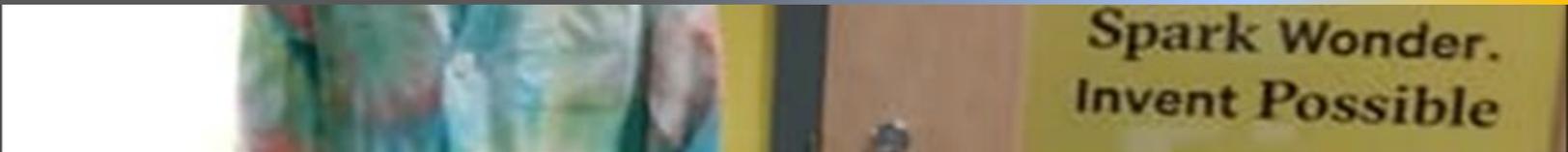




# STUDY OF SELF-NARRATIVE INQUIRY



# S.T.E.A.M & INTRINSIC MOTIVATION *Journal*



# Introduction

This journal is part of the capstone project for the degree of Master of Arts in Art Education at the University of Florida. Since I started studying to earn my Master's degree at the University of Florida, I became interested in how intrinsic motivation works in learning. While I was researching students' intrinsic motivation, I came across the Cade Museum's mission statement. Part of their mission statement reads, "Rather than teaching subjects in isolation, unconnected to daily life, we teach and inspire through inventions, creating an interlocking tapestry of experiences" (The Cade Museum, n.d.). The way the Cade Museum introduces a variety of subjects connected to everyday life resonated with me deeply. I decide to do my capstone research on the connection between STEAM and intrinsic motivation. For my research methodology, I chose to create a narrative self-study. This is a combination of self-study and narrative inquiry. Self-study is the study of one's practice and one's own role in it. As my self-study method, I used narrative inquiry because it reveals more profound thoughts and feelings about why we do things the way we do. In narrative inquiry, we contemplate our accumulated life experience to draw out our reasoning. I compiled my experiences at the Cade Museum of Creativity and Invention in this book. In each scene, I start with an event I experienced and then reflect on my inner thoughts.



Color stickers represent intrinsic motivators that apply to each scene.

(Yellow) = Interest

(Green) = Involvement

(Orange) = Curiosity

(Blue) = Satisfaction

(Red) = Positive challenge

(Pink) = Encouragement. This is added as synergistic extrinsic motivator.

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# Scene1: Entering the Museum



