

# DEVELOPMENT GUIDE



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# **DEVELOPMENT**

# DEVELOPMENT FLOWCHART

HIGH CONCEPT

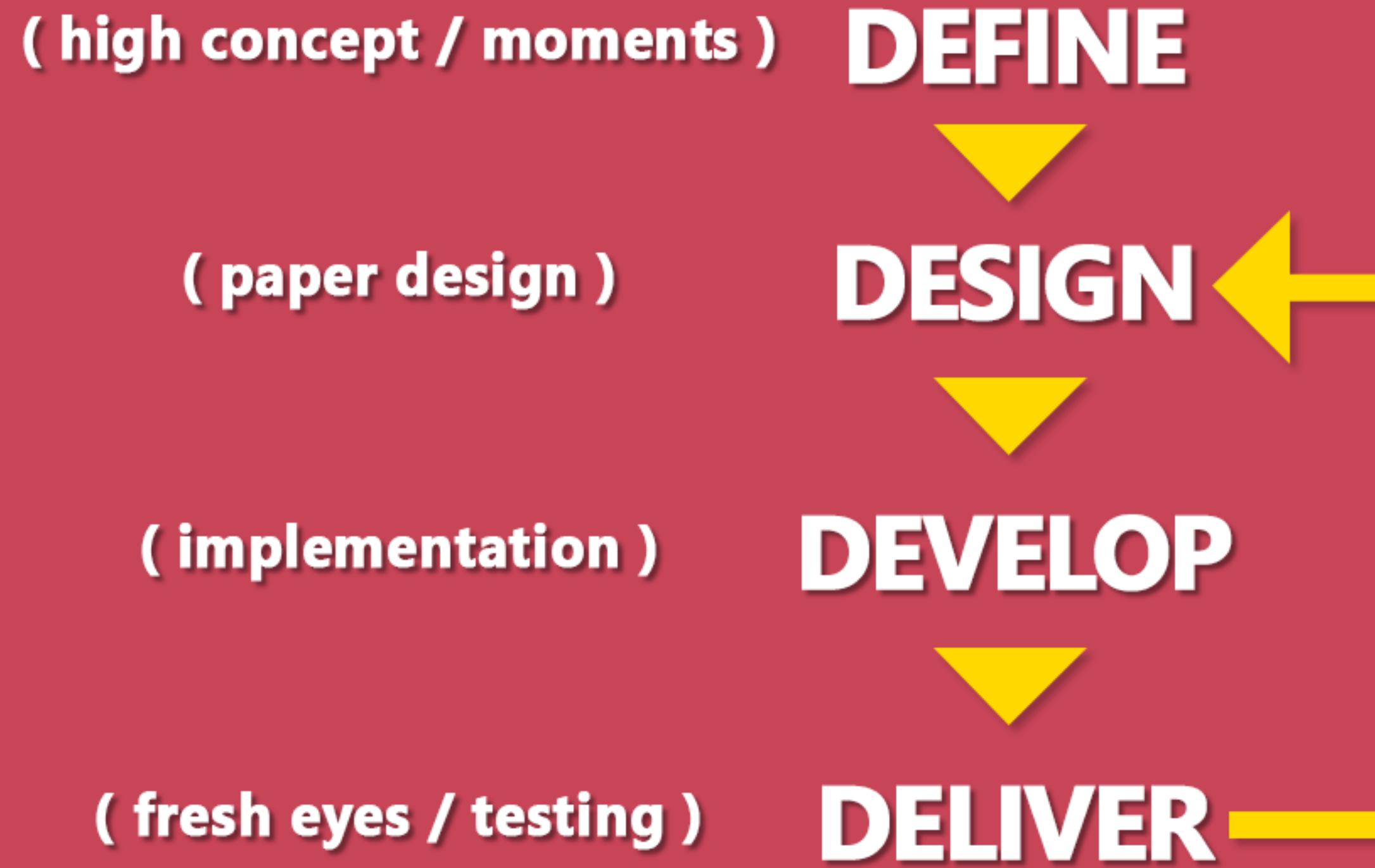
MOMENTS

\* GAME PLAN

SCHEDULE

EXECUTION

# **DESIGN FLOWCHART**



# AESTHETICS

- GAME FEEL
- MARIO STAR POWER-UP

EMOTIONAL

SENSORY

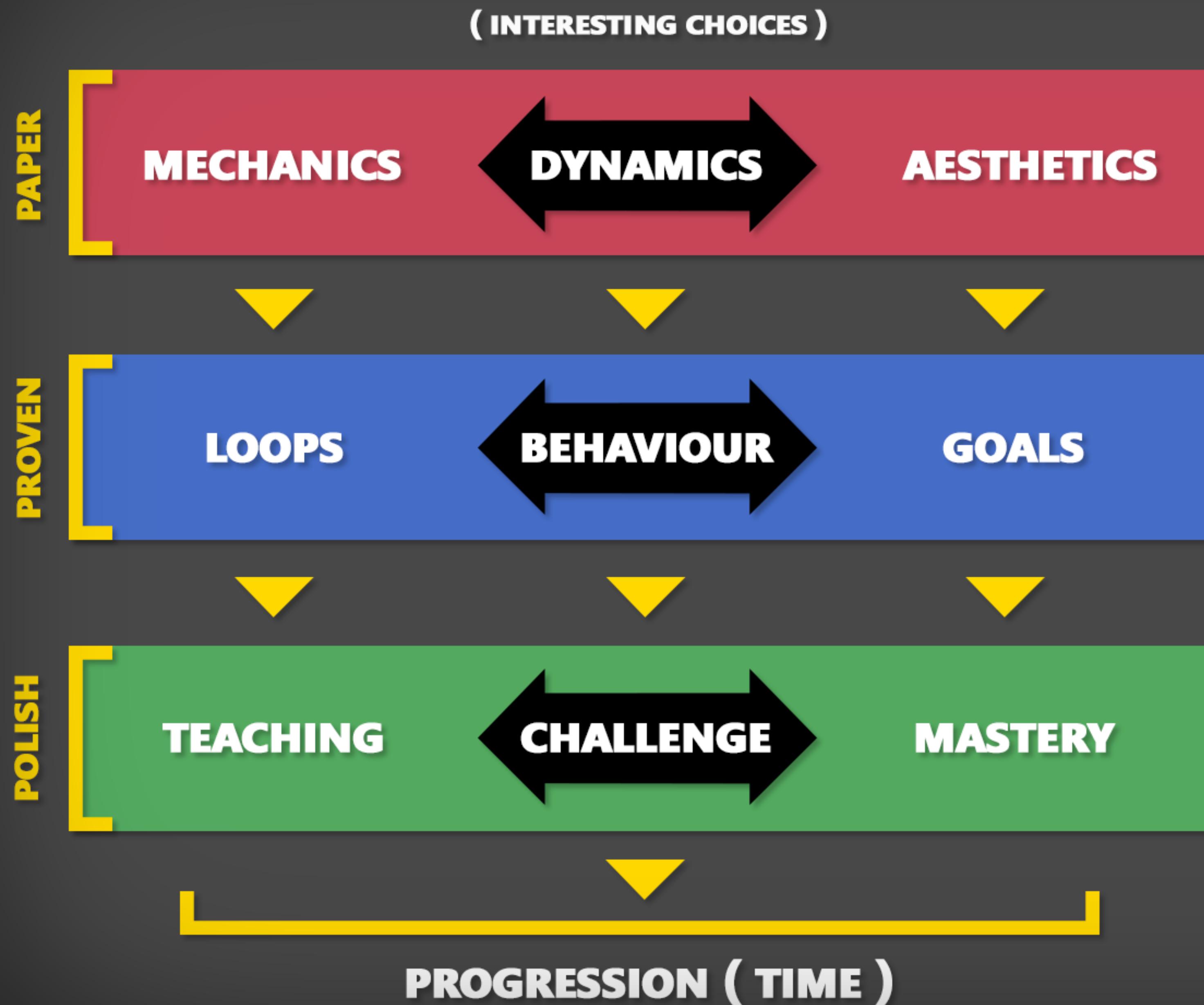


# MDA

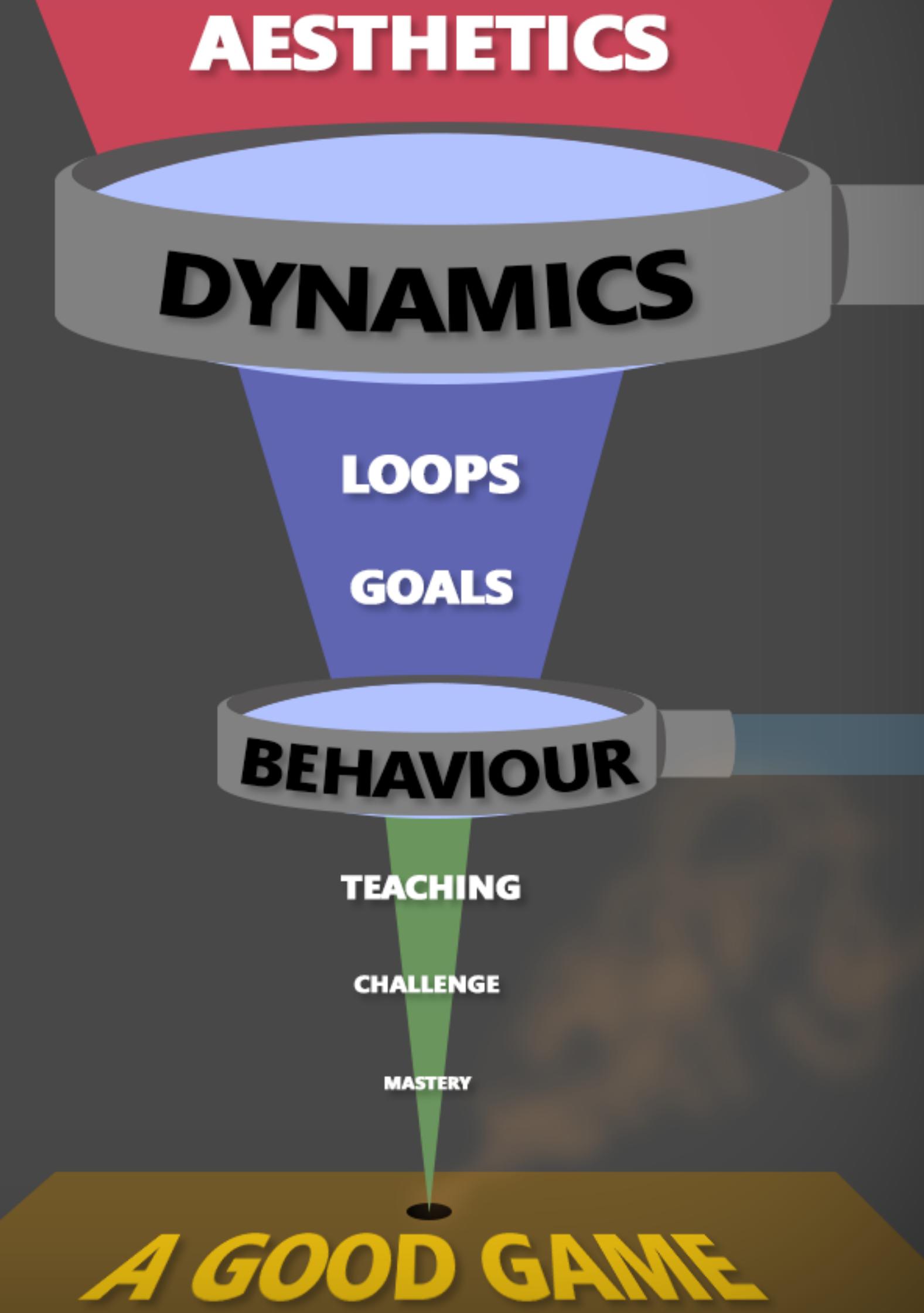
- DESIGN APPROACH
- TEACHING ORDER
- EXPERIENCING ORDER



# DESIGN EVOLUTION

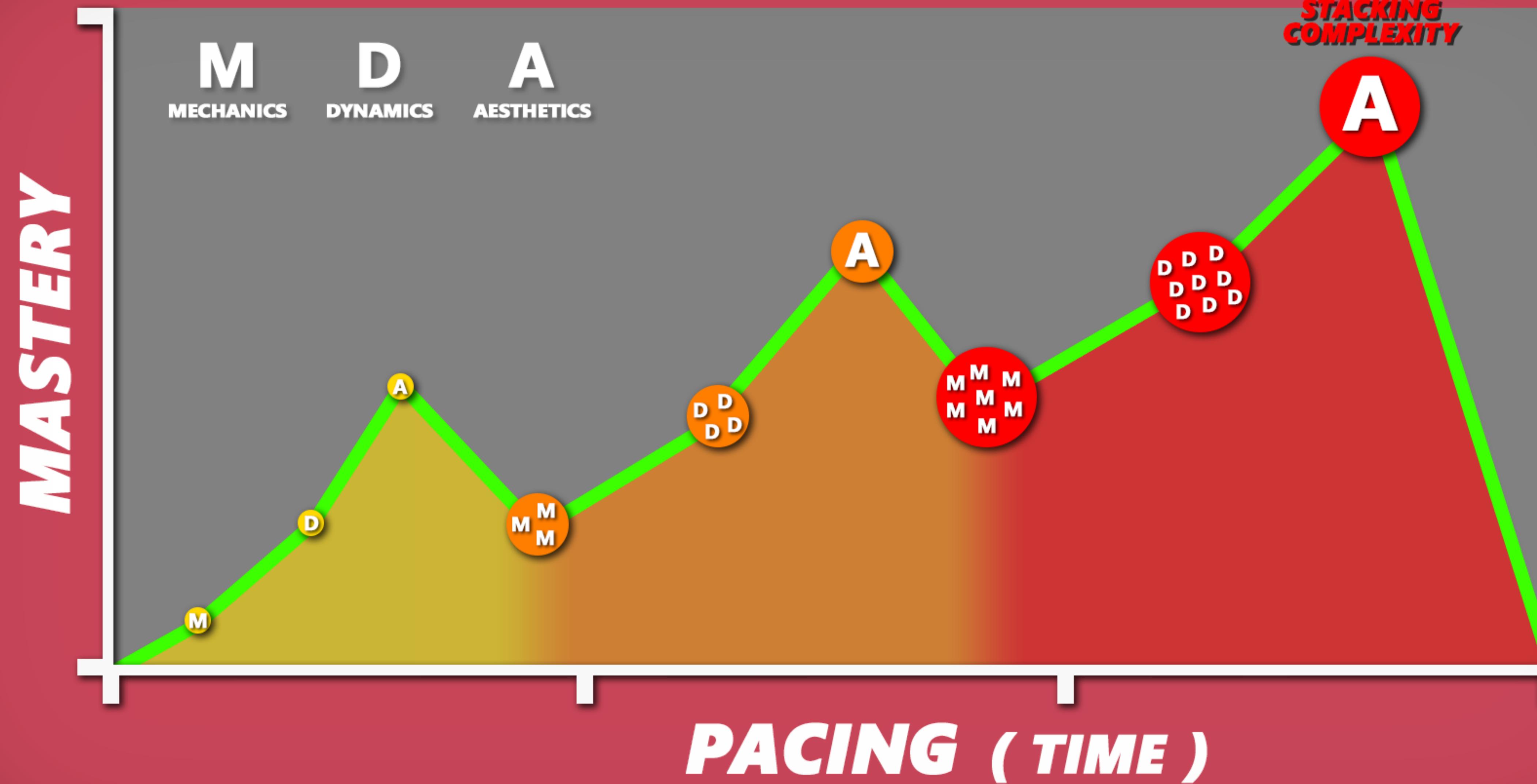


# MECHANICS



# FEATURE MASTERY GUIDE

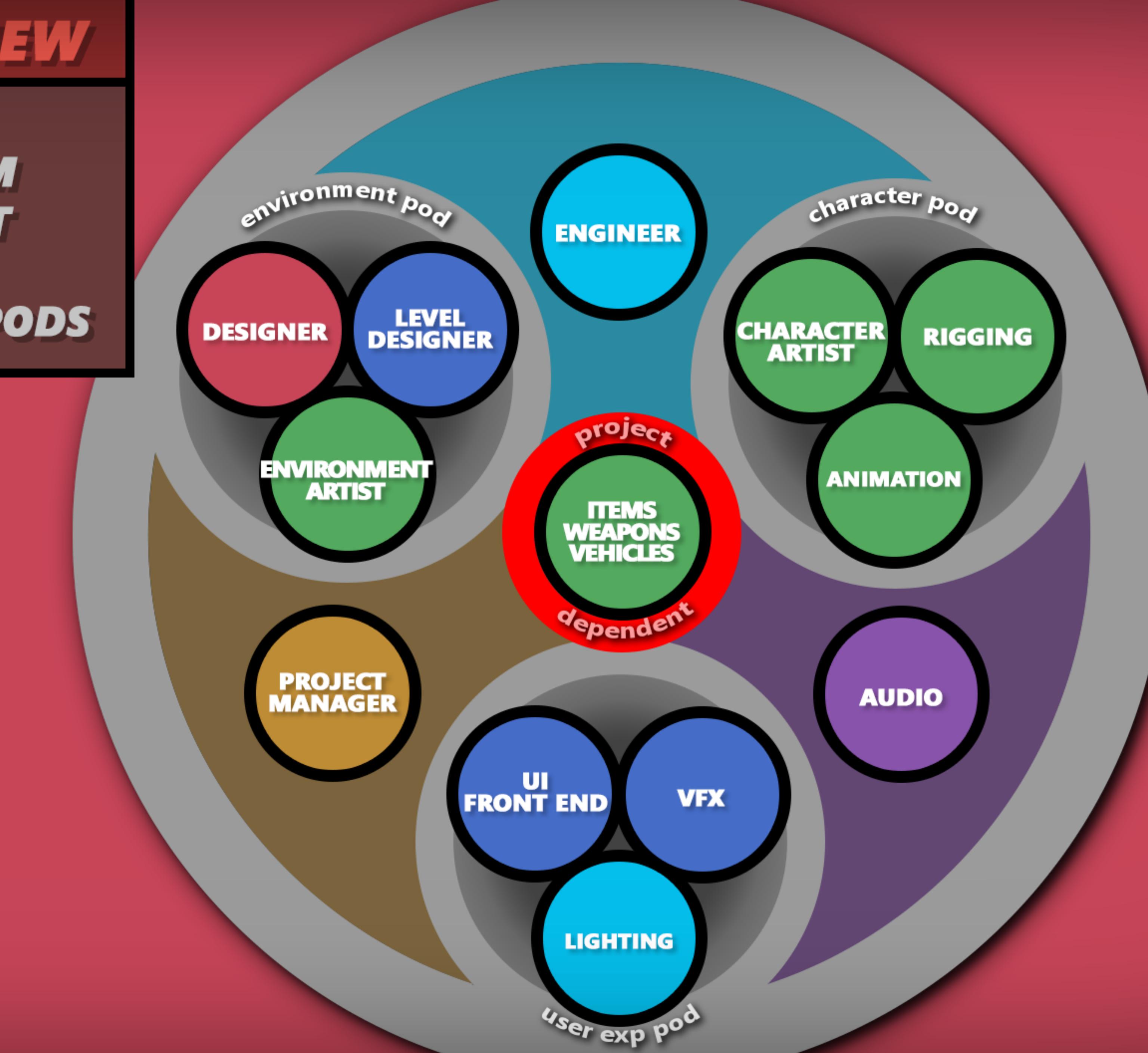
EXPONENTIAL  
STACKING  
COMPLEXITY



# **DOMAINS**

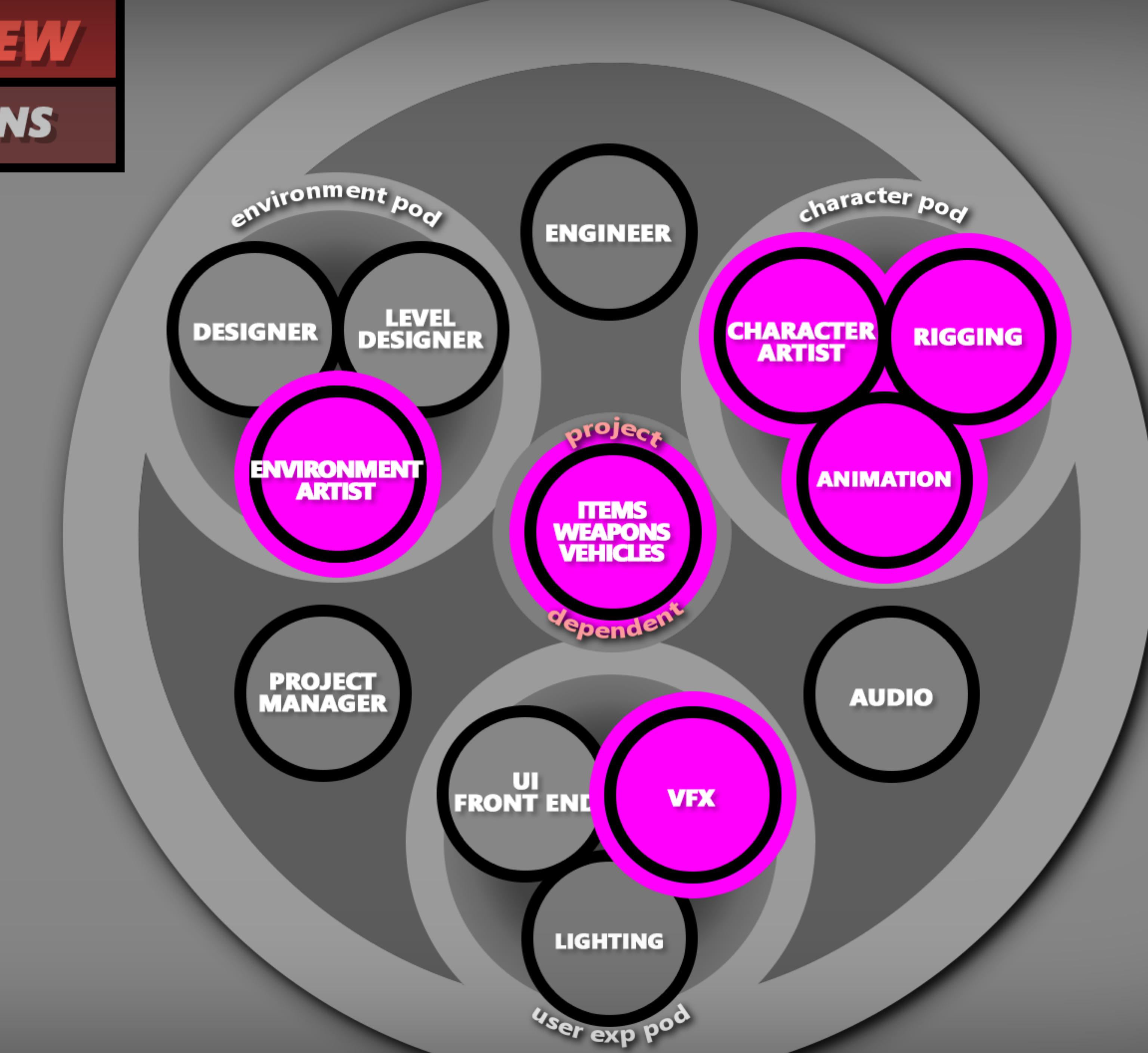
# DOMAIN OVERVIEW

- **PILLAR GUIDANCE**
- **UP & DOWNSTREAM**
- **ACTIVE VS SUPPORT**
- **THE RELAY RACE**
- **COMMUNICATION PODS**



# DOMAIN OVERVIEW

## • YOUR CONTRIBUTIONS



# **ART WORKFLOW**

# CHARACTER WORKFLOW

## IN GAME 1

### PIPELINE TEST

- SCALE TEST
