

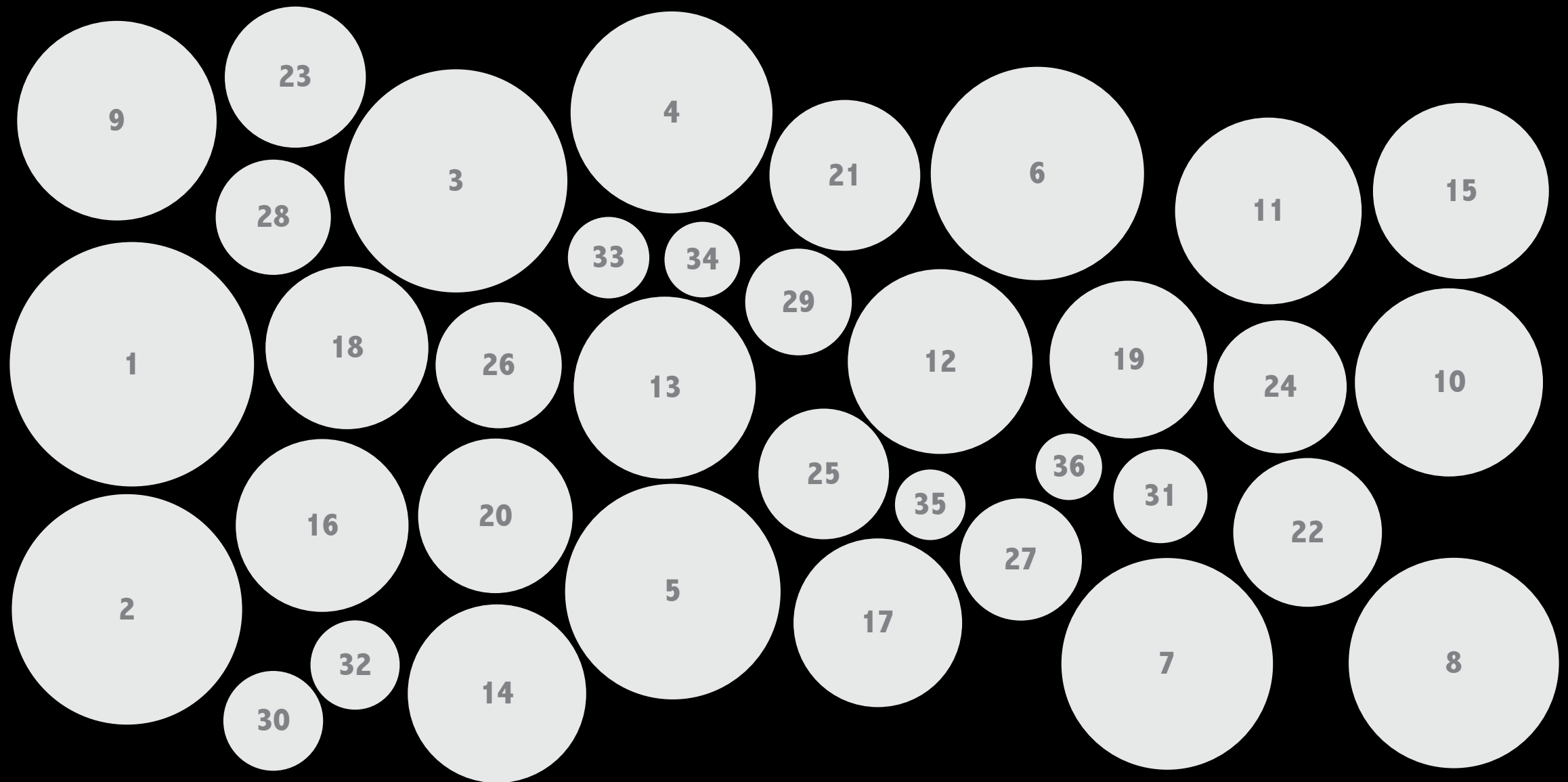
DAVID BITHELL
PASSAGE 2016

ALUMINUM DISCS



ALUMINUM DISCS

FITTING ON 4X8 SHEET



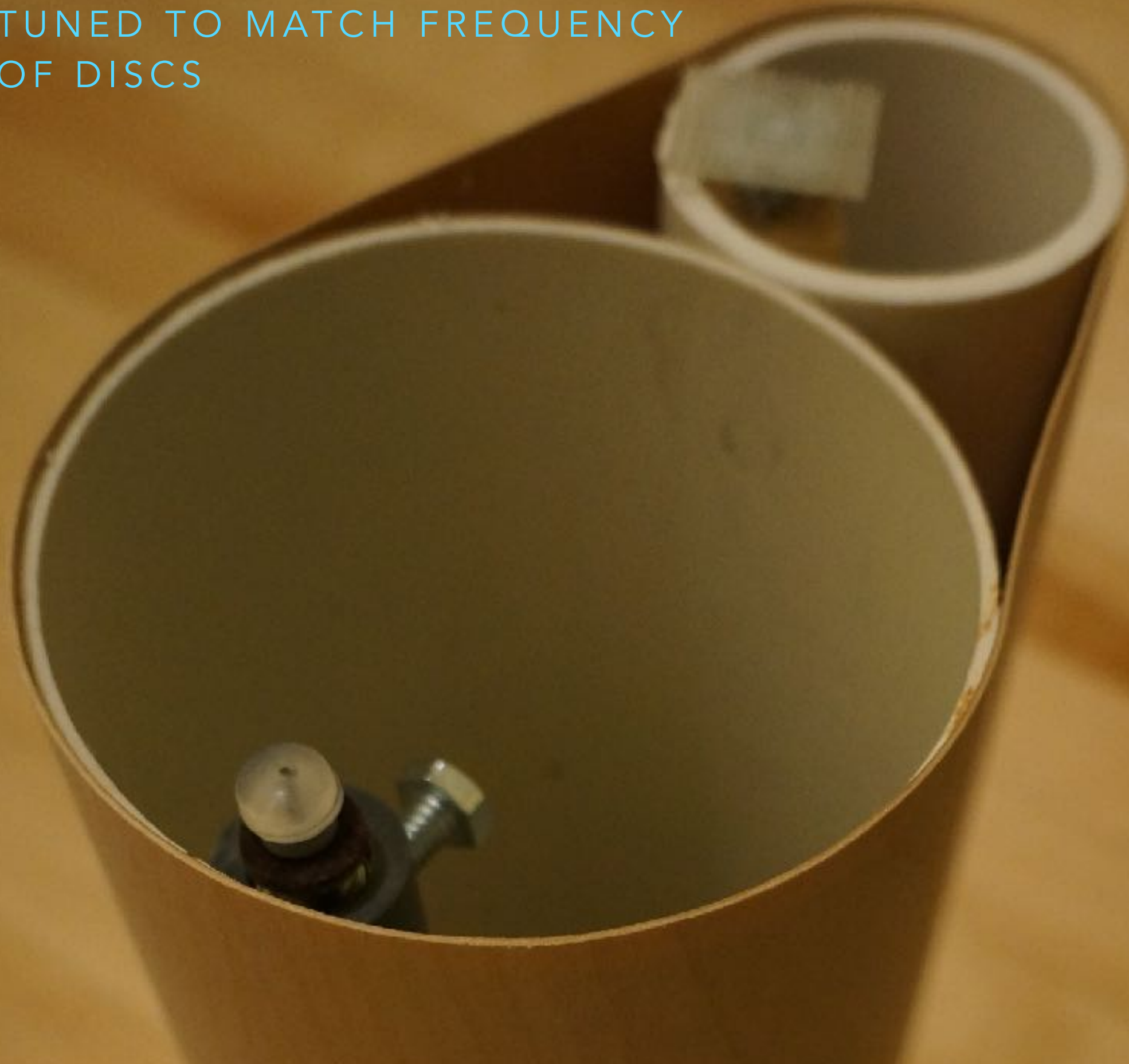
FEDEX MATH





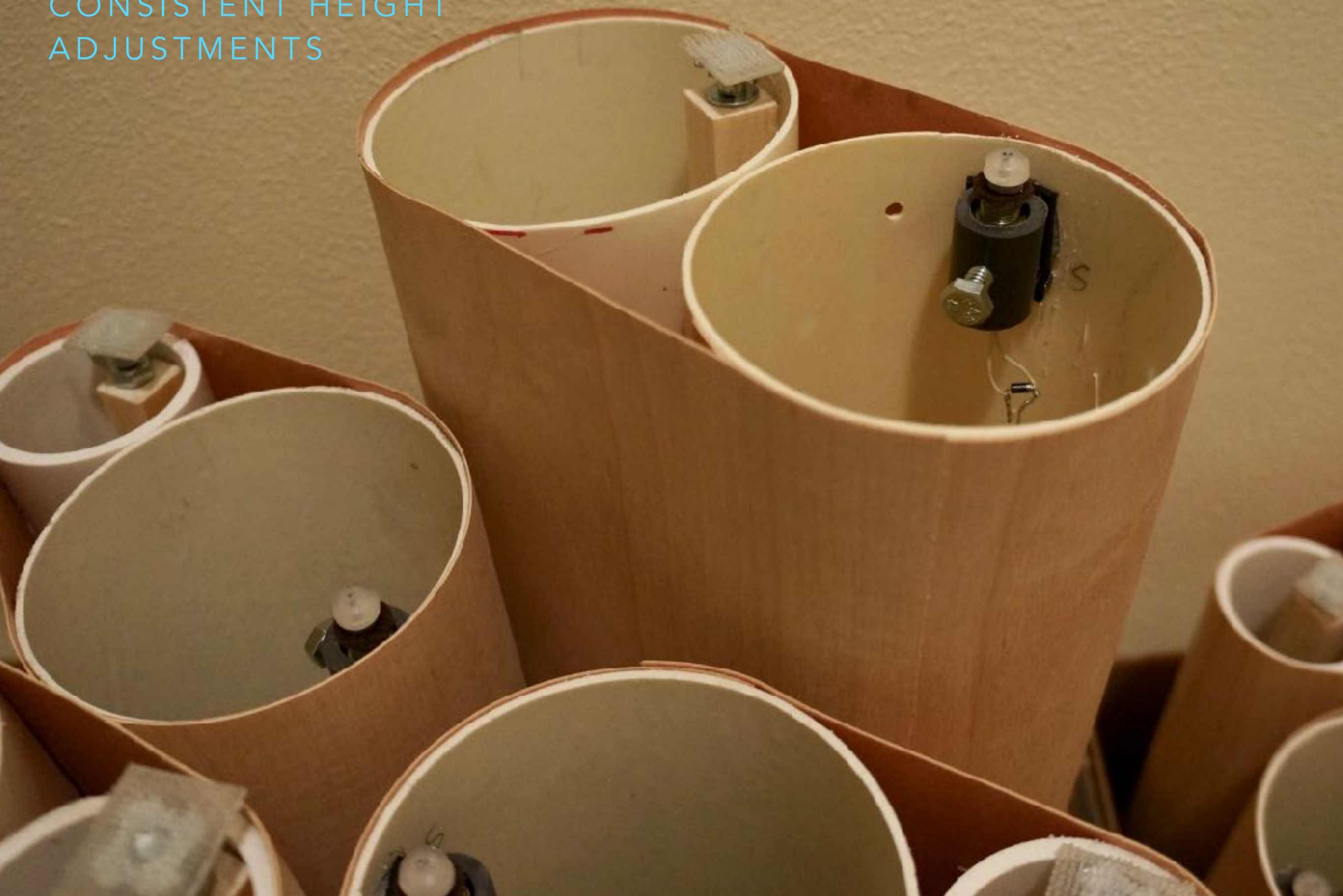
TUBULAR RESONATORS

TUNED TO MATCH FREQUENCY
OF DISCS



MOUNTING HARDWARE

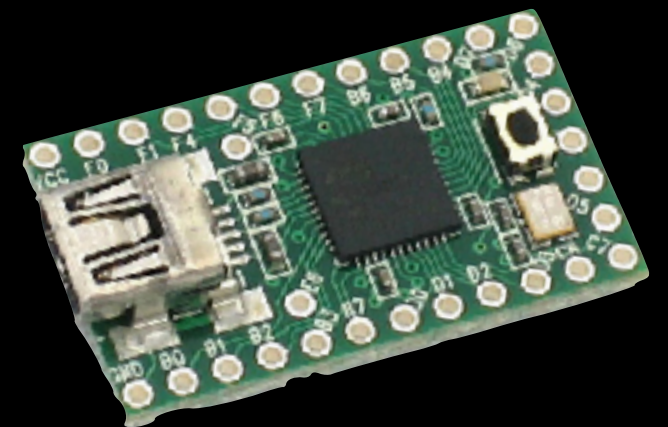
