

Centre of Mass: Kitchen Wooden Unit

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Concept: Centre of mass

Name of model: Kitchen wooden unit

Materials: wood

These are the extracts from the website (www.structuralconcepts.org) and the definitions and concepts are as follows:

“**The centre of gravity of a body** is the point about which the body is balanced or the point through which the weight of the body acts.

The location of the centre of gravity of a body coincides with the **centre of mass of the body** when the dimensions of the body are much smaller than those of the earth.

When the density of a body is uniform throughout, the centre of mass and the **centroid of the body** are at the same point.

- If the centre of mass of a body is not positioned above the area over which it is supported, the body will topple over.
- The lower the centre of mass of a body, the more stable the body.”

“The centre of mass is the point where all of the mass of the object is concentrated. When an object is supported at its centre of mass there is no net torque acting on the body and it will remain in static equilibrium.”



The above photo shows an inclined kitchen wooden accessory. Since the centre of mass of the inclined unit is outside its base there is a need to make it stable and prevent it from overturning. It is thus obvious that the unit cannot remain in the inclined state without a support as shown in the figure.

This is why a small support base is fixed at the back and at the bottom as shown in the figure and thus the added base contributes to the size of the base and lowers the centre of mass. The inclined kitchen unit is now stable since the new centre of mass is above the area of its new base.

References

www.structuralconcepts.org

http://dev.physicslab.org/Document.aspx?doctype=3&filename=RotaryMotion_CenterMass.xml

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