- ANIMATION TEST
- EVALUATE IN-CONTEXT

## SCALEBLOCK

### SKETCH

- BASIC SILHOUETTE
- PROPER SCALE

### SKELETON

- JOINT PLACEMENT
- TEST ANIMATION

### WEIGHTS

- BLOCKING PASS

## GEOMETRY

### NAKED BODY

- DETAILED SILHOUETTE

### ACCESSORIES

- CLOTHES
- PERSONAL EFFECTS

### HAIR

- SCULPTED
- CARDS

## IN GAME 2

### GEOMETRY TEST

- RE-IMPORT GEOMETRY
- GRayscale TEST
- FINAL ANIMATIONS

## RIG

### GEO TEST

- UV TEST ( NON-MANIFOLD CHECK )
- MATERIAL BLOCKING CHECK

### RIGGING

- JOINT ADJUSTMENT
- ANIMATION READY

### WEIGHTS

- BLOCKING PASS
- CALISTHENICS
- SMOOTH PASS

## IN GAME 3

### MATERIAL TEST

- RE-IMPORT GEOMETRY
- SURFACE RESPONSE

## MATERIALS

### UVS

- OPTIMIZED UVs

### BAKING

- HIGH & LOW GEOMETRY

### TEXTURING

- EXPORT MAPS

# BAKED ENVIRONMENT WORKFLOW

## IN GAME 1

### PIPELINE TEST

- PLAYSPACE-AFFECTING PROPS

## SCALEBLOCK

### SKETCH

- BASIC SILHOUETTE
- PROPER SCALE

### COLLISION

- BLOCKING VOLUME

