

COMPILATION: Graphs & Tracks software
[URLs and e-mails updated 9-02]

Date: Wed, 24 Sep 1997
From: Brad Katuna <bkatuna@MARIN.K12.CA.US>
Subject: Graphs & Tracks

How do y'all constructively use Graph & Tracks? After working through Unit 3, wksht #1, I set my kids at it and said I'd give extra credit if they could solve the first 5. It worked well with the kids very engaged. Any other good ideas out there?

Hi Brad (and everybody else),

I used to do the same thing but I found that they just kept guessing until they got it. What I do now is have them call me over when they get one. The screen indicates how many rolls it took for them to successfully match the pattern. I record the number and tell them that they must match the next pattern in the same number of rolls or fewer to receive credit for the next pattern. They continue until they take too many tries. If they take too many, they still have to solve it without getting the extra credit. This number or rolls is their goal for the next pattern.

Cheers,
Rich McNamara

Like Rich, I ask the students to try to minimize their guesses in Graphs and Tracks. Without this goal, Graphs and Tracks can easily degenerate into a guessing game.

As the students are going through the examples, I also ask them to sketch their final ramp, describe the initial conditions, and sketch the 3 kinematic graphs (stacked on top of each other). On each graph, I ask them to describe what the ball on the ramp is physically doing during each portion of the graph.

This takes a while, and many students have to take their graphs home to interpret them. Eventually, most students start making some meaning out of the graphs.

Hugh Ross

WORDS OF WISDOM FROM AN EXPERT MODELER:

Date: Tue, 28 Oct 1997
From: Don Yost <DoYost@AOL.COM>
Both Graphs and Tracks and a sonic ranger should be set-to-go during the first several units. When whiteboarding worksheets, it's great to be able to set up a problem on G&T and run it to see all graphs or to "walk" the solution using sonic ranger, as questions come up. If they are loaded and ready, it becomes natural to use them.

WHERE TO BUY Graphs & Tracks:
Physics Academic Software, Dept of Physics, NC State University
Box 8202, Raleigh NC 27695-8202
Tel. (800) 955-8275 or (919) 515-7447
Fax. (919) 515-2682

pas@ncsu.edu

<http://www.webassign.net/pasnew/>

High School site license: \$350

G&T works best on OLD computers: Mac & DOS.

A modeler said, The Graphs and Tracks does run faster on the PowerMacs. It is still workable, and if you hold down the apple key, the ball stops part way down for you to look at everything, then let up and it goes the remainder of the ramp length.

FREE JAVA APPLLET LIKE GRAPHS & TRACKS! (posted in summer 2001)

If you balk at the cost of "Graphs & Tracks", there is an on-line (free!) Java applet. It is located at:

<http://www.seedofknowledge.com/products/rollball/applet/applet.html>

Almost as good as the real thing - but make certain that your students are looking at the title of the graph (at the bottom right) and not the "graph" button to the left that allows them to switch the type of graphs.

TECHNICAL PROBLEMS: Graphs & Tracks, Conceptual Kinematics

Date: Thu, 8 Feb 2001

From: "Ross, Hugh" <hugh_ross@MAIL.NOBL.K12.IN.US>

Subject: Question: Graphs & Tracks, Objects in Motion

In the past years, I've used "Graphs & Tracks" and "Objects in Motion" for some simulations as part of the deployment stage of the modeling process. I'm running into some difficulty getting these programs to run on any Macintosh with a system 8 or greater.

The programs run on a "cT executor" program (I have version 1.1 which is probably ancient). It crashes the new systems every time I go to run the simulations. I tried downloading a newer version (3.0) of the cT executor program, but it claims that it cannot read the binary files for Graphs and Tracks.

Has anyone run into a similar difficulty and found a solution (short of buying new site licenses, which is what Physics Academic Software wants me to do)?

Date: Fri, 9 Feb 2001

From: Douglas A. Johnson

You aren't alone. We've noticed the same thing (for Graphs & Tracks and Conceptual Kinematics; we don't use Objects in Motion). Our systems haven't crashed but the graphics get rather mixed up and the motions happen so fast you can't follow it.

I've been thinking that the problem is the high clock speeds on the newer computers.
