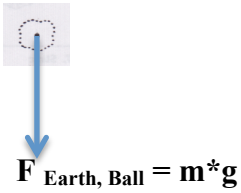
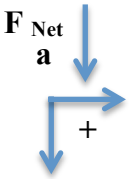
Unit 6 2-Dimensional Motion Particle Model

$F_{Net} = m*a$

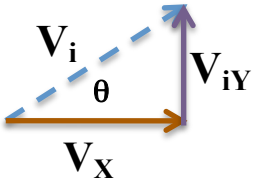
$\cancel{m}*g = \cancel{m}*a$ cancel out the mass

$g = a = 10.\ m/s^2$





X – Direction	Y – Direction
Unit 2 Constant Velocity	Unit 3 Constant ACCELERATION
NO ACCELERATION!	$a = g = 10.\ m/s^2$
$V_{ix} = V_{fx} = V_x$	$V_{fY} = V_{iY} + g * \Delta t$
ΔX = Range	$\Delta Y = V_{iY} * \Delta t + ½ * g * \Delta t^2$
$\Delta X = V_x * \Delta t$	$V_{fY}^2 = V_{iY}^2 + 2 * g * \Delta Y$
	$\Delta Y = ½ * (V_{fY} + V_{iY}) * \Delta t$



$V_{iY} = V_i \sin\theta$

$V_X = V_i \cos\theta$

$\sin\theta = V_{iY} / V_i$

$\cos\theta = V_X / V_i$