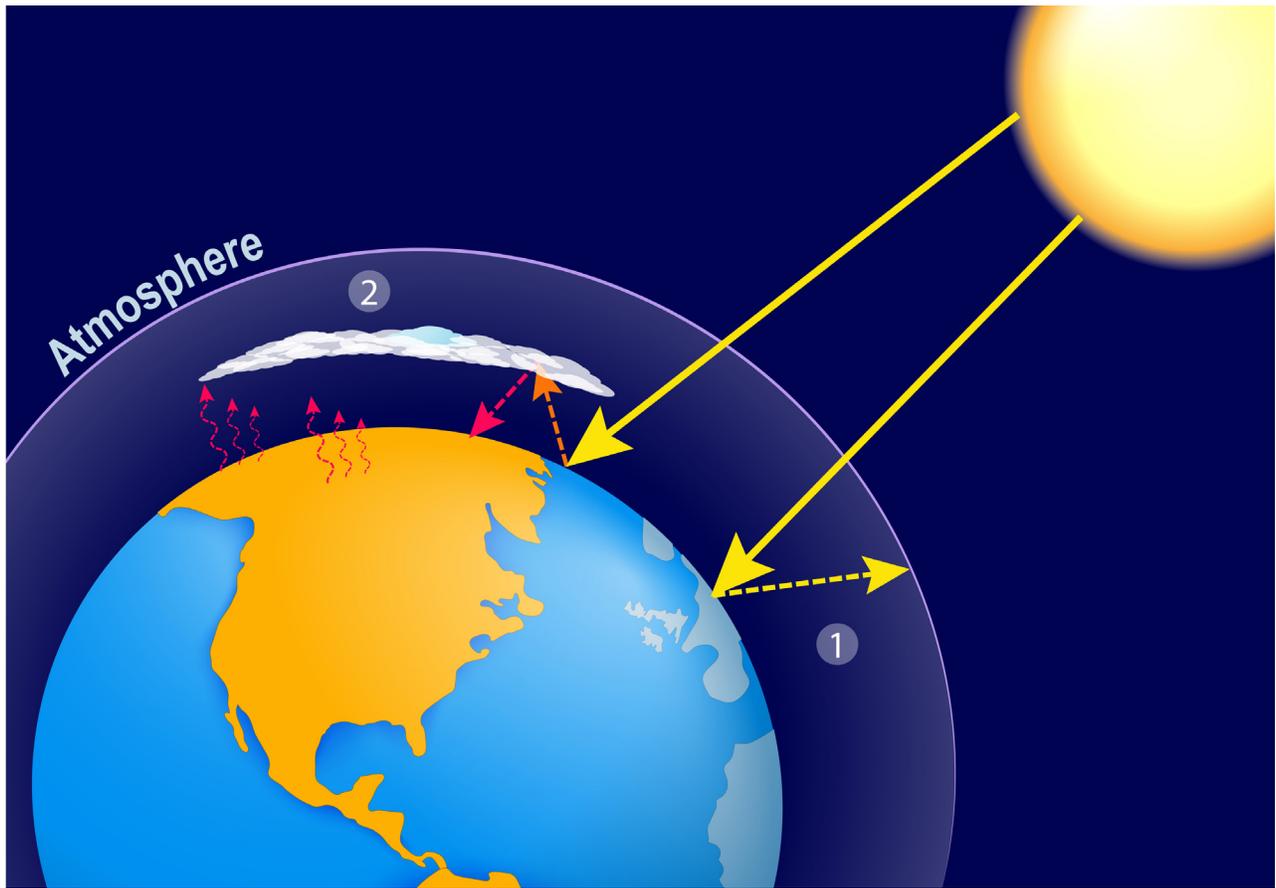
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Q5. Give this graph a title.

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The greenhouse effect is thrown out of balance by too much man-made carbon dioxide. (1) Some sunlight that hits the Earth is reflected. Some becomes heat. (2) CO<sub>2</sub> and other greenhouse gases in the atmosphere trap heat, keeping the Earth warm.

Q1. Draw an arrow pointing to where greenhouse gases are located on the diagram.

Q2. Why is it called the Greenhouse Effect?

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Q3. How does CO<sub>2</sub> in the air contribute to Earth's warming? Use the diagram and the text below the diagram for reference.

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Q4. What human activities do you know of that contribute CO<sub>2</sub> to the atmosphere?

