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Geological Bodies

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GEOLOGICAL BODIES

SAVANNAH FULMER

HONORS PROJECT

Submitted to the Honors College at Bowling Green State University in partial fulfillment
of the requirements for graduation with

UNIVERSITY HONORS

April 29th, 2016

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Introduction

The Earth is filled with natural beauty. The ground we stand on, the materials we use to build our structures, and the jewelry we wear are made of rocks and minerals with complex yet visually aesthetic properties. Rocks are quite common, yet are all different in appearance and composition. Geological processes within the Earth produce these incredibly complex geological wonders, and connecting them to art seems only natural.

The intent of this Honors Project is to combine two disciplines of study in an exciting and unique way. This project is a creative project that expresses geological research through the imaginative use of a chosen artistic medium. The areas of study chosen for research were Digital Art and Geology. Specifically this project focused on character design and the main classes of rocks. ‘Geological Bodies’ is a series of character designs that were developed to personify the traits of nine different rocks.

This project combined scientific research and fine art to create something unique through the use of juxtaposing two disparate areas of study. This document is intended to describe and reference the series of artwork presented as a Creative Honors Project at Bowling Green State University. Information was researched and creatively incorporated into the final series of artwork of geologic and character design reflecting a personal point of view. There was a specific focus on the three main categories of rock found within and at the surface of the Earth and techniques of character design. Through research I was able to learn more about character design and geology, and subsequently, synthesize the two topics together into a collection of created characters reflecting geologic properties specific to each type of rock.

Character Design

There are several things to think about when designing characters. One of the most important elements of character design is shape (Cohen). Basic shapes, like triangles, circles, and squares, add to a strong character design. Shape can invoke specific emotions and tones within the audience. By using these shapes as a base, or using a combination of these shapes, a design will become much stronger. In the interest of creating strong designs, shapes of the characters had to be kept in mind to set up the framework for a distinct character. Depicting the rationalization for specific shapes and curves can add meaning to the design.

Another important trait of character designs to remember is personality. Personality of the characters is shown through how the character walks, talks, and thinks. Through a good personality, a character becomes a memorable personage that people connect with on some level (Şopov). Making sure the character is compelling and the personality understandable is also very important to make a relationship with the audience (Kline). A good way to express personality is through exaggeration of features and facial expressions that invoke specific reactions in the audience (Şopov). A combination of all of these things will create a great character with a memorable personality.

Personality and design will work best when there is a story behind the character being created by the artist (Tillman). Although, initially, a character can be created without a story, to keep continued interest from an audience the artist must typically adjust character design later to create a story background. Therefore, creating this history right away is perhaps a better idea (Tillman). When considering a background story for the character, another important detail to consider is the archetype for the character (Tillman). Archetypes are character types that are commonly seen in characters, like a hero or a villain.

Geology

The three main categories of rocks are Igneous, Metamorphic, and Sedimentary. Igneous rocks are created above or below the Earth's surface from molten rock. Metamorphic rocks are typically created deep within the Earth from extreme conditions that alter the mineralogy and chemical composition. Sedimentary rocks are formed through accumulation of sediment (King).

Within the main three categories of rocks, Igneous, Metamorphic, and Sedimentary, there are individual rock types that have specific traits, which are largely based upon mineral composition and mineral properties. Each character design incorporated traits intrinsic to the rock type, which depends upon this mineral composition, and contributes to the overall personality and design of each piece. As stated previously, three rock types were chosen for each main rock category. For igneous, Obsidian, Pumice, and Granite were chosen. For the metamorphic category, Gniess, Marble, and Quartzite were chosen. For sedimentary, Chert, Limestone, and Sandstone were chosen. Each rock was designed based upon their traits. Each rock has one defining trait that contributes to its design.

Integration of Geology and Character Design

Igneous Rocks

The rock, obsidian, is a unique igneous rock that is made from volcanic glass (Scott). It is created from molten lava cooling so quickly that a crystalline structure cannot form. This rapid cooling is produced at the surface of the earth, making obsidian an extrusive igneous rock (King). Obsidian is usually a black, glassy rock that can be very sharp and jagged when shattered or cut (Gill). The Obsidian character design was created to be a slick, mysterious

personality because of the dark, sleek look of this rock. The sharp edges of this character connect to the sharp edges depicted by shattered obsidian. The shoes of this character were given the dark, jagged a texture of obsidian to amplify the sneakiness of this character, who moves in a sly way and appears somewhat sinister as a result.

