

- ½ hour Discussion of Civil Engineering and bridges. Background info is provided.
- ½ hour Explain rules and distribute materials to teams.
- 1 ¼ hours Teams will design and build bridges. Teams should make a plan and sketch it on paper. The sketches will be collected, and should include team name, member's names, and a brief explanation of why the team chose this design.
- 45 min. Test and judge bridges.

(You may adjust time segments if necessary. However, the bridge building should be a timed activity.)

If digital photos can be taken during the activity, we'll get them on the web site.

Civil Engineering

Civil Engineering: An Exciting Career With an Incredible History and a Tremendous Future

From the pyramids of Egypt to the exploration of space, civil engineers have always faced the challenges of the future - advancing civilization and building our quality of life.

Today, the world is undergoing vast changes - the technological revolution, population growth, environmental concerns, and more. All create unique challenges for civil engineers. The next decades will be the most creative, demanding, and rewarding times for civil engineers, and now is the best time to find out if civil engineering is the right career for you.

Making a Mark on the World

Throughout history, civil engineers have designed and built facilities that have advanced civilization and have provided for a higher standard of living.

A Great Engineering Feat: Building the Pyramids

Around 2980 B.C., thousands of workers labored for years to build the pyramids as tombs for kings. The end results continue to endure and amaze.

The Glory of Ancient Rome

The Coliseum is a fine example of ancient Roman architectural engineering which was used for gladiatorial games and was even flooded for mock navy battles. It measured approximately 280 by 175 feet and featured four floors, with an overall capacity to accommodate 87,000 people.

The Symbol of London

The majestic Tower Bridge is an iron drawbridge that spans the River Thames. It was completed in 1894, and has two central sections that can be raised to allow large ships to pass.

French Civil Engineering Genius

The French contributed a great deal to the progress of this profession. One of the most innovative civil engineers of all time was Alexander Gustave Eiffel, best known for his ingenious design of the Eiffel Tower. He also designed the support structure of the Statue of Liberty.

A Shortcut Between East and West

The Panama Canal, one of the greatest engineering achievements in the world, links the Atlantic and Pacific Oceans to shorten a ship's voyage between New York and California.

A Modern Civil Engineering Wonder

The Hoover Dam was completed in 1935 and continues to generate unparalleled benefits to the nation through regulation of the Colorado River for water conservation, power production, flood control, recreation, and fish and wildlife enhancement.

Crossing San Francisco Bay

The Golden Gate Bridge, designed by Joseph Strauss and Charles Ellis, was placed in service in 1937 and was the longest single span (4,200 feet) bridge in the world at the time. It remains today as an international symbol of civil engineering innovation.

Go Where the Action Is...

Today, civil engineers are in the forefront of technology. They are the leading users of sophisticated high-tech products - applying the very latest concepts in computer-aided design (CAD) during design, construction, project scheduling, and cost control.

Civil engineering is about community service, development, and improvement. It involves the conception, planning, design, construction, and operation of facilities essential to modern life, ranging from transit systems to offshore structures to space satellites. Civil engineers are problem solvers, meeting the challenges of pollution, traffic congestion, drinking water and energy needs, urban redevelopment, and community planning.

Civil Engineering Careers

Civil engineers may be found through the workplace in a variety of functions. Aside from traditional engineering firms, you may work with utility companies, telecommunication businesses, consulting firms, or even toy and athletic equipment manufacturers. A civil engineering degree can lead you to a career in industry, government, computers, law, or medicine. It's your choice!

Begin Building Your Future Now

- **Do you enjoy solving problems and putting your ideas into action?**
- **Are you curious about how things work and how to make them better?**
- **Are you interested in improving the environment?**
- **Are you socially aware and interested in helping people live better?**

These are some of the qualities shared by all civil engineers. They also make sound decisions and are good communicators, using speaking, writing, and listening skills. If you share some of the traits, civil engineering may be the perfect career for you.