

Game Project Intro

- A 21x next week

• Polished

- 20% → "the game"
 - work scheme
- 80% → "Individual contribution"
 - online promos encouraged
- 6 weeks prototyping
 - week 7 Core loop demo
 - See milestones
- Captain Crunch
 - No design doc
 - Not understanding features
 - lack of schedule / deadlines
 - styling features in last week

Module Organisation

- Agile (Scrum → see Bright Space)
 - weekly sprints
 - ↳ Tasks for the week agreed by team
 - weekly sprint reviews
 - Plausible build required each week
 - Individuals will show managers (tutors) their progress
 - Team will agree tasks for next sprint
 - Managers will take notes on progress / provide feedback
- Alpha
- features complete
 - fully playable with all major features (mechanics/ menu/ story)
 - lacking (initial) assets
 - No core features can be added
 - small features can be added, with approval

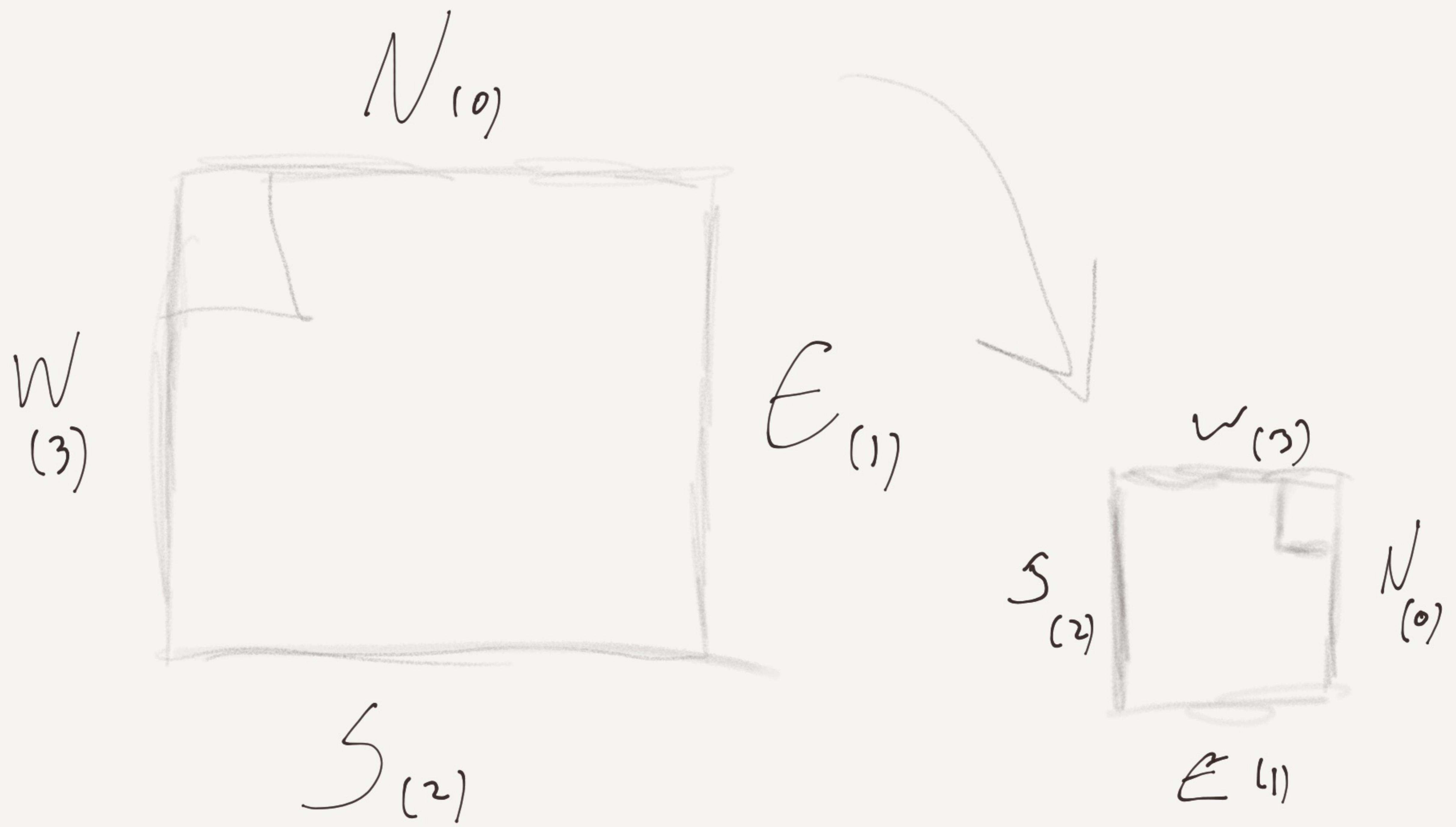
Wear

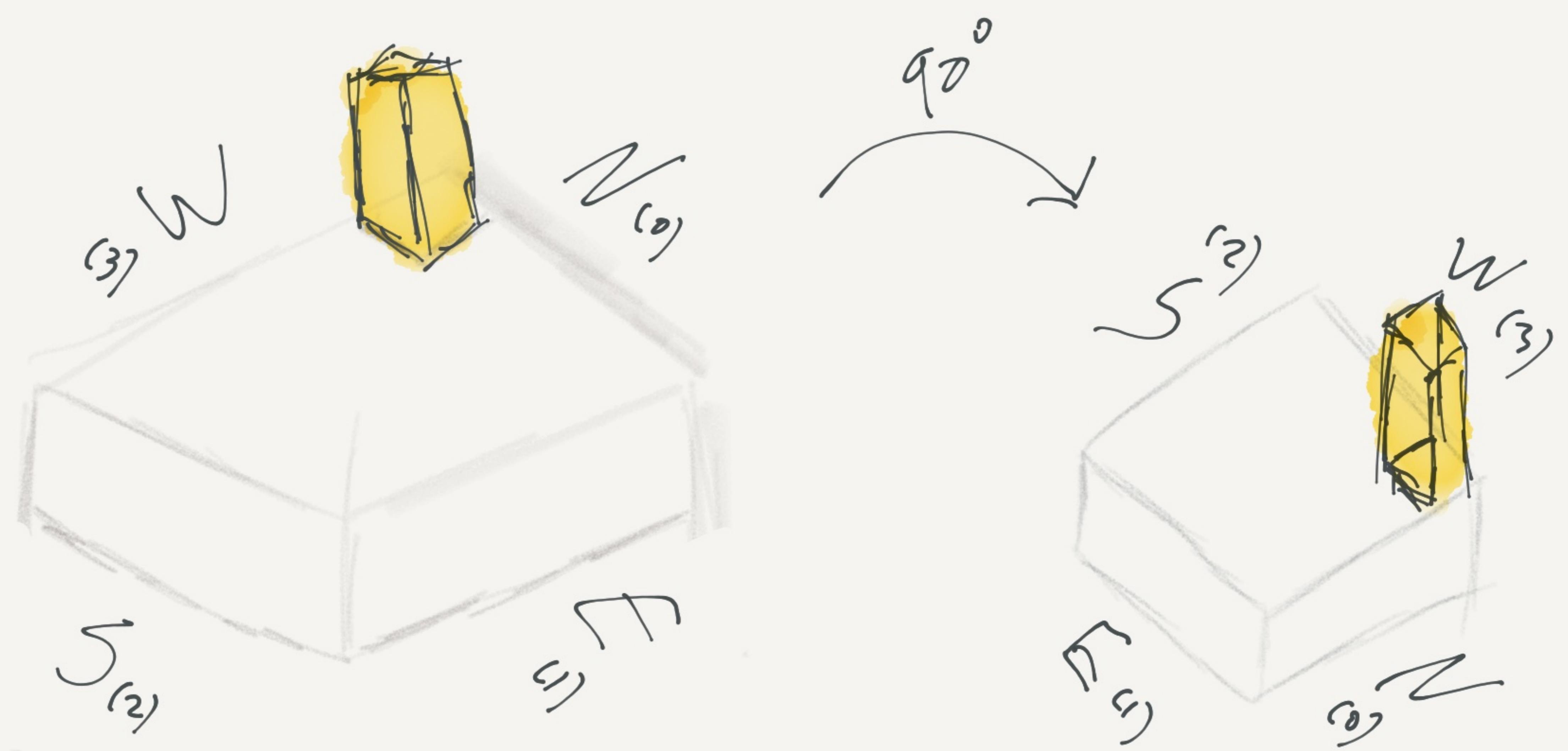
- Feature / asset complete
- only bugfixing / gameplay balancing
- No bugs don't prevent product shipping

Gold Master

- Final Build
- Used for Submission
- No Bugs
- Contains completed / finished game play

