

# Bringing VR Experiences to Life With The Magic of Music

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# What this talk is about

- Music system requirements/considerations
- Music driven by VR specific data
- Enhancing game elements with musicality
- Music instruments in VR



SHORT VIDEOS!

Inspiration!

# Music System Requirements

- Diegetic vs. non-diegetic aesthetics
- Channel Support
  - Mono, stereo, surround and stems
- Responsive and Interactive
  - Spatialization, directionality, occlusion, custom attenuation, etc.



# Music System - Beach

Strategic positions for diegetic music





# Music System - Beach

Strategic positions for diegetic music





# Music System – Rick & Morty

Bringing unrealistic environment to life



San Diego Comic  
Con Demo



# Music driven by VR specific input data

What can we use?

- Head rotation, position and gaze direction
- Hand rotation, position, point, and interactions
- Velocities and physics of Interactive objects
- EVERYTHING!



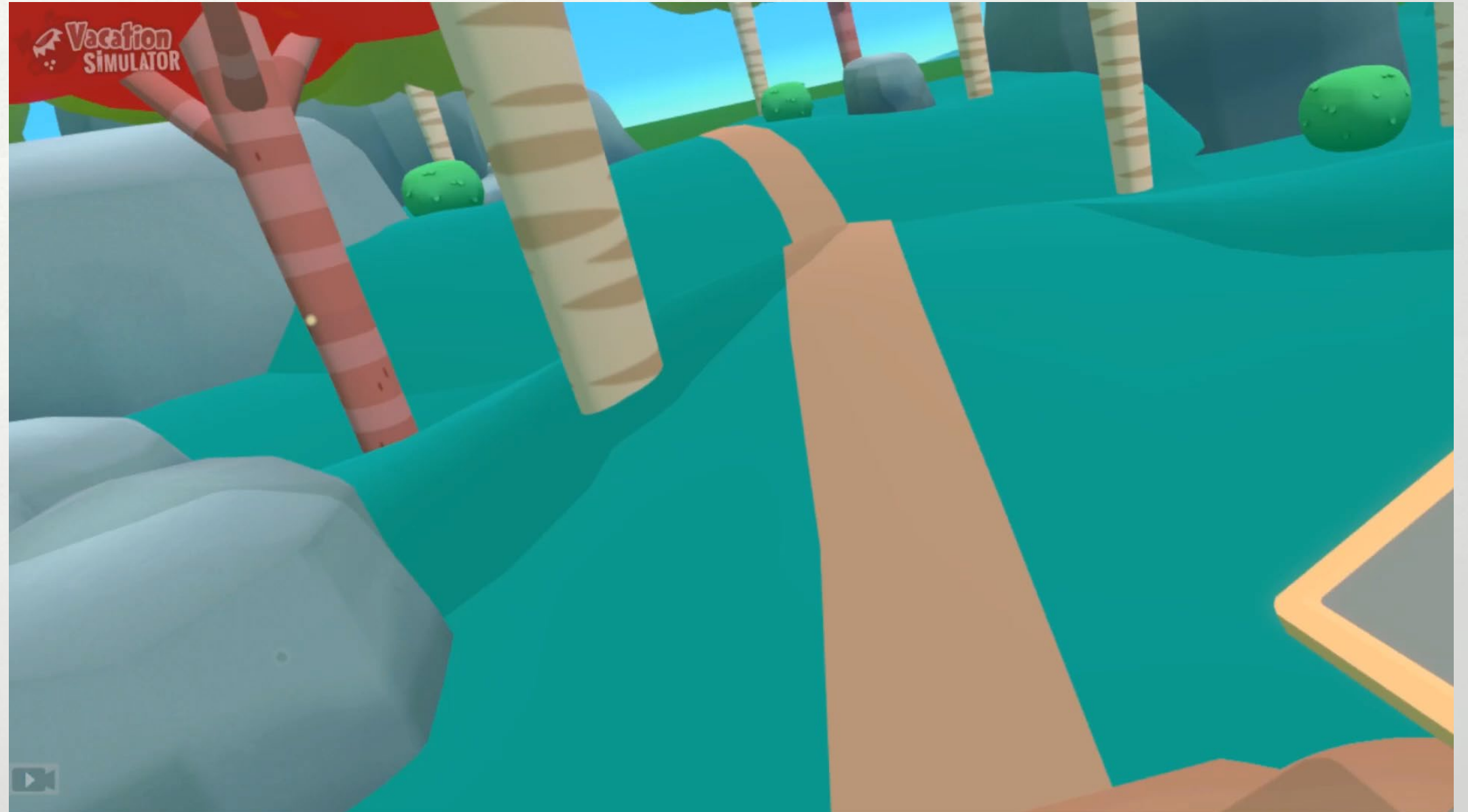


# Music driven by VR specific data

Gaze based – Surprise Factor



Early Prototype



# Music driven by VR specific data

Gaze based – Success Gauge





# Enhancing game elements with musicality

Turning objects into musical instruments!

