

# 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

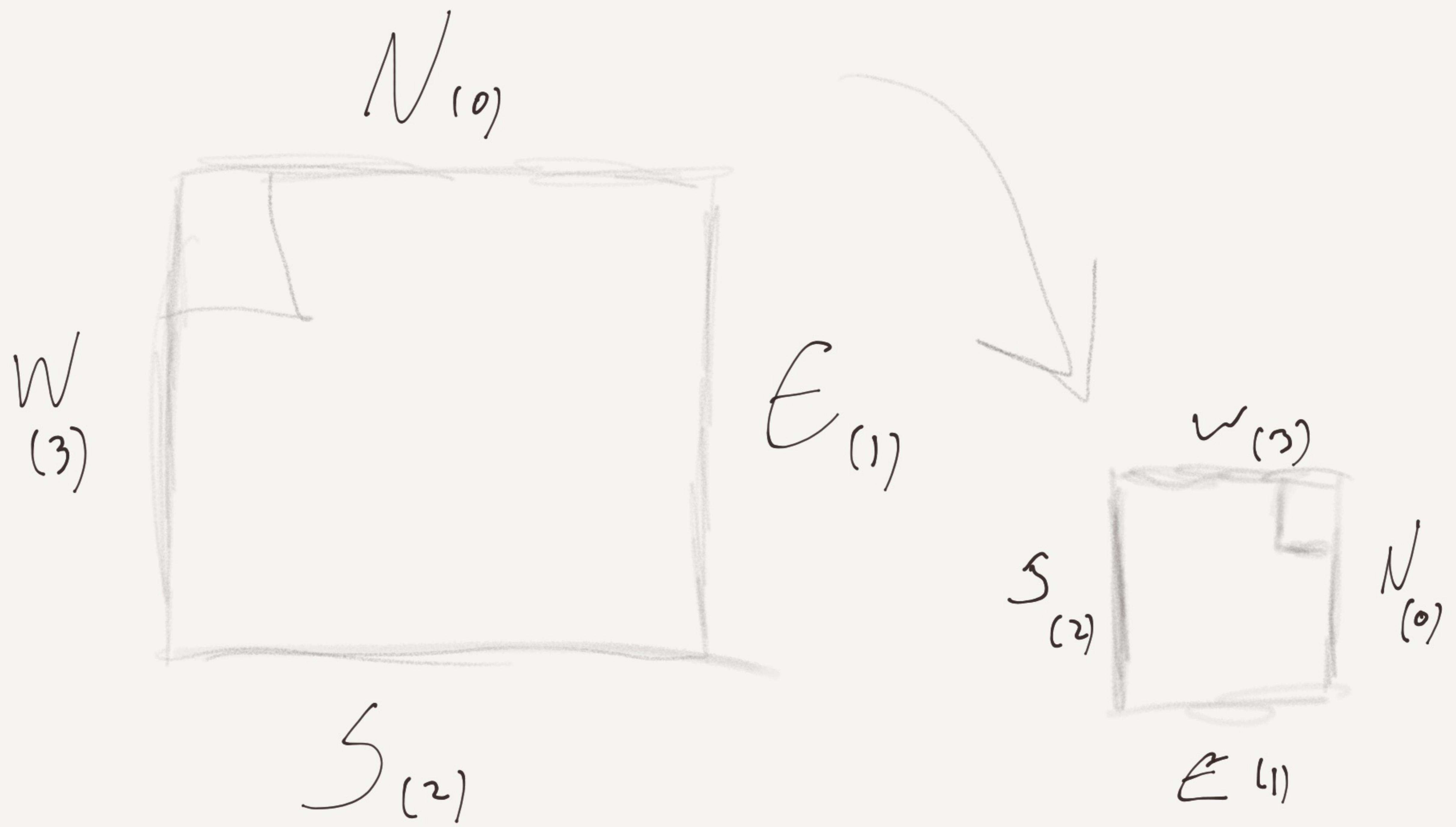
## Wear

