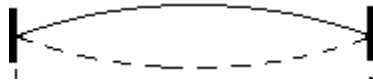


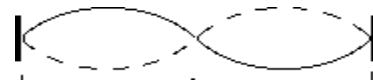
## Exploring Sound 6: Dividing Strings to Get Specific Intervals

We're going to assume for this lesson that we're using the same type of string (thickness and weight) and the same tension of string so that we can see exactly how length changes pitch

We saw that when you divide a string in half, the **pitch** that is made is an **octave** higher.

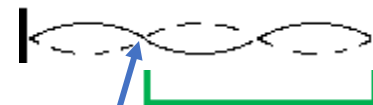


<https://newt.phys.unsw.edu.au/jw/strings.html>



<https://newt.phys.unsw.edu.au/jw/strings.html>

If you divide a string into thirds



<https://newt.phys.unsw.edu.au/jw/strings.html>

and you stop the string here,

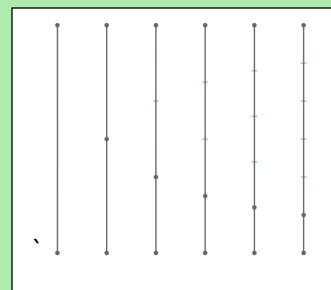
and play this part of the string

You get a **perfect fifth** above the **pitch** of the original string.

Go to Chrome Music Lab at <https://musiclab.chromeexperiments.com/Strings/>

You will see this set of strings:

- Click on the strings to make them play
- The strings are divided
  - in 2 parts (half)
  - in 3 parts (thirds)
  - in 4 parts (quarters)
  - in 5 parts
  - in 6 parts
- Play all of them to hear the differences
- Play just the upper section of the first (left-most) 3 strings
  - What intervals do these make?
- Play the first string and the upper part of the fourth string
  - What intervals do these make?
- Play other combinations to see what intervals they make



## Exploring Sound 6: Dividing Strings to Get Specific Intervals

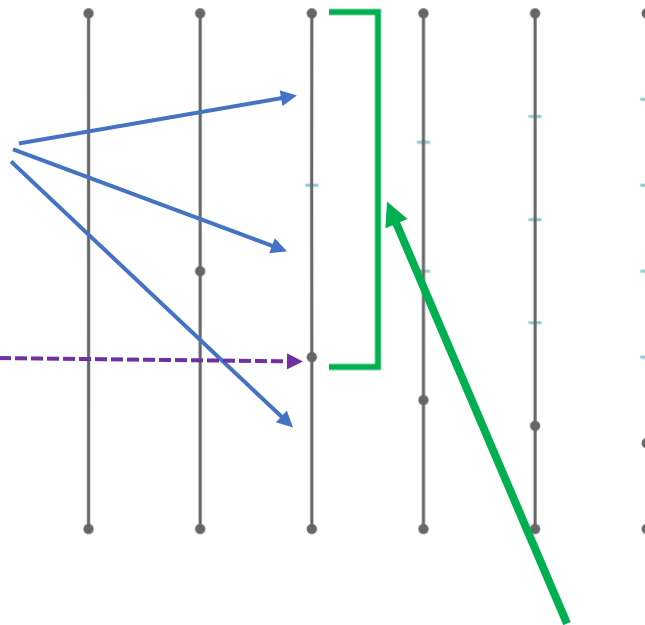
From your experiments with the strings at Chrome Music Lab, you can hear that dividing the strings into fairly simple fractions will give you the following **intervals**:

Number of parts to divide the string into	Number of parts that are allowed to vibrate	So you're playing this amount of the string	Gives this interval above the original pitch
2	1	$1/2$	octave
3	2	$2/3$	perfect fifth
4	3	$3/4$	perfect fourth
4	1	$1/4$	2 octaves (because it is as if you divided in 2 and then divided in 2 again)
5	4	$4/5$	major third

### Example:

The third string is divided in 3 equal parts

The string is stopped (as if you put your finger down on a guitar) at the circle



The amount of string that is free to vibrate (or sound) is 2 parts out of the 3

Go back to Chrome Music Lab and test the intervals on the chart.