CONSISTENT HEIGHT
ADJUSTMENTS





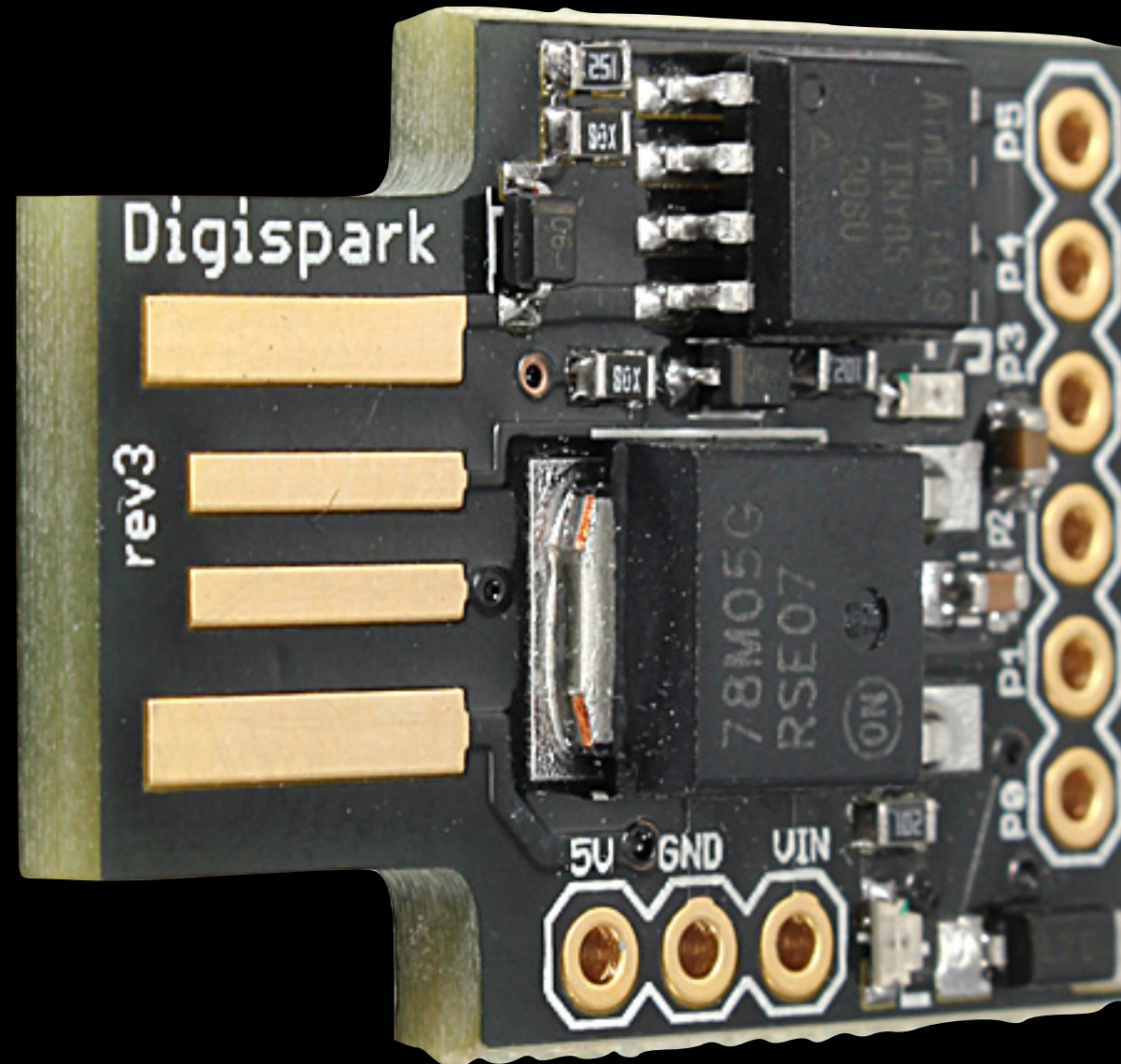
HARDWARE SETUP

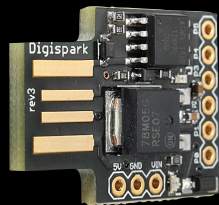
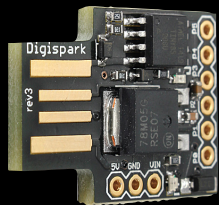
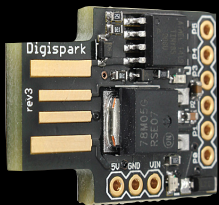
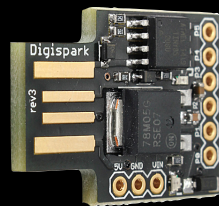
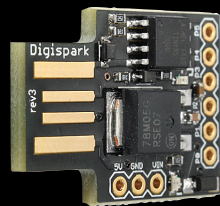
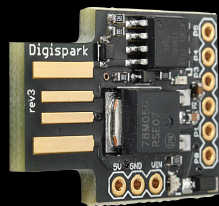
