Tallest tower of straws

This short-term challenge comes from the Creative Challenge guide entitled "Relevez le défis", published by the Conseil de développement du loisir scientifique (CDLS)
All secondary-school students
Key words: resistance of materials
Space: a large space at least 4 m^2

Your mission

At an architects' convention, a contest is held to find someone who can build a structure strong enough to support a certain weight.

The challenge

You must build the tallest possible tower using straws. Your tower must be able to support the weight of 2 dictionaries.

Materials

- 30 straws
- 20 paper clips
- 20 plastic coffee stirrers
- 30 cm of tape
- 1 tape measure
- 2 dictionaries
- 1 stopwatch

A few rules

- Before you begin, take 15 minutes to imagine or discuss the approach you plan to use. Don't handle the materials during your reflection or discussion.
- This challenge requires a fairly large space, so we suggest you use a large desk or a kitchen table on which to build your tower.
- You have 30 minutes to build your tower. Once the time is up, you cannot intervene.
- Your tower must have a flat roof on which to place the dictionaries.
- **You can modify this challenge by using different materials or test loads, or changing the construction time. Use your imagination and invent a variety of different towers!**

Testing

- Measure the towers from bottom to top before placing the dictionaries on the roofs.
- Place the dictionaries on the tower roofs.
- Calculate the time during which the tower withstands the weight of the dictionaries.
- The tallest tower able to support the weight of the books will be declared the winner.
- If you do the challenge with a friend and your towers are the same height, the one that withstands the weight the longest will be declared the winner.
- To make the challenge more interesting, test the strength of the towers in stages. Start with pocket dictionaries and increase the weight of the test load during subsequent stages.

Scientific principle

This challenge calls for knowledge of building structures and the resistance of materials.

Want to know more?

Make a library or on-line research using the Key words at the beginning of this challenge.