Later prototyping is always good.
Hello.
clicking





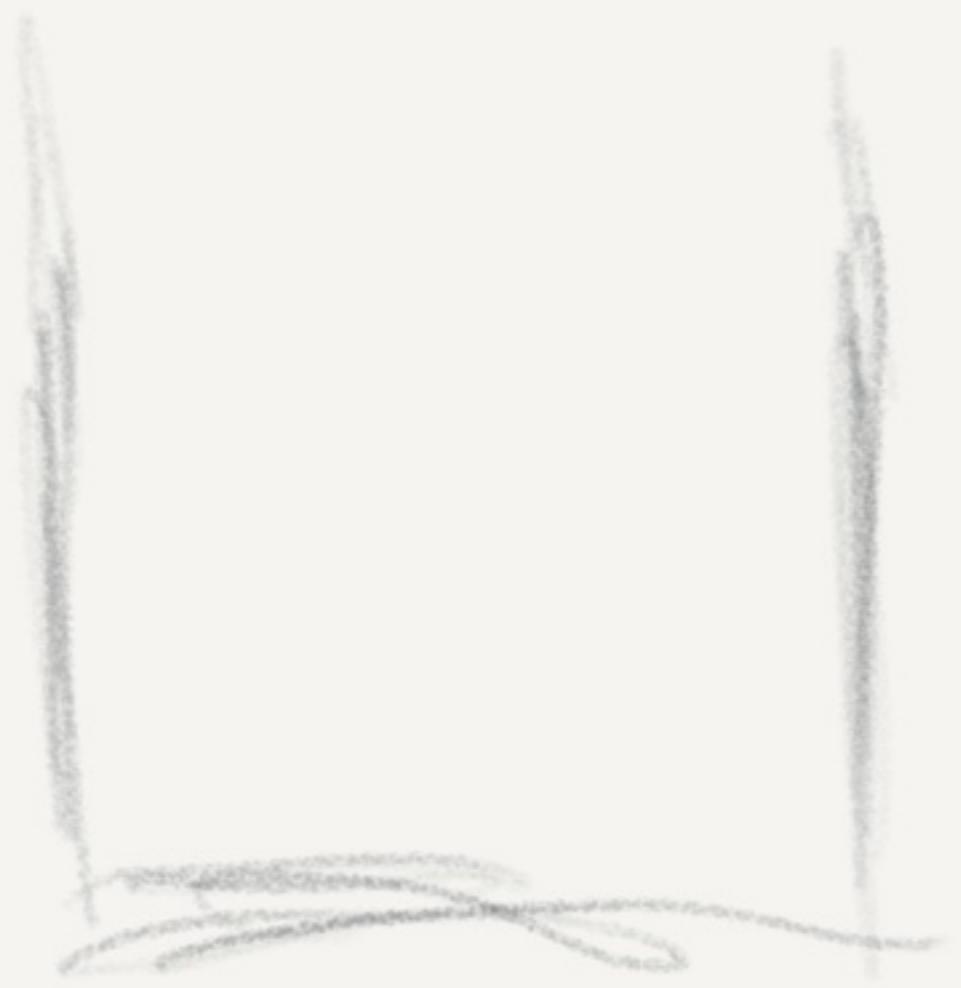
Possible values

Default \rightarrow 0123

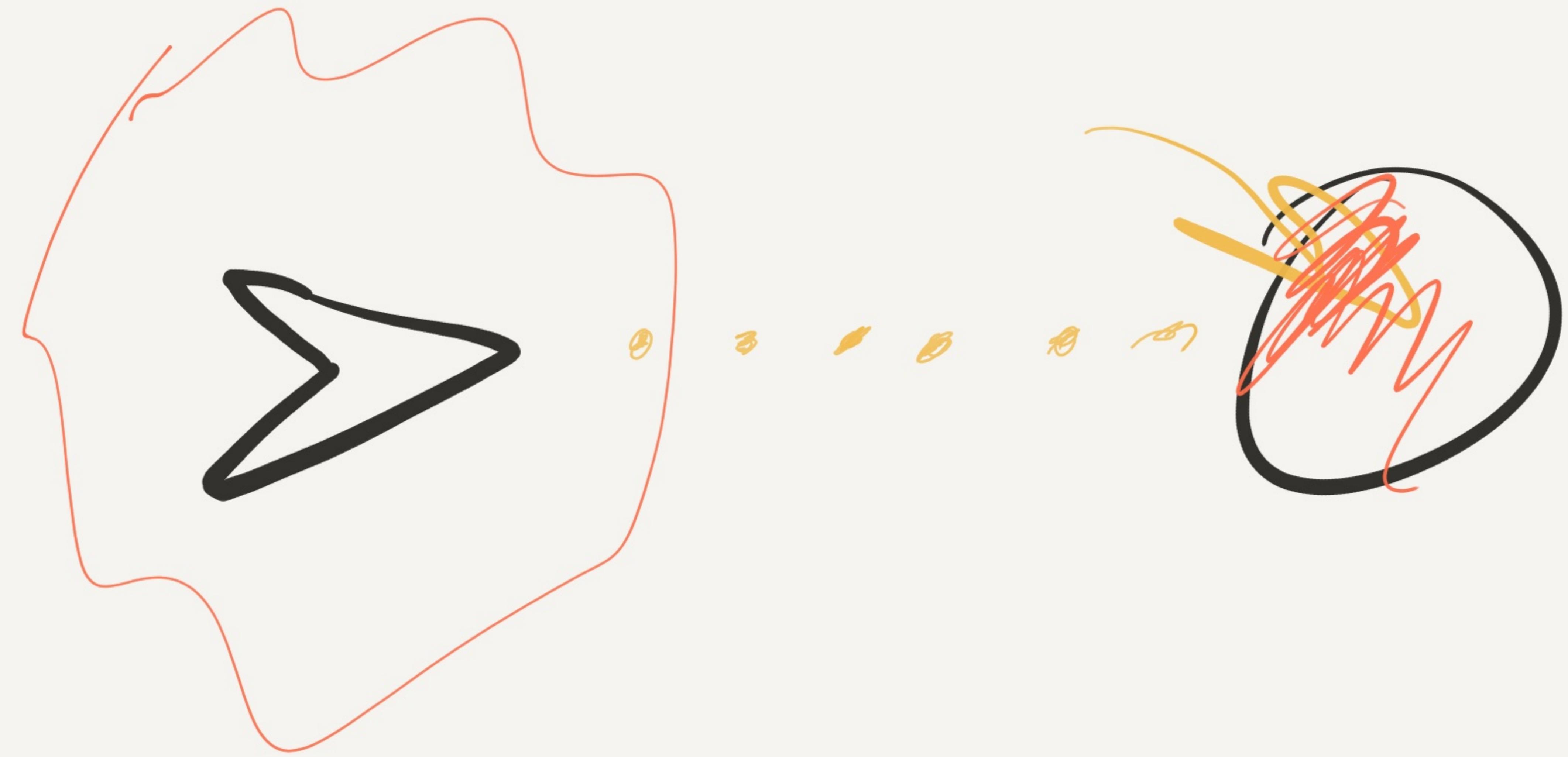
$90^\circ \rightarrow 1230$

$180^\circ \rightarrow 2301$

$270^\circ \rightarrow 3012$



- physical challenges → younger audience
- No mental challenges
- No social challenges
- ↳ good core L, P, M loop
- ↳ how do we keep players retained
- ↳ flow channel, follow-ups
- MUSIC as a reward → Extrinsic reward
- Mastery, autonomy → Intrinsic reward





Space dust → Particles?



