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. Just to be safe we set up two incubators, putting half of the eggs in each.

On April 8th, 24 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!
CANDLING

Our 21 days of waiting for our eggs to hatch were filled with a variety of egg activities. The children were very interested in what was happening inside the eggs. We watched several YouTube videos showing the development of the chicken embryo (http://www.youtube.com/watch?v=LKvez9duEHO).

On Day 7 we candled the eggs to check to see if we could see any development. Again we used the computer to view photos of what to look for while we were candling. We were checking for the appearance of veins and a dark spot for the eye. The children were fascinated with how much we could see inside our eggs. We marked the “good” eggs with a star, the “not sure” eggs with an X and threw away several eggs that were not fertilized. Each morning we candled the eggs and watched our chicks developing. The children were so excited when we saw a chick moving inside the shell!

“EGG”-SPLORATION

Our fascination with eggs led us to deeper exploration. The children were given an unfertilized egg to explore. We observed the shell, which we discovered is porous. Immediately beneath the shell are two membranes, the outer and inner shell membranes. These membranes protect the contents of the egg from bacteria and prevent moisture from leaving the egg too quickly. The yolk is the source of food for the embryo and contains all the fat in the egg. The small white spot on the yolk is call the germinal disc. The germinal disc is where the female's genetic material is found.

We continued exploring eggs by comparing a raw egg to a hard boiled egg. The children conducted simple tests on both eggs to see which egg floated, weighed more and spun the longest. Then they recorded their observations.

AUDUBON INSPIRATION

“An egg is quiet, An egg is colorful, An egg is shapely, An egg is clever, An egg is artistic, An egg is textured.” After reading An Egg Is Quiet the children used water colors to recreate a variety of bird eggs. After painting eggs, students used colored pencils to sketch the matching bird. Students recreated an Emperor Penguin, a Black Vulture, a Common Mure and a Booted Warbler, just to name a few.
OVIPAROUS ANIMALS

Chickens (or birds) are not the only animals that lay eggs. Animals that lay eggs outside their bodies are oviparous. Arthropods (insects, spiders and crabs), fish, amphibians, reptiles, dinosaurs, platypus and echidna all lay eggs too.

The children were surprised to learn that some sharks, such as the Horned Shark, are oviparous animals. Miss Scholes led the discussion of oviparous animals by reading the book *Chickens Aren’t The Only Ones* to the children. They then researched an oviparous animal and used a photograph to sketch the animals.

THE HUMPTY DUMPTY EGG DROP

Aside from hatching our chicks, the favorite activity of the unit was the egg drop competition that we held. Miss Scholes gave the children one egg each and asked them to design and build a protective case for the egg. The eggs would be dropped out of the second floor window. If the egg survived, then it would move up to the third floor and so on. We scoured the art closet and found a variety of materials to use for the cases. Friends also brainstormed and brought recycled items found at home. Foam, styrofoam, plastic containers, packing peanuts, cardboard boxes, diapers and bubble wrap were the popular choices.

After 2 mornings of designing and building, we were ready for the big drop. Half of the class assembled in the parking lot to watch and the other half took their eggs to the second floor to drop. After both groups had dropped their eggs, we went back to the class to open the cases and check the eggs. We were surprised by how many survived the first round. 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. We continued dropping the eggs all the way from the fourth floor! Six eggs actually survived this fall! After the first round of falls, the children were motivated and wanted to continue building egg cases using the techniques that worked and adding new ideas and materials. The students enjoyed watching and re-watching the video clips from our egg drops, focusing on the containers’ flights and landings.
**THE INCREDIBLE EGG**

**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).

**Inertia:**

I wonder...what will happen if we hit the paper plate out from under the egg.

I think...the egg will go flying across the room!

I learned...since the egg is not moving while it sits on top of the tube, that’s what it wants to do - not move. We applied enough force to the paper plate to cause it to zip out from under the cardboard tube (there’s not much friction against the drinking glass). The edge of the tray hooked the bottom of the tube, which then sailed off with the tray. Basically, we knocked the support out from under the egg. For a brief nanosecond or two, the egg didn’t move because it was already stationary (not moving). But then, as usual, the force of gravity took over and pulled the egg straight down toward the center of the Earth and into the glass of water.

The setup includes a large glass of water, a paper plate, a cardboard tube and an egg.

**Naked Eggs:**

I wonder...if we can use vinegar to make a naked egg.

I think...the egg will explode!

I learned...It looks like an egg, but it’s translucent—and the membrane flexes when you squeeze it.

When you submerge an egg in vinegar, the shell dissolves. Vinegar contains acetic acid, which breaks apart the solid calcium carbonate crystals that make up the eggshell into their calcium and carbonate parts. The calcium ions float free (calcium ions are atoms that are missing electrons), while the carbonate goes to make carbon dioxide—the bubbles that you see.

www.stevespanglerscience.com/experiment/walking-on-eggshells
www.stevespanglerscience.com/experiment/egg-drop-inertia-trick

**John and Yu explore some egg**
FINALLY... CHICKENS!

After much anticipation and 21 days of patiently waiting, our chicks started to hatch...right on schedule (Monday, April 29th)! Ms. McMichael and her extended day friends were lucky enough to witness the hatching of our first chick, Lucky! Lucky was named after Mrs. Perovich decided she would check on the incubator Monday night, discovering the incubator had been mistakenly shut off. It was “lucky” that she checked on our newest chick, returning the incubator to its correct temperature! On Tuesday, Mrs. Perovich and Miss Scholes checked on the eggs and found 1 hatched chick (named Little Jacob in honor of Jacob's birthday) and more ready to go. By May 1st, our third egg hatched, May. She hatched just at the right time, allowing the children to see a hatching in person. Unfortunately, by the end of the day, our fourth chick was experiencing some trouble, the egg was cracked around but the chick was exhausted and had stopped trying. The yolk had dried around it and was making the hatch very difficult. Miss Scholes used a q-tip, tweezers and warm water to free the chick. The children named that chick “Monster Chick”

CHICKEN FUN

The children loved having the chicks in the classroom. We fed, cleaned, held, petted, compared, drew, and wrote about them. When that got old, the children came up with idea to race them through the mazes that they built with Magna-Tiles. Chicken races were great fun. (No chickens were mistreated in the process!) One chicken, Monster Chick, became the champion chicken by running through the mazes faster than all of his opponents.
GOODBYE TO GREAT FRIENDS!

The month of May brought a time to say goodbye to some of our friends. We enjoyed our time working with our interns, Aurelia, Hannah and Becca, who spent this semester helping in our classroom. Aurelia learned and played with us every Monday and Friday. Hannah and Becca spent Tuesday and Thursdays with us, getting messy with experiments, working on our letters and numbers and enjoying the blocks, computers and writing center. We will miss them and wish them well on their future endeavors!

Becca and Megumi play catch.

Hannah and friends playing a game.

Aurelia explores the nesting dolls with Ali and Thomas.

END OF THE YEAR FUN!

Great Expectations

It's time to say, "Good-bye." Our year has come to an end.
I've made more cherished memories
And many more new friends.
I've watched your children learn and grow
And change from day to day.
I hope that all the things we've done
Have helped in some small way.
So it's with happy memories
I send them out the door,
With great hope and expectations
For what next year holds in store.

By: Maria Cuellar-Munson

Mrs. Perovich, Miss Scholes and Mr. Rood