

2.1 Centre of gravity

- Centre of gravity is the point of application, where the weight of the body acts.
- The lowest the centre of gravity above the Earth's surface, the most stable position of a body.
- Work needed to fall down an object in stable position:

$$W = F_G \cdot (h - r) \quad (\text{J, joules})$$

F_G - weight of an object (N)

h – height of the centre of gravity (m)

r – radius the object is turning around (m)

Question:

A brick with parameters of 30cm, 15cm, 6cm and its mass is 5kg. Which is the most stable position of the brick? What is the work done if we want to fall down the brick?

Question:

A carrier beam has a total length of 3 metres and a weight of 400N. It is needed to place an object with a weight of 300N on it. The force acting then on the left support of the carrier beam has to be twice greater than that on the right ones.