I liked Adam’s Position vs. Time and Velocity vs. Time graphs, and wanted students to focus on how the graphs would compare for the same information.  So if I had a particular starting point, initial velocity, acceleration, etc., what would the position and velocity graphs look like.  Then change only one thing (maybe the starting point, for example) and re-graph and see what has changed.  Hopefully students would see that changing the starting position would only shift the position time graph up or down a little, and not change the velocity time graph at all (this would be the easiest one).  It could continue on to seeing what happens when you go from positive to negative, etc.

A possible idea is making each group go through the whole activity, but another idea is one group focuses on one change while another group focuses on another change, and then each group presents to the class with some type of summary (“When we changed the initial position, the parts that changed were \_\_\_\_\_\_\_\_ and the parts that stayed the same were \_\_\_\_\_\_\_\_\_\_\_\_.”)

Still thinking though…

Joe