

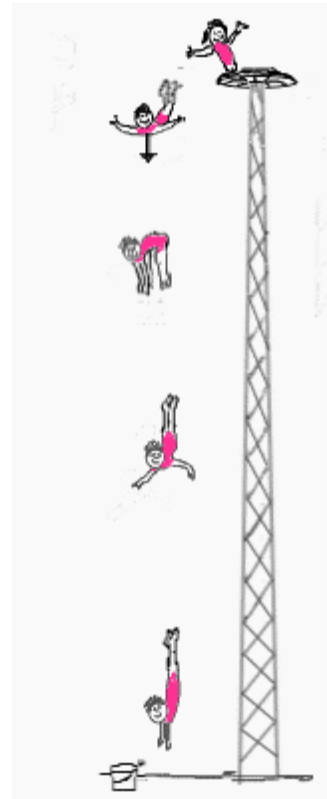
# Middle School Physics Day 4

Acceleration:

**Have fun with an accelerometer.**

Freefall is when we drop something and gravity accelerates it down to earth.

Freefall equations:



Time ( <i>s</i> )	Velocity ( $\frac{m}{s}$ )	Distance Fallen ( <i>m</i> )	Height ( <i>m</i> )
0	0	0	20.
0.5			
1.0			
1.5			
2.0			

## Galileo's tilted table and ball experiment

$1^2 =$

$2^2 =$

$3^2 =$

$4^2 =$

$5^2 =$

$6^2 =$

$7^2 =$

$8^2 =$

$9^2 =$

$10^2 =$

$11^2 =$

$12^2 =$

Projectile motion:

1. A ball rolls off a desk at a speed of 3.0 m/s and lands 0.40 seconds later.
  - a) How far from the base of the desk does the ball land?
  - b) How high is the desk?
  
2. A slingshot is used to launch a stone horizontally from the top of a 20.0 meter cliff. The stone lands 36.0 meters away.
  - a) How long does it take to fall?
  
  - b) At what speed was the stone launched?