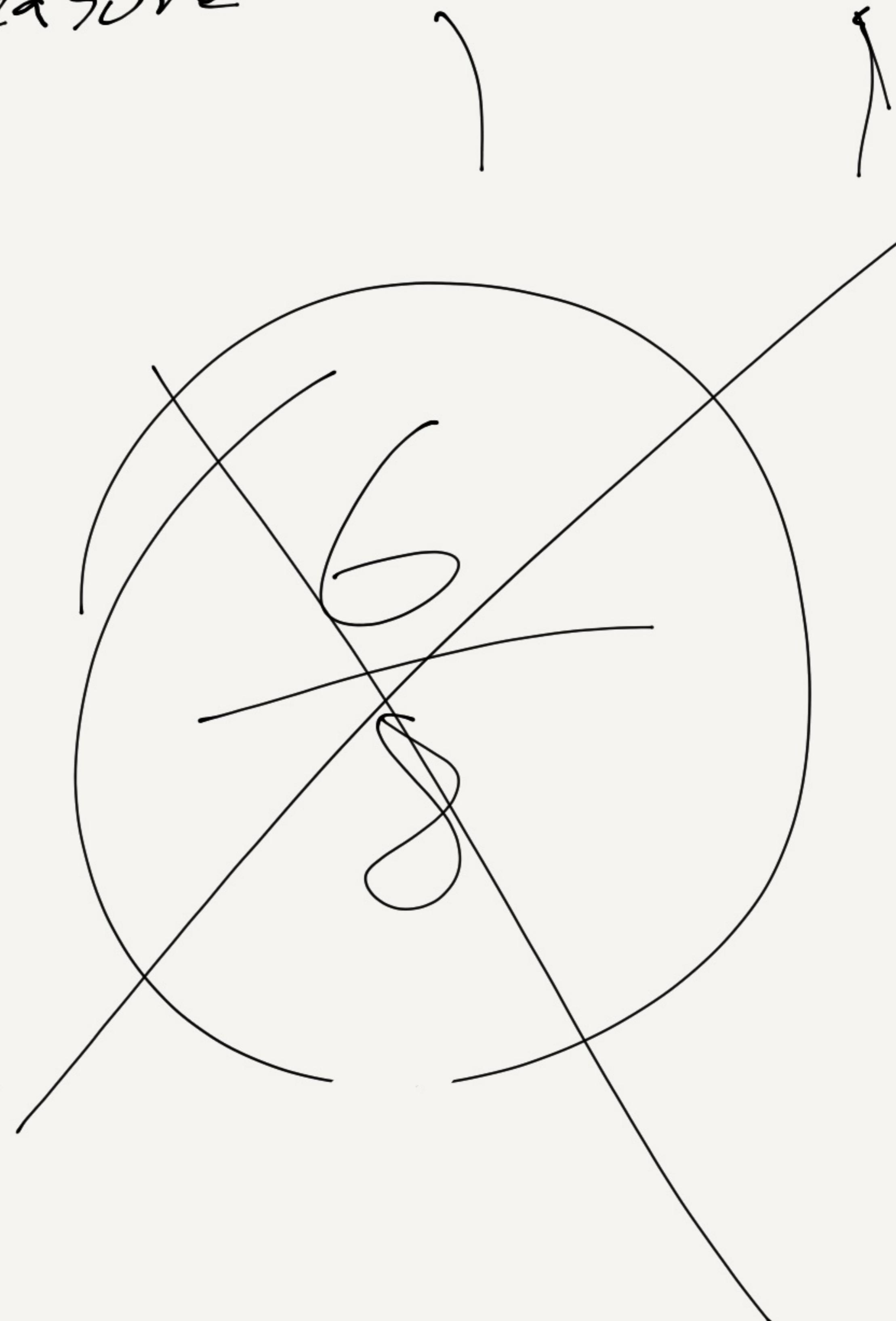
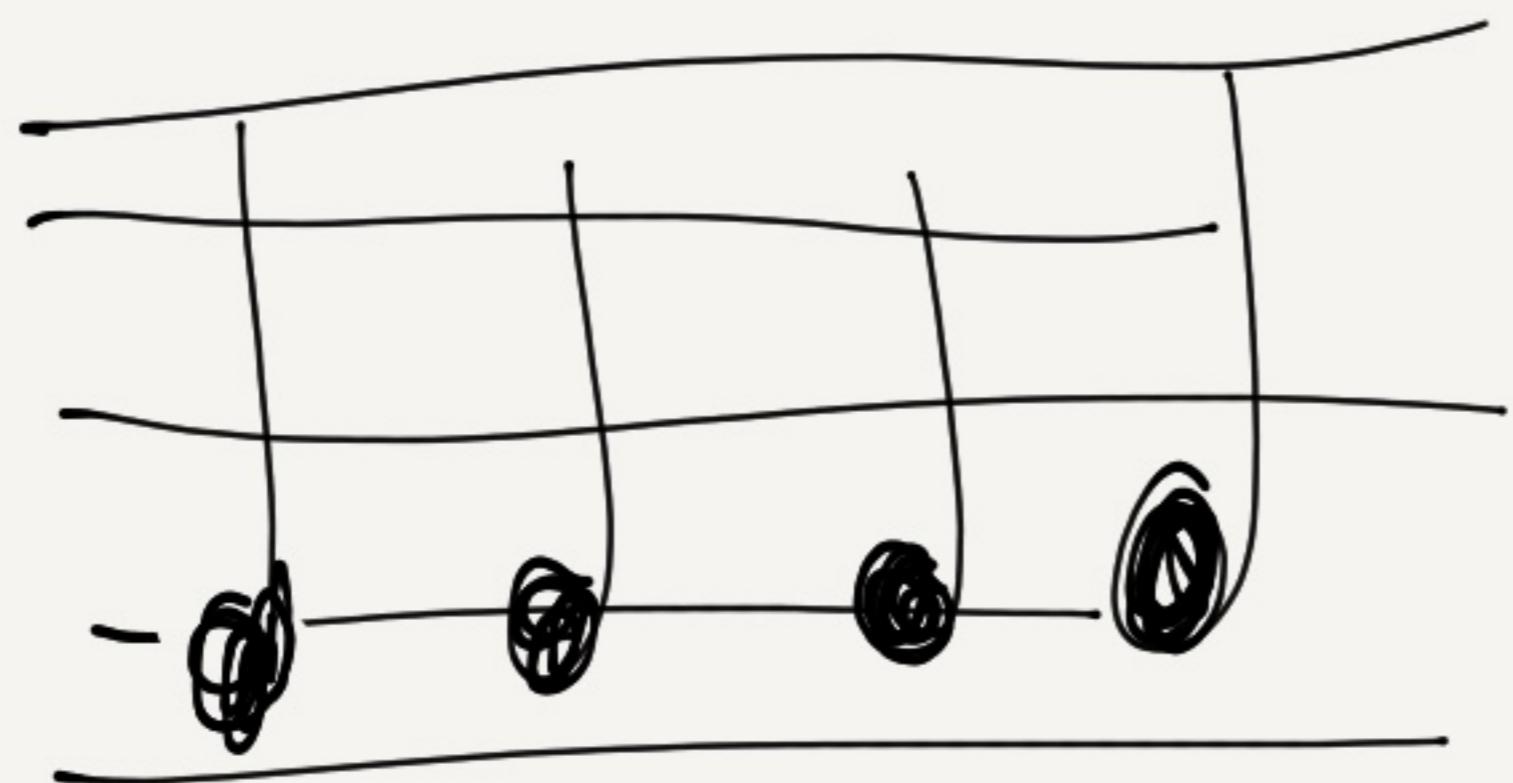
4 → 4 in the measure



