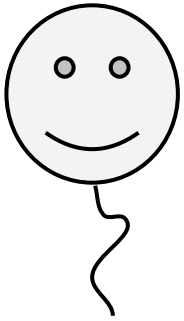
Drawing Force Diagrams

Air balloon hovering or moving with constant speed



Buoyancy Force

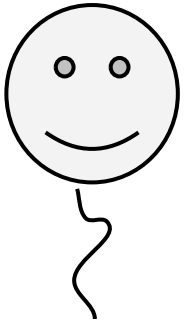
$$B = W$$

Weight = mg

Air balloon accelerating accelerating downwards

$$F_{un} = B - W$$

Air balloon accelerating upwards.

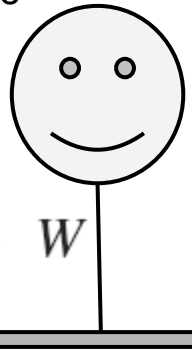


Buoyancy Force

$$F_{un} = B - W$$

Weight = mg

Balloon tied down.
T = tension in rope



$$B = T + W$$