

Objectives - Forces

- Define the following terms
 - Inertia
 - Force
 - Net force
 - Gravitational force
 - Equilibrium
 - Free body diagram (FBD)
- Identify common forces such as
 - Gravitational force (weight)
 - Tension force
 - Normal force
 - Frictional force
- Distinguish between *mass* and *weight*
- Calculate weight given mass and gravitational field strength ($W=mg$)
- State and apply Newton's three laws
 - First law: inertia
 - Second law: $F=ma$
 - Third law: action/reaction
- Draw free body diagrams (FBDs) for assorted situations
- Determine resultant (net) force when multiple forces act on a single object
- Calculate gravitational forces between masses
- Solve quantitative problems relating *force*, *mass*, and *acceleration*