→ Quarter note

120

60 bpm



Coroutine Main Beat () {

forever :

fire beat (main beat)

calculate interval

calculate step measure

calc separate timings

granularity required :

- half beats (minim)
- quarter beats (crotchet)
- eighths (quaver)
- sixteenth (semi-quaver)

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16}$$

$$\frac{16}{32} + \frac{8}{32} + \cancel{\frac{4}{32}} + \cancel{\frac{2}{32}} = \frac{30}{32}$$
$$+ \frac{2}{32}$$

$$\frac{32}{32} = 1$$

1 Beat, Quarter Beat

- 1) 1/6
- 2) 1/6
- 3) 1/6
- 4) 1/6 ← Quarter Beat
- 5) 1/6
- 6) 1/6
- 7) 1/6
- 8) 1/6 ← Half beat, Quarter Beat
- 9) 1/6
- 10) 1/6
- 11) 1/6
- 12) 1/6 ← Quarter Beat
- 13) 1/6
- 14) 1/6
- 15) 1/6
- 16) 1/6

See
photo
of white board

Test metronome to ensure time is kept consistently!

↳ Breaks above ~ 180 fpm!

↳ 160-ish seems safe.

120 BPM -

1 second = 1 beat

$\frac{1}{2}$ second = $\frac{1}{2}$ beat

$\frac{1}{4}$ second = $\frac{1}{4}$ beat

... etc

2 seconds = 2 beats

↳ Effectively 1 beat / 1 second
at 60 bpm

4 seconds = 4 beats

↳ Effectively 1 beat / 1 second
at 120 bpm

Key

→ ^(key)

