8th Grade Study Guide
Chapter 5
Work and Machines

WORK Section 1

- Contrast the scientific and regular definitions of the word work.
- Understand the relationship of force and direction on work.
- Calculate work using W = fd measured in joules (J).
- Define and calculate power, P = W/t, measured in watts (W).
- Know the relationship between power and energy.

USING MACHINES Section 2

- Define machine and its effects on force and distance.
- Identify the input and output forces on a machine.
- Describe the factors of $W_{in} = W_{out}$.
- Define and calculate mechanical advantage, $MA = F_{out}/F_{in}$.
- Define and calculate efficiency, % = output work (J)/input work(J).

SIMPLE MACHINES Section 3

- Diagram and construct : Lever (3 classes), Pulleys, Wheel and Axle.
- Diagram and construct : Inclined planes, Screws, Wedges
- Calculate the IMA of all the simple machines.
- Define and identify a compound machine.