Why?

- Can be a determining variable in the viability of the design
- Add life to the environment and bring feedback/responsiveness
- Offer a creative outlet to your players, who are after all here to have fun!
- Strengthen the emotional atmosphere of the scene





# Enhancing game elements with musicality

Turning objects into musical instruments!

Things to consider:

- Create a harmonic environment between the object and background music
- Choose scale/harmony according to emotional message
- Design around the UI of the object
- Consider solutions that work into infinity (Shepard Tone)





# Enhancing game elements with musicality

Time based game





# Enhancing game elements with musicality

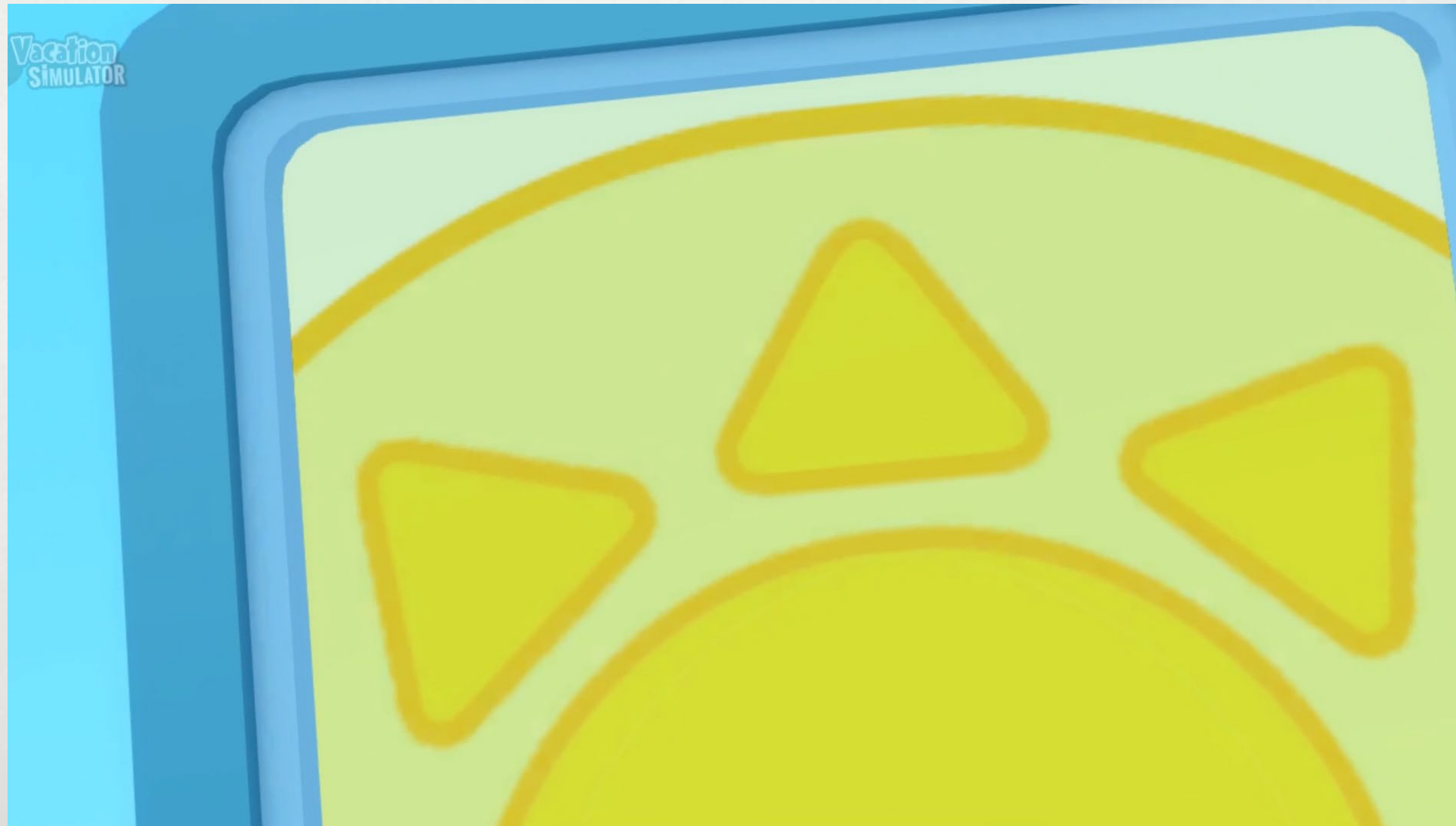
