NAME_____Hr____

iPad Wave Activity!

Learning Targets:

- I can label and describe important wave vocabulary: CREST, TROUGH, AMPLITUDE, WAVELENGTH, PULSE, OSCILLATION, FREQUENCY, FIXED END, FREE END, TENSION
- I can determine how tension and amplitude affect the wave.

I) INTRODUCTION:

1. Draw ONE wave. Label the crest, trough, amplitude, and wavelength.

II) iPAD PRACTICE:

- Choose the "String" app on the iPad.
  - Tips: Make sure to "RESET" in between each question/wave change.
  - You can PAUSE or PLAY the wave at any time by clicking the green arrow at the top of the screen.

III) FREQUENCY

- Click the "Gear" symbol in the upper left hand corner and choose "**oscillate**".
- Set the **Amplitude** to 50%.

2. What do you think the word OSCILLATION means? _____
3. Use the slider on the bottom to change the "**Angular Frequency**"
   a. What happens to the wave if you make the angular frequency larger?
      _____
   b. What happens to the wave if you make the angular frequency smaller?
      _____
   c. In your own words, describe what you think FREQUENCY means:
      _____

IV) AMPLITUDE AND TENSION

- Now go up to the "Gear" symbol in the upper left hand corner and choose "**manual"**
- Make sure the PLAY button is clicked
- Make sure you have the following settings:
  - Damping = 03.3% (That is as close to zero as it goes)
  - Tension = 20%
  - Amplitude = 50%

4. Choose "**Pulse**." Watch the pulse. **How many waves** is one pulse? _____
5. Now change the amplitude and send new pulses. Answer the following questions:
   a. When you increased the amplitude, what happened to the pulse? _____
   b. When you decreased the amplitude, what happened to the pulse? _____
   c. In your own words, describe what you think AMPLITUDE means:
      _____

- Return the settings to Tension (20%), Damping (0%), and Amplitude (50%). Send one wave.

6. Now change the tension to 90%. What did you notice about the speed of the wave?
   _____
7. Describe in your own words how Tension affects wave speed (finish the sentences):
   _As you increase the tension_____
   __As you decrease the tension_____