Name_____

INTRO LAB: Physics is the answer!

Background: Physics is supposedly a science that explains and quantifies phenomena. Most physical events can be explained through physical concepts that are grounded in algebra and basic calculus. Additionally, simple real-world experiments can yield qualitative (descriptive) and quantitative (numerical) data that support the idea that physical laws are sufficient to explain most events. Even complex events (like an internal combustion engine "break-down") can be broken down into a series of causal (cause-effect) events that can be explained precisely by physical laws.

Hypothesis: Each demonstration in this lab can be explained by a branch of physics, or set of physical laws.

Hypothesis 2: I believe Steller physics students are capable of completing this open ended lab in a timely and responsible fashion… this is a test.

Method:

1. At each station, try the activity/action.

STATION A. Hammer a variety of nails into the board. Try different hammering techniques. Some techniques will bend the nail…

STATION B. Spin a top and gently toss a frisbee.

STATION C. Watch the music video on YouTube.

STATION D. Hold the spring with one person on each end. Stretch the spring out a bit to create some tension. Have one person hold their end stationary while the other person tries a variety of motions.

2. Make specific observations of the event(s).

3. Look through the online textbook and find a section that explains the underlying concept you think is responsible.

Results: Describe the "science" of what you think is happening based on your SPECIFIC observations, THEN find an applicable section of the textbook that explains the physics. The following leading questions should help.

A. Why does a nail only bend sometimes when hammered?

B. What do a top and a frisbee have in common? Why is the action of the tippy top unique?

C. Watch the music video of Ok Go, "Upside down and Inside Out"…

D. What type of pattern does the spring make? What is required to change the pattern?

Conclusion:
What have you gained from doing this lab?
What was the purpose of doing the lab?
What would be the next step in learning more about these events (aka future research)?