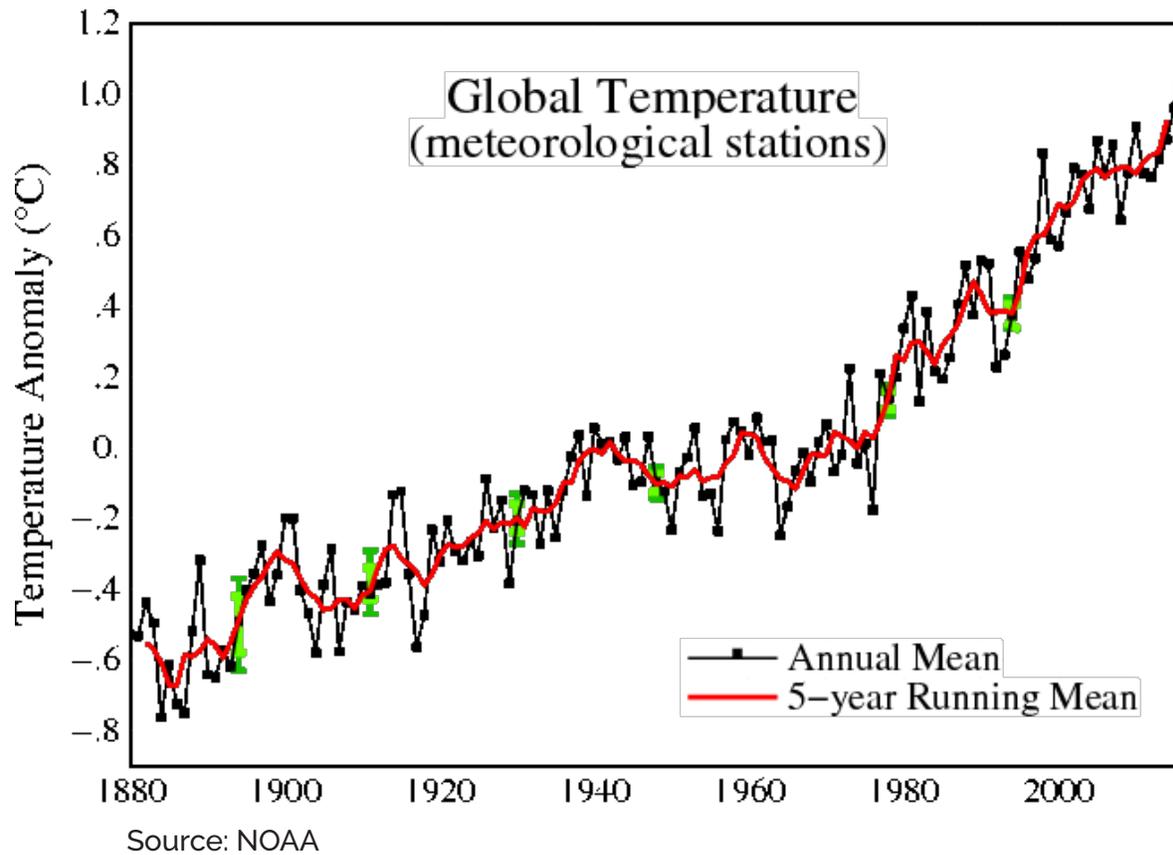
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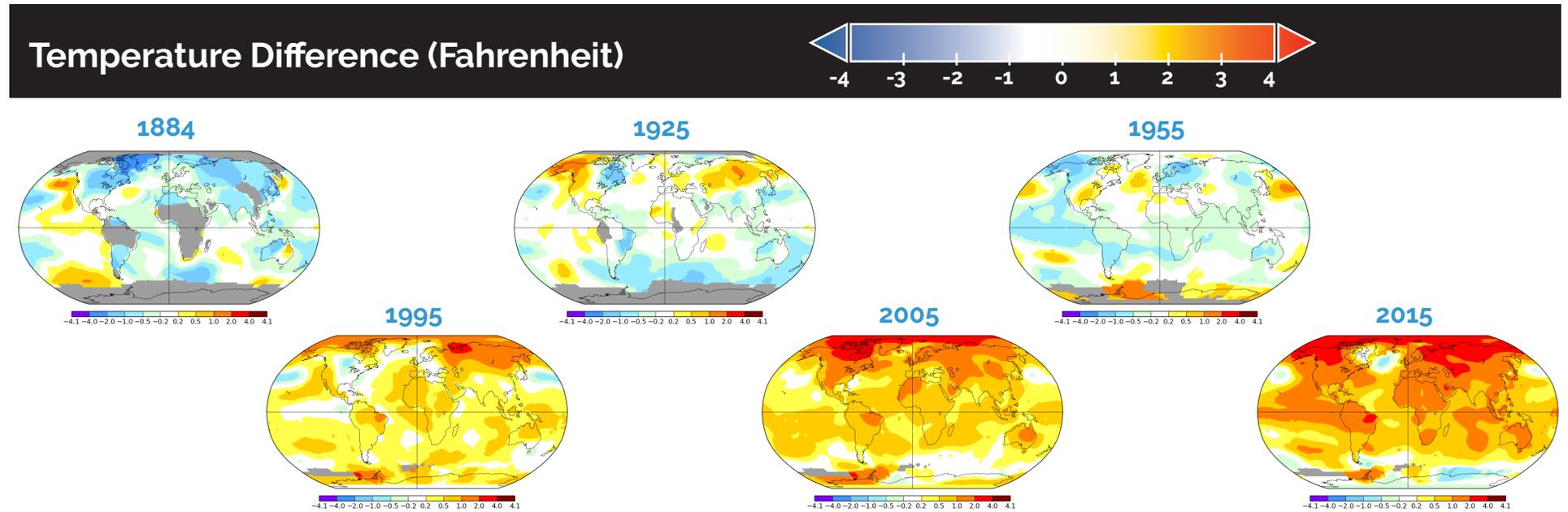
Q1. "Anomaly" means a departure from the long-term average. What do you think the 0 on the y-axis of the graph means?

