

Newton's 3rd Law

Suppose you are an astronaut in outer space giving a brief push to a spacecraft whose mass is bigger than your own.

1) Compare the magnitude of the force you exert on the spacecraft, F_S , to the magnitude of the force exerted by the spacecraft on you, F_A , while you are pushing:

1. $F_A = F_S$

2. $F_A > F_S$

3. $F_A < F_S$



correct

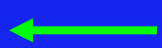
Third Law!

2) Compare the magnitudes of the acceleration you experience, a_A , to the magnitude of the acceleration of the spacecraft, a_S , while you are pushing:

1. $a_A = a_S$

2. $a_A > a_S$

3. $a_A < a_S$



correct

$$a = F/m$$

F same \Rightarrow lower mass give larger a