# Additional Ideas / Thoughts not on the Original List

Another good way of generating a video idea is to think of an experiment that you could conduct to test and show how changing the independent variable will cause changes in the dependent variable. You would have to make sure that you have instruments that can clearly display the values that you are measuring. You also want to have time shown in the video if that is one of your variables. Filming numerous clips (trials) with a title screen describing the changes made each trial would help the audience understand your experiment.

**Example (Not an Earth Science Example, you can't do this for your project)**

Question –

What factors change the amount of time (Period) needed for a pendulum to complete one oscillation?

Equipment –

Pendulum, stopwatch to time 10 oscillations, protractors to measure angle of displacement, camera on tripod to take video segments, ruler to measure length of string, computer and software to edit and publish finished video project.

Procedure -

(3 parts, one to test Mass of Bob, one to test Angle of Displacement, one to test Length of String)

Part A – Mass of Bob

Set up the pendulum with a fixed length string (25 cm). Suspend a bob (50 g) from the string. Displace the pendulum a fixed number of degrees (45°). Release the pendulum and use the stopwatch to time ten complete oscillations. Record the time and repeat two more times. Calculate an average time and the time needed for one oscillation (Period of the pendulum)

Repeat this procedure using 2 other masses (100 g and 150 g)

Part B – Angle of Displacement

Set up the pendulum with a fixed length string (25 cm). Suspend a fixed mass bob (50 g) from the string. Displace the pendulum 45°. Release the pendulum and use the stopwatch to time ten complete oscillations. Record the time and repeat two more times. Calculate an average time and the time needed for one oscillation (Period of the pendulum)

Repeat this procedure using 2 other displacement angles (15° and 75°)

Part C – Length of String

Set up the pendulum with a 25 cm string. Suspend a fixed mass bob (50 g) from the string. Displace the pendulum a fixed number of degrees (45°). Release the pendulum and use the stopwatch to time ten complete oscillations. Record the time and repeat two more times. Calculate an average time and the time needed for one oscillation (Period of the pendulum)

Repeat this procedure using 2 other string lengths (15 cm and 10 cm)

Analysis –

Calculate and graph all of the data collected

Conclusion –

Draw your conclusion based on the measured values that you made and the graphs that you constructed. These data tables and graphs along with your conclusion should be shared at the end of the video.

# Important Note About Partners and the Project

Since this type of experimentation works better with a partner, I am going to allow students the chance to pick a partner from any of my classes to complete the project. The partnership must be mutually agreed upon and the students and parents must sign a form indicating that they know that both partners will receive the same grade for the project.

The form must be submitted to Mr. Abbott by Friday October 13th if you want to have a partner for the first video project which is due on Friday October 27th.