Time based game





# Enhancing game elements with musicality

Turning a menu into magic



# Enhancing game elements with musicality

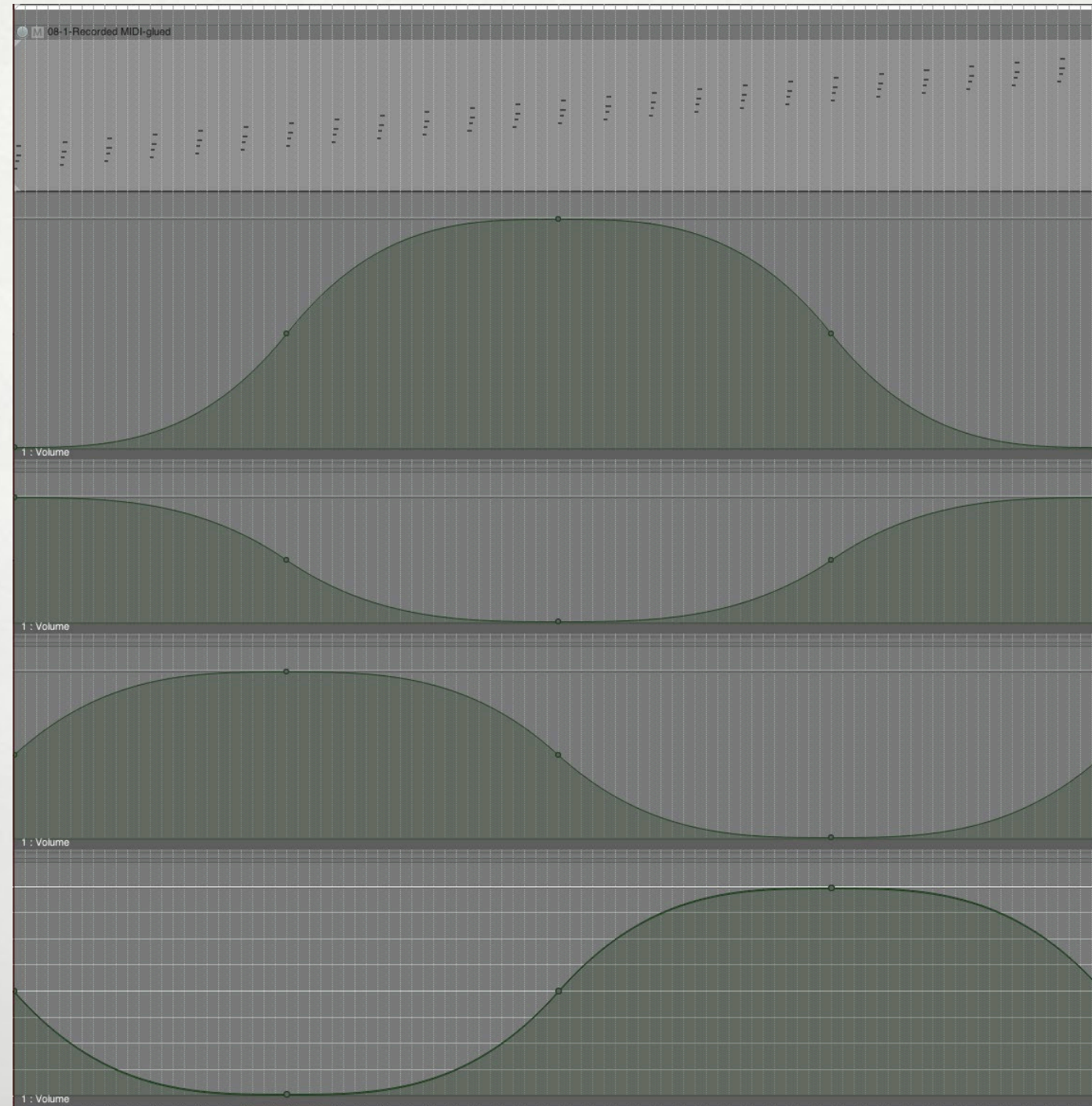
## Shepard Tone example





# Enhancing game elements with musicality

## Shepard Tone



# Designing musical instruments

Things to consider:

- Real world VS. VR limitation precision
- Interactive accuracy VS. Intuitiveness
- Simulation details of physics based instruments
  - Granular VS. Global





# Designing musical instruments

## Guitar

- How do you measure a strum?
- How do you visually represent instrument response?
- Will it respond with one hand?
- How precise does the interaction need to be?





