Free Fall: Timing is Everything

Name_____

Learning Objective: SWBAT determine how to drop three or four objects from **different heights AT THE SAME TIME and have them land AT THE SAME TIME**.

OK GO Video:
https://www.youtube.com/watch?v=QvW61K2s0tA

Prediction: How can your group drop objects from different heights SIMULTANEOUSLY to get them all to hit the floor at the same time? A drawing might be helpful as you come up with preliminary ideas for this to contribute to your group…

Activity: *In groups of four to five, <u>drop one less object then there are people in your group from different heights AT THE SAME TIME and get them to land at the same time</u>. Take slo mo video of at least 3 trials to show your group trying to accomplish this goal by the last of those trials.* **There will be 2 bonus points given to each member of groups that accomplish the task EXACTLY.**

Modeling on whiteboards afterward: Explain how you had to drop the objects simultaneously to get them to hit at the same time. *<u>Make sure to include your new friends XAT and VAT along with ideas from today's discussion about air resistance and masses of falling objects.</u>*

Group ideas as you try to achieve the "land at the same time" drops:

Your final group product:

- **A Google Slide presentation that first has <u>your minimum of 3 videos on separate slides showing your BEST 3 ATTEMPTS to accomplish the task where all 3-4 objects hit the floor at the same moment. MAKE SURE I HAVE BEEN GIVEN PRIVILEGES TO VIEW YOUR VIDEOS!</u>**

- **A final slide with a photo of your white board modeling explaining how you were able to make it happen. *<u>Include XAT, VAT and discussions of the different or equal forces at work on the objects.</u>***