



Newspaper Forts

Use a basic shape to engineer newspaper into a sturdy building material.

Materials: Newspaper, tape

Whether you're building the tallest skyscraper or a newspaper fort, a structure needs to be strong. One of the ways an engineer (someone who designs and builds complex products, machines, systems, or structures) does so is by using struts and trusses.

Strut: A linear structural element

Truss: 2-dimensional triangular arrangement of struts

Triangles are the strongest shape! The sides of a triangle push against each other to distribute tension, a pulling force, and compression, a pushing force. Using triangle-shaped trusses can help make a strong building.

Test it! Build a fort out of newspaper using struts and trusses. Make a drawing of your design, then roll struts and attach them to form triangles. Continue building and attaching triangles to make a fort!

Tip: Roll struts as tightly as possible. Roll from the corner, then secure with a piece of tape.



Challenge Yourself! Build a fort with two rooms; build a fort that can fit your whole family; or build a fort tall enough for the tallest person in your family to stand inside.

Continue your Learning!

Learn about skyscrapers that use a system of trusses called cross-bracing, such as 875 North Michigan Avenue (formerly John Hancock Center) in Chicago and The Centre Pompidou in France.

Learn about truss bridges, including Quebec Bridge in Canada and Minato Bridge in Japan.

Read the book *Fort Building Time* by Megan Wagner Lloyd and gain inspiration for new forts you can build with other materials. *Fort Building Time* is available for purchase from the National Building Museum Shop.