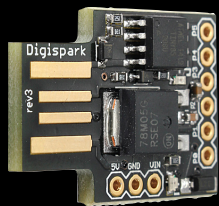
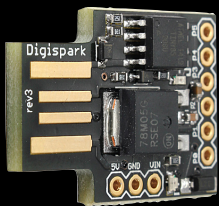
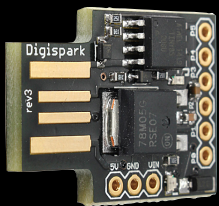
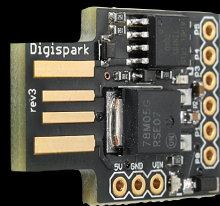
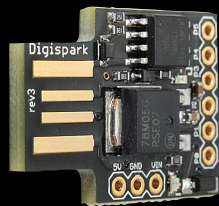
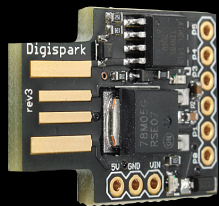
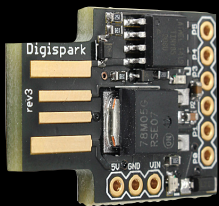
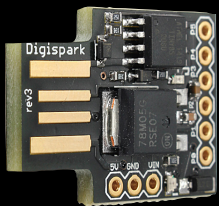
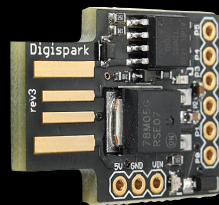
