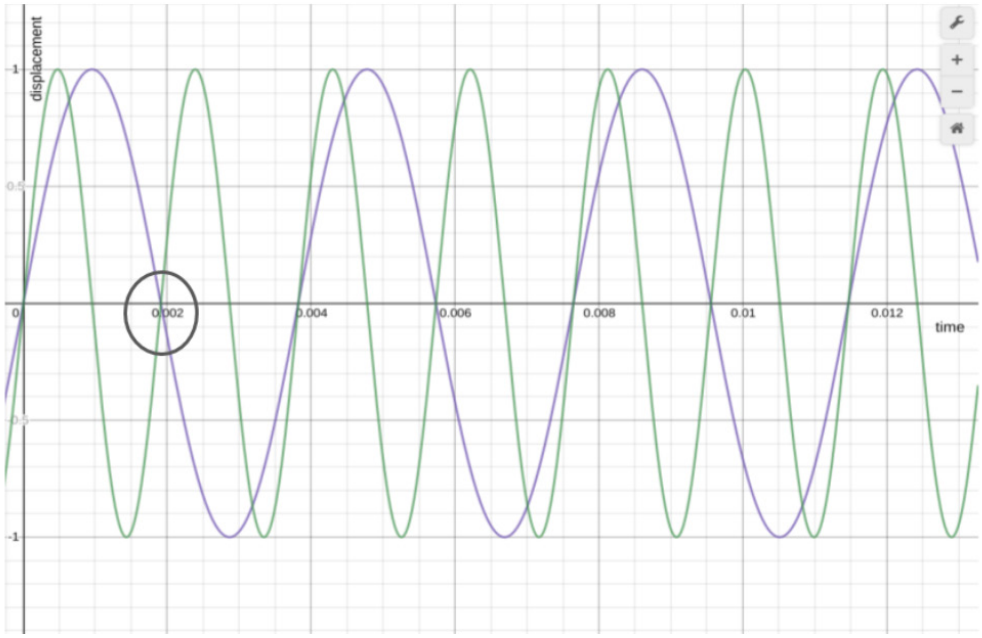
Extension Activity - Interpreting the Graphs of Sound Waves

Instructions: Go to http://bit.ly/intervalgraph and use the graph to complete the following directions:

1. Turn on the graphs for C4 and C5 (the first and last options). Find where both graphs intersect with the x-axis at the same point.



a. Count the number of zeros (points on the x-axis) between 0 and the point of intersection for C4 (including the point of intersection):_____

b. Count the number of zeros (points on the x-axis) between 0 and the point of intersection for C5 (including the point of intersection):_____

c. What is the ratio of the number of C4 zeros to the number of C5 zeros? How does this compare to the C : C frequency ratio you calculated in the C Scale Ratio Table?

_____

_____

d. Go to the C Scale Note Pairings Observations on Handout 2. What was your opinion of the sound of C:C?

_____

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_____

2. Go back to DESMOS and turn off the graphs for C and C. Now turn on the graphs for C and D.

   a. Count the number of zeros (points on the x-axis) between 0 and the point of intersection for C4 (including the point of intersection): _____

   b. Count the number of zeros (points on the x-axis) between 0 and the point of intersection for C5 (including the point of intersection): _____

   c. What is the ratio of the number of C4 zeros to the number of D4 zeros? How does this compare to the C : D frequency ratio you calculated in the C Scale Ratio Table?

_____

_____

   d. Go to the C Scale Note Pairings Observations on Handout 2. What was your opinion of the sound of C:D?

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3. Based on your investigation, how do you think the graphs of these notes relate to the sound they make when they play together?

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