

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?

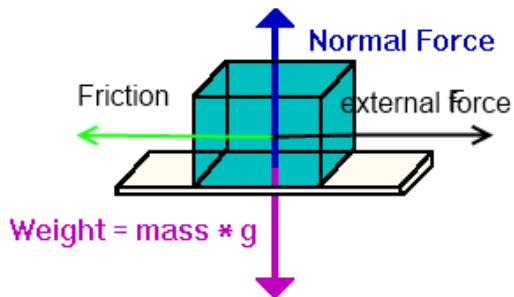
**Answer:**

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