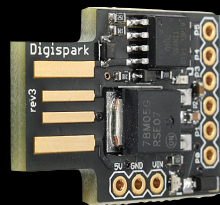
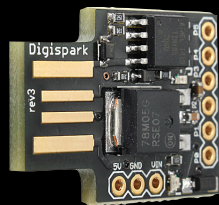
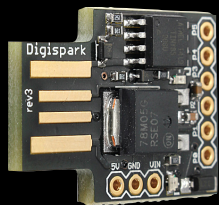
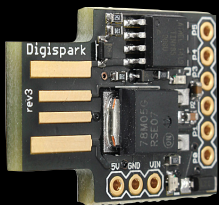
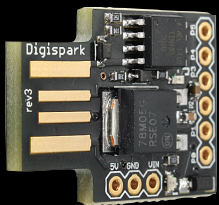
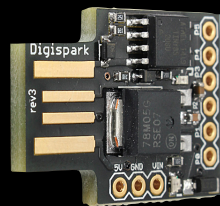
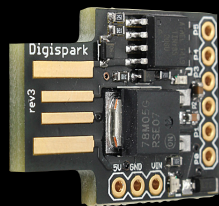
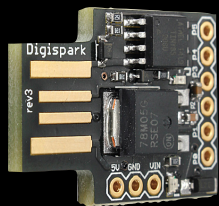
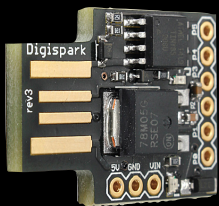
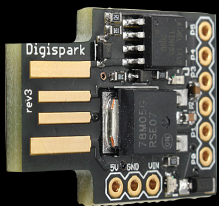
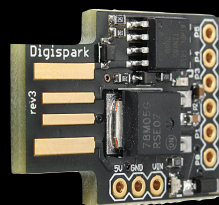
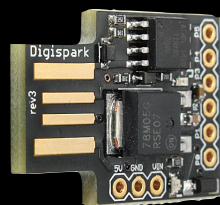
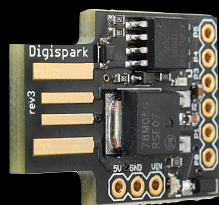
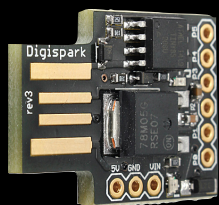
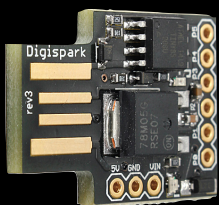
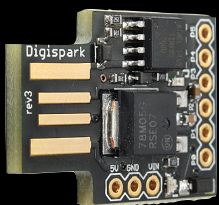
PROJECTOR + COMPUTER + MICROCONTROLLERS