## IN GAME 2

### GEOMETRY TEST

- RE-IMPORT GEOMETRY
- GRayscale TEST

## GEOMETRY

### MAN-MADE

- PROPS
- SHELL PROPS

### NATURE

- FOLIAGE

## IN GAME 3

### MATERIAL TEST

- BLENDING TEST
- LIGHTING TEST

## MATERIALS

### UVS

- OPTIMIZED UVs

### BAKING

- HIGH & LOW GEOMETRY

### TEXTURING

- EXPORT MAPS

# TILED ENVIRONMENT WORKFLOW

## IN GAME 1

### PIPELINE TEST

- SHELL & TILING TEST
- PLAYSPACE-AFFECTING PROPS

## SCALEBLOCK

### SKETCH

- BASIC SILHOUETTE
- PROPER SCALE

### MATERIAL SKETCH

- GRayscale Base

### COLLISION

- Blocking Volume

## IN GAME 2

### GEOMETRY TEST

- RE-IMPORT GEOMETRY
- TILING TEST
- GRayscale Test

## MATERIALS

### PLANNING

- MATERIAL LIST
- SHADER LIST

### TILING MATERIALS

- TINTING
- VARIATIONS
- TRIM SHEETS

## GEOMETRY

### MAN-MADE

- PROPS
- SHELLS
- SHELL PROPS

### NATURE

- LANDSCAPE
- WATER TABLE

## IN GAME 3

### MATERIAL TEST

- UV TEST
- BLENDING TEST
- LIGHTING TEST

## TEXTURING

### UVS

- TEXEL DENSITY  
10.24 | 1024 ETC....

