**Data Calculations**

**Tuning Fork #1**

Midline is a line that rests exactly between the top and bottom peaks.

1. Draw the midline on you above tuning fork #1 graph and label the midline.
2. Where does your midline sit?
3. Write the equation for your midline.

Amplitude is the amount of displacement a wave has from the midline to the top peak.

1. What is the distance from the midline to the top of the peak?
2. Given the above simplified definition of what is the amplitude of tuning fork #1?

Period is amount of time it takes the graph/sound wave to cycle through one interval (return to its starting place.

1. How far is it from the top of one peak to the next?
2. Using your previous, divide it into 2π. Example (2π/#).
3. If you were told your period is 2π/(amount of time to complete on cycle) was your period, then your period is?

Phase Shift is the distance away from the initial values the sine and cosine graphs have on the unit circle.

1. Recall the sine graph has an initial of zero on the unit circle what does the cosine graph have as an initial value?
2. Use either sine or cosine and pick a start time (can be your y-axis or another point on your graph) but must be on your midline.
3. What is measurement of time from your start point to where your sine or cosine graph would normally start?
4. If phase shift is calculated by taking your measurement from c. and multiplying it by your period, then what is your phase shift?

Vertical Shift is the distance the midline of your current graph is from the x-axis.

1. How far is your midline from the x-axis?
2. What is your vertical shift?

In your own words explain: midline, amplitude, period, phase shift, vertical shift.