DIGISPARK USB

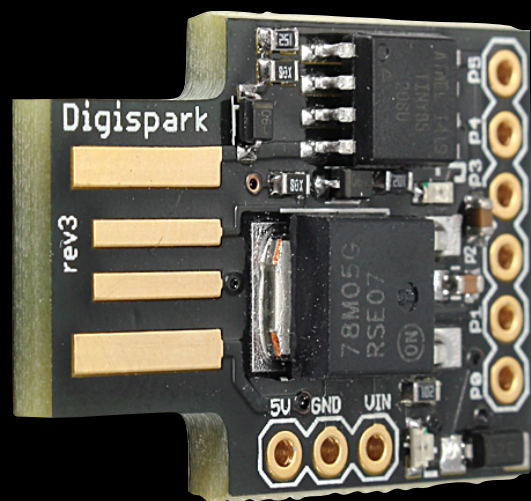
MICROCONTROLLER





SOLENOID

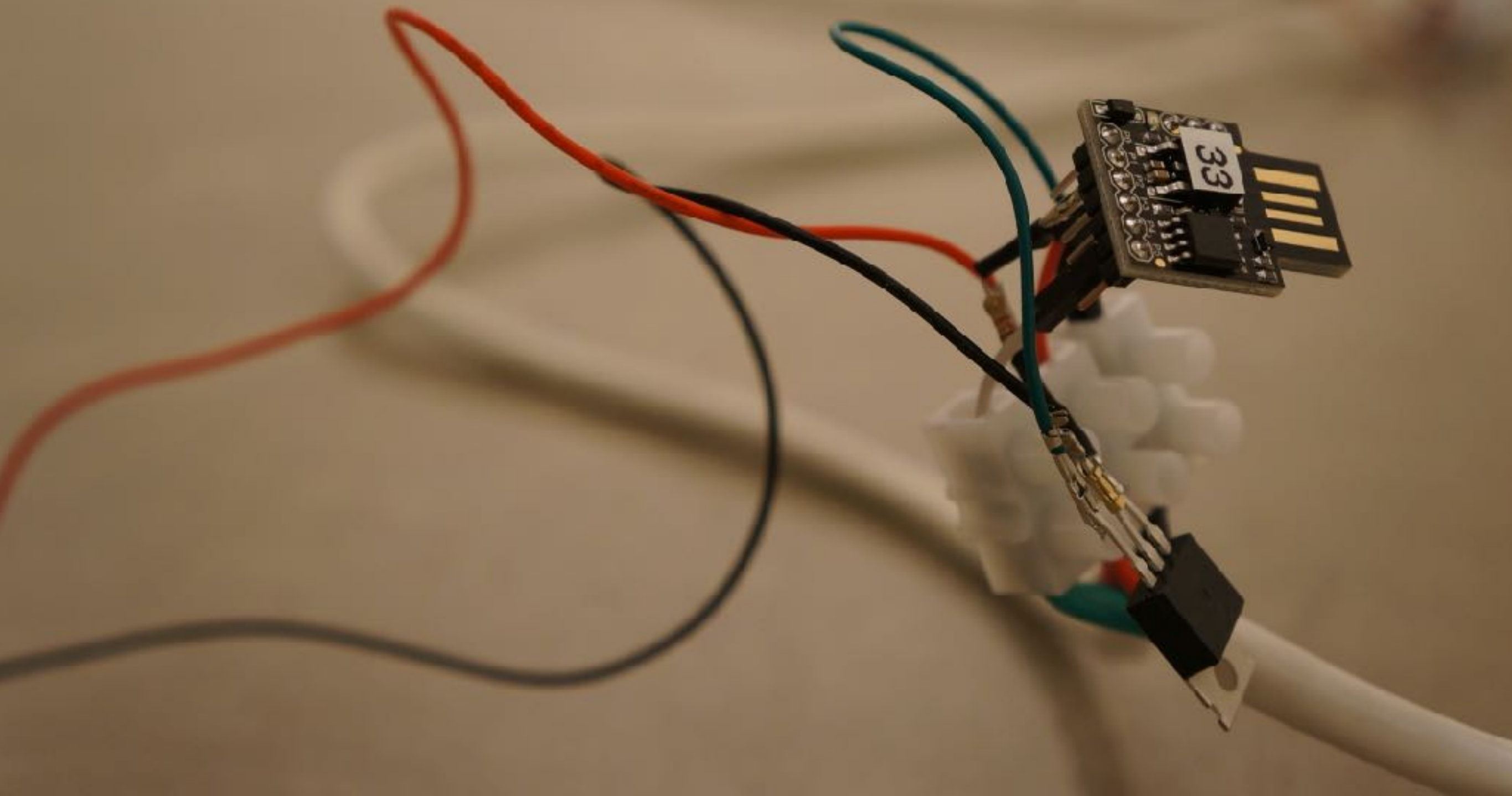
ACTUATOR





WIRING AND CIRCUITS

MODULAR DESIGN



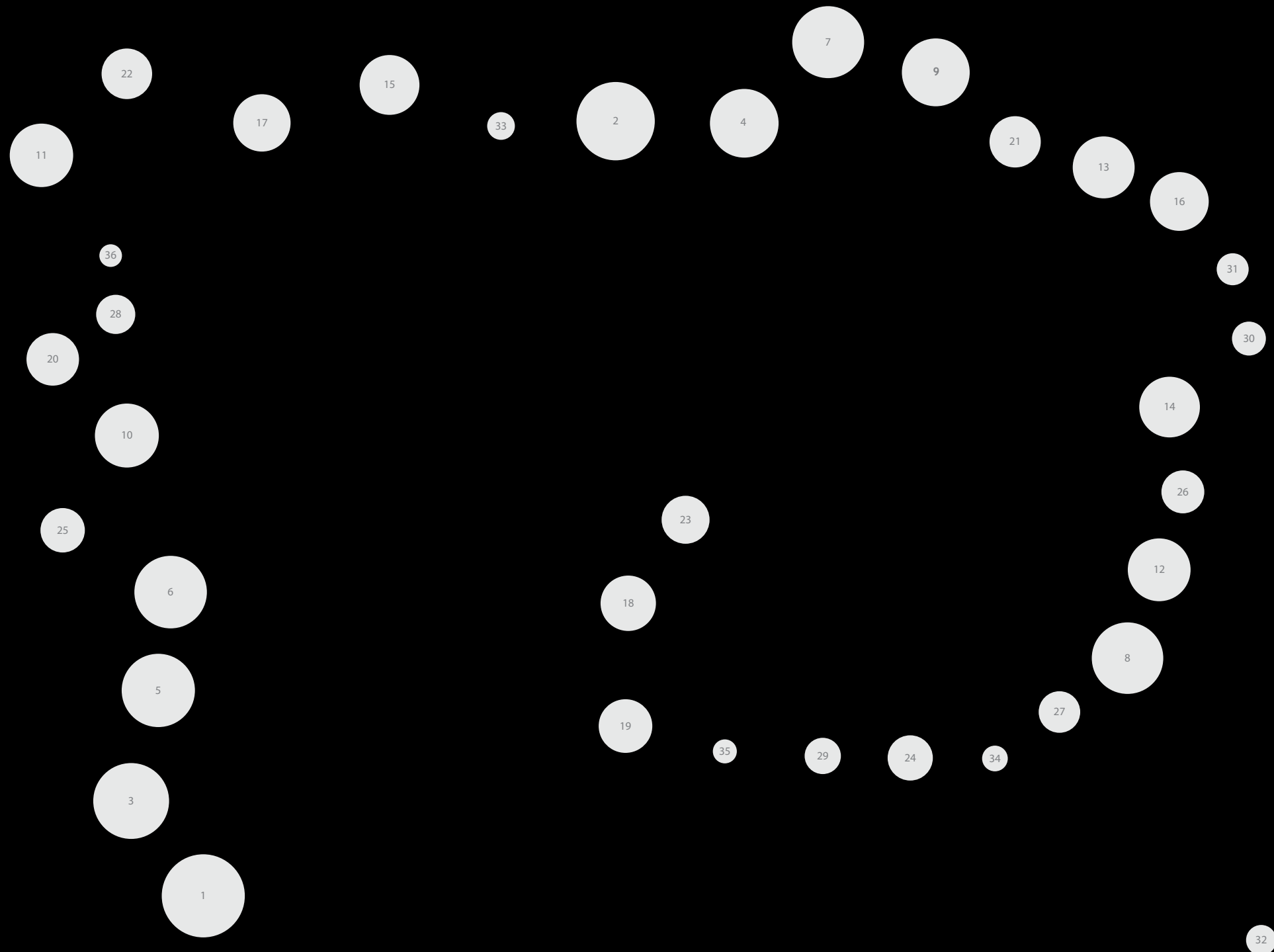


RECONFIGURABLE

ACCOMODATE VARIABLE SPACES

LAYOUT

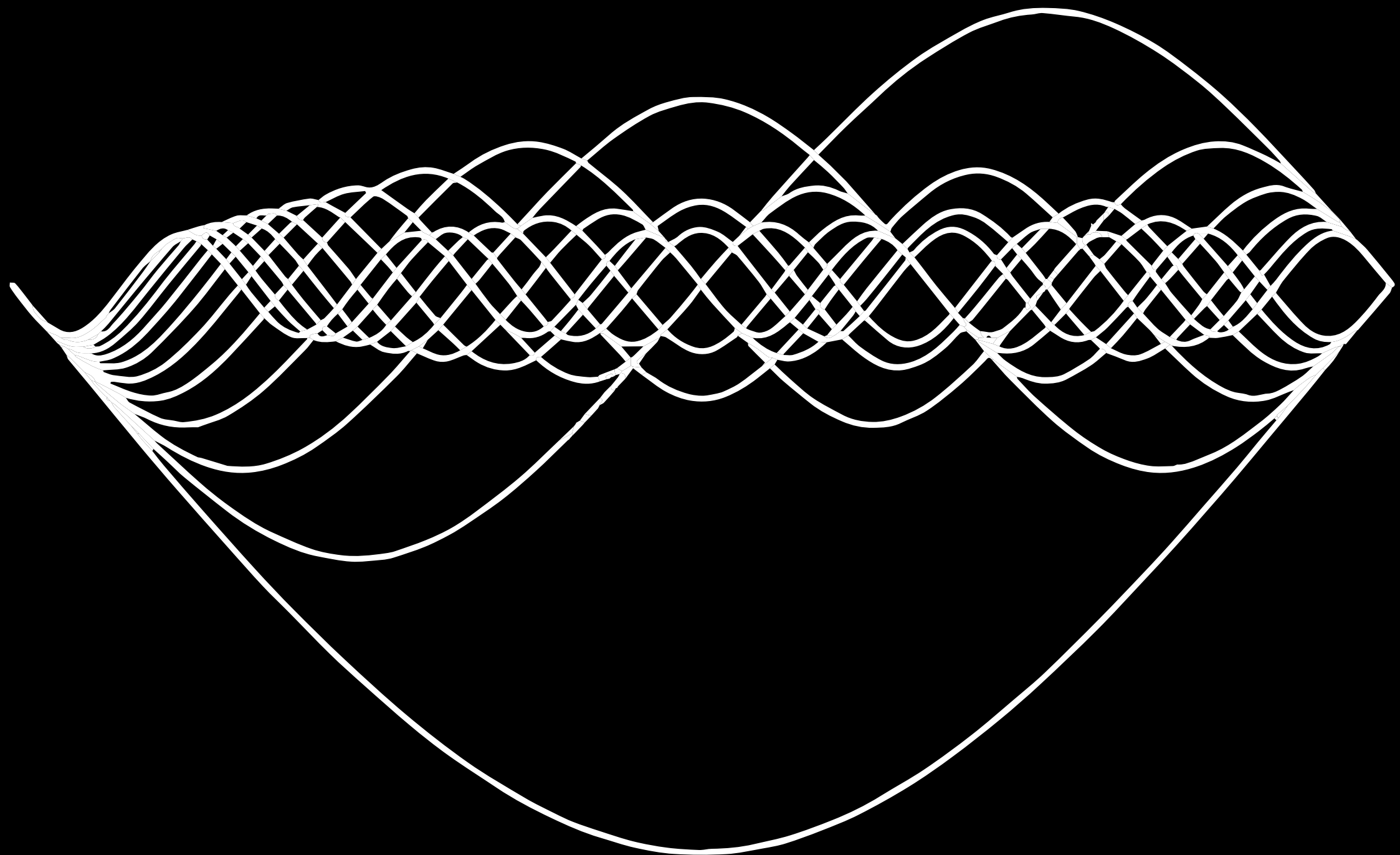
SCHNEIDER MUSEUM OF ART





TUNING SYSTEM

9-LIMIT JUST INTONATION