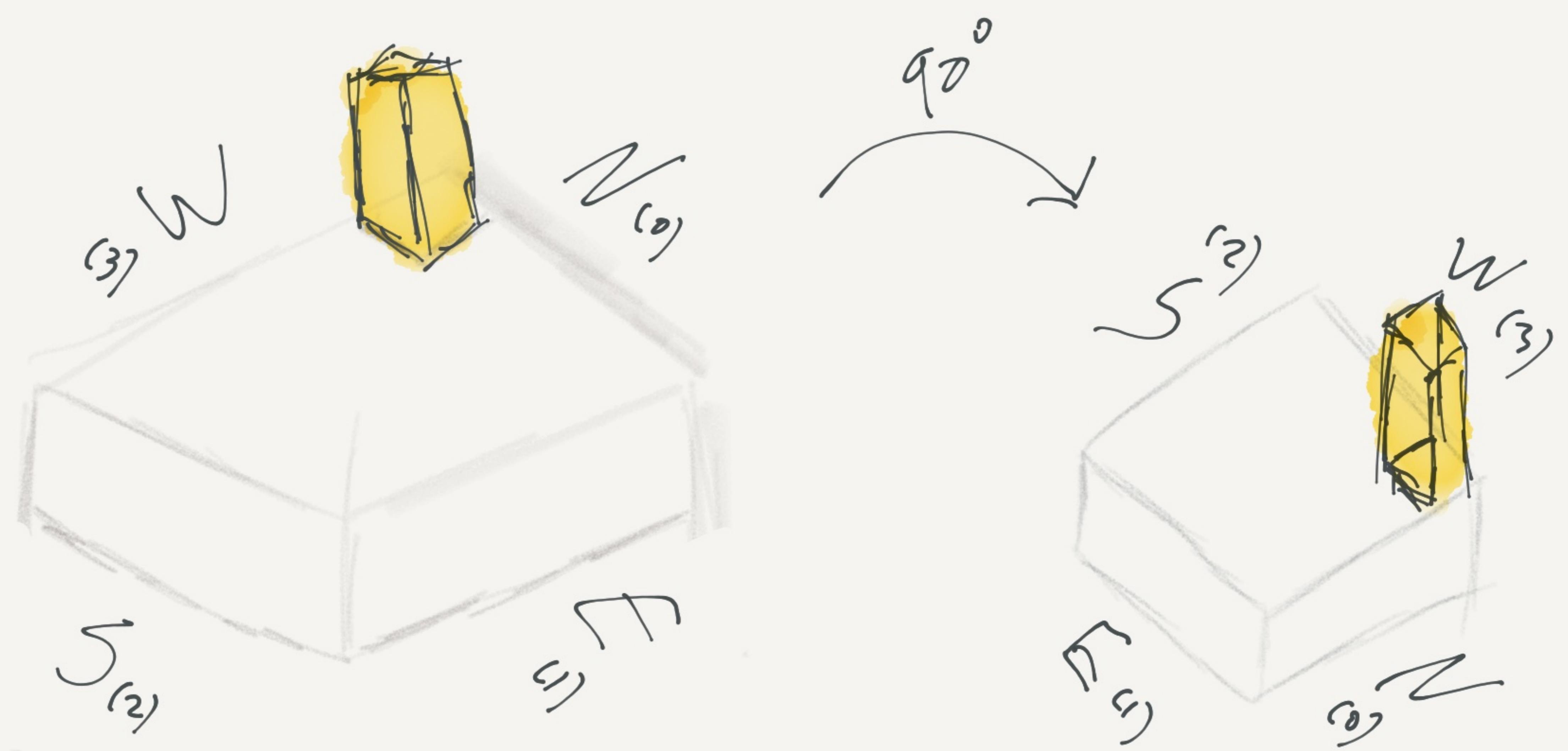
- Feature / asset complete
- only bugfixing / gameplay balancing
- No bugs don't prevent product shipping

