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CS148 Final Report

Project Requirements from Scratch:

Main Geometry from scratch

1. Main Mushroom House with Staircase
   - Shape was created by following a tutorial linked in references section, made some changes
   - Used sculpting, scaling, subdivision, extrusion, etc. on cube and sphere
   - Glowing texture of spots from scratch, lighting from scratch, used nodes and emission
   - Stairs made from dividing circle and extruding segment faces; followed tutorial in references
2. Bridge
   - Created through heavy trial and error. Final geometry created by taking a cube, flattening it into a plane, curving, and extruding the edges to create the handrail. The handrail was then created through face insetting and geometry face removals. The final bridge was mirrored through the center to replicate the other half of the bridge, placing another handrail on the other side of the bridge
3. Assorted Mushrooms (swirl pattern and small shiny mushrooms)
   - Created through a combination of different cylinder and sphere meshes undergoing sculpting and extruding to form mushroom stems and caps. Other mushrooms were generated through the use of bezier curves, which were taken and rotated around
4. Glowing Flowers
   - Created with bezier curves, spheres, and planes; color from scratch using emisison; followed tutorial in references
5. Geodes
   - Created from extruding and scaling circles, merging vertices; followed tutorial in references
6. Terrain
   - Described below; followed tutorial in references
7. Water
   - Described below; followed tutorial in references
8. Blue Grass (for terrain)
   - Made using particle system and density shading to reduce rendering time; followed tutorial in references, made modifications

UV mapping and texturing from scratch

- Terrain
  - Land surface consists of UV map where materials can be mapped onto
- River Water
  - Uses material nodes as well, also leveraging cycles and ray tracing to allow for more reflection of its surroundings (such as the bridge on top of it) in the water, and also creating the ripple effect in the water itself, making it look more realistic
- Both make use of material nodes/texturing from scratch

- Texturing from scratch can also be seen in our flowers, grass, assorted mushrooms, and parts of our mushroom house
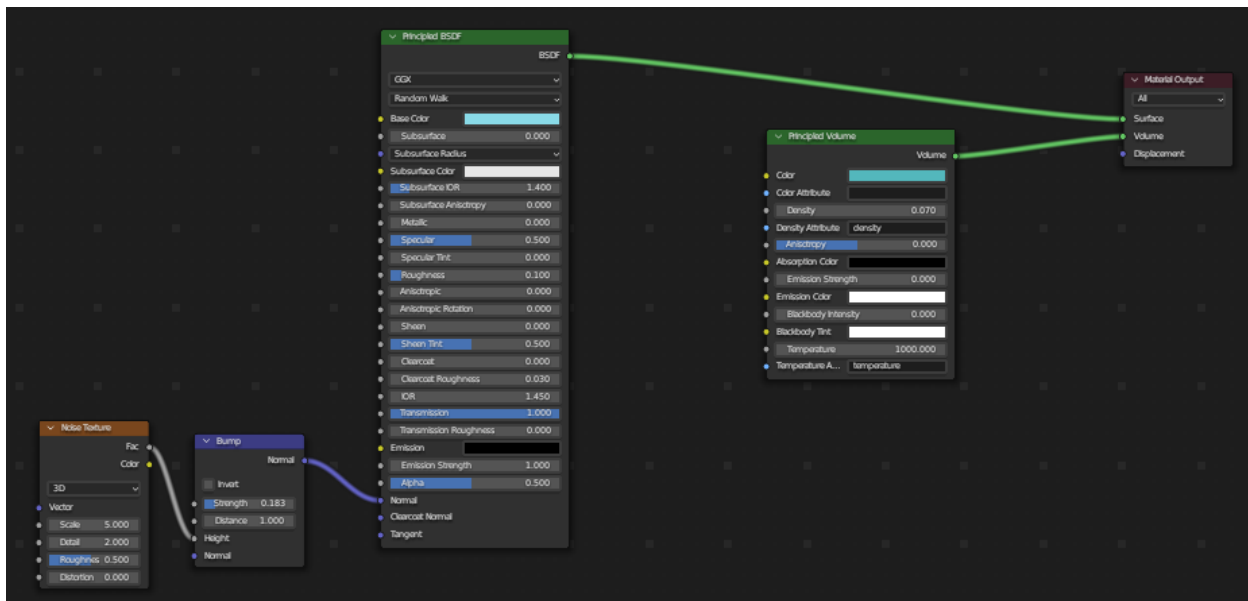

Fig 1: The material nodes for the water.