n:x

HARMONIC SERIES

3:2	4:3	5:4	6:5	7:6	8:7	9:8	10:9
2:2	3:3	4:4	5:5	6:6	7:7	8:8	9:9
1:2	2:3	3:4	4:5	5:6	6:7	7:8	8:9
	1:3	2:4	3:5	4:6	5:7	6:8	7:9
		1:4	2:5	3:6	4:7	5:8	6:9
			1:5	2:6	3:7	4:8	5:9
				1:6	2:7	3:8	4:9
					1:7	2:8	3:9
						1:8	2:9
							1:9

ratio —> disc size

HARMONIC SERIES

1:1 = 12" diameter disc

pitch is proportional to volume

volume of disc = volume of 12 disc * tuning ratio

$$\text{diameter} = \sqrt{(\text{volume} / (\pi * 0.25)) * 2}$$

n:8

HARMONIC SERIES

1:8		1432 hz
2:8		716 hz
3:8		477.3 hz
4:8		358 hz
5:8		286.4 hz
6:8		238.7 hz
7:8		204.6 hz
8:8		179 hz
9:8		159.1 hz
10:8		143.2 hz
12:8		119.3 hz

1:8

1:4

3:8

1:2

5:8

2:3

7:8

1:1

9:8

5:4

3:2

1:8

1:4

3:8

1:2

5:8

2:3

7:8

1:1

9:8

5:4

3:2

