**PreAP Physics – Wave Interference PhET Lab**

Today, you will use the Wave Interference PhET simulation to explore how the characteristics of water waves and how they interact.

**Part 1 – Water one source**

1) Open the Wave Interference PhET simulation. On the first tab, what can you change about the simulation?

2) Select "Show Graph." What is on each axis? How would you explain what it is showing in simple terms?

3) Start with **one drip** and change the frequency and amplitude first predict what you think will happen then record what happens below.

| | Prediction | Observations | How does the graph change? |
|---|---|---|---|
| Changing frequency | | | |
| Changing amplitude | | | |

**Part 2 – Water two sources**

4) Try **two drips** and repeat #2.

| | Prediction | Observations | How does the graph change? |
|---|---|---|---|
| Changing frequency | | | |
| Changing amplitude | | | |

5) Based on your observations, summarize what happens when you change the frequency and amplitude with one or two drips.

**Part 3 – Sound**

6) Now that you are more familiar with the PhET simuation, write your own procedure for investigating amplitude and frequency for one and two speakers on the Sound tab below. Record your observations. Include a few pictures/diagrams.

**Conclusion**

In a few sentences answer the following questions. How do the properties of frequency and amplitude affect how we hear sound? What is an everyday example of two sources? What happens when two sources simultaneously make noise?