MYSTICAL grove

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# Concept

VOLUMETRIC CRYSTAL SHADER

Scene contents

- Emissive crystals
    - Shadowy gem - Wesley
    - Electrical crystal - Evita
    - Fire crystal - Aaron
    - Water crystal -
- Wind affected foliage
- Fireflies with glow effect, particle system
- Volumetric lighting,
- Clouds
- Water shader, caustics

High Definition Render Pipeline (HDRP)

Adapting to the HDRP workflow

- Volume Framework
- Lighting is different
- New shaders
- Fog
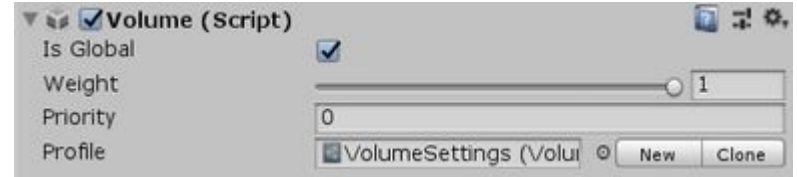
Crystals

Shadowy gem - Wesley

- "Crystal ball" effect
- Post-process effects to a tethered camera
- Scrolling noise to create an interesting blend effect between camera texture and base texture

Electrical crystal (It's Electric)- Evita

-Lightning particle effects

- Textured rim shader noise applied to it to replicate electrical currents

- Create a glowing crystal effect

Fire crystal-

-Translucent and molten liquid flowing moving inside

-Emissive, pulsating glow

-Sparks circling the crystal

-Dark/burned spots on surface

Water crystal - Wai Chun

- Reflective/refractive surface

- Flowing water effect

- Caustic light rays that shine through the crystal

Clouds

- Modeling clouds will take in a Perlin-Worley noise function to generate the fluffy shape of the clouds
- Fog will be added to give the clouds more texture
- Particles with the noise function may also be another way to make clouds

Wind and Foliage

Using Unity Shaders and Shader graph, we want to create a forest scene that inspires wonder and a bit of mystery to the viewers. We are thinking of including the following in our scene:

- Realistic grass
- Various flowers and other small foliage
- Trees and Bushes
- Everything to react to wind
- And perhaps crepuscular rays that shines through the tree leaves

We intend to create this through the use of particle systems and wind manipulation.

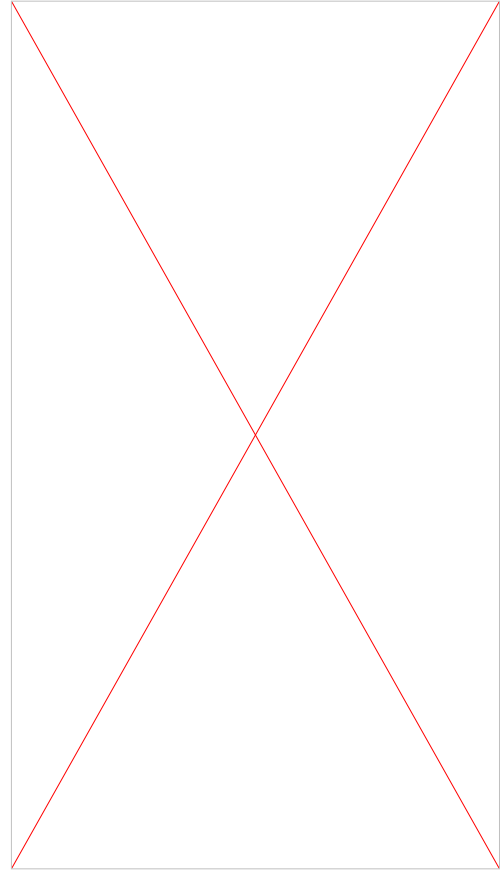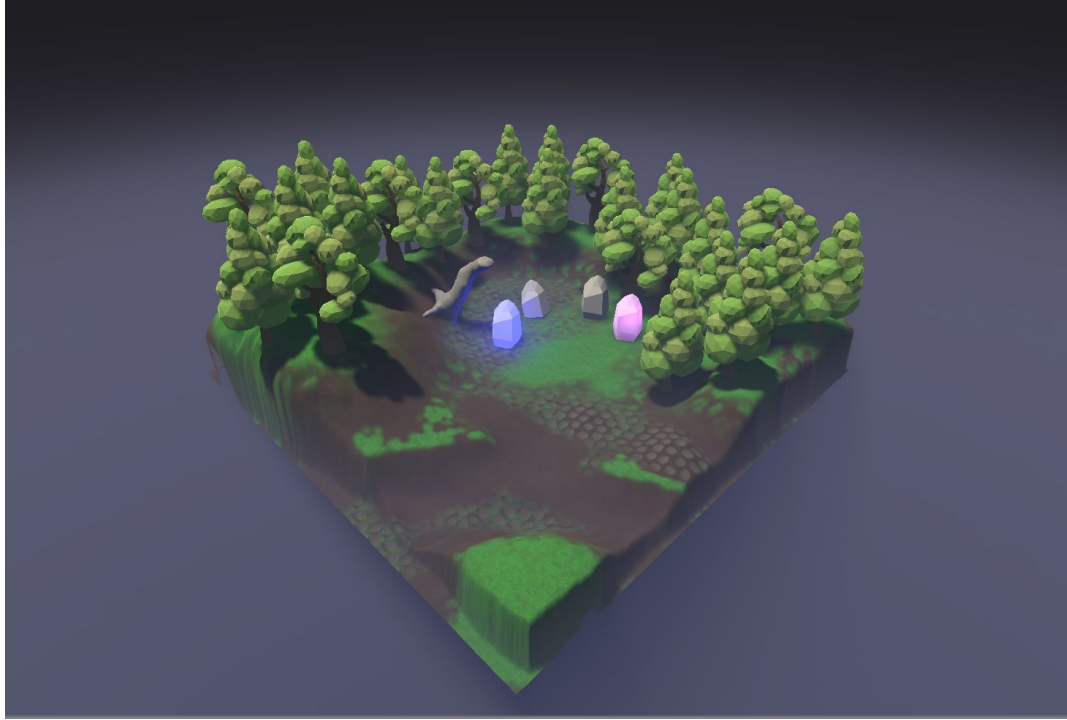# Fireflies and Water

Water
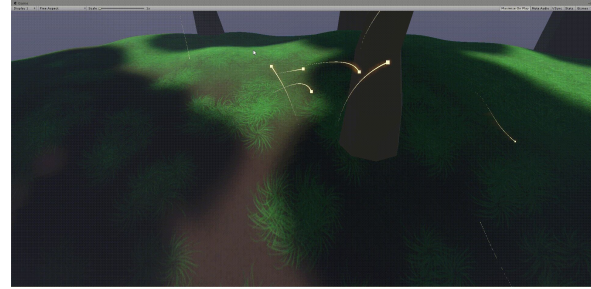
- Water will be rendered using a scrolling noise function and vertex displacement
- Caustics will be generated using a shader tethered to the water's vertex coordinates

Fireflies

- Mystical, emissive fireflies are generated using the particle system
- Wind zones control what the fireflies are attracted to, giving them organic and interesting behaviors

Work in Progress

Sources and Tutorials

https://www.dualheights.se/caustics/caustics-water-texturing-using-unity3d.shtml

https://docs.unity3d.com/Manual/class-Tree.html

https://lmhpoly.com/unity-tutorial-volumetric-lighting/

Complex Materials (Crystal textures) https://catlikecoding.com/unity/tutorials/rendering/part-9/

Wind-Affected Grass https://roystan.net/articles/grass-shader.html