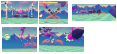
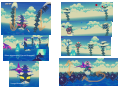
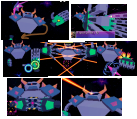
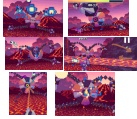
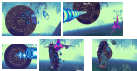


Boss Research

Context: "As a developer, I want a prototype of the **boss's attack patterns**, so that I can see its behavior in engine and iterate on it"

Research Question: *What variety of attack behaviours do bosses have in our reference game (Ex-Zodiac) and how do they impact challenge?*

Data & Notes

Codename	Time to beat	Breakdown	Screenshots	Suitability for our game
Scorpion	1:37	3 phases: 1. with arms a. cutting poles b. lunging (2 types) 2. using tail: homing orbs 3. using head: homing rockets		+ tree cutting 7 attached arms - form
Worm	2:23	2 phases: 1. each segments shoots something (3 types) 2. once segments gone, uses big laser head		+ rocky segments + navigating on splines 7 laser beam - movement complexity
Octopus	2:03	~2 phases, immune during step b) 1. cycle through: a. drop 2 arms b. shoot from 2 arms (bullets or rockets) c. lunge with head 2. at half health: a. drop 4 arms b. shoot from 4 arms (bullets and rockets) i. 2 at a time! c. lunge with head d. rotate arms around e. drop 5 arms		+ detached arms - form - large attack count
Totem	1:39	3 phases with increasing aggression types of attacks: • homing orbs • raising obelisks (alternating or as a row) • rockets (large count in last phase) • player-following laser beam		+ raising obelisks from ground + rocky form 7 laser beam - many attack variants per phase
Mech	3:18	hit points are (un)covered through fist shape hands have separate health 2 phases: 1. hand(s) alive, using attacks: a. hand wave / hands clap / fist punches b. circles shot c. laser web 2. alternating: a. rockets (reveals hit point) b. laser beam (immune)		+ rocky form + detached arms - poor hand attack readability - hand complexity
Spider	0:54	5 hit points (head and 4 arms) soft phases, seems to unlock new attacks attacks: • homing orbs / rockets • lunging arms / from below • rockets create rows to dodge • laser beam (?)		7 attached arms - unclear phases - row obstacles (how to theme?)
Runner	1:03	torso is hit point alternates attacks: • runs around passively (dodging, not an attack) • lunges arms • using weapon from train: • spawns fire • hurls homing orbs • draws road		7 attached arms - run animation - grounded 3Cs
Disc	2:00	first many segments, then central head random attacks: • segments shoots projectiles (or the head) • count independent of segments alive • fire beam • scatters shootable rocks / rolls in a path		+ lunged rocks + segments encourage aiming 7 laser beam - complex rolling

Conclusions

- Bosses in Ex-Zodiac generally take **1 to 2 mins** to beat.
 - Skilled players may skip several attacks by playing aggressively and using bombs.
- The bosses typically have **2-3 phases** based on overall health or destroyed parts.
 - Some phases feature completely new attacks while others only tweak them.
 - Later phases generally **raise difficulty and intensity**, featuring more dangerous and epic patterns.
- Each boss has around **4-5 attacks**, while some attacks may have extra variants per phase.
 - Attack complexity ranges wildly, impacting scope.
- Some bosses **cycle** their attacks and others choose them **randomly**.
 - Random attacks require a bit more **anticipation** for fairness (compare the predictable Octopus to the varied Disc).
- Attack types** (each boss covers ~3 of these):
 - (homing) projectiles - count and properties **modulate difficulty**
 - (laser) beam - follows the player, requiring **continuous movement** to dodge
 - launched obstacle - requires a **swift reaction**
 - in-world obstacle creation - forces **precise and deliberate** dodging
- Hittable areas** vary greatly in size, count and accessibility.
 - Smaller or fast-moving areas encourage using the lock-on*, whereas *large areas are more efficient to spam-shoot*.
 - Some bosses are **segmented**. Over time, this naturally **increases the challenge of aiming** but may **reduce overall intensity**.
 - Some attacks render the areas **inaccessible**. This encourages switching between **offensive** and **defensive** playstyles.

Takeaways

- To create an interesting boss given a limited scope, we should aim for about **2 phases** and **4 varied attacks**.
 - We can either **cycle** between the attacks or introduce some **randomness**, as long as they are **telegraphed**.
 - The two phases should feature **different hittable areas** to vary the suitable player strategies.
- All **4 attack types** from Ex-Zodiac are worth prototyping!
 - Beams** greatly support our *Constant Movement* pillar but it is unclear how they might fit our theme - to be checked with visual artists.
- The boss should take around **90 seconds** to beat. We can balance this through health and verify by playtesting.
- As the best **reference**, we should consider the **Disc** boss and the following attacks:
 - (GIF) Disc's *scattered rocks* for a deep (and themed) attack with multiple solutions.
 - (GIF) Disc's *segment projectiles* for how simple bullets are made interesting when shot from many angles.
 - (GIF) Disc's *fire beam* for forcing continuous movement.
 - (GIF) Totem's *rising obelisks* for naturally rocky in-world obstacles.