PART 2: DESIGNING AND PLANNING A SKYSCRAPER

Vocabulary

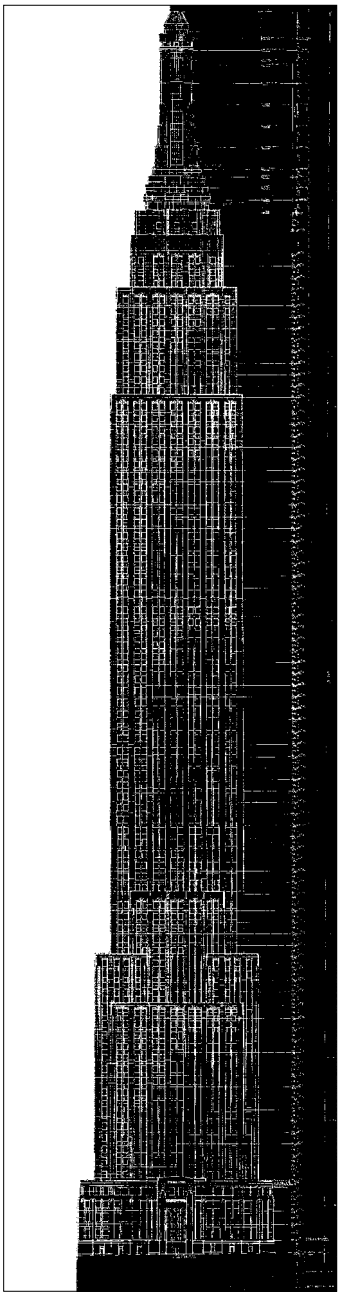
Architect	a person who plans and designs a building or space
Engineer	a person who plans and designs the structure of a building or space
Light Court	an exterior space, usually in the center of a building, that allows light and fresh air to reach inner spaces
Section	a drawing of the inside of a building as if it were cut through vertically or horizontally
Setbacks	building design that gradually makes a building smaller at the top, like a wedding cake or steps on a pyramid
Silhouette	the shape of a building in outline

Shape is one of the most important parts of skyscraper design. **Architects** imagine how basic shapes, such as squares, rectangles, triangles, and semi-circles, can work together to support a structure but also look unique. The silhouette of a building shows how all these different shapes work together to form a particular design.

Architects and **engineers** also make sure the people who live and work there have access to light and air. Many older skyscrapers have wider bases with space for a **light court** to allow for a window in every room. As the skyscraper is built taller, the top often gets narrower. One way to gradually reduce the size of tall buildings is by using **setbacks**, which look like smaller boxes stacked on top of larger ones. Setbacks are a design element that gives many skyscrapers their unique shape.

TUBE to do

Describe the shapes that compose different parts of the Empire State and Woolworth buildings. Identify the setbacks in each building. Use blocks or boxes to design a skyscraper.



EMPIRE STATE BUILDING
Blueprint

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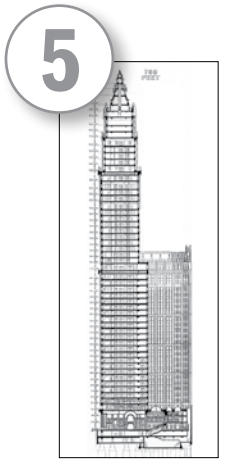
Close Looking Activities

Object 4. Woolworth Building Historical Postcard. At 792-feet, the 55-story Woolworth Building was the tallest building in the world from 1913 to 1930. The broad base of the Woolworth Building sits close to the street on Broadway in lower Manhattan. The bottom 29 floors share an interior light court. The top 26 stories are narrower to make up the tower.

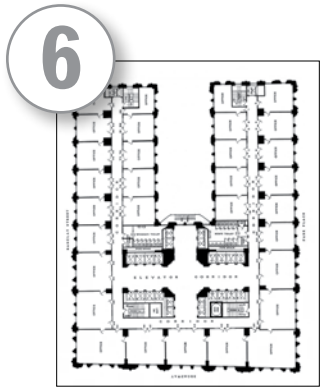
TUBE to do *Compare and contrast the historical views of the Woolworth and the Empire State Buildings. How are they are alike and different? Which building design do you like better? Why?*

Object 5. Woolworth Building Section Drawing. This type of drawing gives information about the interior structure and spaces of a building. You can see floor levels, windows and doors, the ground floor lobby—a large grand space—basement levels and foundations (in dotted lines). The exterior of the building shows windows and some decoration.



TUBE to do *Compare and contrast this drawing to the Empire State Building Blueprint. What different kinds of information does this document provide about the Woolworth Building? Identify the interior and exterior of the building and locate elevators, stairs, windows, doorways, decoration, and the entrance. What part of the building is under ground? How do you know?*

Object 6. Woolworth Building Floor Plan. The floor plan shows the location of offices, hallways, elevators, restrooms, closets, fire escapes, doorways, windows, and pipes on one floor of the Woolworth Building. It also shows the shape of the building and where it sits on the street. Building designers draw many floor plans to show how space is used differently on each floor.



TUBE to do *Compare this to the Woolworth Building Section. Is this floor on the top or bottom of the building? Locate the light court. Discuss how the light court brings light and air to rear offices.*

Across the Objects: *Brainstorm a list of factors to consider when planning a skyscraper. Consider how people will get to each floor (elevators and stairs) and what they will need on each level to live or work, such as toilets, running water, heat, light, and air. What other kinds of plans and designs would you draw?*