Horizontal and Vertical Dropped Balls

Horizontal and Vertical Dropped Balls Time Taken: ~5 min

Objectives: (optional)
The students will:

- Understand the effect of gravity only effects vertical motion
- Understand the difference of vector quantities (i.e. x- and y- velocity).

Materials:

- Spring loaded apparatus (provided)
- Two ball bearings (preferably of the same size and mass—provided)

Vocabulary: (optional)

- Vector
- Gravity

Procedures:

- Unpack the apparatus.
- Place both balls on their respective side of the apparatus.
- Explain that when the trigger is released, that one ball will be shot directly out horizontally (i.e. initial y velocity is 0) and the other dropped completely vertically.
- Ask which will hit the ground first.
- Pull the trigger

End of activity questions to ask: (optional)

- Why did both balls hit at the same time?