

Tallest Towers Webquest

Visit www.skyscraper.org. On the right side of the page, you will see a menu of options, including Web Projects. Select “Tallest Towers,” to complete the following Webquest.

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Introduction

One significant trend in architecture and construction – both in New York City and around the world – is that buildings tend to get taller over time. You will examine the many challenges that face engineers and architects in the design and construction of super-tall high-rises, and the solutions they have developed to overcome these obstacles.

Tallest Towers Webquest

Tallest Towers

Once you have taken time to survey the timeline, click on the red dot above each building listed below. Read the caption that appears and answer the questions for each building.

The World Building

- What year was construction completed?
- How tall was it?
- What structure was it the first to surpass?
- What did critics say about its design and size?

The Woolworth Building

- What year was construction completed?
- How tall is the building? How much taller is it than the World Building?
- Explain why the Reverend S. Parkes Cadman called the Woolworth Building the "Cathedral of Commerce."

Manhattan Company & Chrysler Building

- What year was construction completed for each building?
- How tall is each building?
- What was the "celebrated race" of 1929? Who succeeded and how?
- What is unique about the design of the Chrysler Building?
- What did critics think of the Chrysler Building?

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Empire State Building

What year was construction completed?

How tall is it? How many floors? How much taller is it than the Chrysler Building?

How long did it take to design, engineer, erect, and prepare the Empire State Building for tenants? What is impressive about this speed of construction?

What building did the Empire State Building replace?

What function does the Empire State Building serve?

World Trade Center

What year was construction completed?

How tall was each tower? How much taller the Empire State Building was the World Trade Center's tallest tower?

What problem did the elevators of the Twin Towers pose for engineers? How did they resolve it?

The Petronas Towers

How tall are the Petronas Towers? How much taller are they than the World Trade Center's tallest tower?

With the construction of the Petronas Towers, which continent took the title for being home to the world's tallest skyscraper?

What did the Petronas Towers symbolize for the city of Kuala Lumpur?

What material did contractors use to build the Petronas Towers instead of steel? Explain why.

What does it mean to be a "mixed-use building?"

Timeformations Webquest

Burj Dubai

01 Click on the red dot under Burj Dubai on the timeline which will open a separate webpage.

02 Go to "Click here for a virtual walk-through of the exhibit." A new page will open.

03 Click "skip video," which will take you to the introduction. Read through the text and answer the questions related to each topic below.

Introduction

How tall is the Burj Dubai? How many times the size of the Empire State building?

What has changed in recent years about how skyscrapers are used?

Wind Considerations

What problems did wind pose for the engineers? What was their solution?

Façade

Explain the term "curtain wall."

What material is Burj Dubai's curtain wall? In Dubai's desert climate, what problem must architects resolve in order to use this material?

Elevator

How many miles per hour will Burj Dubai's elevators travel?

VIVA Webquest

Summary Questions

What are some problems that architects and engineers must resolve when building to extreme heights?

Name 3 technological developments that have affected the construction of skyscrapers:

Presentation

Once you have read through the material and answered the questions above, print out the "World's Tallest Towers" timeline (choose the "landscape" print setting for larger images).

Cut out the images of the seven buildings you learned about. Then draw your own graph where you will paste the images of the skyscrapers. Like the "Tallest Towers" timeline, the year of construction will serve as the x-axis and height as the y-axis.

Below the image of each skyscraper, write the name of the building, the exact height of each building, the year construction was completed, and a caption stating at least one fact that demonstrates changes in skyscraper construction and design.