

A blurred background image showing a group of cyclists in a race, with their wheels and frames creating motion blur against a warm, orange-red gradient. The text is overlaid on the lower-left portion of the image.

Potential and Kinetic Energy Notes

Energy and Work

1. Energy is the ability to do work.
2. Work occurs when a force causes an object to move in the direction of the force.
3. When one object does work on another, energy is transferred.
 - Mr. Brown pushing a desk across the floor.

Kinetic vs. Potential

4. Kinetic energy is the energy the object has due to its motion.
 - A ball rolling down a hill.
5. Potential energy is the energy an object has due to its position, shape, or condition.
 - A girl on a 10ft diving board, a rubber band, two chemicals that react.

Kinetic vs. Potential

6. Kinetic energy is found using mass(m) and velocity(v):

Kinetic vs. Potential

8. Potential energy is found using height(h) and weight(w):

Energy Conversions

10. Energy Conversion – a change from one form of energy to another.
11. Machines help convert energy into a more useful form.

Energy Conversion Examples

- Kinetic to potential – skateboarding to the top of the ramp and doing a stall
- Potential to kinetic – standing on a diving board then jumping off
- Light energy to chemical – photosynthesis in plants
- Chemical to kinetic – eating breakfast and using that energy to walk, run, kick, etc.

More examples

- Potential to kinetic – stretching a rubber band and letting go
- Electrical to thermal – electricity powering a blow-dryer
- Electrical to light – turning on a light bulb
- Chemical to sound – an iPod running off battery power.