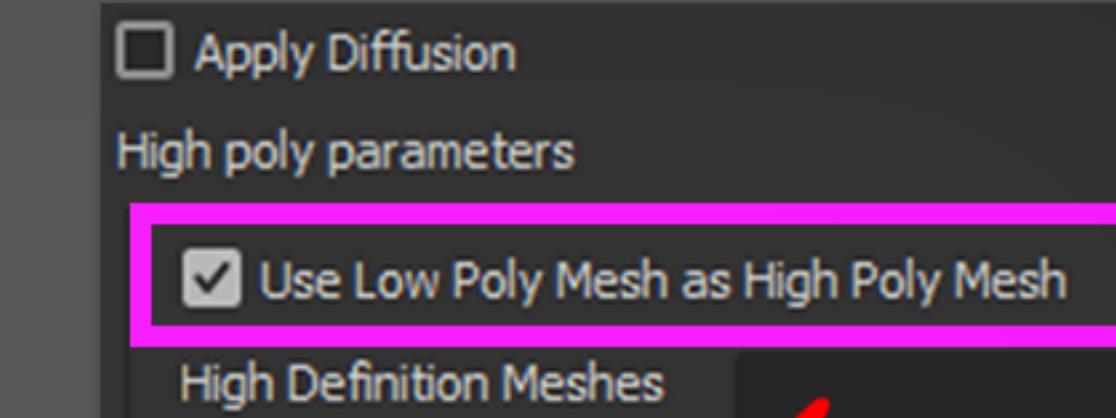
### MATERIAL BLENDING

- VERTEX PAINTING  
( HEIGHT BLENDING )
- DECALS

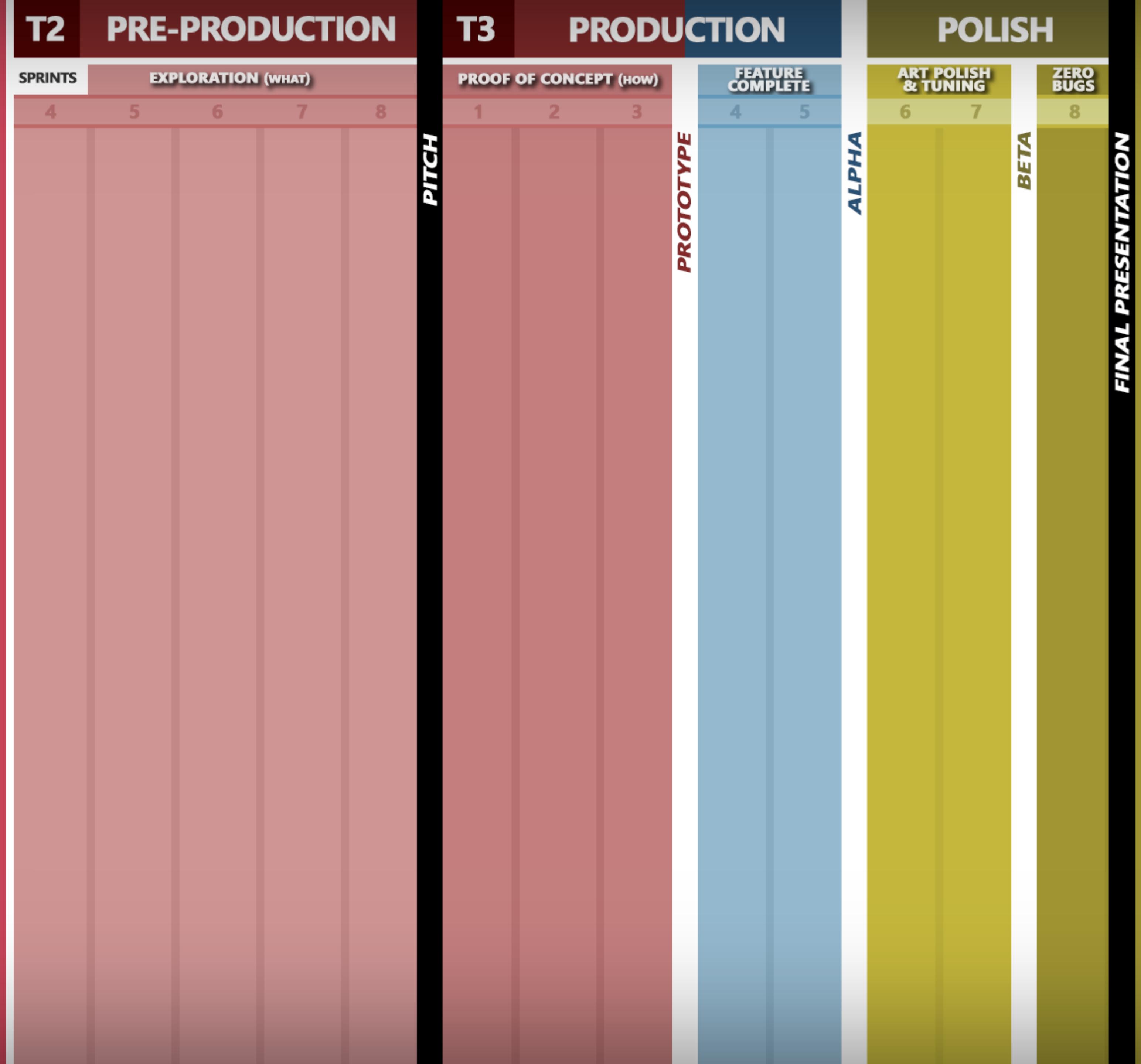
# WORKFLOW OPTIONS

- DESIGNER & ZBRUSH = WORK IN PASSES
- ASSET TREATMENT IMBALANCED
- BALANCE QUANTITY & QUALITY

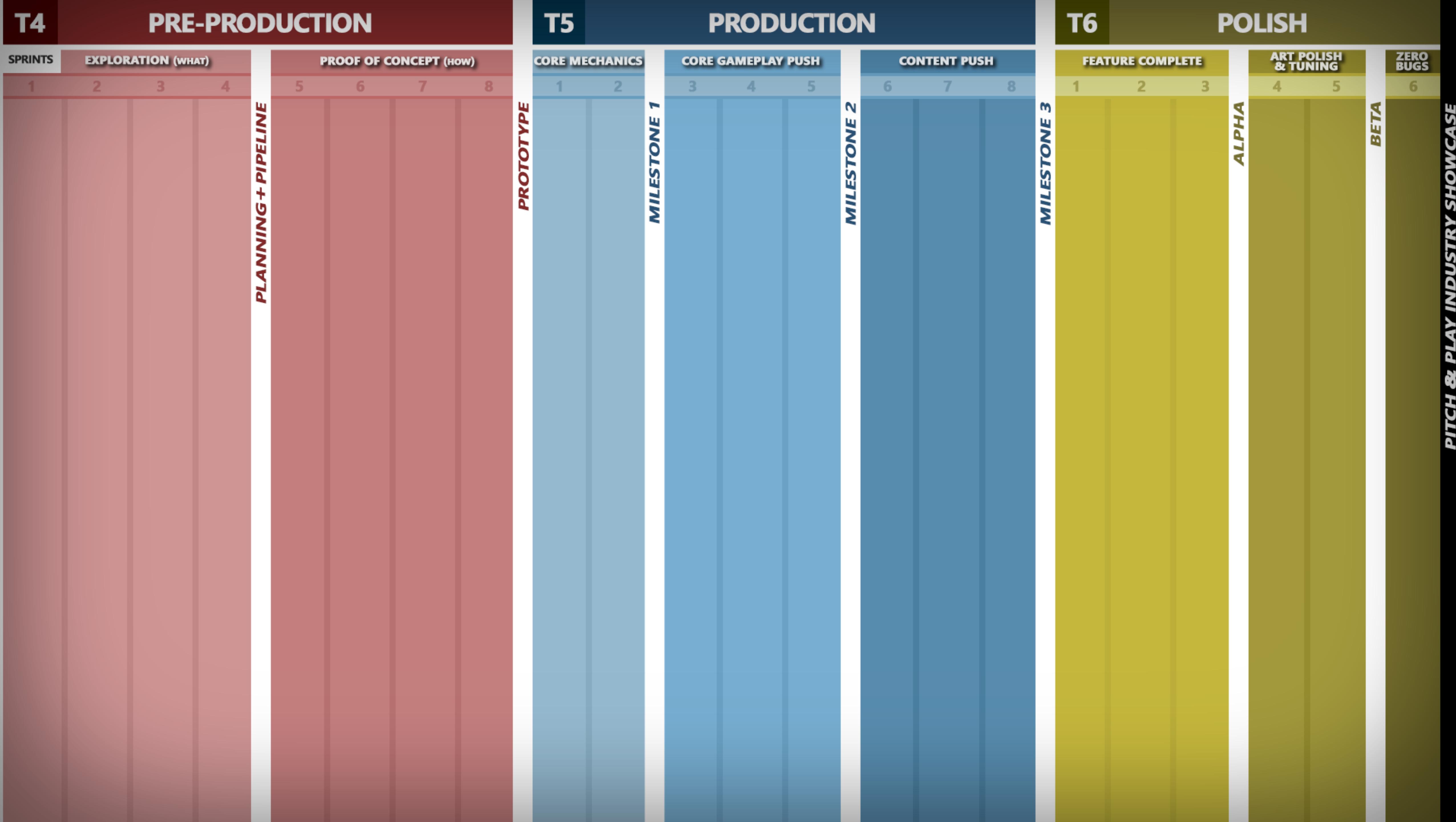
A		B	C
BAKING	SUBSTANCE PAINTER	TILING	LOW BAKING
GEOMETRY	HIGH & Low REZ	MID REZ	Low or Mid REZ???
SILHOUETTE	No BEVELS	NEEDS BEVELS	BEVELS???
UVS	0-1 SPACE	TEXEL DENSITY	0-1 SPACE
TEXEL DENSITY	BALANCE →	← BALANCE	BALANCE
TEXTURE SIZE	LARGE	SMALL	Very Large???



