

## Population Predictions

Urban Sprawl is the study of the spreading of cities over a greater area due to increases in population.

- Graph Raleigh’s population by year using the provided data
- Carefully space and label the X and Y axis
- Plot the data and connect the points
- On a new sheet of graph paper, graph Raleigh’s size by year
- Use the same spacing for the years as you did in your first graph

**Use your graphs to answer the following questions in complete sentences.**

1. What trend do you see in Raleigh’s population?  
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2. How does the population growth vary at different time periods?  
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3. What trend do you see in Raleigh’s size?  
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4. How does the growth of the city vary at different periods?  
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5. How do population and city size compare in Raleigh between 1800 and 2007?  
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6. You are going to calculate the rate of growth (or slope) of Raleigh’s population at different time periods. You may use a calculator. Please show your work. These do not have to be complete sentences.
  - a. What is the rate of population growth in Raleigh between 1800 and 1900?
  - b. What is the rate of population growth in Raleigh between 1900 and 1950?
  - c. What is the rate of population growth between 1970 and 1980?
  - d. What is the rate of population growth between 200 and 2007?
7. You are going to calculate the rate of urban sprawl, or slope, in Raleigh at different time periods. You may use a calculator. Please show your work.
  - a. What is the rate of urban sprawl in Raleigh between 1800 and 1950?
  - b. What is the rate of urban sprawl in Raleigh between 1950 and 2000?
  - c. What is the rate of urban sprawl in Raleigh between 2000 and 2007?

8. Using your data, you are going to make predictions about the continued growth of Raleigh's population. You may use a calculator. Please show your work.

a. What will be Raleigh's population in 2017?

b. What will be Raleigh's population in 2027?

c. What will be Raleigh's population in 2057?

d. What rate of growth did you use to make your predictions? Why?

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e. Would your predictions be accurate if you use the growth rate between 1950 and 1970? Why?

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9. Using your data, you are going to make predictions on the size of the city of Raleigh.

a. What will be the size of the city of Raleigh in 2027?

b. What will be the size of the city of Raleigh in 2057?

10. If you created a graph that compared the size of the city of Raleigh to the population, could you make accurate predictions of the future? Why or Why not?

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11. City planners need to make predictions about the city's future population size. Explain three reasons they need to plan.

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