

## 19.2: Introduction

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When a car rolls or slides down a hill, it gains speed and may do mechanical work on anything that is at the end of its path. This is an example of conservation of mechanical energy, the transfer of energy. Height gives an object gravitational potential energy and this energy is transformed into kinetic energy as the object travels downward. At the bottom of a hill, mechanical energy may be transformed into mechanical work when braking or when impacting another object.

**Gravitational Potential Energy:**

$$GPE = mgh$$

**Kinetic Energy:**

$$KE = \frac{1}{2}mv^2$$

**Mechanical Work:**

$$W = Fd$$

## Contributors and Attributions

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