

# Simple Machines

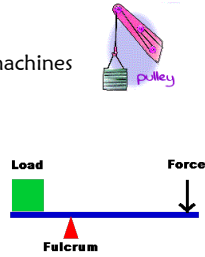
## Simple Machines

### Objectives

Define machine & list the 6 simple machines

Investigate force & distance amounts required to do work on a simple machine

Investigate work done on a lever & pulley

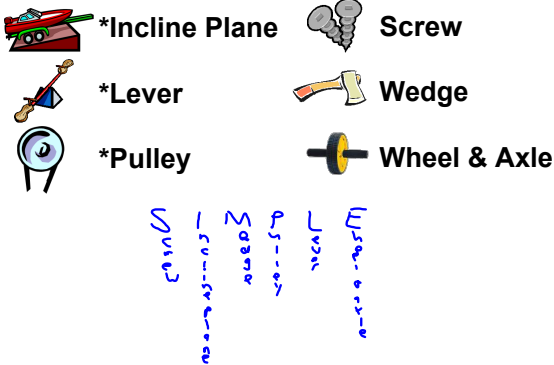


## Machines

A device that makes doing work easier.

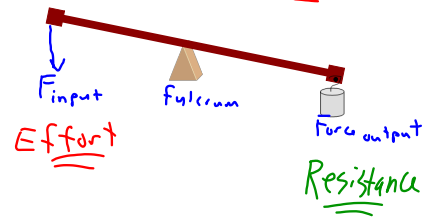


## Types of Simple Machines



Lever - bar that pivots

F 1<sup>st</sup> class  
R 2<sup>nd</sup> class  
E 3<sup>rd</sup> class



### Input Work ( $W_{in}$ )

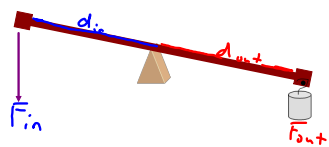
done by the person

$$W_{in} = F_{in} \cdot d_{in}$$

### Output Work ( $W_{out}$ )

results of lifting the object

$$W_{out} = F_{out} \cdot d_{out}$$



$$W_{in} = W_{out}$$

$$F_{in} \cdot d_{in} = F_{out} \cdot d_{out}$$

$$f D = F d$$

### Input Work ( $W_{in}$ )

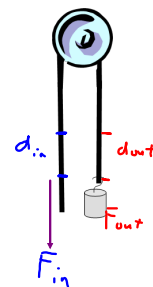
done by the person

$$W_{in} = F_{in} \cdot d_{in}$$

### Output Work ( $W_{out}$ )

results of lifting the object

$$W_{out} = F_{out} \cdot d_{out}$$



## Simple Machines

### Assignments . . .



- Lab 8.2: Levers & Pulleys