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Q2. What is the trend in global temperatures? Draw an extension of the red line to represent what you think will happen in the year 2020.

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The time series below shows the five-year average variation of global surface temperatures from 1884 to 2015. Dark blue indicates areas cooler than average. Dark red indicates areas warmer than average.



Q1. What was the trend from 1884 – 1955?

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Q2. What is the trend in the last 20 years of data?

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Q3. What color do you think will be most represented on the map in 20 years?

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Q4. What benefits are there to viewing temperature data in this format? What are the drawbacks?

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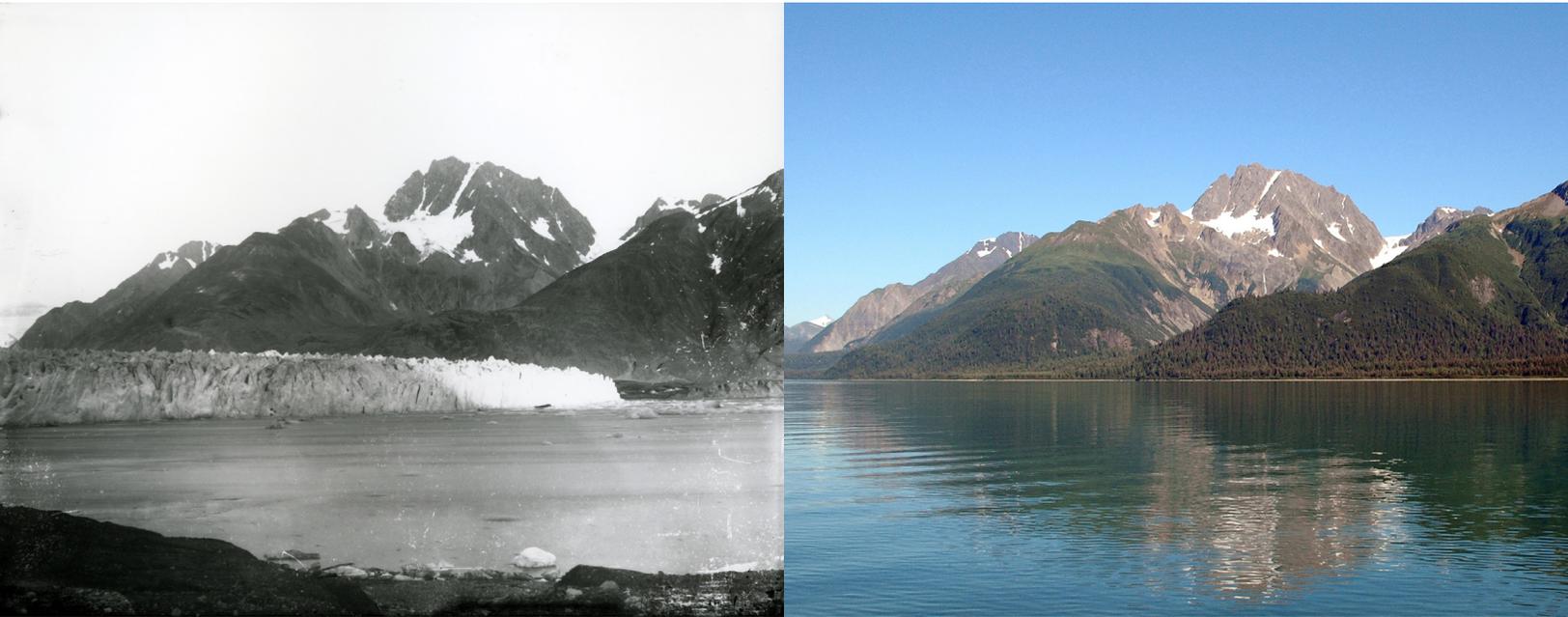
Q5. How else could this data be portrayed?

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# MUIR GLACIER, ALASKA

September 2, 1892

August 11, 2005



Source: USGS

A pair of northeast looking photographs, both taken from the same location on the west shoreline of Muir Inlet, Glacier Bay National Park and Preserve, Alaska showing the changes that have occurred to Muir Glacier between September 2, 1892 and August 11, 2005.

Q1. How many years passed between the first and the second picture?

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Q2. What do you think is causing the glacier to retreat so rapidly?

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Q3. Give this set of images a catchy title.

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