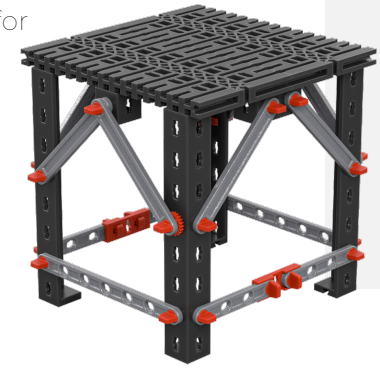
Model 8
Table

The students receive the building instructions for constructing the table.



Date

Name

Class

THEMATIC TASK

Model with tightly fitting legs:

The table tips over when the resulting force lies outside the "foot area." This force arises from the weight of the table and the load. If the load is too great in relation to the weight of the table and acts outside the foot area, the table tips over easily. However, if the resulting force lies within the foot area, the table remains stable. Only the twisting of the legs can then affect the structure.

Model according to the assembly instructions:

The table does not tip over because the resulting force from the weight and load is within the base area. Thanks to the stiffeners, the structure is extremely stable and can be considered a rigid cuboid in terms of statics. In practice, however, the struts often interfere with users.

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EXPERIMENTAL TASK

Try to build a table whose base area corresponds to the table top area and still offers legroom. There are several approaches to this:

- Place narrow legs on the outside: Without bracing, there is a risk of bending. This problem can be solved by choosing suitable materials or by adjusting the leg cross-section.

- Use a base plate: A base plate that corresponds to the table surface can be connected to the tabletop by means of a stable construction. A wide cross-section of the center leg must be able to absorb a high bending moment.
The construction therefore requires careful material selection and structural planning to ensure stability and legroom.

APPENDICES

Construction instructions and templates Models:

Model 8: Table construction instructions.