

**CHAPTER 16** Section 1 (pages 482–487)

# Science and Urban Life

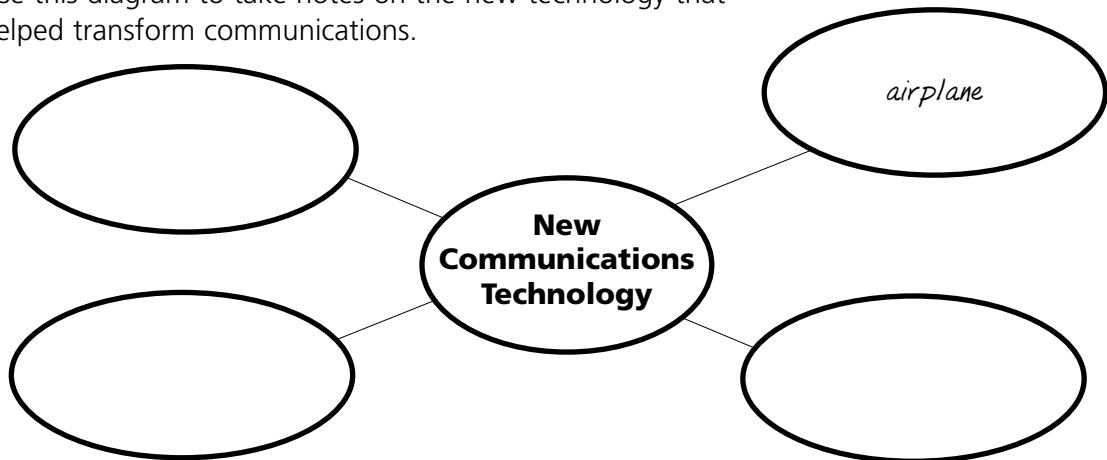
## BEFORE YOU READ

In the last section, you read about the people and organizations that controlled the nation's major cities and how reformers tried to end corruption.

In this section, you will read about how technology improved life in the cities and dramatically changed the world of communications.

## AS YOU READ

Use this diagram to take notes on the new technology that helped transform communications.



### TERMS AND NAMES

**Louis Sullivan** Early leader of architecture

**Daniel Burnham** Chicago architect

**Frederick Law Olmsted** Developer of Central Park

**Orville and Wilbur Wright** Brothers who flew the first airplane

**George Eastman** Inventor of the camera

## Technology and City Life

(pages 482–485)

### *How did cities cope with their growing populations?*

By 1900, millions of Americans had settled in the nation's cities. To *accommodate* their growing populations, cities had to rely on technology. One example of this was the development of the skyscraper. Skyscrapers are tall buildings that allow people to live many floors above ground. As a result, skyscrapers save space.

Two factors allowed architects to design taller buildings: the invention of elevators, and the development of steel. One of the early skyscraper architects was **Louis Sullivan**. In 1890, he designed the

ten-story Wainwright building in St. Louis. In 1902, **Daniel Burnham** designed the Flatiron Building, a skyscraper at one of New York's busiest intersections.

Skyscrapers allowed cities to grow upward. Changes in transportation helped cities spread outward. In 1888, Richmond, Virginia, became the first American city to use electric-powered streetcars. Soon other cities installed electric streetcars. By the turn of the century, electric streetcars carried people from their homes in outlying neighborhoods to downtown stores, offices, and factories. People could now live in one part of a city and work in another.

To avoid overcrowding on streets, a few large cities moved their streetcars above street level. This created elevated or “el” trains. Other cities built subways by moving rail lines underground. Steel bridges joined sections of cities across rivers.

City planners also tried to make cities more livable by creating parks and *recreational* areas. Journalist and farmer **Frederick Law Olmsted** led the movement for planned city parks. In 1858, he and an architect drew up plans for Central Park in New York. The finished park included boating and tennis facilities, a zoo, and bicycle paths. All of these were placed in a natural setting.

In Chicago, Daniel Burnham designed a plan that would change a swampy region near Lake Michigan into a recreational area. His plan resulted in *elegant* parks and sandy beaches along Chicago’s Lake Michigan shores.

**1. Name two technological advances that helped make cities more livable.**

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## New Technologies (pages 485–487)

*How did technology transform communications?*

Technology also improved the field of communications. There were several technological advances in printing. American mills began to produce huge

amounts of cheap paper from wood *pulp*. A new kind of high-speed printing press was able to print on both sides of the paper, making magazines and newspapers more affordable. Two brothers, **Orville and Wilbur Wright**, built the first airplane. Their first successful flight occurred in 1903 at Kitty Hawk, North Carolina. It covered 120 feet and lasted 12 seconds.

People paid little attention to the Wright brothers’ achievement. Many newspapers didn’t even bother to print the story. Within two years, though, the Wright brothers were making distant flights of 24 miles. By 1908, however, the government took an interest in the new technology and by 1920, the United States had established the first transcontinental airmail service.

In 1888, **George Eastman** invented his Kodak camera. This provided millions of Americans with an easy way to take pictures. The camera also changed news reporting. Reporters could now photograph events as they occurred, and this helped create the field of photojournalism. When the Wright brothers made their first successful flight at Kitty Hawk, an amateur photographer caught the event on film.

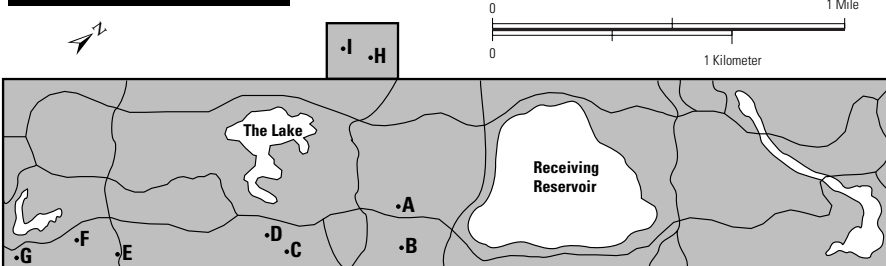
**2. Name two inventions that helped change the world of communications.**

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### New York’s Central Park



- |                                  |                                      |
|----------------------------------|--------------------------------------|
| A Cleopatra’s Needle             | F Zoo                                |
| B Metropolitan Museum of Art     | G General Sherman Statue             |
| C Alice in Wonderland Statue     | H Hayden Planetarium                 |
| D Hans Christian Andersen Statue | I American Museum of Natural History |
| E Children’s Zoo                 |                                      |

## Skillbuilder

Use the map to answer the questions.

**1. Roughly how long is Central Park? How wide? (Do not include the small section with locations H and I.)**

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**2. Categorize the types of attractions found in the park.**

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