# Designing musical instruments

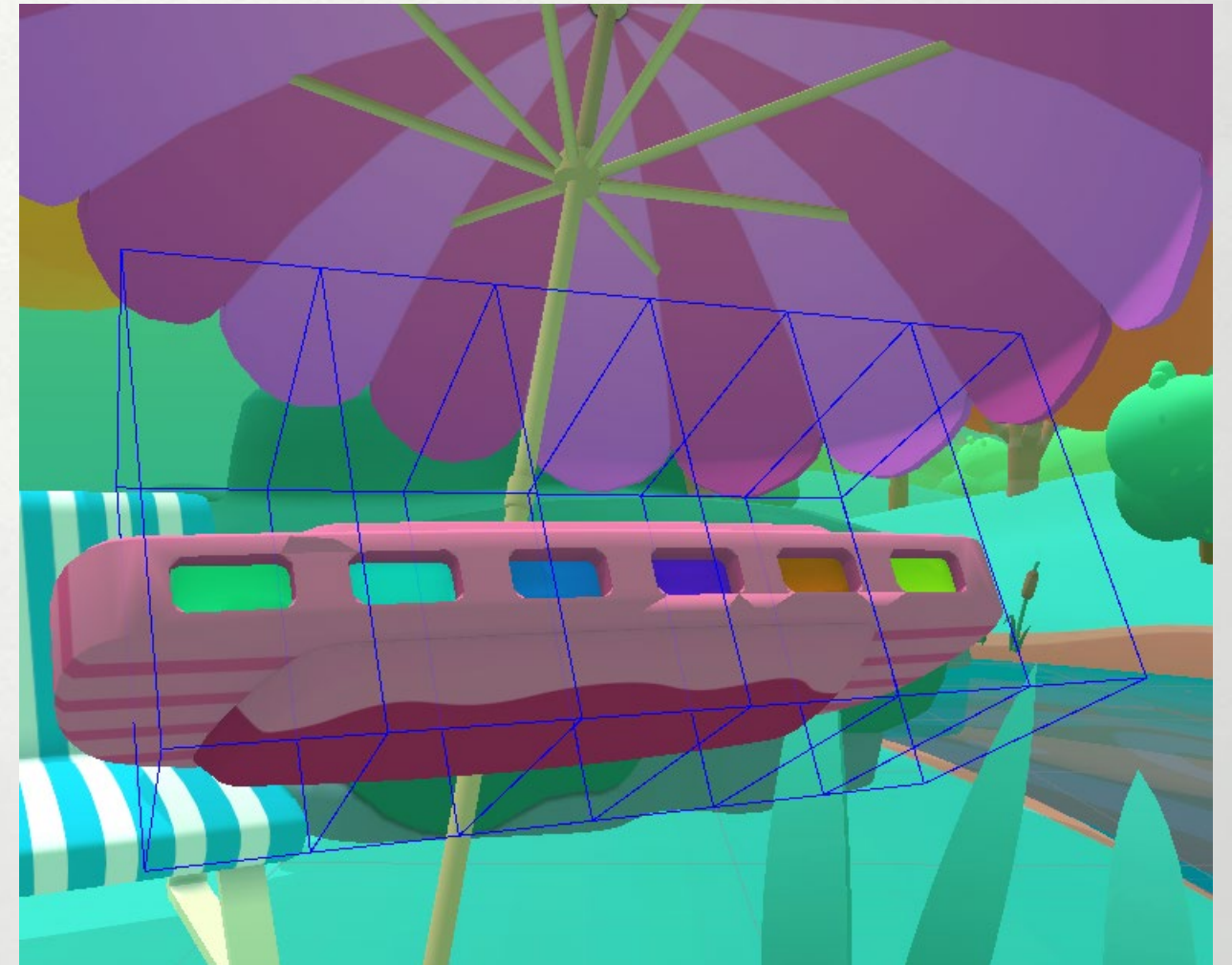




# Designing musical instruments

## Harmonica

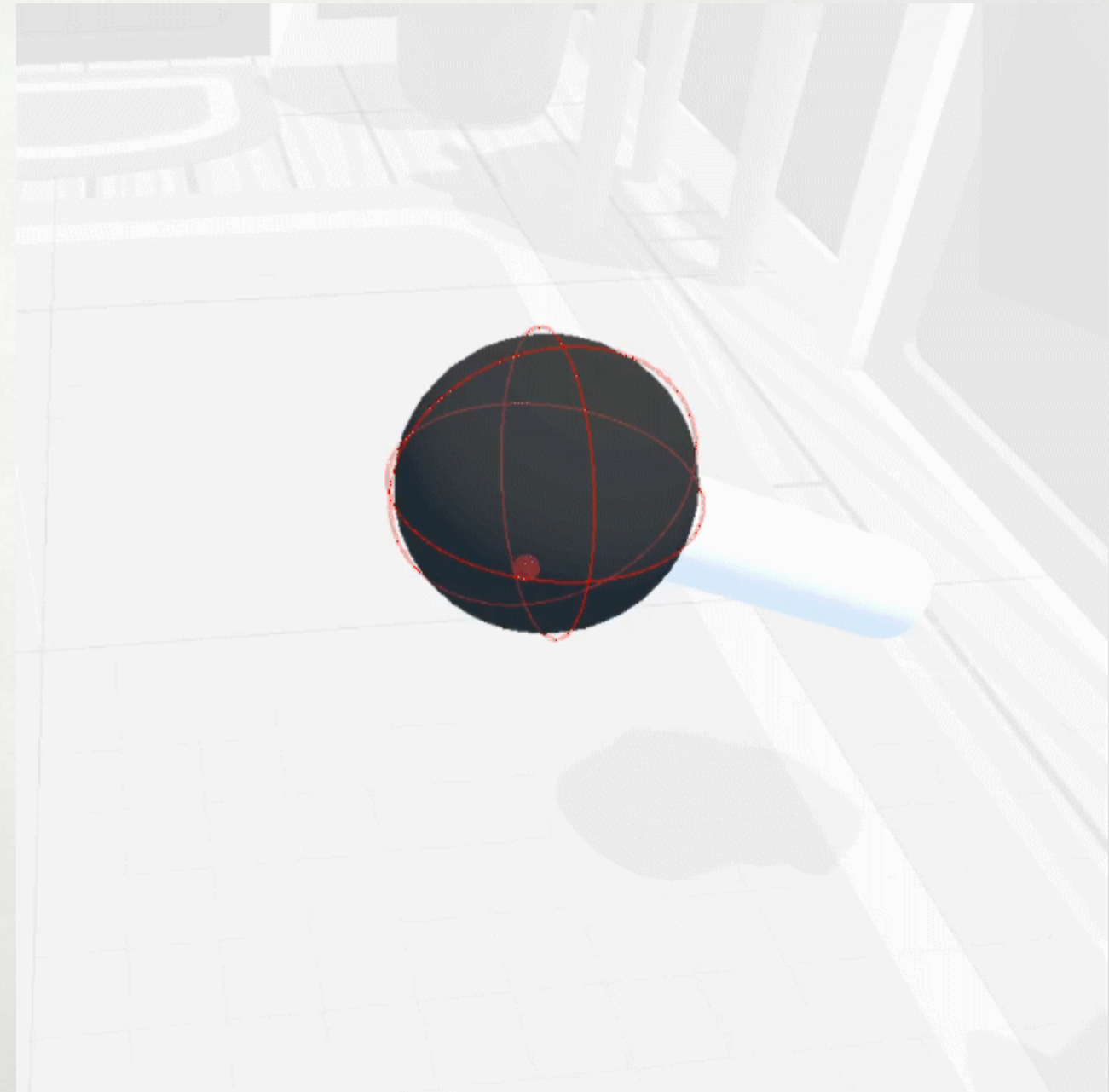
- How big is an interaction area?
- Where is the players mouth? (be inclusive in your design)
- How many interaction areas become confusing?



# Designing musical instruments

## Shaker/Maracas

- Will grains have gravity?
- How much bounce do grains have?
- How will rotation affect the sound?
- How much velocity equal in volume?





# Summary

Music gives you the ability to embellish interactions and intensify emotions in your game.

Consider music accents in your experience early, and prototype to find the best solutions for your experience.

Make sure to support the audio team with the system/implementation solution that will allow performing all the necessary tasks





# Thank you!

## Q&A

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