Building bridges

When you build a bridge the looks or the view aren´t the most important thing. These things are just something extra. The most important is of couse the question, will this bridge bear the loads this bridge will be exposed to?

This is in the technical world called mechanics of materials. This subject is about the science of stain in different materials, and it´s extra important when it comes to construtions that will be used by humans such as houses, cars and bridges. The golden rule of mechanics of materials are; *Better safe than sorry!*

### Assignment

The assignment it that you will, in group, constuct a bridge that should withstand 15 kg. The weight will be distributed on a 100 x 100 mm surface in the middle of your bridge. The bridge will have a lenght of 800 mm and one road that is at least 100 mm wide and a overhead clearance of 150 mm. The gridge will be placed, not attached, between two tables and can have a maximum of 100 mm overlap on each side. You can only use the material assigned to you.

### Working process

Before you start making your suggestions on how your bridge should look you will make a as it´s called State of the Art, a study on what type of bridges there are. After that you as a group will pick three different concepts. You will make your sketches while assessing your different concepts and thinking about what the forces will do to your constuion once you put pressure on it. After this you shall present your concept to your professor, if your concept is approved you can start builing!

Presentation and testing of your constructions will be done in front of the entire class. At the presentation you will show a sketch of your bridge where you have drawn the forces that will affect your construction. You will share with the class what thoughts are behind your construction.

### Competition

The bridges that could handle the first test of 15 kilos will then be put thru a test of that bridge can handle the most weight.

### Each group will have access to the following materials:

* Wood glue
* Cardboard as a road
* 150 ice lollys

Good luck!