

November 2, 2015

① How do you explain which variable belongs on which axis? I was having trouble explaining why time was the horizontal instead of the vertical without just giving them the answer.

1) The real, adult, true answer is: its arbitrary and, as scenarios become more open-ended, valid arguments can be made for putting either variable on either axis.

A good guiding question is: what are we trying to measure? what do we care about? This is the quantity we typically want to put on the y-axis because that's how we're used to measuring things visually. This question works most of the time, but falls short for problems like "Dave is walking 20 miles per hour and is trying to get home". ~~It could~~ ~~ask~~ ~~about~~ depending on my next question, I may be asking to measure how far away his house is (so distance on y-axis) or how long it will take to get there (so time on y-axis).



However: ~~an important phrase in the state standards is "independent"~~  
(on closer investigation of the standards, the sentence I was about to write turns out not to be true).

One way that our textbook addresses this is by emphasizing the idea of "independent" and "dependent" quantities, and noting that the independent quantity is always on the x-axis.

This helps explain why time is ~~also~~ usually on the x-axis, because it's pretty much the most independent quantity we have - time depends on nothing, it marches on (pretty philosophical, yeah?).

But - this notion becomes arbitrary again when with most problems that can be ~~solved~~ ~~is~~ represented with standard form. For example:

"I sell apples for \$2 and oranges for \$3. How many of each do I need to sell in order to raise \$60? (multiple possible answers)"

This is a good problem to introduce standard form:  $2a + 3o = 60$ . But from here, it's completely arbitrary ~~the~~ which axis you choose for which quantity:

