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Mapping Columbia's History  
- Build Your City

# Changing Cityscape

- As city's grow over time and resources become more accessible, and technology develops, the number and variety of buildings in the city increases, changing the cityscape. You can see examples of this on Main Street in Columbia.

How do you think the city you designed would change over time?



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What changes  
can you see  
over time on  
Main Street?



MAIN STREET, LOOKING TOWARDS STATE CAPITOL, COLUMBIA, S. C.



**Top left:** 1500 Block of Main Street, c. 1890s.

**Bottom left:** Main Street looking toward the Capitol, c. 1920s.

**Bottom right:** Modern view of Main Street looking from the Capitol.



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## Changing Cityscape

- Main Street contains a variety of different buildings with a range of architectural styles, including skyscrapers. Columbia's first skyscraper – the National Loan and Exchange Bank – was constructed on Main Street in 1903.

What new resources and technology would you need to build a skyscraper?



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Examine these early skyscrapers, what similarities do you notice?

**Left:** Colorized postcard of the National Loan and Exchange Bank, c. 1915.

**Right:** Colorized postcard of the Palmetto Building, c. 1915.



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# Changing Cityscape

- Design and construction methods for skyscrapers have changed over time. Modern skyscrapers feature simple exteriors in comparison to those of the past, and stand even taller than their predecessors, but the same – and newer – safety concerns are present when building these structures.

What are some modern challenges that you think engineers may face when building skyscrapers?



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How do these structures compare to earlier skyscrapers on Main Street?

**Top left:** Mid-century office tower at 1241 Main Street.

**Bottom left:** Meridian building at 1320 Main Street.

**Right:** Main and Gervais office tower at 1221 Main Street.



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# Construct a Building from Your City

## Activity Instructions

- Choose a building from your city, or from Main Street as shown on the slides above, to construct.
- Gather materials to build your structure with. We recommend marshmallows and toothpicks, or you can get creative!
- Before you begin construction, consider:
  - What are some real-world situations similar to this challenge?
  - How do real-world engineers solve these challenges?
  - Are there any special features that you could incorporate to help your design be more stable?
- After you finish construction, follow the instructions on the slide below to test the sturdiness of your building.



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# Structure Testing

1. Once you've finished constructing your building, measure it and note how tall it is here:  

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2. Let it stand on its own. Does it stay up by itself? If not, what changes can you make to improve your building?  

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3. If you made changes, what were they? Did they make your building better or worse? If they made it worse, would you go back to your previous design or make new changes?  

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4. If your design is able to stand on its own, add weights to test the stability of the structure. Use pennies, or other coins, as weights. How many pennies/ coins is your building able to hold?  

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If you're still not happy with your building, keep making changes and then test again! Make sure to record your results.