# **TEAM PROJECT**



# **FINAL PROJECT**

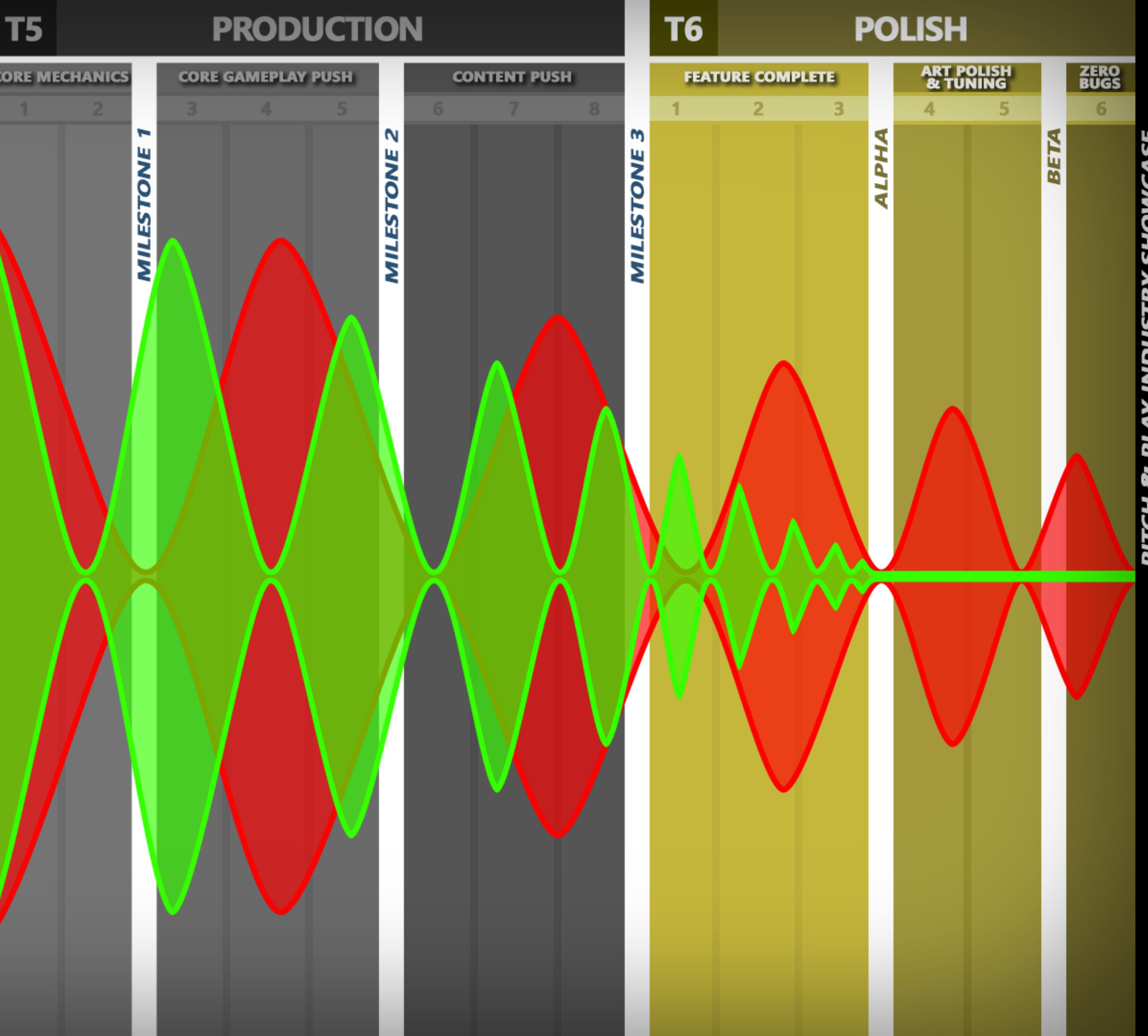




# DEV PATTERNS

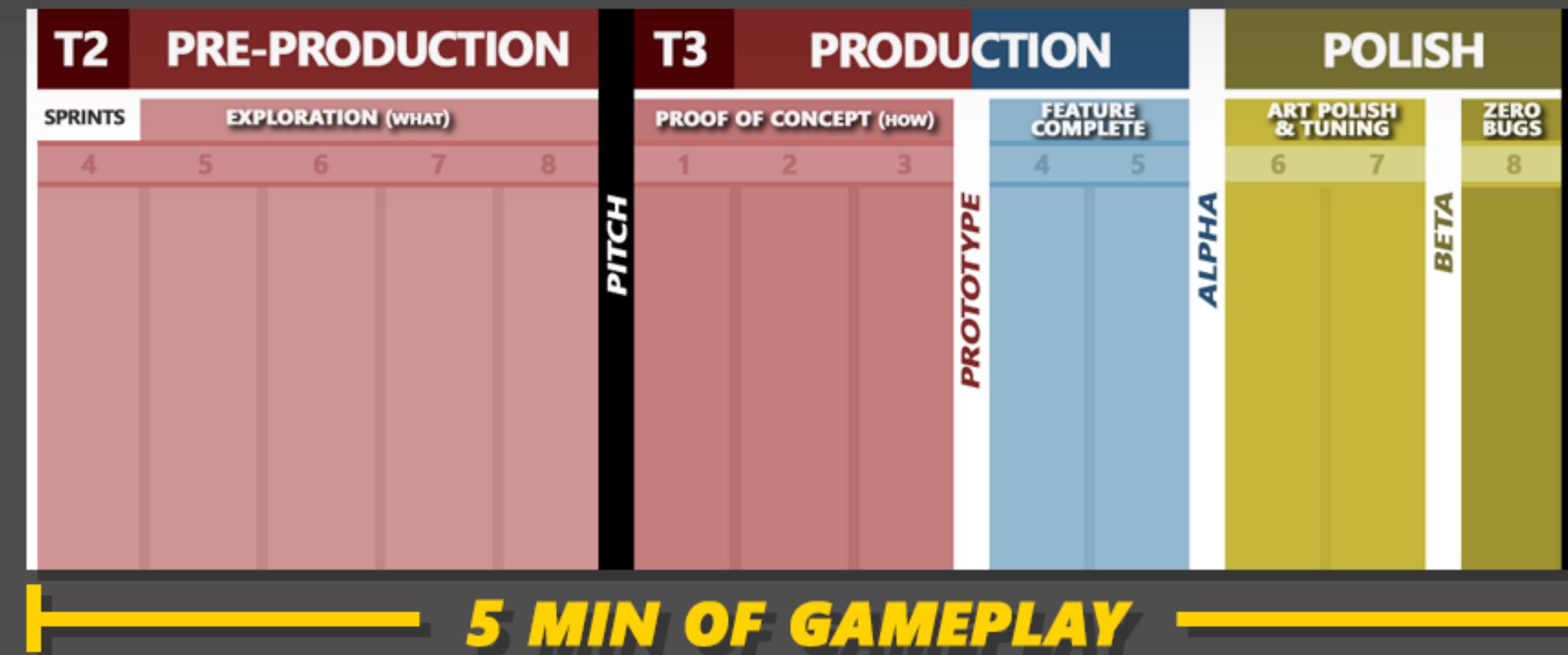
- **PAPER VS IMPLEMENTED**
- **ITERATION RATE**
- **FINDING THE FUN**
- **POLISH = QUALITY**
- **GAMEPLAY PRIORITY**

PI



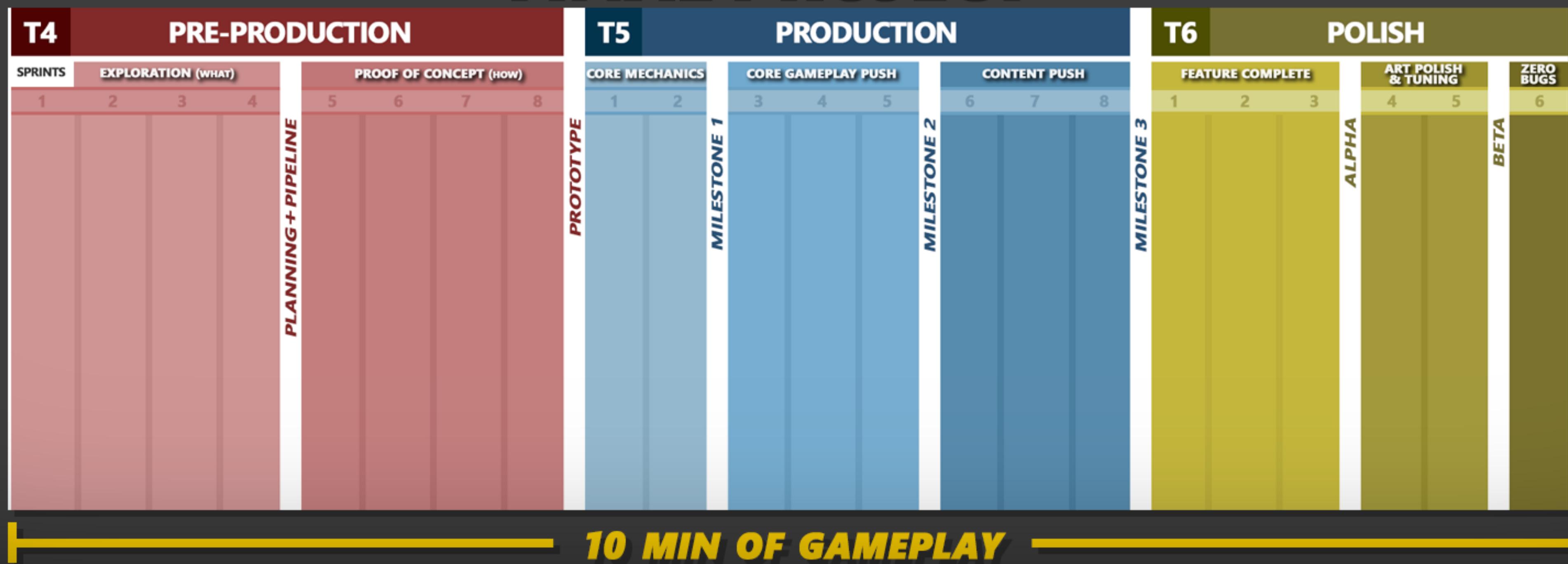
# TEAM PROJECT

**~210 HRS (5 PERSON TEAM)**



# FINAL PROJECT

**~1555 HRS (5 PERSON TEAM)**



**BACK**

# **EXTRA BITS**

# COMMUNICATION

- **ISOLATION ISSUES**
- **DAILY STAND UP**
- **BLOCKERS & UPDATES**
- **DISCORD CHANNEL UPDATES**
- **BE ACCOUNTABLE**
- **YOUR REPUTATION**
- **NEVER IDLE, ASK TO HELP**