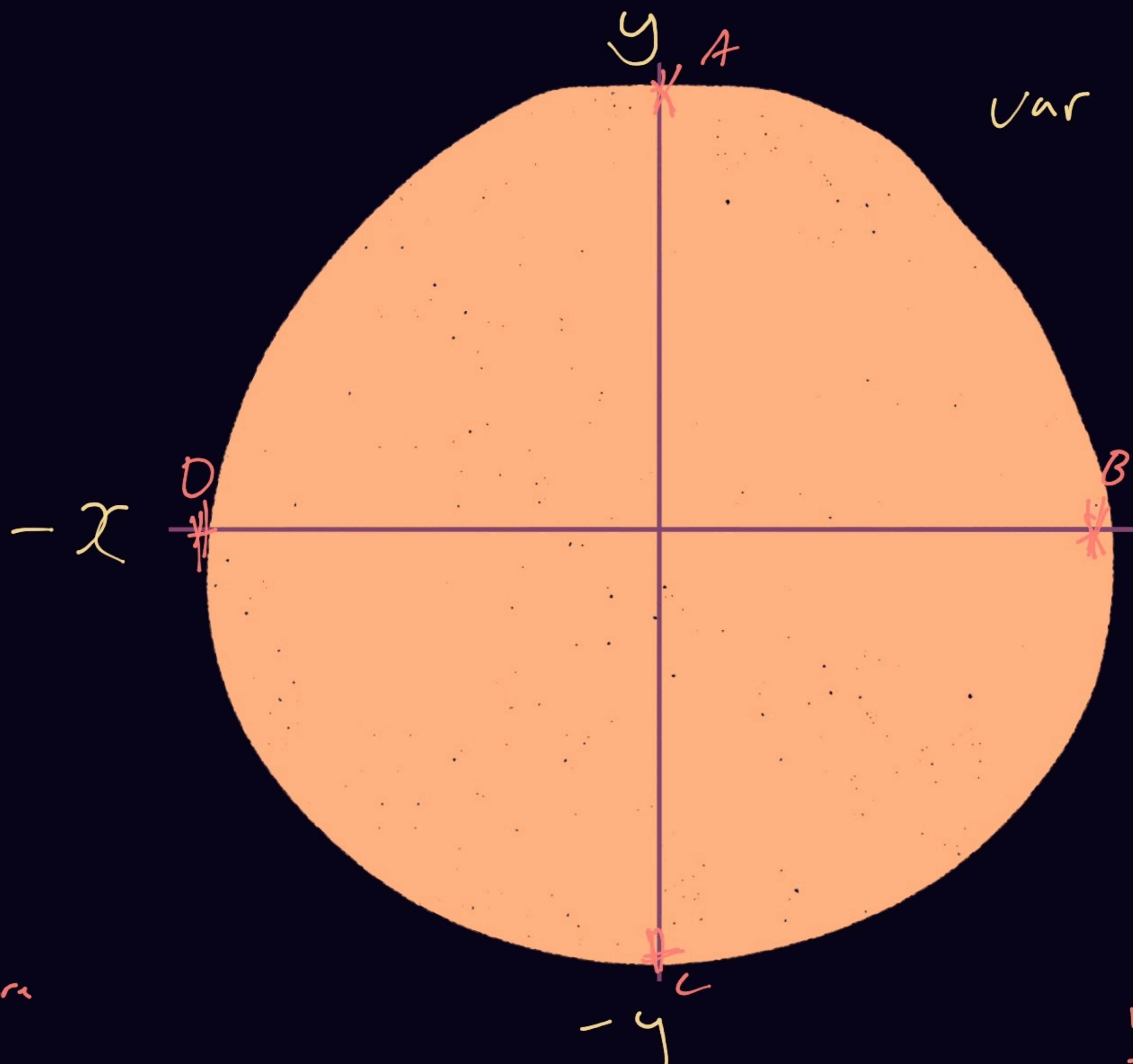
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]

[c, d, e, f, g, a, b]

[0, 2, 4, 5, 7, 9, 11]

Y

Left Thumstick



var Move vector 2



(x, y)

Examples:

