Physics 11

**Section 2.8: Acceleration Due  
to Gravity**

There are many factors that affect how quickly a falling object picks up speed:  
  
  
  
  
  
  
  
  
  
  
  
  
  
However, in many circumstances, these effects are small and can be ignored (thank goodness!). In that case, if an object…

1)

2)

and 3)

then it will accelerate at

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(Acceleration due to gravity on Earth)

**Example:** A student stands on the edge of a 45 m high cliff and throws their homework straight up in the air at 12 m/s. How fast is it traveling when it hits the ground at the bottom of the cliff?

**Example:** A football is kicked straight up in the air at 15 m/s.

1. How high does it go?
2. What is its total hangtime and what is its velocity when it hits the ground?

The moral of the story is, on level ground…

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