# ENGINE SPECIFIC



**UNREAL  
ENGINE**

**ART PIPELINE**

Sourcetree



**unity**

**ART PIPELINE**



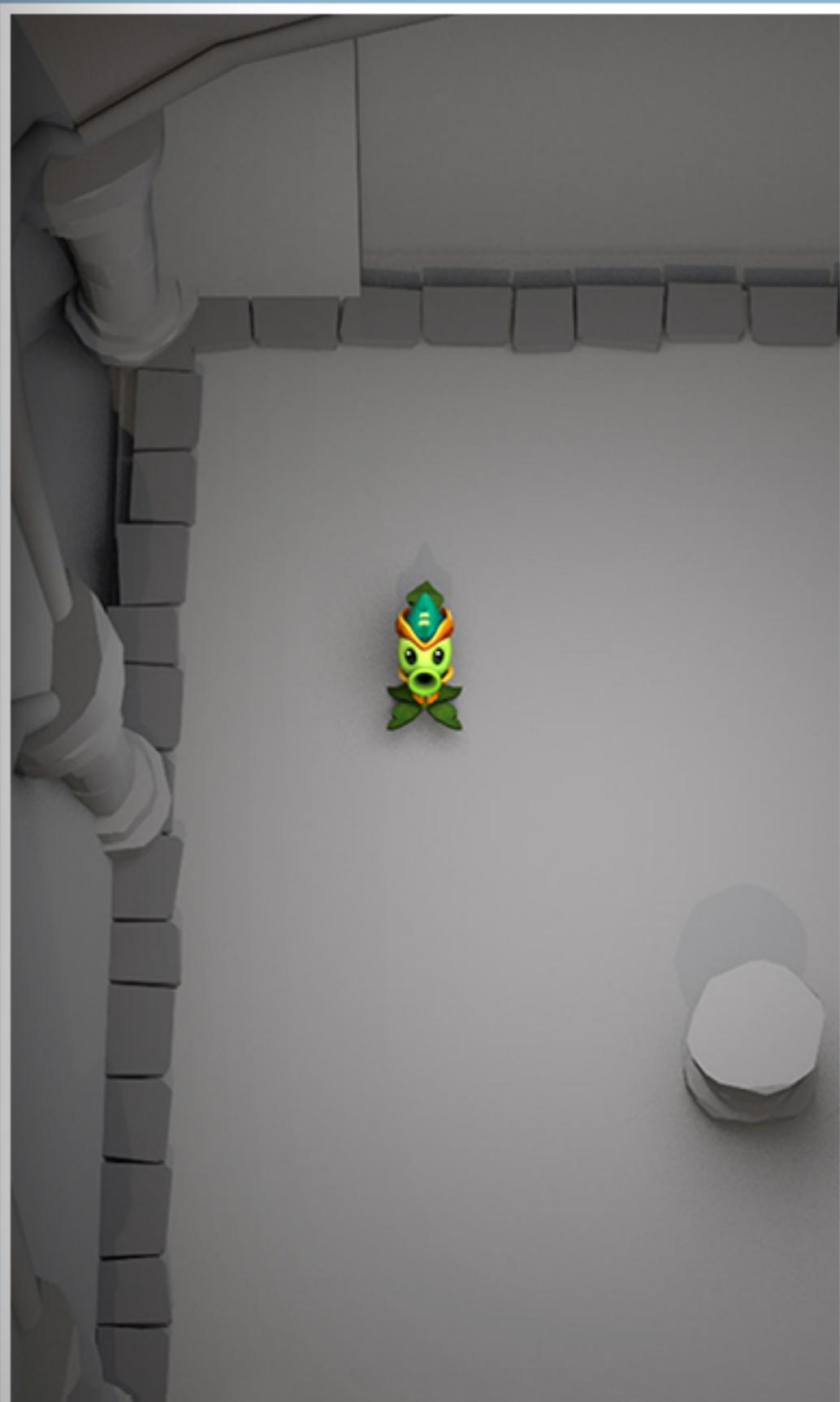
# CHARACTER PRIORITIES

- **SUPPORT THE GAME LOOP**
- **ITERATION FOCUSED**
- **ASSET COMPLEXITY**
- **ENEMY FIRST, PLAYER SECOND**



