

Data Management and Probability

Learning Goal:

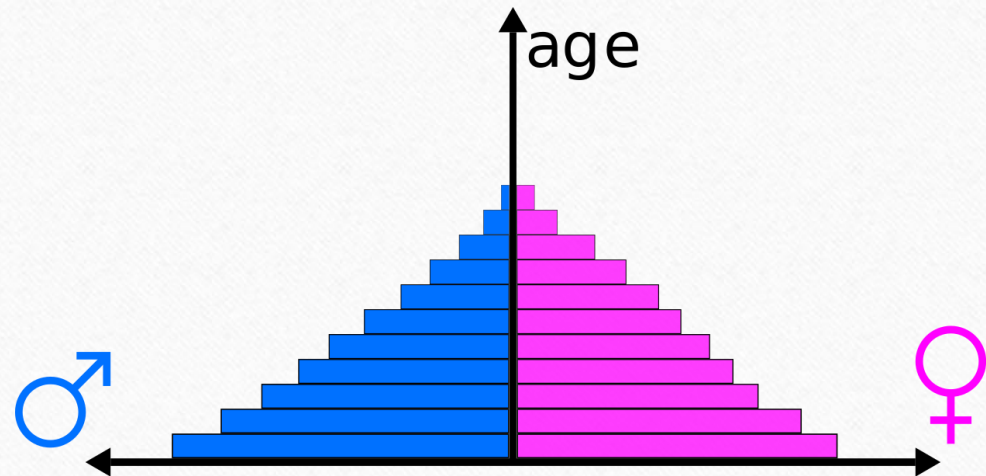
- Organize data into intervals that spread over a wide range
- Read, interpret, and draw conclusions from secondary data
- Identify and describe trends from tables and graphs
- Make inferences that are based on the analysis of charts, tables, and graphs

Population Pyramids

- What is a population pyramid?
- Watch the following video:
- <https://www.youtube.com/watch?v=VcSX4ytEfcE>
- Why are population pyramids important?

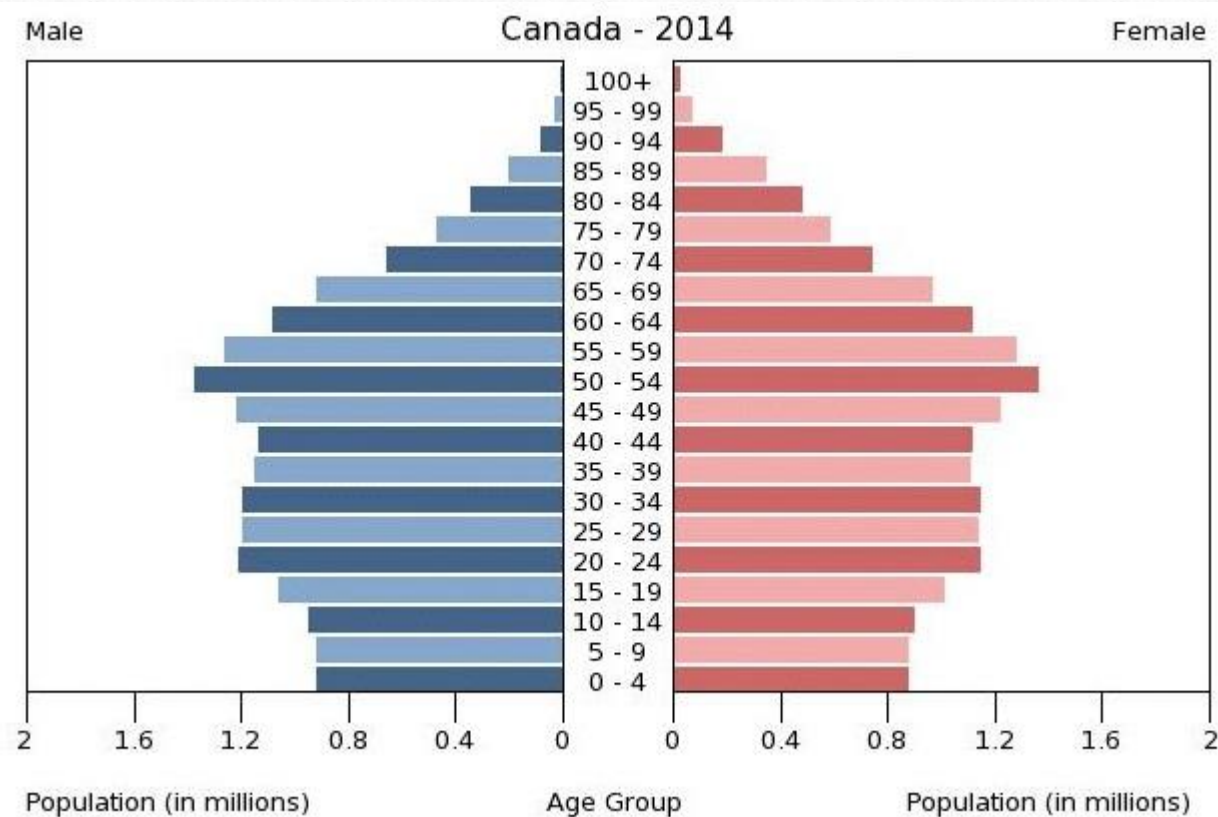
Population Pyramids

- Population pyramids are used by demographers as a tool for understanding the make-up of a specific population. They can be created for a city, country, region, or the world.
- Learning about, using, and understanding these pyramids is an important part of Human Geography and Environmental Science.
- A population pyramid is a graph that shows the age-sex distribution of a specific population. It is a graphic profile of the people who live there.



