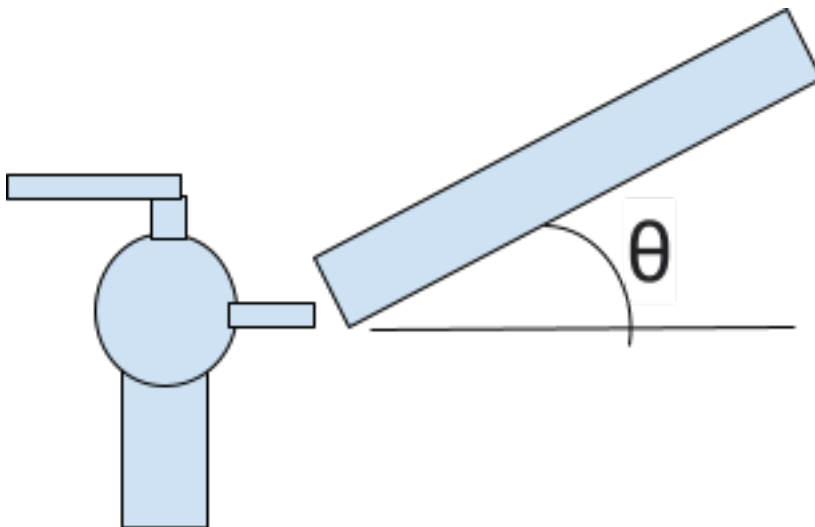


Station 1: Elastic Band

2. The heavier/thicker the band, the deeper the pitch.
3. When plucked at different distances, the black band resonated at shorter amplitudes.
4. Tension used: 13 N.
Heavy band: Deep pitch and loud.
Medium band: High pitch and loud.
Small band: High pitch and quiet.

Station 2: Air Column

6. I can hear a low pitch and high pitch frequency. Higher forces result in more audible high frequencies, and vice versa. The longer the pipe, the longer the noise lasted.
7. Similar lengths but different diameters sounded almost identical, but the smaller diameter sounds slightly higher pitched.
8. There is effectively no resonant sound generated with the plunger in.
9. The steeper the angle to the nozzle, the higher the pitch and the louder the noise.



10. The further the plunger was, the louder and higher pitched the noise.

Station 3: Mass on a string

11. Easiest to stretch: Shortest spring
Mediumist to stretch: Long single spring
Most difficult to stretch: Double spring
12. Lightest: 10 g
Mediumest: 20 g
Heaviest: 50 g

13. No, it will oscillate slower because most of the kinetic energy that would have been gained from starting higher is not in the system.
14. The heaviest weight with the easiest to stretch spring will oscillate the slowest.
15. The lightest weight with the hardest to stretch spring will oscillate the fastest.
- 16.

Mass	Spring	Time for 10 Oscillations	Natural Frequency (Hz)
heavy	easy	11.40	0.878
heavy	medium	8.31	1.203
heavy	difficult	4.75	2.105
medium	easy	7.94	1.259
medium	medium	5.34	1.873
medium	difficult	3.22	3.106
light	easy	6.44	1.553
light	medium	3.75	2.667
light	difficult	2.16	4.629

17. The lighter the mass, the higher the natural frequency and vice versa.
18. The less the spring stretches, the higher the natural frequency and vice versa.
- 19.

	Natural frequency depends on:	Adjustments:	Doesn't affect:
Air Column	Length and diameter of tube	Decrease length	Diameter
Elastic Band	Mass of the band and tension	decrease mass and tension	"Fret"
Mass on spring	Mass, spring resistance	Lighter mass, harder spring	Initial displacement