Blender/Cycles advanced feature
- The advanced feature we used was depth of field, which can be seen through the mushroom house being the focus, and other objects seeming further away from view; this feature brought dimension to our image

What each member of the group did:
- Jennifer Hao - jennhao
  - Main mushroom house with staircase (shape, texture)
  - Swirling forest mushrooms (texture)
  - Staging of objects (image composition)
  - Geodes (shape, color)
  - Glowing flowers (shape, texture)
  - Depth of field
  - Camera and lighting
  - Grass (shape, texture)
- Flora Huang - flora221
  - Bridge (shape)
  - Terrain
  - Water/River
  - Swirling forest mushrooms (shape)
  - Small shiny mushrooms (shape)
- Both collaborated on the final image virtually and in person to decide on composition, additional modeling changes, and HDRI background

Assets downloaded online:

Main Mushroom House with Staircase	Mushroom cap material created with image texture by DALL·E 3 via Poe (https://poe.com/universal_link_page?handle=DALL-E-3) with the prompt "cool tone purple and blue swirling sky," further edited for high-resolution with Let's Enhance (https://letsenhance.io/boost) Wooden texture for door frame and window frames imported from https://www.blenderkit.com/get-blenderkit/319f3e3f-18e2-49e7-b2d1-02708efb09cd/, "Tree Wood" Wooden texture for door and staircase: https://www.blenderkit.com/get-blenderkit/cee34298-951b-45d8-9f81-3df923ac5eaf/, "Wood" Wooden texture for door knob: https://www.blenderkit.com/get-blenderkit/4a943994-785d-4cf0-b61b-99dc4a1f2e6f/, "Black wood"
Bridge	Texture same as "Tree Wood" above
Assorted Mushrooms (swirl pattern and small shiny mushrooms)	Swirl pattern for tall mushroom cap on left side of image created with image texture by Midjourney V4 via https://www.imagine.art/dashboard/tool/from-text with the prompt "blue galaxy sky pattern" Swirl pattern for shorter mushroom cap on left side of image created with image texture by Midjourney V4 "blue swirling galaxy sky pattern" Swirl patterns for other mushrooms are as above (duplicated objects) *Note: Small shiny mushrooms did not require downloading online assets*
Other Mushrooms (purple/red with dots)	Glowing mushrooms (objects and materials) imported from Ryan King Art via https://ryankingart.gumroad.com/l/glow-mushrooms
Geodes	Procedural crystal material imported from Ryan King Art via https://ryankingart.gumroad.com/l/flzsx
Background Image and HDRI	Created by Midjourney V4 with the prompt "blue enchanted mushroom forest"

Anything not listed above, we made ourselves.

Tutorials referenced:

Main Mushroom House with Staircase	Look Through It, "Blender 3D Beginner Tutorial: Fantasy Mushroom House": https://www.youtube.com/watch?v=LkR5WLYF1-0 Blender Forbeg, "blender 3.4 easy stairs modeling tutorial": https://www.youtube.com/watch?v=XUwDRHL4oac
Glowing Flowers	BlenderVitals, "Create a Flower in Blender in 1 Minute!": https://www.youtube.com/watch?v=jxwU38rVsv0
Geodes	Ryan King Art, "Procedural Crystal Material (Blender Tutorial)": https://www.youtube.com/watch?v=W9bl4VhVcD4&t
Terrain	Bro 3D, "Blender Tutorial : Create a Beautiful River Landscape in Blender": https://www.youtube.com/watch?v=3INTJfdmjbs
Water	As above
Blue Grass (for terrain)	pinkpocketTV, " Create a Grassy Meadow Scene in 10 Minutes (Blender 2.9 Tutorial)": https://www.youtube.com/watch?v=Y0X_Htj3MS8