## Gold Master

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

Later prototyping is always good.  
Hello.  
clicking





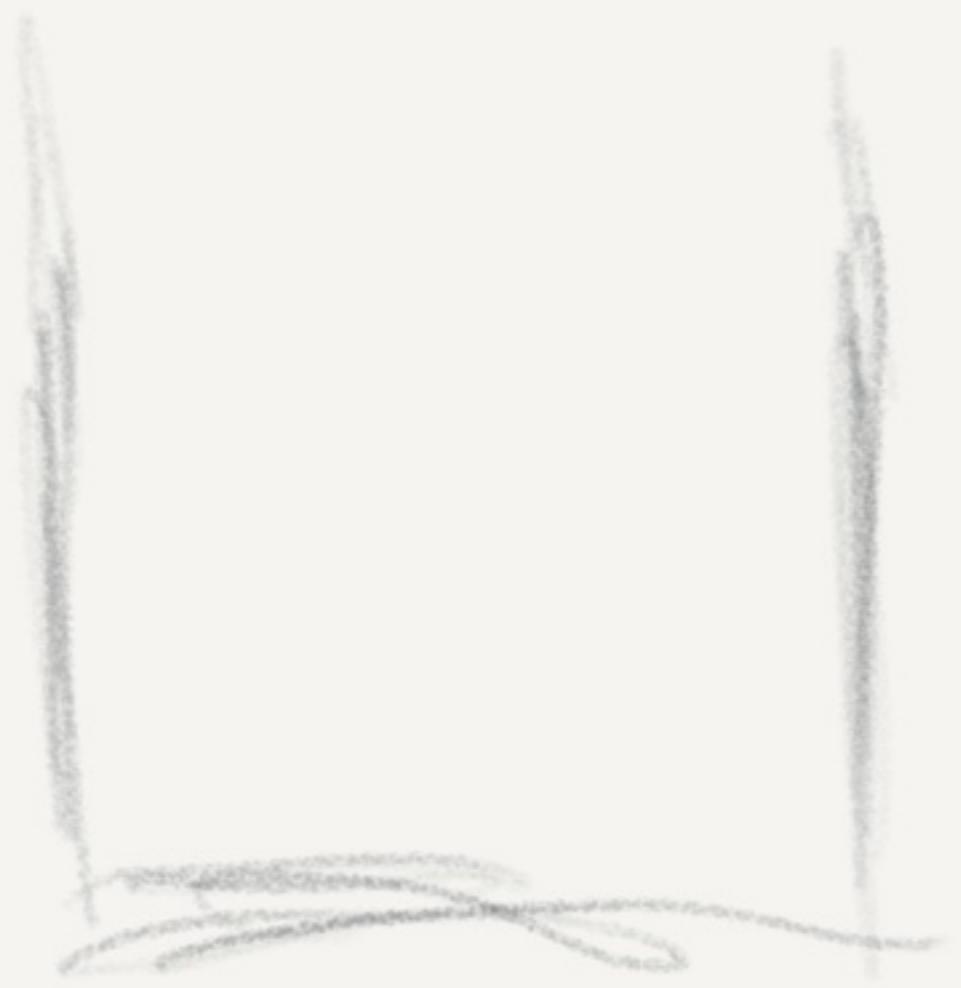
Possible values

Default  $\rightarrow$  0123

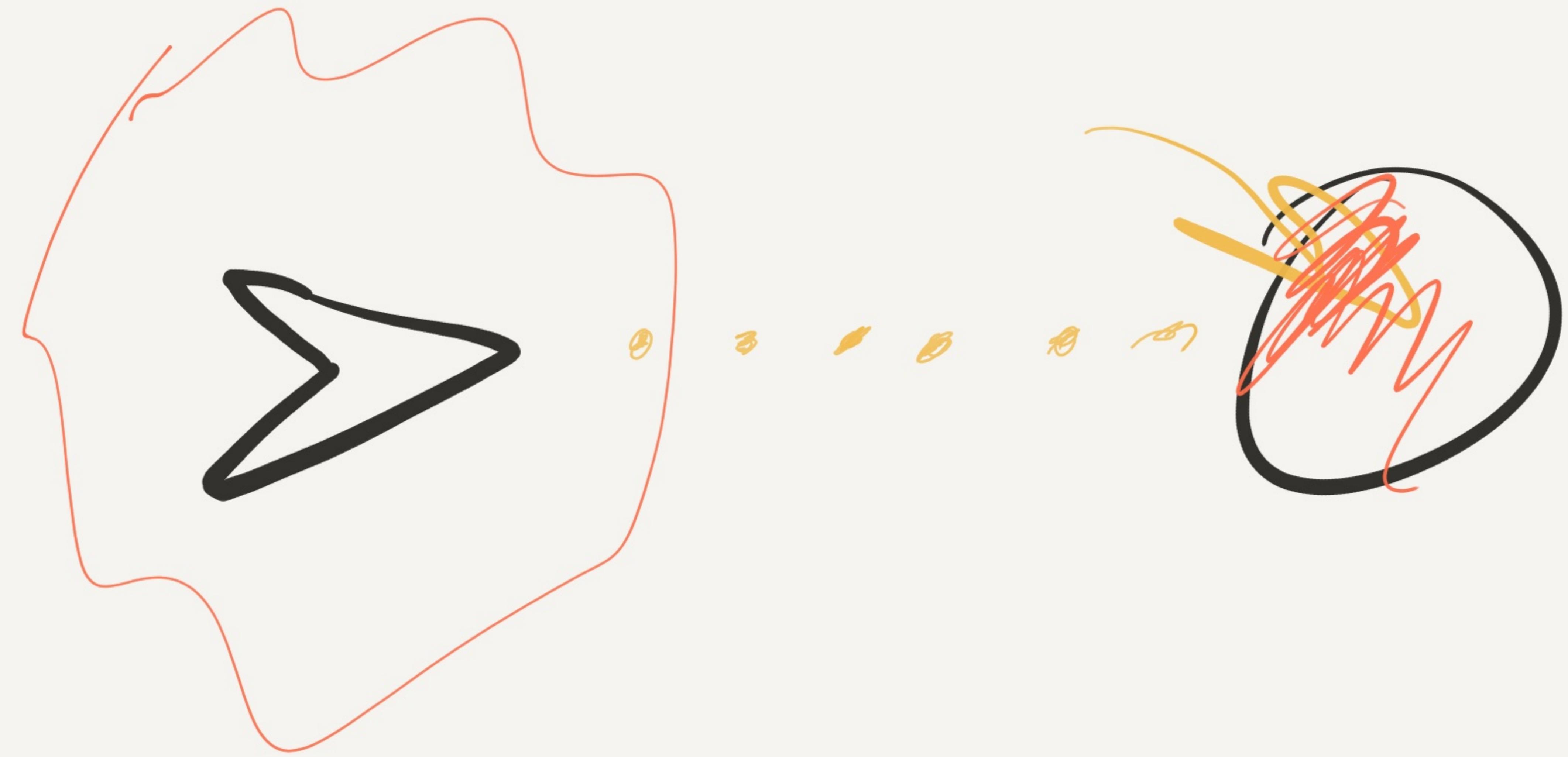
$90^\circ \rightarrow 1230$

$180^\circ \rightarrow 2301$

$270^\circ \rightarrow 3012$



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





Space dust → Particles?