# ITERATION STAGES

## • PLANTS VS ZOMBIES EXAMPLE



MILESTONE 1  
A - Z



MILESTONE 2  
CORE GAME



MILESTONE 3  
ART COMPLETE



ALPHA  
FEATURE COMPLETE

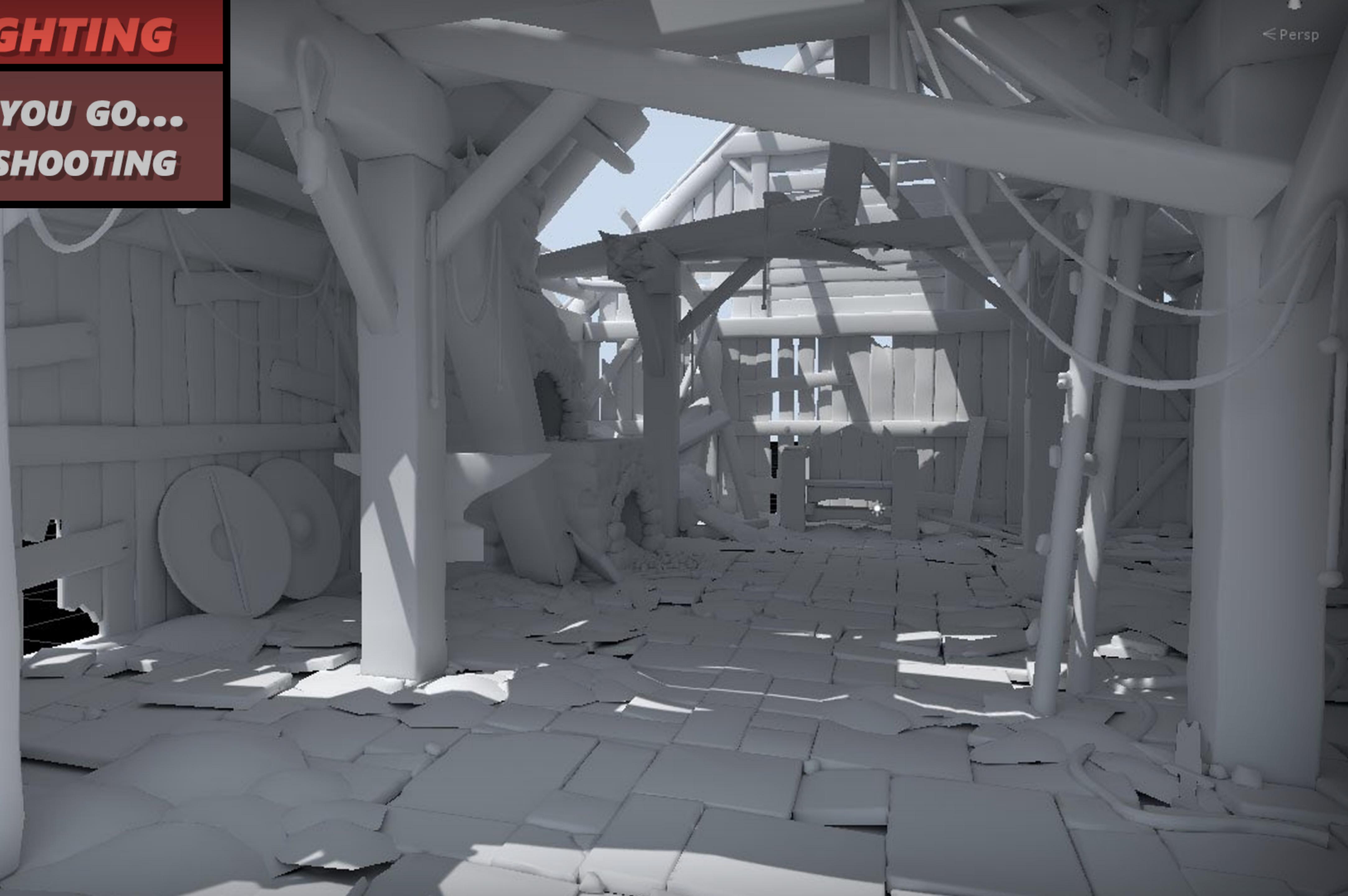


BETA  
ZERO BUGS

# BAKE LIGHTING

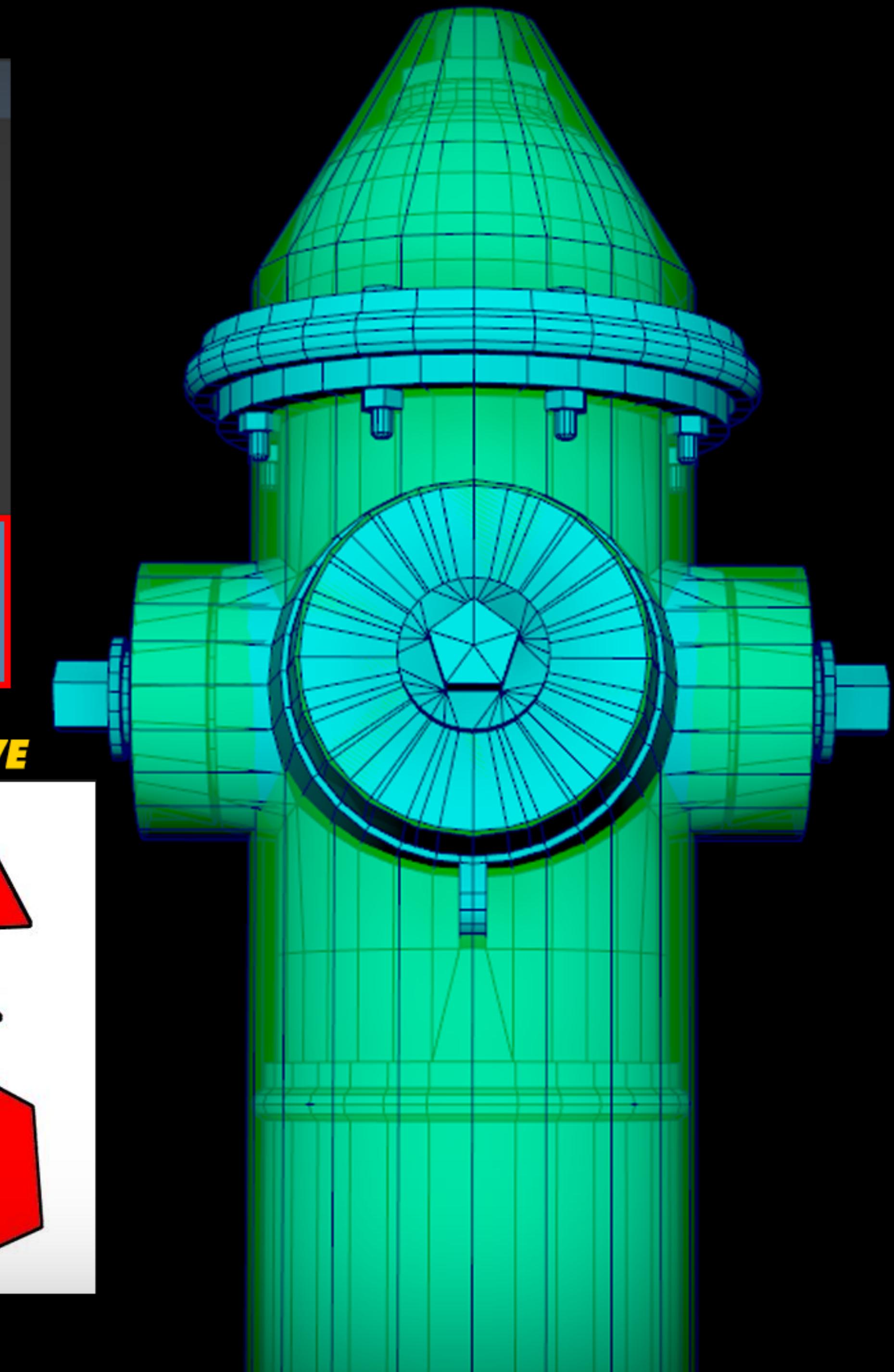