The rock, pumice, is another unique igneous rock that is highly porous (Guadagno). Although it is extruded very similarly to obsidian, pumice has a very different mineralogy that promotes the formation of gas bubbles. These gas bubbles become trapped as the rock quickly cools, creating pore spaces. This rock has very low specific gravity due to these pore spaces thus enabling it to float on water (King). Pumice's character design was created as an elegant dancer to reflect this ability. Her pointe shoes have a pumice texture on them to express how much she can 'float' gracefully. She was created with a pose that expresses this trait of being graceful and light upon her feet.

The rock, granite, is a strong, coarse-grained rock that is made of quartz, mica, and feldspar (Gill). The crystals within granite are large, visible, and interlocking, which results in a structurally hard substance. This hardness makes granite an excellent material for creating statues and durable building stone (King). The strength of this rock inspired its character design of a strong man. This man is someone who obviously loves lifting weights at the gym and wears a shirt reflecting the rock type upon which the character is based. This design has a strong stance and a thick appearance, which contributes to the recognition of the strength of the rock.

Metamorphic Rocks

One metamorphic rock with unique traits would be gneiss. This rock is a foliated, or banded, rock composed of alternating bands of dark and light color minerals. Metamorphic

rocks, like gneiss, have experienced recrystallization within the Earth (Chrisholm). This banded rock is formed through the deformation of an igneous rock. Mineral grain size and segregation create alternating bands of color as a result of recrystallization under intense pressure and heat (King). The character design for gneiss is someone that is under extreme stress and pressure. The extreme pressures required to transform an igneous rock into the metamorphic rock gneiss represents the emotional and physical toll the Gneiss character is undergoing. She is exhausted from her stress, which is shown through her pose. She is wearing a hat with the gneiss-banded texture to represent the stress on her mind.

A form of non-foliated, or not banded, metamorphic rock is marble. This rock is relatively soft and easy to carve because it has a hardness of 3 on the Mohs scale of hardness. This makes it very easy to manipulate, susceptible to being changed, and carved (King). Marble comes in many colors and patterns but its most pure form is white. This character design for Marble is composed of lots of curves and round shapes. These shapes help give the character a soft appearance. The character is also very pale in color, which relates to the white color of pure marble. The character is meant to be someone who is just starting college, ready for new experiences, but easily influenced due to her inexperience to this new part of life.

Another example of non-foliated metamorphic rock is quartzite. Quartzite is known as a tough, durable rock that was used in stone tools due to its strength and hardness of 7 on the Mohs Hardness scale (King). Quartzite's toughness and use as a tool material inspired the design for the corresponding character. This character is athletic and has a somewhat boxier shape than other designs. This square shape depicts durability inspired by the strength of the rock. The common usage of this rock used for tools inspired the athletic personality. This character is in

motion, running and working, because of the work the quartzite tools can do. The 0007 on the shirt of the Quartzite character is a reference to the hardness level.

Sedimentary Rocks

One type of sedimentary rock is chert. Chert is a rock that breaks in a conchoidal fracture, much like glass, thus making it sharp. In the past, chert was used for weapons, like arrow and spear points (King). Chert breaks into irregular patterns, but early peoples found fire-treated chert is much easier to work (Mecholsky). This rock often is found as nodules with a crust on the outside that does not expose the interior construction. The character design for this rock is a large, punk man who has tattoos and piercings and a spiked collar. Chert is a rough looking man, but there is something different underneath. His personality and his appearance are almost opposites. He is depicted holding a puppy to show he has a soft nature underneath the piercings and tattoos. The character has piercings that are two textures of gray-colored chert rock to connect to the relationship of the hidden interior and the rock texture on the collar is the more obvious exterior crust.