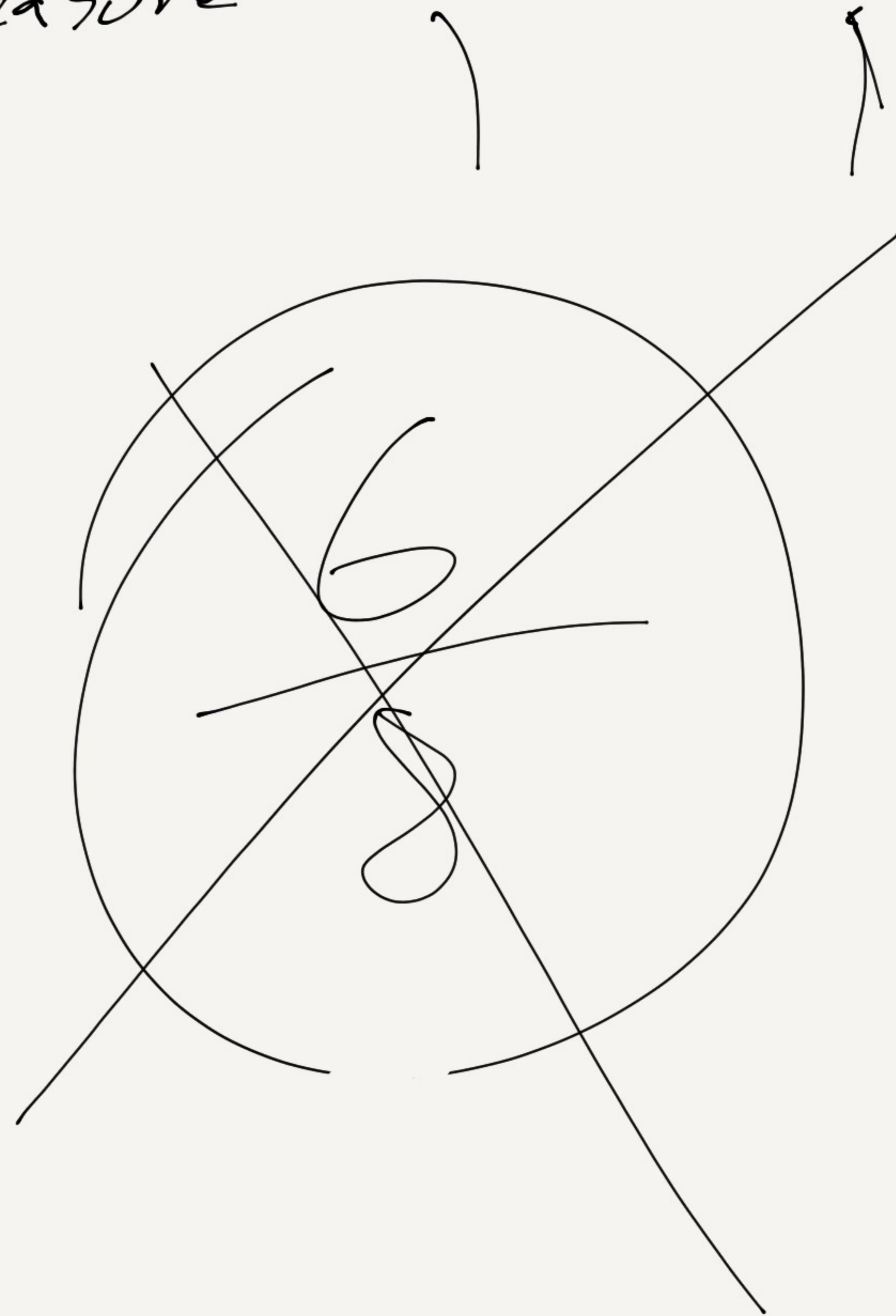
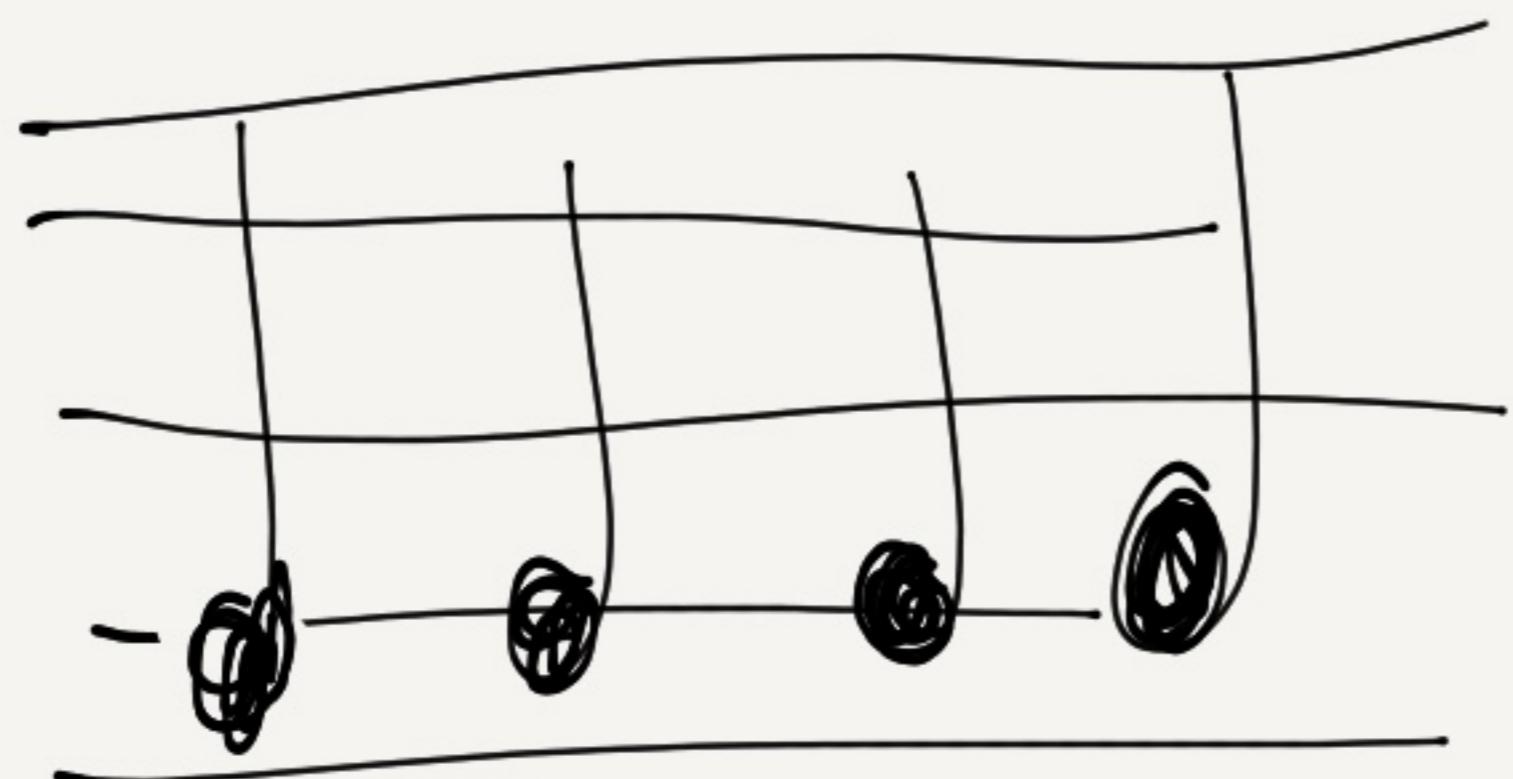
4 → 4 in the measure



