

A horizontal force acts on a body that is free to move. Can the force produce acceleration if it is less than the weight of that body?

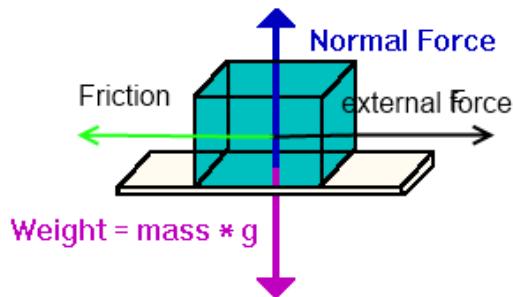
Answer:

YES.

According to the second Newton's law:

$$\vec{F} = m * \vec{a}$$

Where \vec{F} is vector sum of forces acting on a body.



In projection on horizontal axes:

$$F_{external} + F_{friction} = m * a_{horizontal}$$

$$F_{friction} = W * \mu$$

Where W is weight and μ is coefficient of friction. Usually $\mu \leq 1$ so external force can produce acceleration if it is less than the weight of that body.