Another example of sedimentary rock is limestone. Limestone is a rock formed from calcium carbonate, and can be formed organically from skeletal debris of material like coral, shell, algae, and feces. This rock forms in calm, shallow, tropical seas filled with such living creatures (King). The character design for limestone is a girl who is a confident resident of the beach. She feels at home in the surf and sun. Since limestone is formed in marine waters, this character calls the water her home and wears a necklace made of a shell, which connects her to the skeletal material that is sometimes a component of this rock.

A final sedimentary rock used for this project is sandstone. Sandstone is a clastic sedimentary rock made from mechanical weathering debris that is composed of sand-sized grains of often dis-similar materials, such as shells, minerals, and rock fragments (King). This rock inspired the character design that is an elementary school art teacher. This art teacher is always covered in small, varied materials, be it glitter or splatters of paint. This rock, being made of small weathered grains, is at its core a unique combination, and so is an art teacher. Art teachers are unique, creative, and have a lot to deal with on a daily basis.

Conclusion

Personifying inanimate objects within nature was a creative way to amplify human-like geologic traits of rocks. It was often difficult to choose exactly which traits from each rock to use when designing the character, since the type of rock and its composition possess so many distinct features. Although more geologic information was discovered during the research phase than was described in this paper, only the most relevant and prominent traits were incorporated into the finalized characters.

This project provided an opportunity to amplify the beauty of geological objects and incorporate them in a creative way into a series of artworks. Throughout the process, the focus on petrology enhanced an understanding of the main types of rocks as well as various groups of rocks within each classification. In addition, new techniques were discovered and applied in the process of developing the characters. Through the research and creation of the characters, the use of lighting, shading, proportion, color and archetypical attributes were enhanced. Overall this project encouraged critical thinking and creativity, as well as facilitated an innovative approach to a conventional topic.



Obsidian



Pumice



GRANITE

ENGAGE





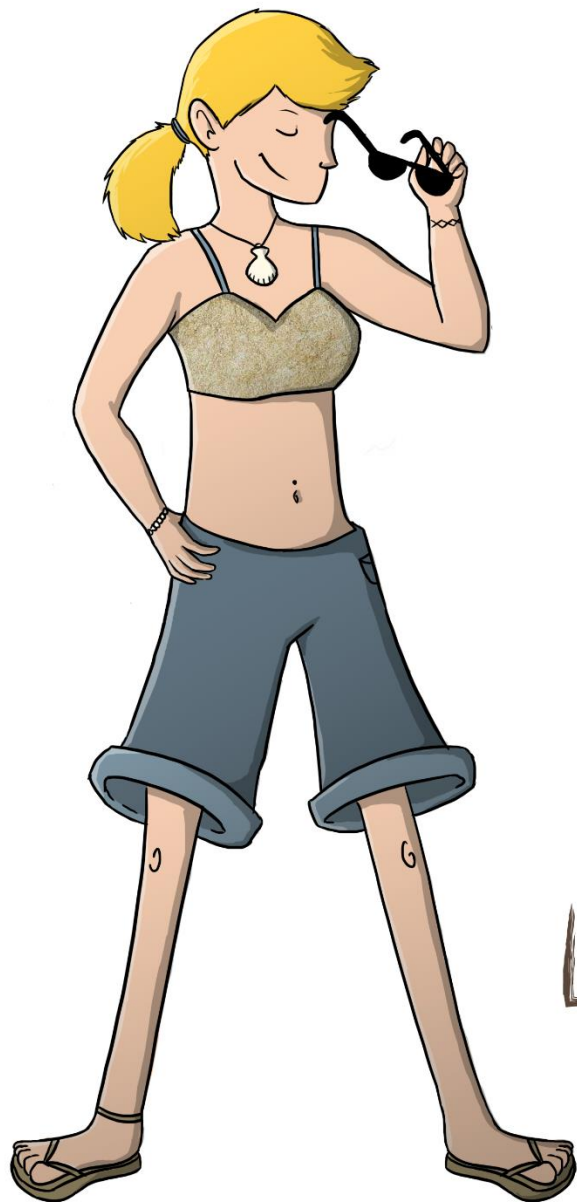
MARBLE



Quartzite



CHEAT



Limestone



SANDSTONE

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