

Exceeds level questions



1. What is the accepted equation for calculating Kinetic Energy? (look this up)
2. How closely do your lab results match this accepted equation? (PLEASE BE THOROUGH... parts of your results may closely match this accepted equation, parts of your results may not).
3. Using equations for Gravitational Potential Energy and Kinetic Energy, write a simplified equation to predict the final velocity of a falling object if you know the height of the drop.
4. Use this equation to predict the final velocity for an object falling from 100m.

1. Kinetic Energy = $\frac{1}{2}mv^2$

KEY exceeds follow up

2. is your a-value = $\frac{1}{2}m$?

Are your KE value = $\frac{1}{2}mv^2$ & is your equation a quadratic function?

3. $GE_{top} = mgh_i$

$KE_{bottom} = \frac{1}{2}mv_f^2$

$mgh_i = \frac{1}{2}mv_f^2$

or $gh_i = \frac{1}{2}v_f^2$

$gh_i = \frac{1}{2}v_f^2$

$h_i = \frac{v_f^2}{2g}$

$h_i = \frac{v_f^2}{2g}$

$v_f^2 = 2gh_i$

$v_f = \sqrt{2gh_i}$

4. $v_f = \sqrt{2 \cdot g \cdot h} = \sqrt{2 \cdot 10 \cdot 100} = 44.7 \text{ m/s}$