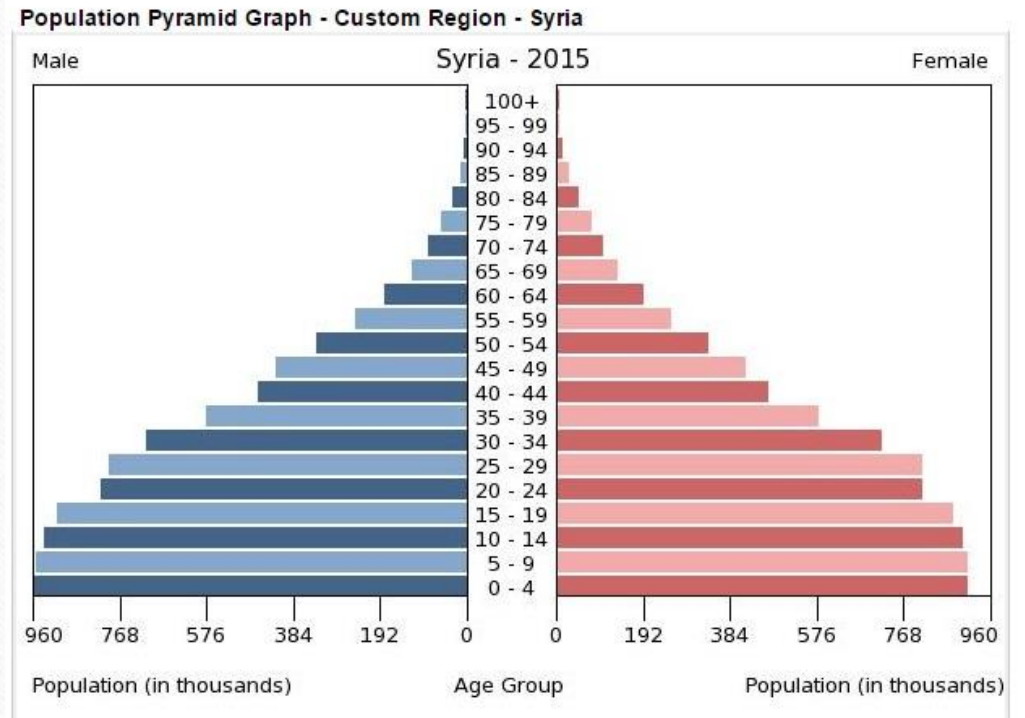
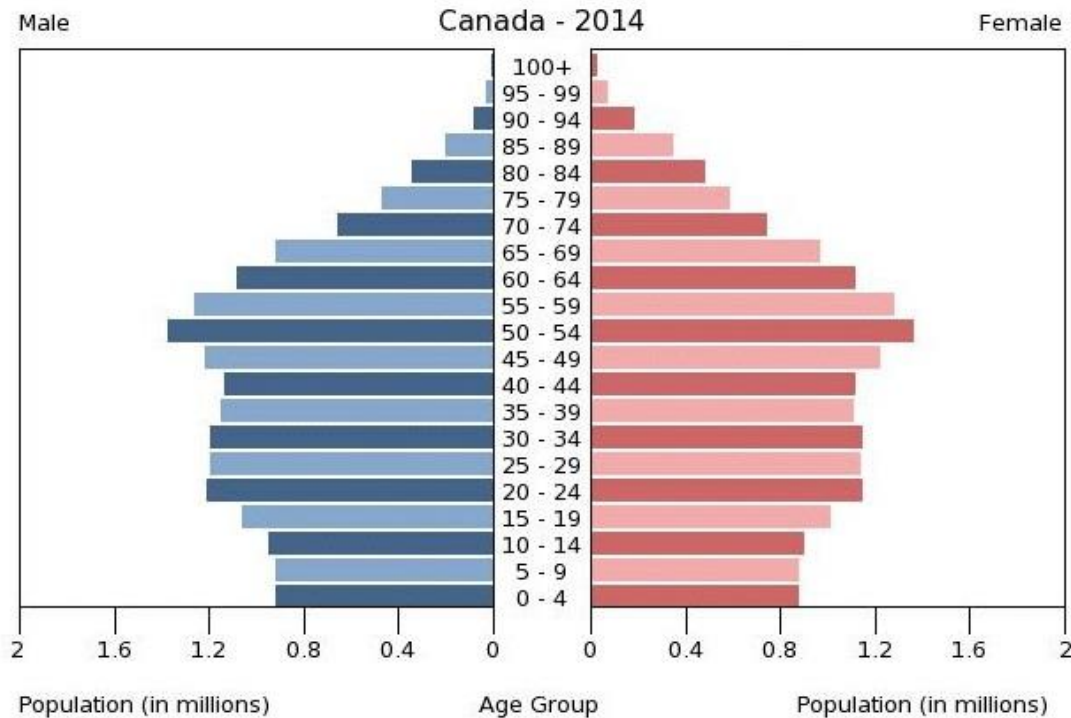
<http://www.indexmundi.com/canada/age-structure.html>

After looking at this graph, how would you describe it? What does it look like?



