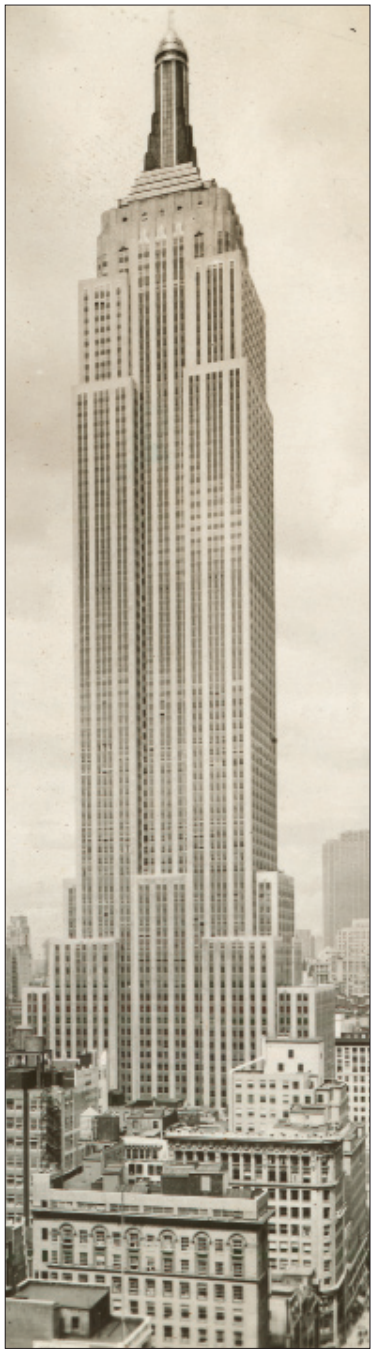
PART 1. What is a SKYSCRAPER?

Vocabulary

Base	the part of a building that sits on the ground
Commerical	a property or space within a property that is used for business purposes (examples include storefronts, office space, and warehouses)
Elevation	a drawing of the front, back, or side of a building showing its height
Residential	a property or a space within a property that is used as housing. (Hotels do not count as residential spaces, though any apartments rented by the hotel do)
Proportion	the comparative measurement or size of different parts of a building
Public	a property or space within a property that is used by the general public for its well-being (examples include parks, libraries, hospitals, and government offices)
Steel	an alloy of carbon and iron that is both stronger than iron and more malleable when heated. (Its strength and lighter weight made it invaluable to the development of the skyscraper)

Not all tall buildings are skyscrapers. The best way to determine if a structure is a skyscraper is to examine its height, construction, and purpose. Skyscrapers must be taller than they are wide; it is bigger in height in **proportion** to its width. That means the measurement of the building's height is greater than the measurement of its **base**.

More than a century ago, most buildings were made by stacking bricks or stones to make exterior wall that supported the building. Skyscrapers are built with a strong interior structure that also supports the weight of the building from the inside on columns of steel or reinforced concrete. This type of construction makes it possible to create multiple-story buildings that rise hundreds of feet in the air. Since these buildings are so tall, skyscrapers require elevators to carry people to the upper floors.



Document 1: Empire State Building Historic Postcard.

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To Do: *Technological innovations have allowed skyscrapers to grow taller over time. Research important inventions in skyscraper construction over the past 150 years and chart these on a timeline. Provide students with broad areas to research, including fire safety, electricity, plumbing, and temperature control, or let them investigate more independently.*

Another important aspect of skyscrapers—something that distinguishes them from other tall structures—is their function. Skyscrapers must be comprised of useable floors, identifiable as residential, commercial, or public use. Hence, a commercial structure such as the Empire State Building is a skyscraper, whereas Seattle's Space Needle—which has very few usable floors—is not.

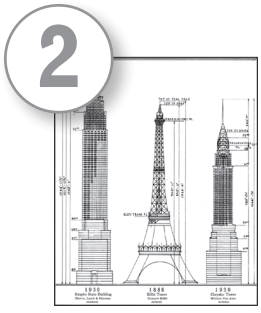
To Do: *Add notable tall buildings, from New York City, the United States, and other countries, to your technological innovation timeline. (See skyscraper.org/tallesttowers for ideas.) Decide whether each can be categorized as a skyscraper.*

Document Analysis Activities

Document 1. Empire State Building Historic Postcard At 1,250-feet, the 102-story Empire State Building was the tallest structure in the world from its completion in 1931 until 1972. This historic photograph shows the Empire State Building towering above its neighbors along Fifth Avenue.

To Do: *Think about how the Empire State Building must have looked to someone in 1930. Using your knowledge of life at that time, write a message from someone visiting New York City that might have been written on the other side of this postcard.*

Document 2. Structural Height Comparisons. This drawing compares the height of famous tall structures in 1930, including the Eiffel Tower, the Chrysler Building, and the Empire State Building, the tallest skyscraper at that time.



To Do: *Describe the shape of each structure and how the shape is important to its height. What are the similarities and differences of each structure? Why is the Eiffel Tower not a skyscraper?*

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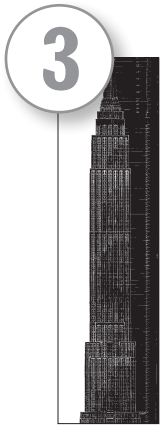
Document 3. Empire State Building Blueprint. Architects draw blueprints to show the design and measurements of a planned building. These drawings are often used on the construction site. Before digital technology, a blueprint started as a line drawing, but when copied, looked like a negative with white lines on a blue background. This blueprint is called an **elevation** because it shows the complete height of the Empire State Building. N.B. This drawing shows the narrow east/west sides of the building.



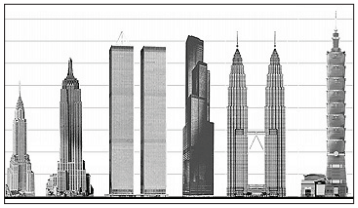
To Do: *Students should orient themselves to looking at a blueprint by locating parts of the building, including windows, doorways, embellishments (decorative elements), observation decks, and the tower. They can then estimate the height of the building, the cost of replacing all the windows with more energy-efficient windows, or the ratio between the height of the building and that of the tower alone. You may also have students write an equation for finding the total square footage of the building, or brainstorm all of the possible costs that would need to be included in the budget for this structure.*

Across the Documents: *Compare the three images of the Empire State Building and discuss what different types of information you can get from looking at them together.*

Additional Web Resources:

www.skyscraper.org/worldstallest
See the Museum's illustrated timeline of the world's tallest buildings.

www.skyscraper.org/viva2
Visit VIVA2 for construction photos of the Empire State Building.


World's Tallest timeline