

# Work-Kinetic Energy

## Theorem

- When work is done by a net force on an object and the only change in the object is its speed, the work done is equal to the change in the object's kinetic energy
- $W_{\text{net}} = \sum W_{\text{ext}} = KE_f - KE_i$ 
  - Speed will increase if work is positive
  - Speed will decrease if work is negative

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IB Physics (IC NL)

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## 7-4 Kinetic Energy and the Work-Energy Principle

This means that the work done is equal to the change in the kinetic energy:

$$W_{\text{net}} = \Delta K = \frac{1}{2}mv_2^2 - \frac{1}{2}mv_1^2$$

- This is the Work-Energy Principle
- If the net work is positive, the kinetic energy increases.
- If the net work is negative, the kinetic energy decreases.