→ 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  $\sim 180$  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 second = 2 beats

↳ Effectively 1 beat / 1 second  
at 60 bpm

4 seconds = 4 beats

↳ Effectively 1 beat / 1 second  
at 120 bpm

Key

→ <sup>(key)</sup>

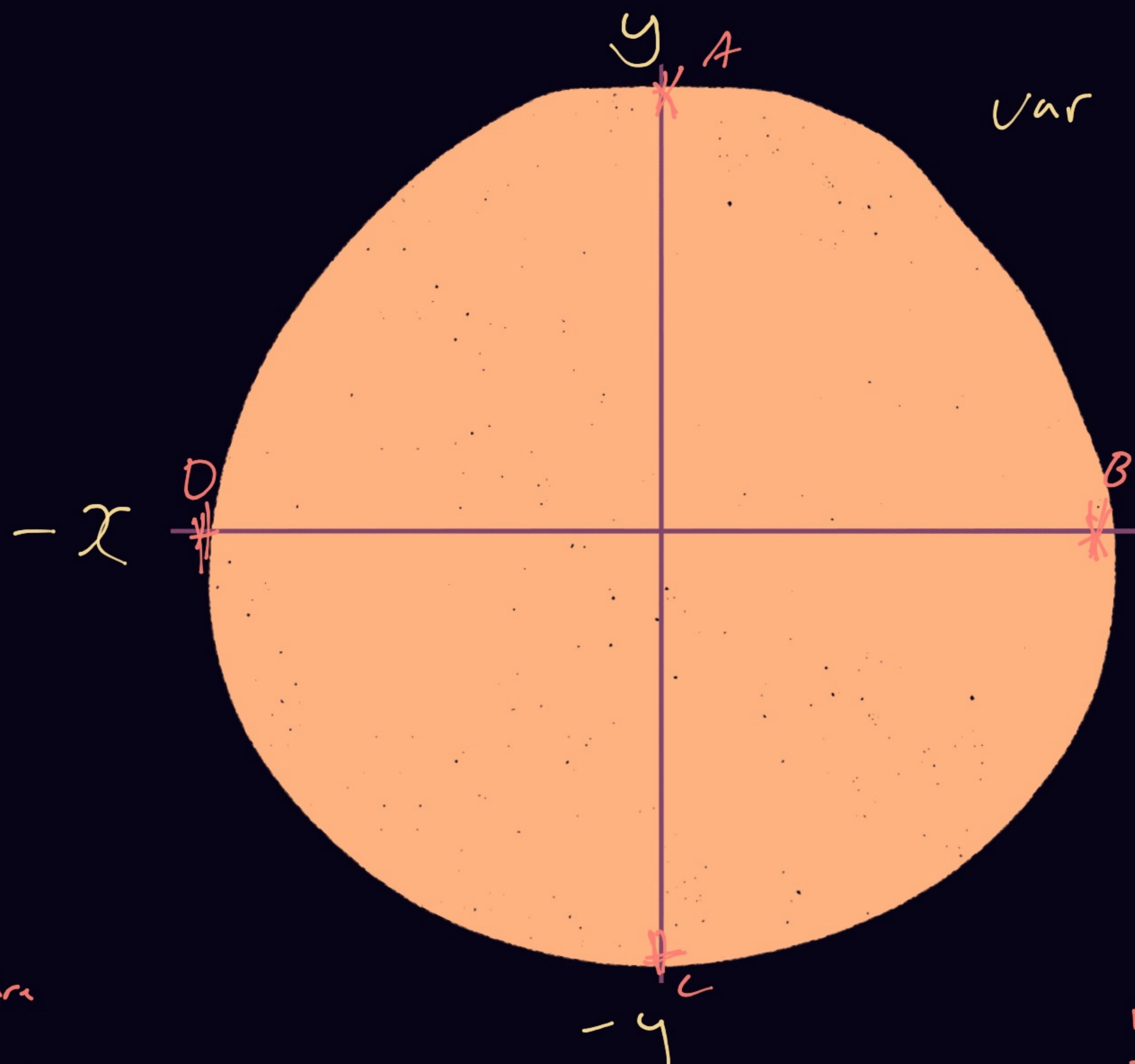
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]

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

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

Y

# Left Thumstick



var Move vector 2



$(x, y)$

Examples:

