The Great Barrier Reef Mural by the Kindergarten class

THE GREAT BARRIER REEF

The Great Barrier Reef off the coast of Australia is the world’s largest single structure made up of living organisms. The Great Barrier Reef is made of millions of coral. It is bigger than the Great Wall of China, and it can be seen from space. The Great Barrier Reef is at least 20,000 years old. Coral are marine animals that make calcium carbonate, which formed a hard shell. The shells build up, creating coral reefs. This coral reef consists of over 2,500 individual reefs and 900 islands.

The reefs offer food and shelter, which make them a popular home for other sea life. The reef is home to 400 different kinds of coral, as well as fish, birds, worms and crustaceans. Sea turtles and birds come here to lay their eggs, and butterflies come in swarms to rest over the winter. The reef is an ecosystem; the animals depend on each other. Some animals, like the sea anemone and clownfish, have a partnership that benefits both creatures. Colorful coral are some of the deadliest predators in the ocean!

The Great Barrier Reef is a world heritage site. It is protected from fishing.

During the Great Barrier Week, the children drew and painted animals and fish that live on the reef. The children also created a piece of coral. The coral and fish were added together to create a hallway mural.
NIAGARA FALLS
Located on the Niagara River, which drains Lake Erie into Lake Ontario, the Niagara Falls form the highest flow rate of any waterfall in the world (they can fill 1,000,000 bathtubs every minute). Niagara Falls is the collective name for three falls, the Horseshoe Falls, the American Falls and the Bridal Veil Falls.

We spent the week experimenting with water. We began by practicing pouring water from a pitcher into glasses of various sizes. We used a hand pump and pipes to move water from a bucket on a table through the pipes and into the water table.
We created the colors of the rainbow in test tubes by using the 3 primary colors, red, blue and yellow.
We made music by playing the water glasses. We made a rainbow by shining a flashlight through a bowl of water.

Niagara Falls is the source of hydroelectric power for both Canadian and American cities. The children worked with Snap Circuits and learned how to build an electrical circuit to power a light bulb. The children then worked with disassembled battery operated toys, wire leads with clamps and battery packs to create a circuit that would power the toy. Problem solving, cooperation and applying previous knowledge were skills required to make the toys work.

Mrs. McGillen introduced the concept of sink and float to the children by having them predict and test if an object would sink or float. Once the concept was understood, the children built a “boat” that would hold weight. The boats were tested for floatation and then weights were added to find out how much weight they would hold before sinking.
The Grand Canyon is found in the U.S. state of Arizona. The Grand Canyon is 277 miles long and 6000 feet deep. At its widest point, it stretches 18 miles across but is only 4 miles across at the narrowest. The Colorado River runs through the canyon and has been eroding its steep sides for millions of years. The Grand Canyon is an important sight for geological research due to the different types of rocks that are visible. The rock on the upper rim is 230 million years old, while the rock at the bottom of the canyon is 2 billion years old. The Grand Canyon became a national park in 1919.

Geology
Stacking different colored pancakes allowed Mrs. McGillen a delicious way to demonstrate the layers of sedimentary rocks. The children explored erosion by pouring water onto the dry sand and pebbles in the water table. The children extended the activity by using squirt bottles of water to push water beads through a plastic track showing how the rushing water picks up debris and uses it to cut through the rock. Adding sand, pebbles, small gravel, colored glass gems and bamboo sticks to our Loose Parts table allowed the children to create radial patterns. We then explored the concepts of greater than and less than by adding rocks, pebbles and balances.

Wildlife
The California Condor became extinct in the wild in 1987 when the three remaining condors were taken into captivity in order to save the species. The birds were bred in captivity and reintroduced into the wild in 1992. The California Condor is the largest bird in North America, with a wingspan of 9.5 feet. The children made a condor to scale, measuring and drawing the huge wings.
Mount Everest at 29,035 feet is the highest mountain in the world. Everest grows about a quarter of an inch a year. Mount Everest is 60 million years old. The summit is the border of Nepal on the south and China or Tibet on the north. It takes 40 days to climb Mount Everest in order for the body to adjust to the high altitude. Camps are set up on the mountain for climbers to become acclimated to the oxygen level. Climbers use special equipment, clothing and supplemental oxygen to help them make the climb.

Using graham crackers and cool whip, the children simulated the collision of the tectonic plates that formed the mountain. The children used salt dough to make models of the various land forms that we had studied. We hung our wishes from the top of the mountain when we made Tibetan Prayer Flags. We drew and painted MOUNTAINOUS self portraits using oil pastels and tempa paint.

The children explored measurement by using Unifix cubes to measure objects around the classroom. We continued greater and less than by using an open alligator mouth to identify the greater number.

After introducing a magnetic compass, the children spent time exploring magnets. They tested materials to identify which were magnetic. They experimented with the North and South poles, attracting and repelling other magnets.
Paricutin is a cinder cone volcano in Michoacán, Mexico, that rose out of a cornfield owned by a farmer, Dionisio Pulido. Paricutin was established as a natural wonder because it was the first volcano that scientists could fully document from birth to death. The volcano has been dormant since the last eruption in 1952. The volcano was also fast growing, reaching three-fourths of its size within the first year. It grew to 10,397 feet with in a year.