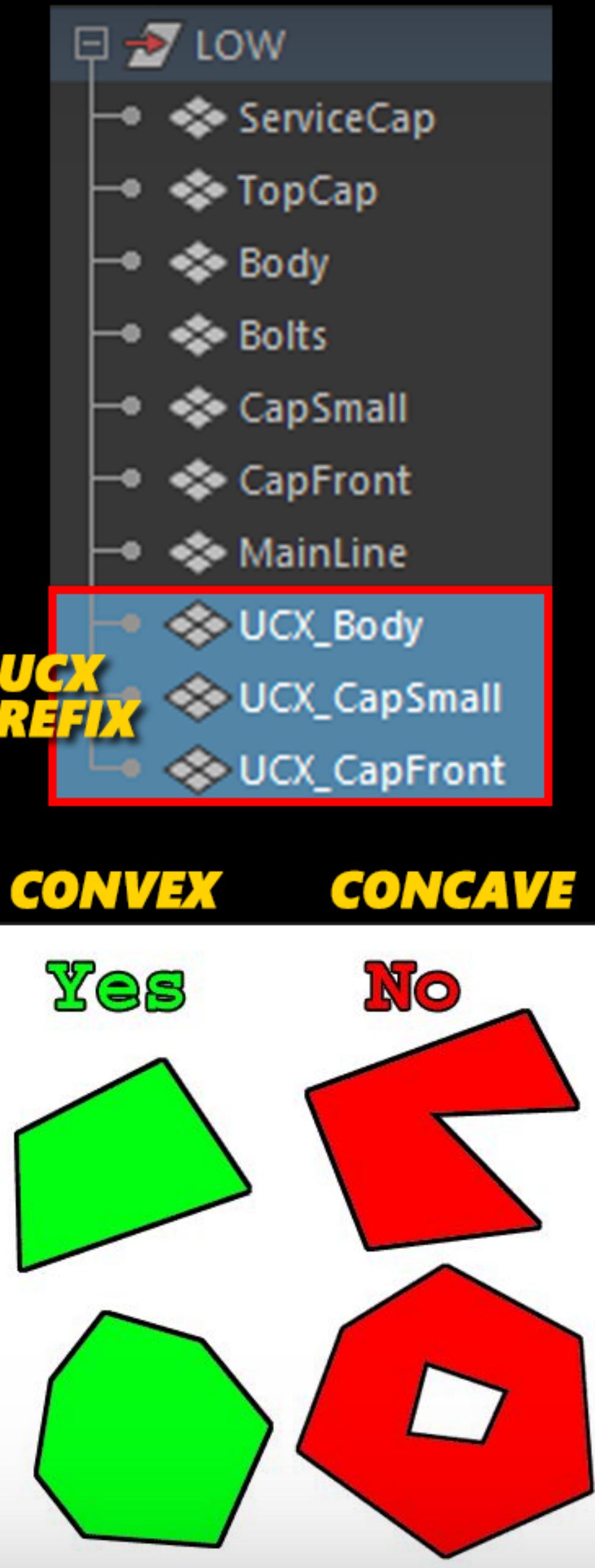
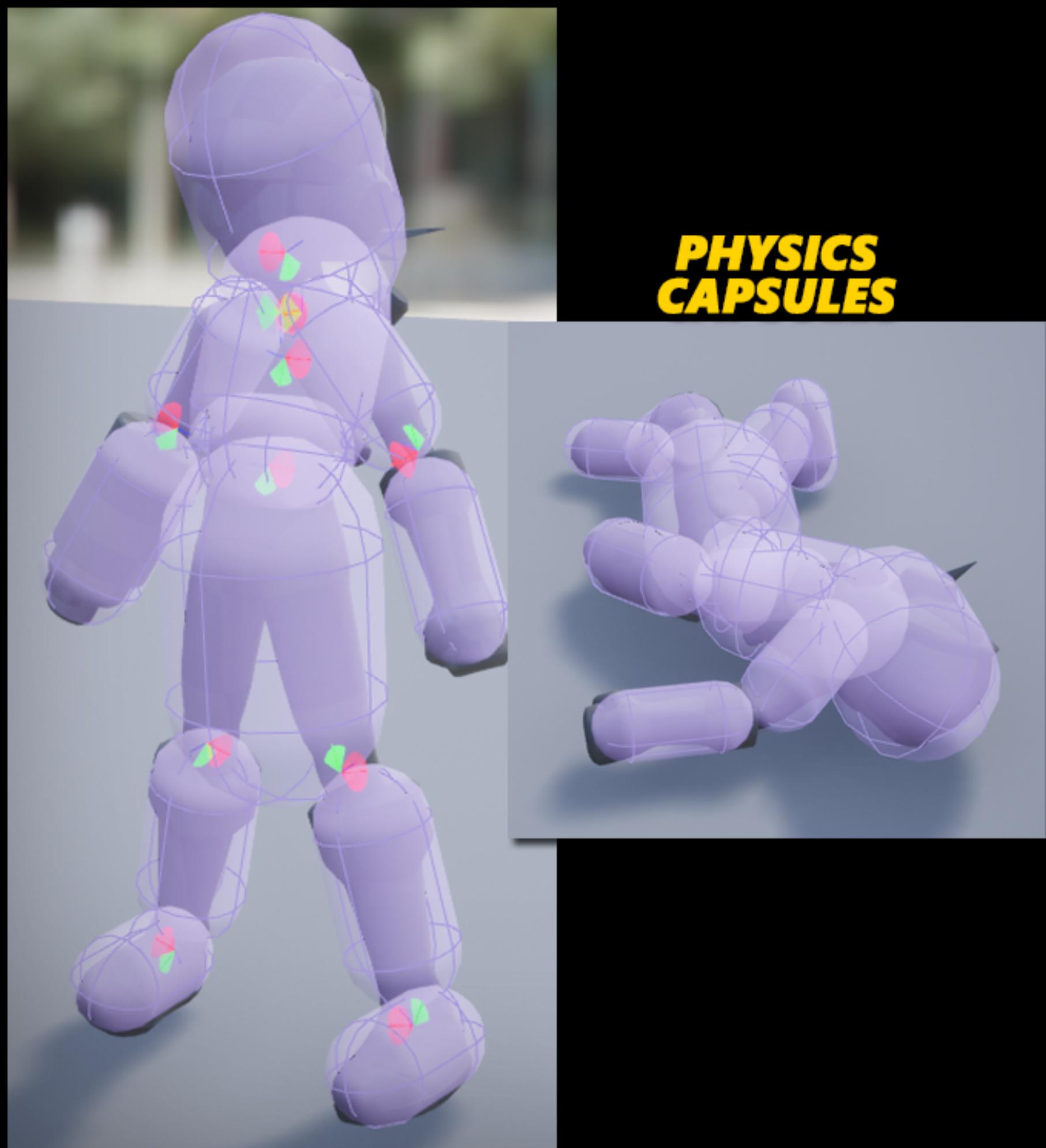
< Persp

- **BAKE AS YOU GO...**
- **TROUBLESHOOTING**



# COLLISIONS

- CHARACTER COLLISION
- ENVIRONMENT COLLISION
- RUB TESTING IN GAME



**BACK**

VFS 2023