$$A = (0, 1)$$

$$B = (1, 0)$$

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

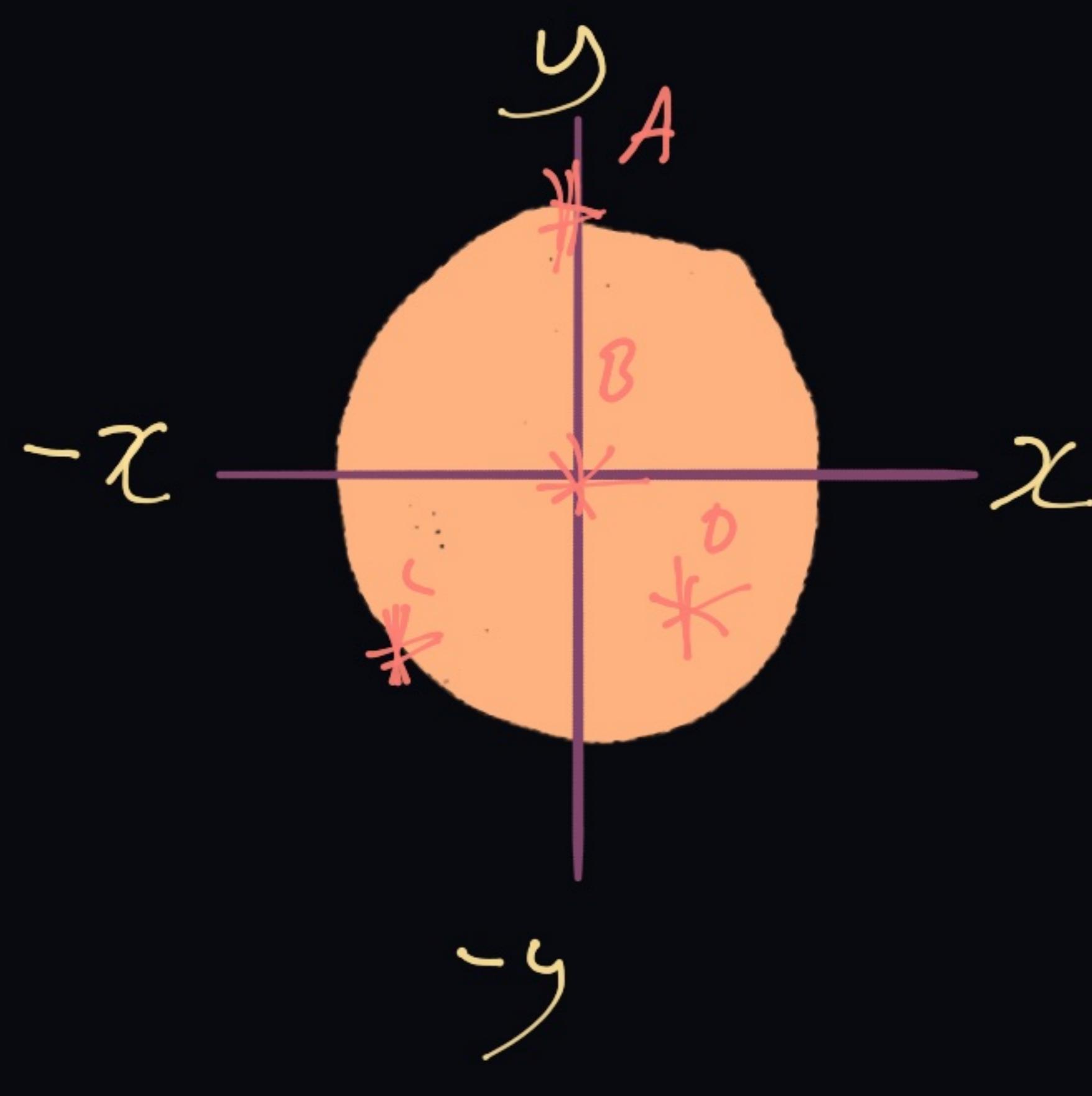
$$D = (-1, 0)$$

{

All expressed as  $\begin{pmatrix} p \end{pmatrix}$

$A, B, C, D$  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  $y$

$360^\circ$

what is the Circumference?