The classroom erupted with a variety of activities involving volcanoes. A volcano, trees, colored sand and plastic animals were added to the sand table for imaginative play. Mixing clear glue, liquid starch, food color and glitter, we continued dramatic play by making lava slime. The children erupted their own volcanoes by mixing baking soda, vinegar and red food coloring in a container.

In the art center, the children used red and yellow paint to splatter paint an erupting volcano.

We introduced subtraction by creating our own subtraction stories such as There were four rabbits in a burrow, one ran out and there were three left. 4-1=3 (Roxie) Also, there were two rockets in space, one rocket got hit by meteors leaving one rocket. 2-1=1 (Matthew)
AURORA BOREALIS

The auroras, also known as the Northern Lights, are naturally occurring lights that create intriguing and spectacular displays in the sky. The aurora lights frequently appear as diffused glow lighting up the horizon. The most amazing sight is when the northern lights appears as waves across the sky; it is almost as if the lights are dancing.

The Northern Lights are caused by electrons from solar winds. The electrons are attracted to the poles by the magnetic fields found there. The electrons mix with gases in the atmosphere, causing the gases to glow. Solar flares can also cause the Northern Lights to appear.

We spent the week exploring light, color, and dark. We darkened the Make Shop and added the overhead projectors and colored gems to create our own version of the Northern Lights. Music and movement were added to create a Northern Lights dance party!

We continued exploring light and dark by using a black light to paint with fluorescent colors. The children enjoyed watching not only their paintings glow but also their clothes! We tested glow sticks in warm and cold water to watch how temperature effected the brightness. We observed colors dance in milk when we put drops of food coloring into whole milk then added a drop of Dawn dish soap.

Mattias arranging gems on the overhead projector.

Adella and Jemma arranging gems on the overhead projector.

Alex, Mason and Campbell observing the colors dance.

Rhys made a sun with cheese, yellow and orange peppers.

Evy, Megu and Marley dancing under the Northern Lights.
The Harbor of Rio de Janeiro is located in Brazil and was created by erosion from the Atlantic Ocean and is also known as Guanabara Bay. The Harbour is the largest bay in the world based on the volume of water. The Harbour is surrounded by gorgeous granite monolith mountains that include the famous Sugar Loaf Mountain at 1,296 feet (395 m), Corcovado Peak at 2,310 feet (704 m), and the hills of Tijuca at 3,350 feet (1021 m).

Focusing on the country and culture of Brazil, we learned about soccer and the national holiday, Carnival. Sam’s dad, Joao, a former soccer player, demonstrated his soccer skills for us one afternoon. Carnival marks the beginning of Lent and lasts for 5 days. More than 200 samba schools dance in the parade. The dancers wear lavish costumes and masks.

The kindergarten designed their own masks during the week. Using recycled materials such as yarn, corrugated cardboard, flowers, paper scraps, feathers, and gems, we painted cereal boxes to create interesting and unique masks.
April is always an exciting month in the kindergarten! Each year, eggs from Miss Ellie’s chicken farm in Somerset arrive for the children to attempt to hatch. In preparation for the big event, the children helped set up an incubator in the classroom. The incubator temperature has to be kept at a steady 99.5. The humidity has to stay around 50%. We use an egg turner to simulate the mother hen turning her eggs. On April 6th, 14 eggs arrived! The children were surprised that the eggs were not white but a variety of colors. The children counted and then placed the eggs onto the egg turner in the warmed incubator. We made a hatching calendar to track the 21 day incubation process. During this time, preschool friends enjoyed visiting our eggs. The kindergarten loved explaining the process to the younger children!

Aside from hatching our chicks, the favorite activity of the unit was the egg drop competition that we held. Mrs. Armbruster gave the children one egg each and asked them to design and build a protective case for the egg. The eggs would be dropped off the wall in the reflection garden. We scoured the art closet and found a variety of materials to use for the containers. Foam, styrofoam, plastic containers, packing peanuts, cardboard boxes and bubble wrap were the popular choices.

After 2 mornings of designing and building, we were ready for the big drop. The class assembled in the garden to watch as Mrs. Armbruster took their eggs to drop. After all eggs had dropped, we went back to the class to open the cases and check the eggs. We were pleased by how many survived. The children discovered that the ones that broke first were the ones in plastic containers. Although the plastic containers were intact, the force of the impact caused the egg to break against the side. The children were intrigued and wanted to continue building egg cases at home using the techniques that worked and adding new ideas and materials.

**Shape=Strength:**

**I wonder**...how strong is an egg. Can it hold the weight of a person?

**I think**...the eggs will crack when we stand on them.

**I learned**...an egg can support our weight!

One end of the egg is more “pointy” while the other end is more round. Just make sure that all of the eggs are oriented in the same direction. By doing this, your foot will have a more level surface on which to stand.

The shape of the egg is the secret! The egg’s unique shape gives it tremendous strength, despite its seeming fragility. Eggs are similar in shape to a three-dimensional arch, one of the strongest architectural forms. The egg is the strongest at the top and the bottom (or at the highest point of the arch).

Although our chicken eggs did not hatch, August’s mom was able to find 11 chicks for us to keep in the classroom for the week. The children were so excited to care for these chicks. It was amazing to watch how fast they grew! The children enjoyed holding and playing with the chicks. It was sweet to watch how nurturing the children were with the baby chicks.