December 01, 2015

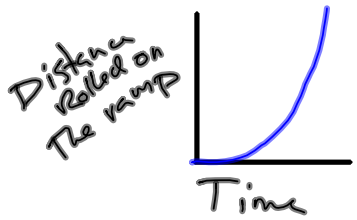
Title

Name

wild guess

Research Question

Hypothesis:



I think, when the object falls, the distance depends on the time in a _____ relationship.

Variables:

Independent: distance ball bearing rolls on the ramp.

Dependent: time

Controlled: ball bearing,

angle of the ramp

ramp texture

the way we measure distance/ length of ramp

How will you keep controlled variables controlled?

how will you change the independent variable?

how will you measure the dependent variable?

Name

Title:

date

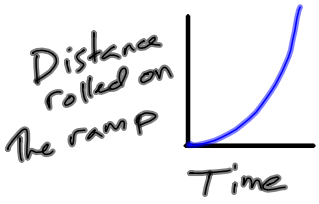
period

Wild Guess: It will it take a ball bearing _____ seconds to roll from the top of the cabinets to the ground on 2 ramps.

1.5s, 2s, 1.7s, 6s, 3s, 13s

Research Question: What is the pattern of motion for objects pulled by gravity?

Hypothesis:



I think, when the object falls, the distance it falls depends on time in a _____ relationship.

Variables:

Independent: Distance ball bearing rolls on the ramp.

Dependent: Time

Controlled: Ball bearing

Ramp: material

angle of the ramp

measurement system and increments

the persons and the jobs

How will you keep the controlled variables controlled?

How will you change the independent variable?

How will you measure the dependent variable?

December 01, 2015

name

Title:

date

period

Wild guess: It will take _____ seconds for the ball bearing to roll from the top of a cabinet to the ground on 2 ramps.

6s, 2s, 4s, 1s, 3s, 2.5s, 2.7s

Research Question: What is the pattern of motion for objects pulled by gravity?

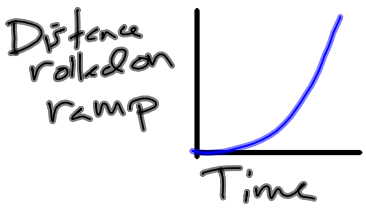
Variables:

Independent: Distance the ball rolls on the ramp.

Dependent: Time

Controlled: Angle of the ramp, length of the ramp, person timing, mass of the ball bearing, ball bearing itself, material of the ramp,

Hypothesis:



I think, when an object falls, the distance the it falls depends on the time in a _____ relationship.

How will you keep the controlled variables controlled?

How will you change the independent variable?

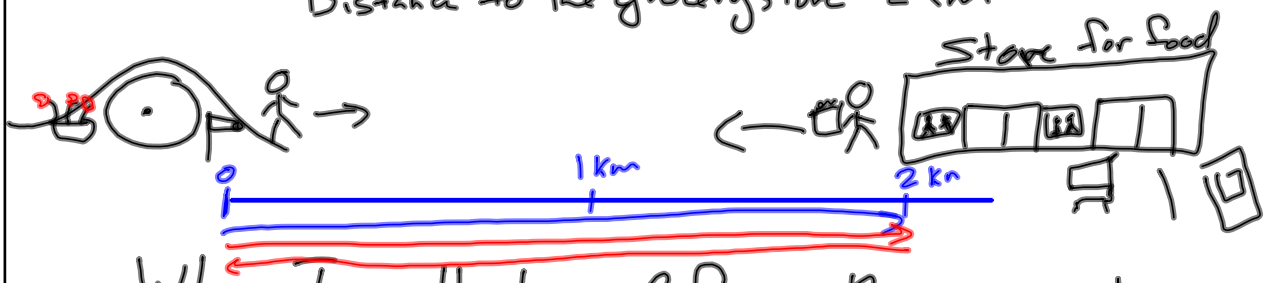
How will you measure the dependent variable?

Motion Notes:

Essential Question: How do we refer to the motion of objects in physics?

Distance: the measurement of how far or close an object is.

Distance to the grocery store = 2 km



When I walk to and from the grocery store I travel (2 km + 2 km = 4 km) 4 km.

Displacement: change in position = final position - Initial Position

When we travel from the hobbit hole to the grocery store our displacement is 2 km.

Final Position - Initial Position

$X_f - X_i$

2 km - 0 km = 2 km

When I travel from the grocery store to the hobbit hole my displacement is -2 km

$X_f - X_i$

0 km - 2 km = -2 km

When we travel to and from the grocery store, our displacement is zero

$X_f - X_0$

0 - 0 = 0

Speed: the measurement of how fast something travels.

$$\text{Speed} = \frac{\text{distance (m)}}{\text{Time (s)}} \qquad S = \frac{d}{t}$$

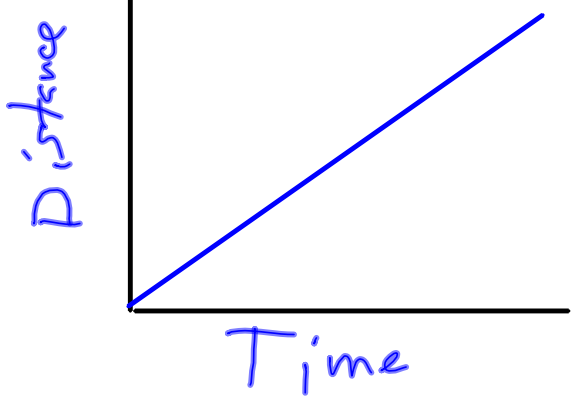
$$\text{Units: } \frac{m}{s}$$

Velocity: the rate at which an object changes position.

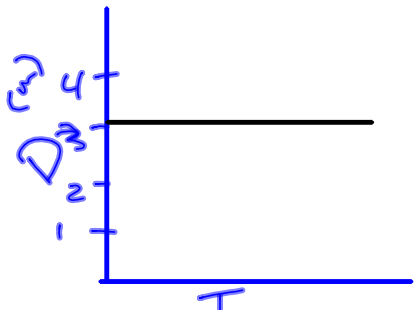
$$\text{Velocity} = \frac{\text{displacement (m)}}{\text{time (s)}} \qquad V = \frac{\Delta x}{t}$$

$$\text{units: } \frac{m}{s} \qquad \Delta x = x_f - x_i$$

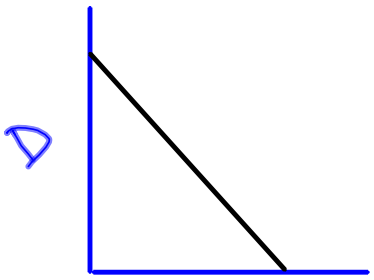
Velocity measures the speed and direction



Move forward at a constant speed, positive
Constant positive velocity



Stand still 3m away



Walk toward Zero, constant negative velocity

The slope of a position vs. time graph is the velocity.

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