$$r = ?$$

$$C = 2\pi r$$

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

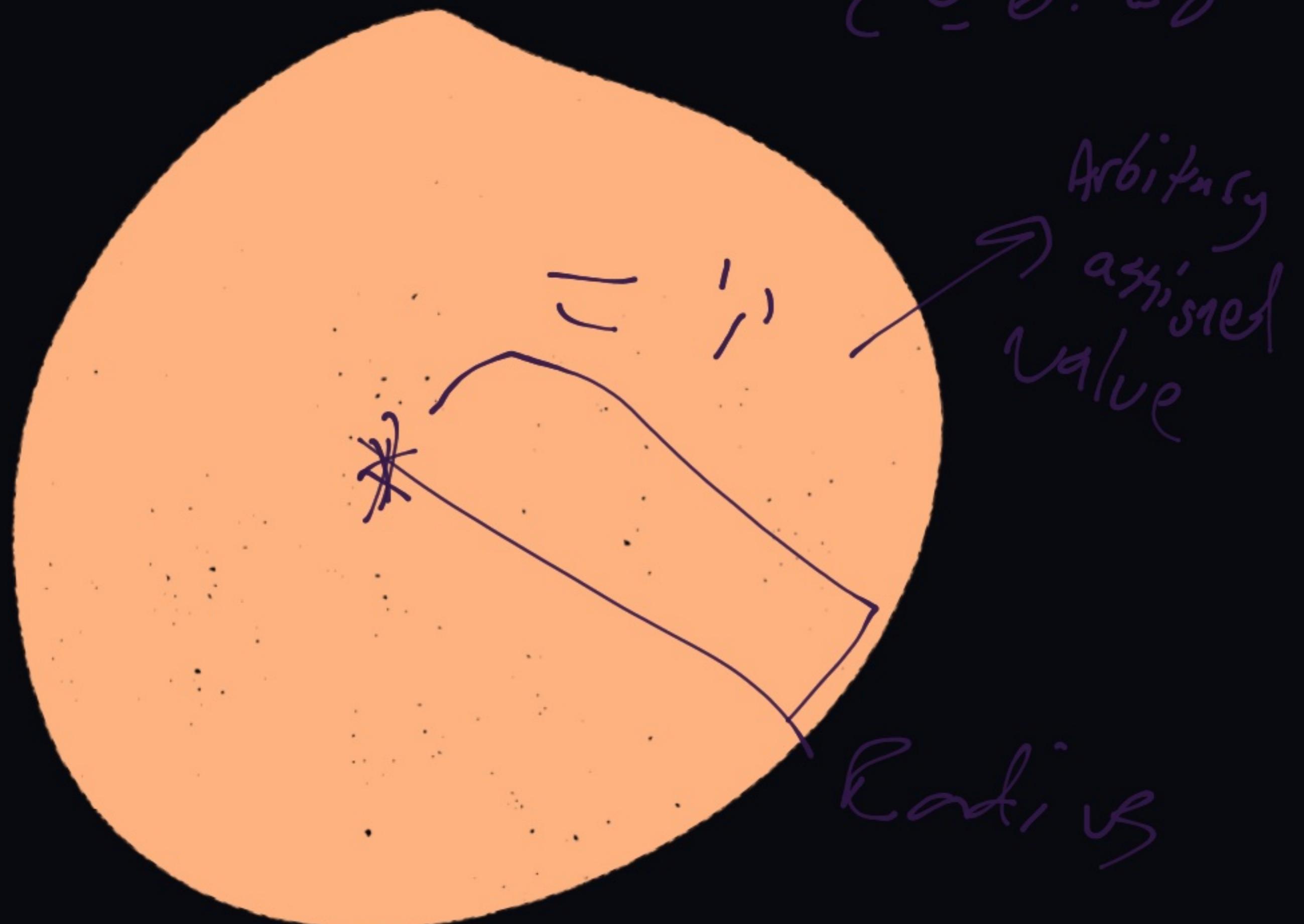
$$C \approx 6.28$$

$(0, 0)$  → Fasted state

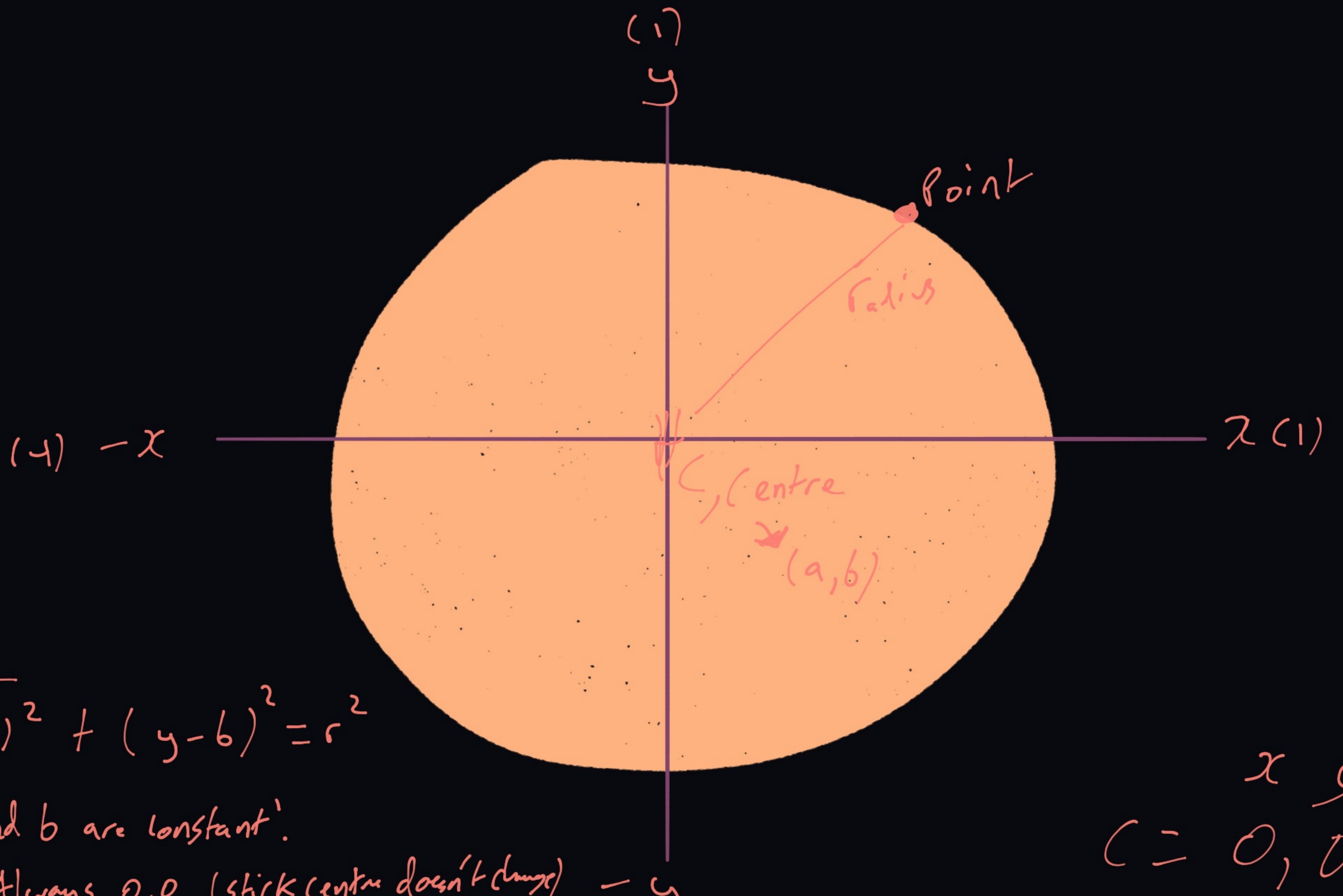
No  
acceleration

0  $\frac{m}{s^2}$  →  $1 \frac{m}{s^2}$   
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!

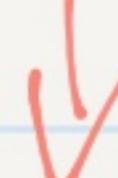
## THIS WEEK!

- 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

