Name: _____

Date: _____ Core: _____

Simple Dream Machine

Task—You and your group members must design a simple machine that launches a small paper wad at least 60 cm or lift a Dixie cup filled with 6 marbles to a height of 30 cm without spilling any marbles. Incorporation of a second simple machine will earn you 5 extra credit points.

How does your machine work? Describe how the machine(s) work *(together)* to move the object. List any materials used to develop the machine.

Machine Description: _____

_____

_____

_____

_____

_____

_____

Machine Design—draw and label a design of your machine

How far/high does your object travel?

IV Levels:	DV:	DV:	DV:	DV Avg:

Not all will have many levels of your IV—some may manipulate/retest many different options before landing on best design.*

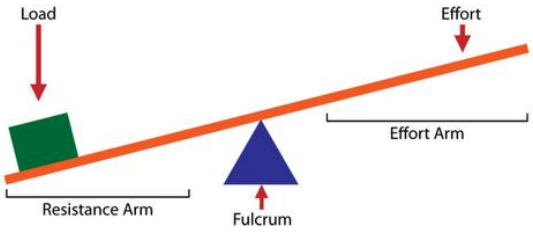
Name: _____

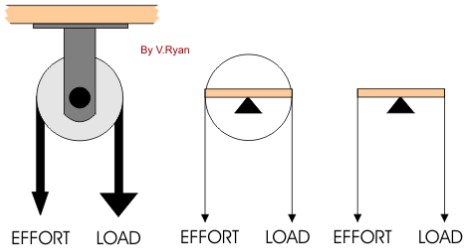
Date: _____ Core: _____

Mechanical Advantage

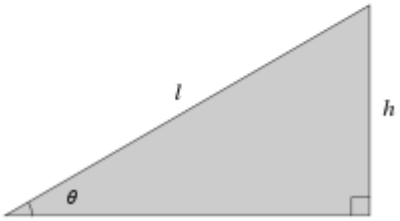
Calculate the mechanical advantage of your machine--

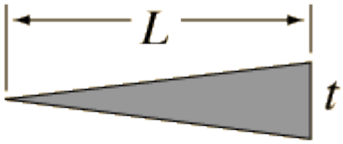
$$\textit{Mechanical Advantage} = \frac{\textit{Input Distance}}{\textit{Output Distance}} = \frac{\textit{Effort Arm}}{\textit{Load Arm}}$$





$MA = \frac{l}{h}$	
MA	mechanical advantage
l	length
h	height





Wedge $\quad IMA = \frac{L}{t}$

L = depth of penetration

t = separation of wedged surfaces