Oral Presentation 1 (6-8 min) Non-Coding Grading Form

Be aware, the final score indicated by this form may not be your actual score. Reduction for tardiness or lack of participation on data acquisition & presentation preparation days are not reflected on this form (but will be in the actual grade sheet).

Title slide with 1) cool image (citation if web image), 2) full names, & 3) date

Goal slide with image of experiment and some questions Slide numbers 18 point font?

Procedure – effective video (or comparable visuals) with *brief* explanation of what happened and how data was obtained (BRIEF!)

Theory – Applicable kinematics, force, and/or other theoretical equations (e.g., COR) clearly written using the equation editor. Variables in italics! Show your coordinate system and state what we expect for the signs of position, velocity & acceleration.

Include xt-, vt-, & at-plots.

- Plots fill >90% of the screen (but not all the way to the edge)
- Axis labels with correct units
- Units are NOT italicized
- Variables are italicized (and match variable names in theory)
- If using words (e.g., position) do *not* use italics
- Space between axis label and units: t (s) not $t(s)$
- 18 point font on all text (including numbers on axes)
- Major tick marks (cross) & minor tick marks (inside)
- Major *and minor* tick increments multiples of 1, 2, or 5
- Use prefixes to reduce excessive leading zeros
- Experimental points are dots (with no lines)
- Trendlines or theory curves are lines (with no dots)
- Include a legend if more than one curve on a plot
- Space between numbers and units: $m = 3.2$ g not $m = 3.2$g

xt-plot things to discuss

- For some t, show calculation of a non-zero slope
  - Indicate points used for computing slope
  - Show rise over run with units
  - Mention $\pm$ sign
  - State if moving forward or backward
  - Mention how slope changes during *next* time interval on plot (steeper or more gentle slope?)
  - State if speeding up or slowing down
- If you need to fill time, show a second slope (without the calculation), mentioning if the object is moving forwards or backwards & speeding up or slowing down.
- Compare the value(s) of the slope on xt-plot to the value(s) of v on the vt-plot (use a slide with both plots)
- If time permits, discuss concavity of the xt-plot (upwards or downwards) and compare the to the sign of the at

vt-plot things to discuss

- For some t, show a calculation of a non-zero slope
  - Indicate points used for computing slope
  - Show rise over run with units
  - Mention $\pm$ sign of values of v & the slope
  - State if moving forward or backward
  - State if speeding up or slowing down
- Compare the value(s) of the slope on vt-plot to the value(s) of a on the at-plot (use a slide with both plots).
  Expect the at-plot to be noisy; hopefully a very rough average of the noisy data matches the sign and approximate value from the vt-plot.
- For some time interval, estimate displacement using area
  - Superimpose a triangle, rectangle, or trapezoid
  - Show calculation of area with units
  - Mention $\pm$ sign
  - State if moving forwards or backwards
- Verify number from area calculation on vt-plot matches displacement (*change* in position) on xt-plot. Use a slide with both plots on it to support your claim.

Items specific to Running/tennis ball/magnet: multiple stages used, stages distinguished by color & shape of marker on plots, FBD & force equation included in theory (use eqt'n editor!), use a computed from slope of vt-plot to compute force requested in handout

Items specific to cart hits brick: same as above but include COR equation in your theory, compute multiple values of the COR from the xt-plot, give average value of COR for all three collisions with the brick

Falling cotton ball or coffee filters: FBD & force equation in theory (verify coordinate system & a arrow in FBD match $\pm$ of data) state (do not *derive*) theoretical equation used for $v(t)$, include theory curve on vt-plot, use trial and error to estimate drag constant *if coffee filters*: include plots of v_T^2 versus m and v_T versus m and state which model seems to fit data best

For oscillations: use a theory xt-plot to define period and amplitude to the class, include theory curves on xt-, vt-, & at- plots.
On xt-plot: point out times where object is moving forward & speeding up, moving forward & slowing down, moving backward & speeding up, and moving backward & slowing down.
On vt-plot: point out times where object is moving forward & speeding up, moving forward & slowing down, moving backward & speeding up, and moving backward & slowing down.
Ask me for 2 extra minutes *before* starting your talk if you need the time to cover all that info.

- Within time limits
- High contrast
- Large font size (>18 point font)
- Consistent use of terminology & variable names
- Consistent color coding
- Large clear images with sparse wording
- Avoided use of data tables
- All speakers audible in the back of the room
- Eye contact with students (not staring at instructor or screen)
- Effective use of pointer/animations (not distracting)
- Made own images (do not use mine…*recreate* them)
- Cite web images if used on title slide (14 pnt font ok)
- Obviously practiced multiple times
- Team members speaking approximately equal amounts