$$A = (0, 1)$$

$$B = (1, 0)$$

$$C = (0, -1)$$

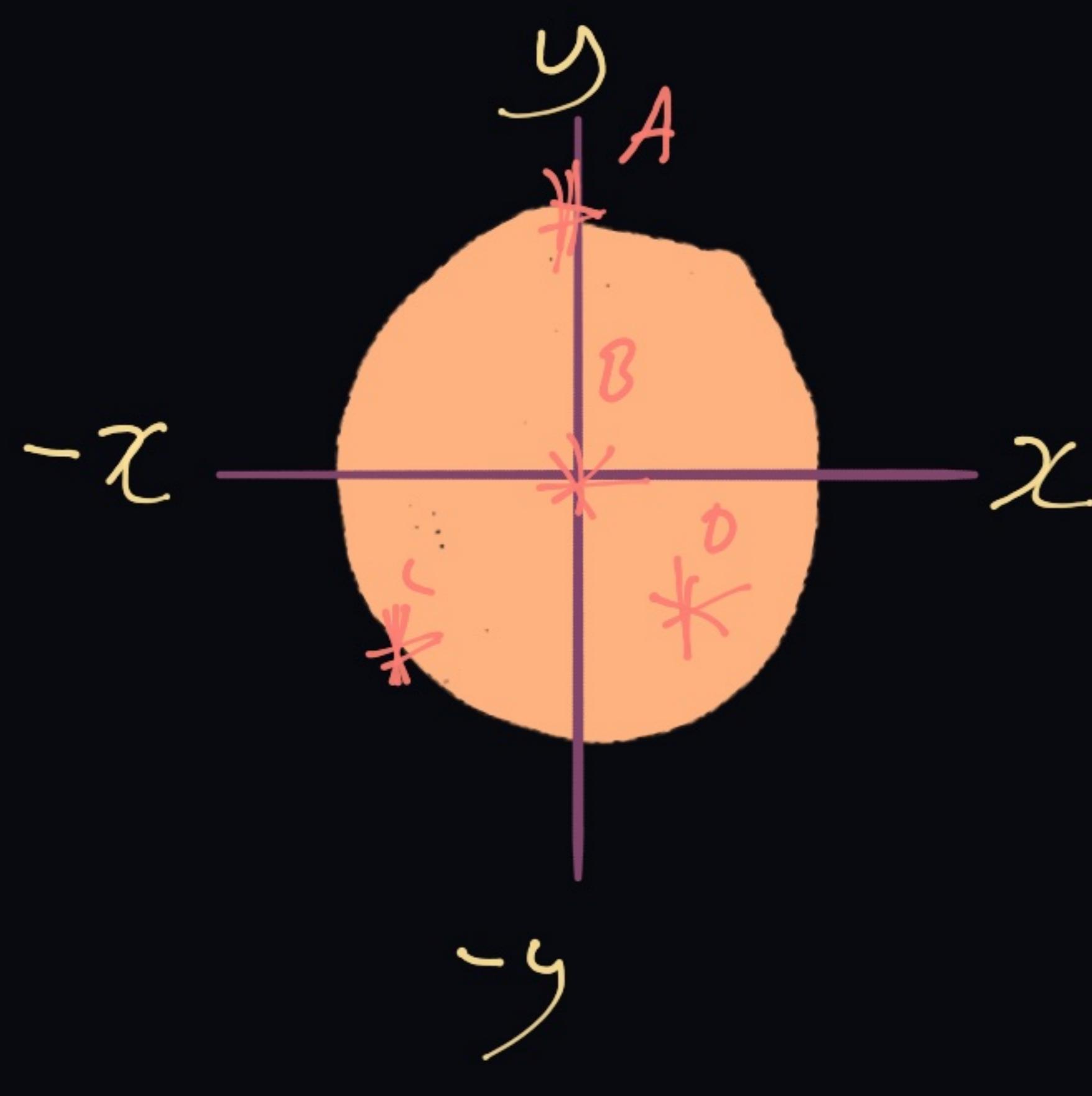
$$D = (-1, 0)$$

{

All expressed as $|P|$

A, B, C, D are
an example of
a 4-way movement
system

Convert Direct stick data to absolute values for each axis \rightarrow Absolute = Distance to zero $\Rightarrow -1 = 1, 1 = 1$
 $-2.35 = 2.35, 0 = 0$
etc..



Direct Values
 $A = (0, 1)$

$B = (0, 0)$

$C = ($

Absolute values
 $(0, 1)$

$(0, 0)$

Absolute x
Absolute y

360°

what is the Circumference?