- **Notice:** The population is distributed along the horizontal axis, with males shown on the left and females on the right. The male and female populations are broken down into 5-year age groups represented as horizontal bars along the vertical axis, with the youngest age groups at the bottom and the oldest at the top. The shape of the population pyramid gradually evolves over time based on fertility, mortality, and international migration trends.

Comparing Population Pyramids



Why Do We Need Population Pyramids?

- What are some reasons population pyramids from various countries look different?
- Who might want to know this information? Why?
- How might the information on this graph be used by the government of that country?
- Brainstorm a list of reasons for why individual countries and world leaders would be interested in knowing the information found in a population pyramid?
- One example: <https://www.worldof7billion.org/student-video-contest/2014-winners/>

Your Task

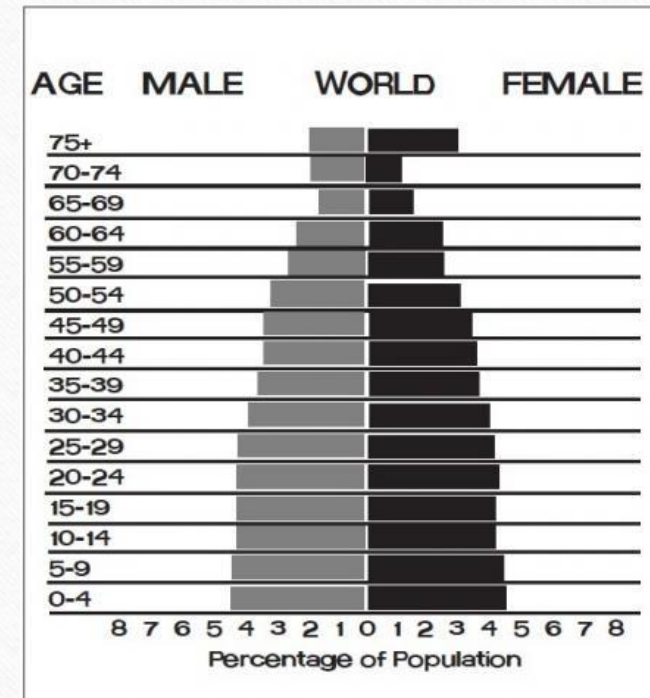
- Today, you are going to construct a population pyramid using information from a population database.
- You will pick one developed country and one developing country to graph.
- Use the population data you found on the website to create a population pyramid for your selected countries.
- Use this website to gather your data:
 - <http://www.census.gov/population/international/data/idb/informationGateway.php>
 - (I will demonstrate how to use it first!)

Drawing Conclusions

- After you have created your graph you will make **3 insightful** conclusions about the two different sets of data, such as (but not limited to):
- How might the information on this graph be used by the government of that country?
- How might the difference in the two pyramids affect how people live in each country?
- What problems may arise as a result of the shape of each country's population pyramid?

Creating Population Pyramids

- Sex is shown on the left/right sides, age on the y-axis, and the percentage of the population on the x-axis.
- Each grouping (i.e. males aged 0-4) is called a cohort.



	Level 1	Level 2	Level 3	Level 4
Thinking (Planning and processing skills-have you thought about how to solve a problem in multiple ways and do you have a plan of attack?)	Plans, gathers, and records evidence with limited effectiveness	Plans, gathers, and records evidence with some effectiveness.	Plans, gathers, and records evidence with considerable effectiveness.	Plans, gathers, and records evidence with considerable effectiveness.
Application (Applying and transferring knowledge and skills-have you used the most effective strategies and tools?)	Applies and transfers knowledge and skills with limited effectiveness	Applies and transfers knowledge and skills with some effectiveness	Applies and transfers knowledge and skills with considerable effectiveness	Applies and transfers knowledge and understanding with a high degree of effectiveness
Communication (Expression and organization of ideas-how well can someone else understand your Math?)	Communicates for different audiences and purposes with limited effectiveness	Communicates for different audiences and purposes with some effectiveness	Communicates for different audiences and purposes with considerable effectiveness	Communicates for different audiences and purposes with a high degree of effectiveness
Knowledge (Knowledge and understanding-how well do you understand the content?)	Demonstrates limited knowledge and understanding of content	Demonstrates some knowledge and understanding of content	Demonstrates considerable knowledge and understanding of content	Demonstrates thorough knowledge and understanding of content