



Start Your Engines

Zoom into Engineering Challenges

Comic Construction

After you've read the Sunday funnies, what do you do with them?

How about using those colorful comics to do some engineering, like building a tower? Try building the tallest tower you can build with just two sheets of newspaper.

1. Use *only* newspaper to build your tower. You can bend, tear, crumple, or roll the newspaper.
2. Keep building and redesigning until you can't go any higher. It must stand for at least 30 seconds without falling over.
3. Use the ruler to measure the height of your tower.

What You Need

- two sheets of newspaper
- different types of paper (tissue, cardboard, copier)
- ruler
- 8" of tape
- books

How can you make your tower even taller? Choose one thing to change (that's the variable) and make a prediction. Then test and observe. Are you changing your prediction? Choose your own variable, or use one of the following:

1. What happens if you add 20 cm (about 8 inches) of tape?
2. What happens if you use books as a foundation to support the bottom of the structure?
3. Or, what happens if you use a different type of paper, like tissue paper, copier paper, or cardboard?

What's the engineering behind building this tower?

How can you make a weak material like newspaper strong enough to stand up? One way is to change its shape, like rolling it into a tube, crumpling it, or pleating it. You also need to think about the different forces that are acting on it. The tower's weight is pulling the tower down. The surface on which the tower is resting is pushing back up. Small air movements are also pushing from the side, and can blow the tower over. If you build a wide base at the bottom, this distributes the weight over a wider area and makes the tower more stable.