$$r = ?$$

$$C = 2\pi r$$

$$2 \cdot \pi \cdot 1$$

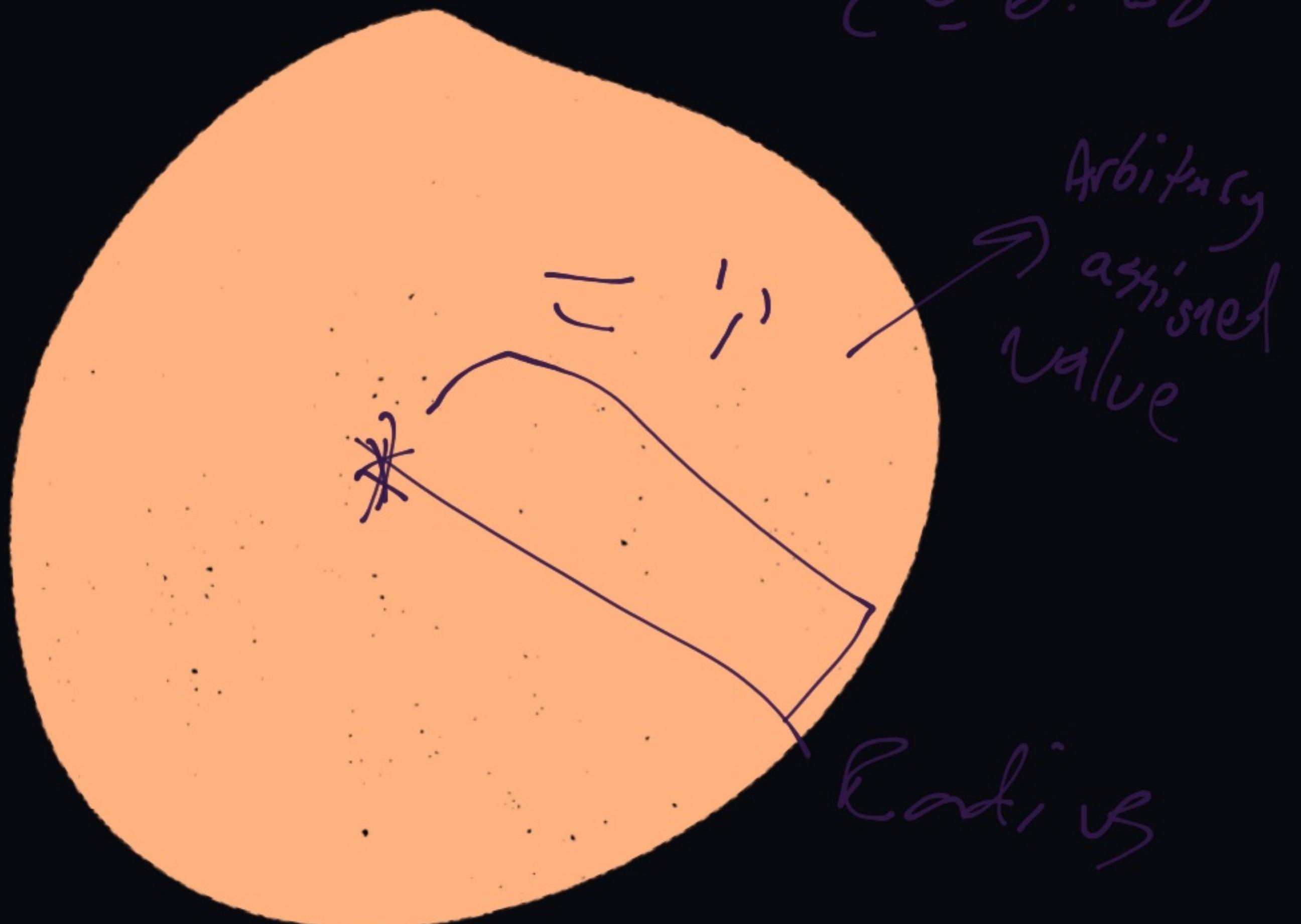
$$C \approx 6.28$$

(0, 0) → Fasted state

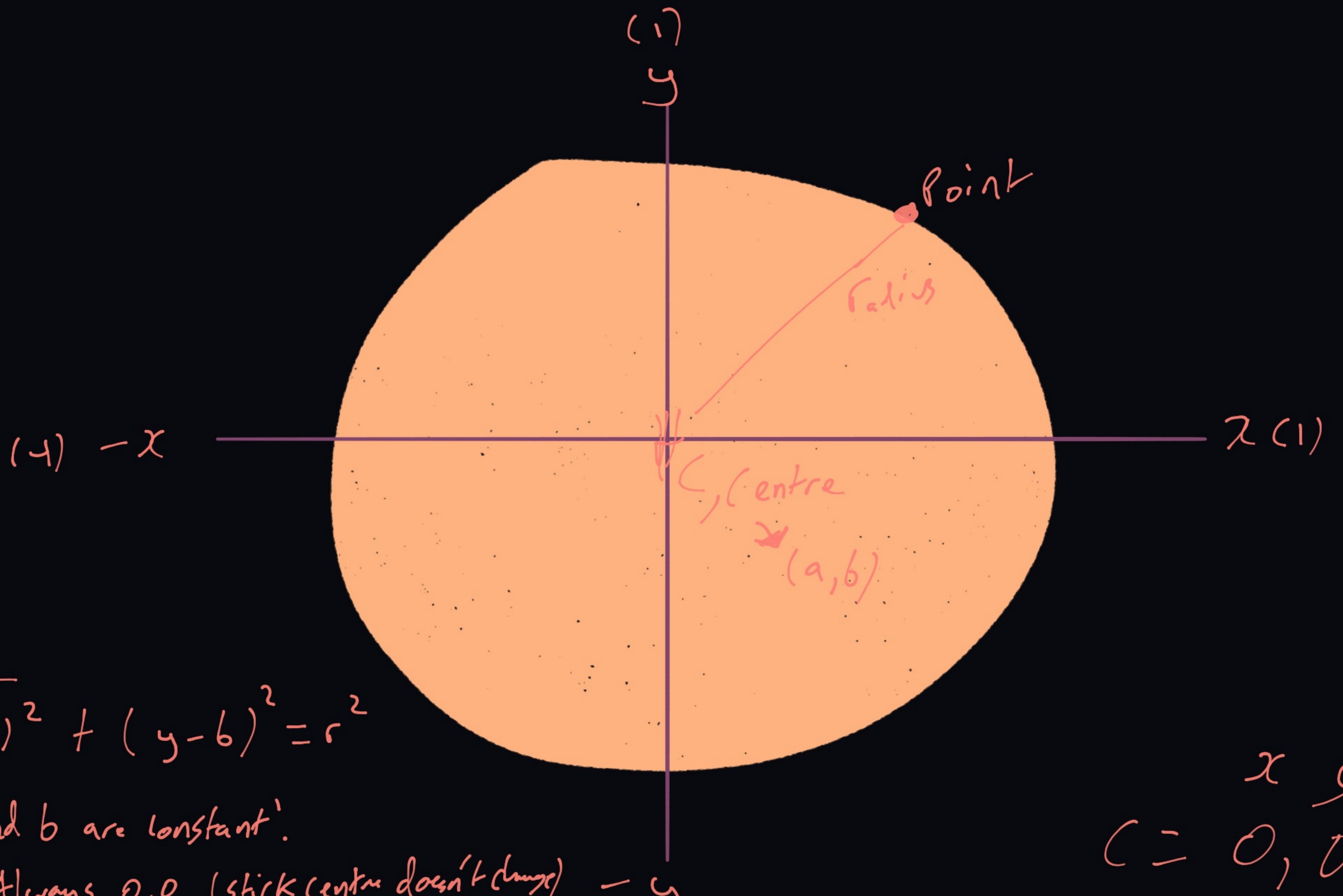
No
acceleration

0 $\frac{d}{dt}$
Radius

Max Acceleration?



"A circle is just a set of all points that are exactly 'r' units away from the center"



Key

$$(x-a)^2 + (y-b)^2 = r^2$$

a and b are constant.

↳ Always $0,0$ (stick centre doesn't change)

r can never be > 1

$$C = 0, 0 \quad x \quad y$$

triggerVol []

↳ 4 elements, all BoxCollider 2D

triggerVol[0].size → Vector2 (x, y)

Scale to fill screen

[| horizontal edges, (0, arenaY .. 1)

— vertical edges (arenaX size, 0)

TODAY!

- RECORD AUDIO LOOPS!
- FIGURE OUT PLAYER TRACK!
 - ↓ TIMING
- SYNTHS
- DRUMS
- IMPLEMENT TO UNITY!

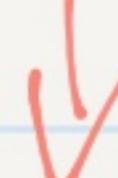
THIS WEEK!

- COLOUR-CHANGING DUST MECHANIC
- POTATO A.I.
- PLACEHOLDER V.I.
- ELEVATOR PITCH

DREAM PAD BASS



ATTACK SYNTH



WHIRLY



MELODY (1, 2, 3, 4, 5)



MODERN 808



PUMPING ELECTRO BASS



LEAH_01



LEAH_02



← COULD COME IN TOGETHER!

- 5-bar loop

- ↳ currently - Metronome current measure

- % 5

- ↳ IF no reminder (i.e. is divisible by 5, play loop)

- possible solutions

- ↳ only use single bar loops

- ↳ max delay of 2 seconds (almost always lower in reality)

- ↳ Implement 'buffer' loop that is always safe to play, very short

Single-bar implementation

- Each major track is divided into ' χ ' number of bars
e.g. 5 bars total length, Comprised of 1 bar loops