

Name: _____ Tutorial section _____

A new mistake-catching strategy: The case of motion graphs

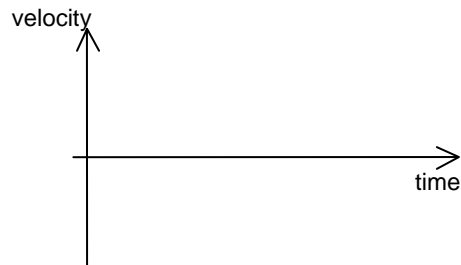
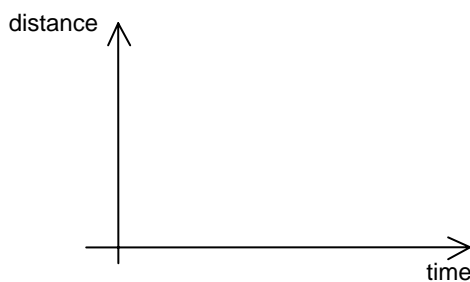
Today's interactive lecture demonstration, a continuation of this week's tutorial, will not only help you consolidate what you learned but will also teach you something new, the president-for-life of all mistake-avoidance strategies.

I. Test your knowledge: an experiment

Consider a cart that

- (i) Rolls away from the detector slowly and steadily for 2 seconds, then
- (ii) Stops rolling for 2 seconds, then,
- (iii) Starts rolling away from the detector again, gradually speeding up, like a car merging onto a highway.

- A. (*Work alone*) **Prediction.** IF YOU'RE SITTING ON THE LEFT SIDE OF THE ROOM, draw a velocity graph only, using a dotted line. IF YOU'RE SITTING ON THE RIGHT SIDE OF THE ROOM, draw a position graph and also a velocity graph, using dotted lines. (Please bear with us; we're doing an experiment about learning.)



- B. (*Work alone*) While drawing your graph or graphs, did you change your mind about something, causing you to erase or redraw something? If so, explain why.

★ *Class discussion of velocity graph predictions. POLLING*

- C. Discuss your prediction with a neighbor. See if you can come to consensus. **DON'T ERASE YOUR ORIGINAL GRAPHS.** Sketch your consensus prediction using a dashed line.

★ *Class discussion of velocity graph predictions. POLLING*

★ *Experiment.*

- D. Sketch the experimental results on your graphs above, using a solid line.

★ *Experiment about learning: Which half of the room did better?*

