

Lesson 2: DESIGNING A SKYSCRAPER

grade level: elementary (2-6)

► OVERVIEW

This lesson is designed to awaken students' awareness of why skyscrapers emerged in the urban environment. Through guided discussion, close looking, and small group exploration, students will consider the needs of a community and the varied functions of buildings. Students will apply their understanding by designing their own mixed-use skyscraper.

► GUIDING QUESTIONS

- Why do people build skyscrapers?
- How are skyscrapers used?
- What functions are best for different parts of skyscrapers?

► MATERIALS

- Copies of Student Activity Sheet
- Art supplies such as paper, crayons, markers, and collage materials
- Notecards (one per student) labeled as directed in Part III.

► MATERIALS to DOWNLOAD

- Activity Sheet: Designing a Skyscraper

► VOCABULARY

Commercial: A building used for business purposes, such as office buildings or stores

Function: Use or purpose; In this context, function indicates how a building is used

Mixed-Use: Buildings that combine residential, commercial, and/or public purposes

Public: A building that is used by all members of the community, such as public libraries or community gardens

Residential: A building people live in, such as an apartment building

LEARNING OBJECTIVES

Students will:

- Understand the many functions and purposes of buildings
- Identify and describe how buildings reflect the necessities of city life
- Design a building that meets a variety of community needs

Relevant History

The Empire State Building

In 1859, the wealthy Astor family moved into a grand mansion at Fifth Avenue and 34th Street in New York City. In 1893, the family left the mansion and built the fancy Waldorf hotel in its place. This was one of the finest hotels in the city, and the Astors made a fortune. In 1931, the Astors sold the land to a private company. The hotel was demolished to make way for the construction of the Empire State Building.

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► I. INTRODUCTION:

WHY DO PEOPLE BUILD DIFFERENT TYPES OF BUILDINGS?

- Review “Strategies for Close Looking.” Pre-teach technique if necessary, using an image from a magazine or newspaper.
- Distribute Activity Sheet: “Designing a Skyscraper” to students. They will complete the activity in small groups.
- Explain to students that the three pictures on the sheet depict the same corner in Manhattan: 34th Street and Fifth Avenue. They will practice close looking in this activity, recording their observations of each picture in the space provided.
- To conclude the activity, ask students to put the buildings in chronological order, deciding which is oldest and which is most recent.
- Ask groups to share their observations and predictions regarding the age of each building.

Strategies for Close Looking

1. *Look at the image closely.*
Let your eyes move around the image and take in everything. Now look for details. If your eyes get tired, turn away for a few seconds, then look again.
2. *Describe what you see.*
What is interesting or surprising about the image?
3. *Connect with what you already know.*
Have you seen this image or anything depicted in the image before? Have you had a personal experience with anything you observe here? Does this image remind you of something with which you are already familiar?
4. *Share facts about the image.*
How does this information change what you already know about the people, places, time periods, and ideas expressed through other objects?
5. *Compare and contrast to other images.*
How is this image similar to or different from others?

► II. HISTORICAL EXPLORATION and ANALYSIS: **WHY BUILD TALL BUILDINGS?**

- Provide students with the names of each building to fill in at the top of their paper, along with the construction dates. As you discuss the identities of each building in light of the introductory activity, explain the history of the site (see inset, p. 1).
- Encourage students to speculate as to why a mansion would be replaced by a hotel, and a hotel by a skyscraper.
- Explain why older buildings are replaced with skyscrapers (see following list). Discuss how these reasons might apply to the Astor Mansion, Waldorf Hotel, and Empire State Building.

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Reasons why older buildings are replaced with skyscrapers:

- Older buildings sometimes look outdated.
- Older buildings might not be safe compared to new buildings.
- Ownership changes. When a building or land is sold, the new owners may decide to build something different. (Note: Sale of one usually includes sale of the other; ie: the sale of a building usually includes the parcel of land on which it stands.)
- Cities change over time (see Lesson 4). For example, an area that was once a quiet, residential neighborhood becomes a busy business district, or vice-versa. As such changes occur, buildings and land may be used for new purposes.
- Skyscrapers make more money because there is more space to rent.
- Technology improves, making it possible to construct even taller buildings.

Discussion Questions:

- Why would the Astors want to tear down their home to build a hotel?
- Describe the neighborhood that is usually home to a mansion, an expensive hotel, and a skyscraper. Think about the way the sidewalks look, the types of businesses that surround it, transportation, traffic, and the condition of the buildings.
- Predict which would make more money—a 100-room hotel or a 100-story office building? Why?
- Imagine 34th Street and 5th Avenue in 1931. What was the neighborhood like? Does this description seem ideal for a hotel? Consider noise, traffic, surrounding buildings, and urban infrastructure.
- How would you know if the mansion or hotel were outdated in appearance or unsafe to live in?
- Would you rather stay at an old hotel like the Waldorf, or work in the tallest office building in the world? What do you think is more interesting and important to the community and why?

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▶ III. APPLICATION: *HOW ARE TALL BUILDINGS USED?*

- Give each student a notecard with a specific building function on it. Some examples follow:

Police Station	Law offices	Television studio
Supermarket	Doctor's office	Coffee shop
P.S. 40 – Elementary school	Hospital	Pizza parlor
Smith residence	Shopping mall	Bookstore
Gymnasium	Convenience Store	Laundromat
Home of the Bartletts	News offices	Post Office
Museum of Natural History	Playground	Subway station

- First, have students group themselves according to building function: residential, commercial, and public.
- Next, possibly in smaller groups, have students group their building function according to those that would work well in a skyscraper, and those that might not work well in a skyscraper.
- As students are working, encourage them to use new vocabulary words and refer to skyscrapers they may have visited. They should also discuss the following:
 - ▶ Reasons why skyscrapers serve some functions better than others
 - ▶ Functions that may work best on lower floors of skyscrapers
 - ▶ Functions that may work best on upper floors of skyscrapers

▶ IV. EVALUATION: *HOW WOULD YOU DESIGN A MIXED-USE BUILDING?*

- In small groups, students will design a mixed-use skyscraper that includes each of the functions assigned to students in the group (at minimum). Each skyscraper drawing or collage should be labeled so that it is clear which functions are assigned to lower and upper floors. Students should justify their design decisions orally or in written form.

▶ New York State LEARNING STANDARDS

- English Language Arts Standards 1.1 and 3.2