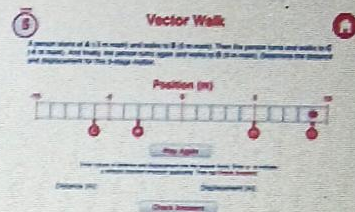


# 1-Dimensional Kinematics

## Vector Walk

This Interactive highlights the distinction between distance and displacement. Three different motions are presented to the learner with the challenge of determining the distance traveled and the overall displacement for each.

**NEW** Now available with Task Tracker compatibility. [Learn more.](#)



## Name That Motion

This Interactive challenges learners to correctly apply the concepts of velocity and acceleration in order to match the motion of 11 objects with their corresponding verbal descriptions. Learners must correctly identify the direction of the velocity and acceleration vectors in order to successfully match the verbal descriptions to the animated motions.

**NEW** Now available with Task Tracker compatibility. [Learn more.](#)



## Graph That Motion


This Interactive challenges learners to correctly apply the principles of kinematic graphing in order to match the motion of 11 objects with their corresponding graphical descriptions. Learners must understand how the shape of position-time and velocity-time graphs relate to a motion of in order to successfully match the graphical descriptions to the animated motions.

**NEW** Now available with Task Tracker compatibility. [Learn more.](#)

**Graph That Motion**  
View the animation below and attempt to match it to the corresponding graphical description.

Animation of **5**

Tip: a letter to display a graph. Check you have found a graph that seems to match the animated object by on the **Check Answer** button. You will receive immediate feedback regarding your choice.

A	B	C	D	Graph
E	F	G	H	K
I	J	K	Check Answer	

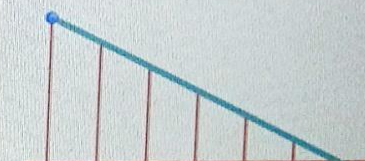
Tip: a letter to display a graph in a different animation.

1 2 3 4 5 6 7 8 9 10 11

## Graphs and Ramps


This Interactive presents learners with the position-time or velocity-time graphs for numerous types of motion. Learners must then construct a ramp along which a ball will roll in order to match the given graph. As the ball rolls along the ramp, the motion is plotted in real time, allowing the learner to make adjustments to the ramp in order to successfully complete each challenge.

**speed vs time**



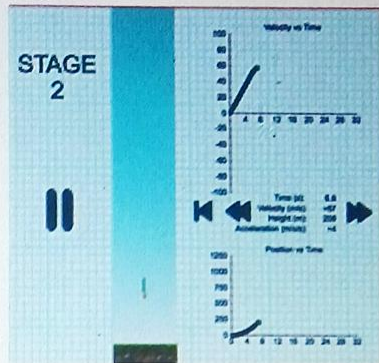
Adjust the ramp and the initial speed to match the graph

Launch Speed



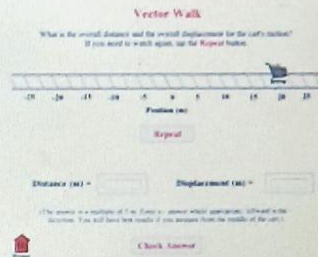
## Two Stage Rocket

This Interactive simulates the motion of a two-stage rocket and displays the position-time and velocity-time graph in *real time*. It won't take long before you become a genuine rocket scientist. Once you've completed your study, earn your Rocket Scientist badge by successfully completing the accompanying quiz.



## Vector Walk

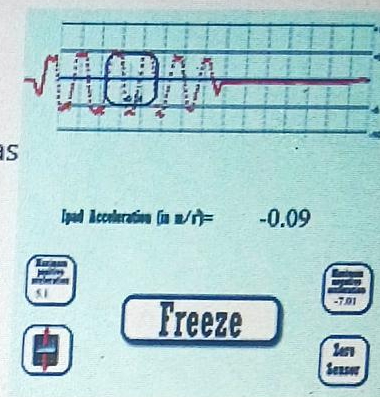
This Interactive highlights the distinction between distance and displacement. Three different motions are presented to the learner with the challenge of determining the distance traveled and the overall displacement for each.



## Accelerometer

With this Interactive in your browser or your mobile device, you can use your device as an accelerometer. The Interactive collects information from your device's accelerometer and displays it as a plot of acceleration vs. time. There are numerous ways in which the device can be used.

The Physics Classroom would like to thank [Nerd Island Studios](#) for contributing this Interactive to our collection.



## Distance versus Displacement

This Interactive Concept Builder provides learners with nine situations in which they must accurately determine the distance and displacement for a multi-stage motion. There are three different difficulty levels (with three questions at each level) by which a learner can progress through this concept builder. Progress is tracked. And each question is accompanied by a question-specific Help page that describes how to think about the situation.

(Distance vs. Displacement has been moved to our [Concept Builders](#) section. The links on this page will direct you to that section of the site.)

A kayaker moves 26 meters southward, then 18 meters northward, and finally 12 meters southward.

For this motion, what is the distance moved?

Distance (m) =

What is the magnitude and direction of the displacement?

Magnitude (m) =

Dir'n =  (Tap here to change)

The buttons at left will enter answers using our built-in number pad.

Tap buttons at left to enter answers using our built-in number pad.

## Match That Graph


This Interactive Concept Builder provides learners with 12 situations in which they must accurately match a position-time graph description of an object's motion to the corresponding velocity-time graph ... or vice versa. There are three different difficulty levels by which a learner can progress through this concept builder. Progress is tracked. And each question is accompanied by a question-specific Help page that describes how to think about the situation.

(Match That Graph has been moved to our [Concept Builders](#) section. The links on this page will direct you to that section of the site.)

**Main Menu**

Pick from among the three levels of difficulty -  
Apprentice Level, Master Level, and Wizard Level.

Student Name: Ed Yukashin



Apprentice Level  
Completed

**Master Level**  
8 Questions

Match 8 position-time graphs to a set  
of velocity-time graphs and match 8  
velocity-time graphs to a position-time  
graph.

Begin Master Level

**Wizard Level**  
12 Questions

Match 12 position-time graphs to a set  
of velocity-time graphs and match 12  
velocity-time graphs to a position-time  
graph.

Begin Wizard Level