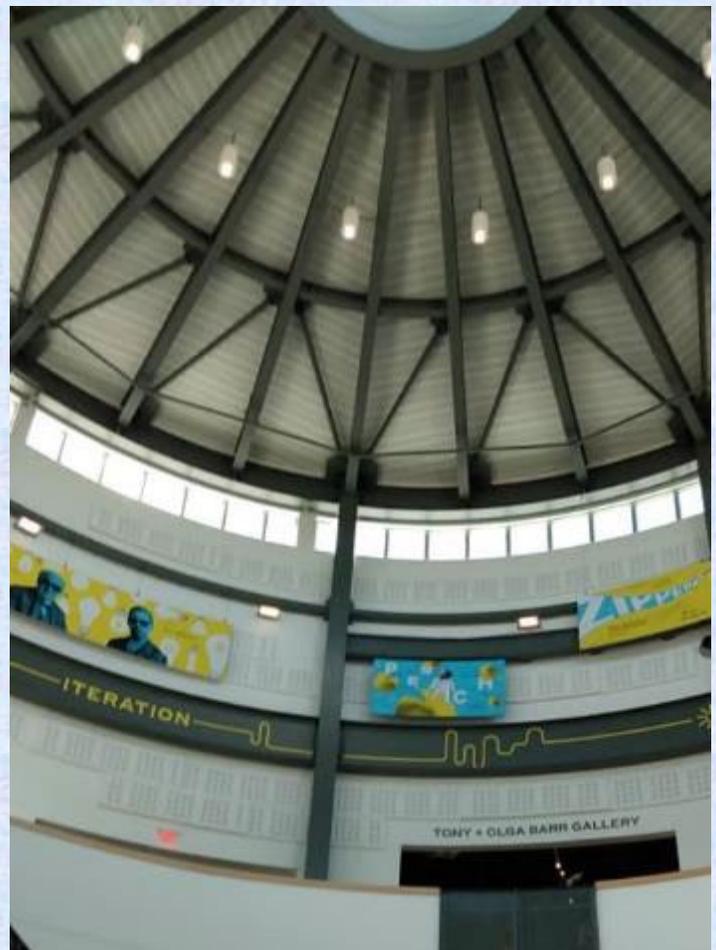
## --Existential Event--

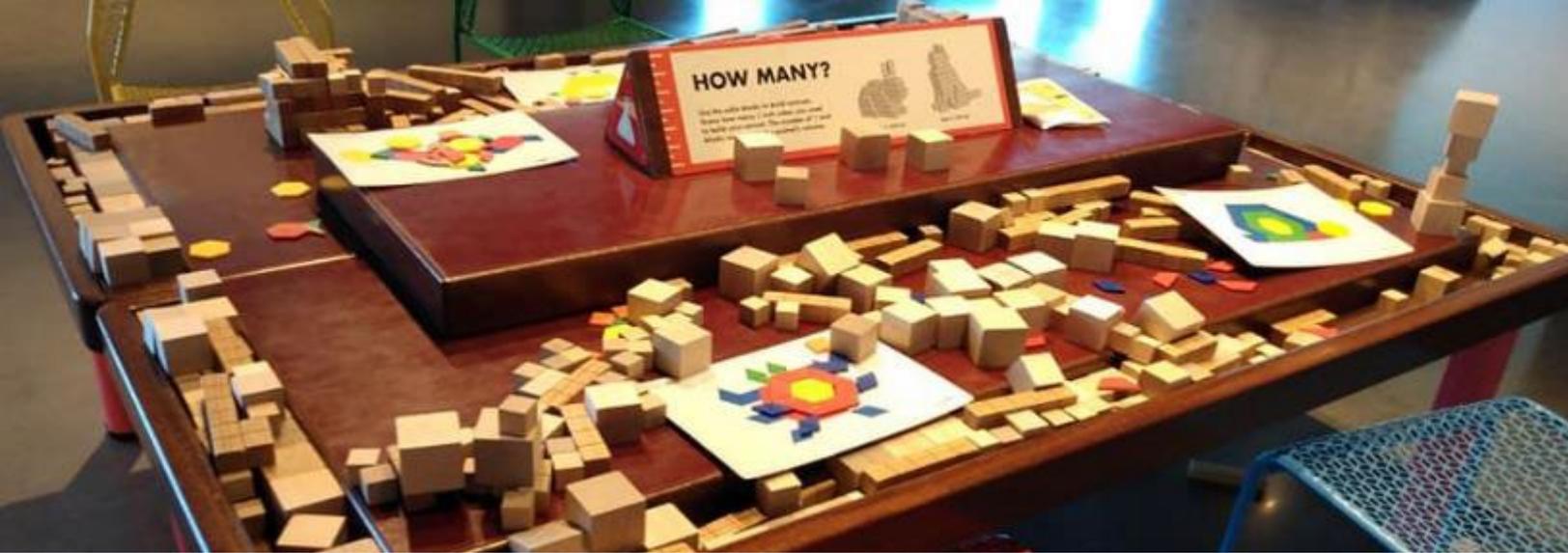
When I entered the Cade Museum, I saw many children participating in hands-on activities, and I heard their surprised voices and endless questions flying past such as, “How does this work?” “Wow, what is this?” “Why does it do that ?!” The main lobby, called the Rotunda, had 55-foot ceilings and was filled with children’s wonder and beautiful light from the skylight above.



## --Inner Response--

When I first entered, it felt different from other museums I had been to. In other museums, I usually feel serenity and dignity. The atmosphere tends to change drastically from the outside world; the space feels almost like a holy place where I have to be quiet and well-mannered. However, this time was different. On entering the Cade Museum, I encountered a lively atmosphere filled with abundant curiosity. Hearing children’s surprised voices and curious questions reminded me that learning about the world through all of my senses and experiencing “wow” moments have been essential life components for me. STEAM education naturally invites hands-on activities that stimulate our intrinsic motivation. Also, the building structure was very interesting.





Visitors get to touch everything to explore



## Scene 2: Rotunda (main lobby)



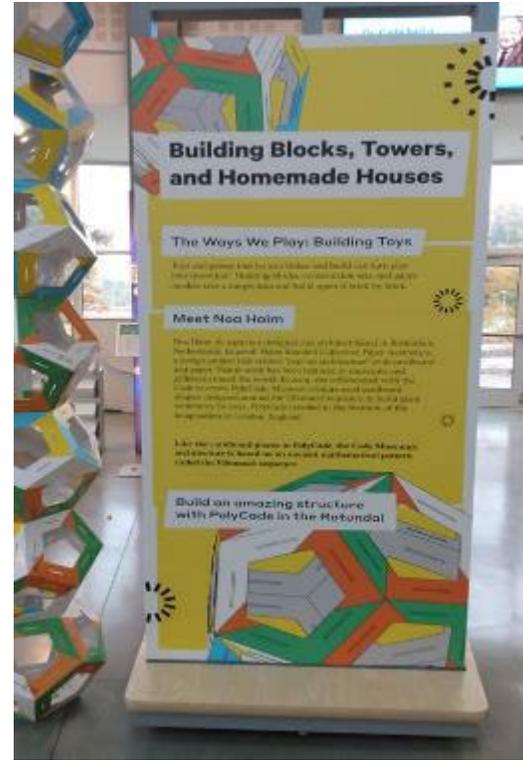
### --Existential Event--

There were a few different sections in the rotunda (the main lobby), and each section provided hands-on activities with a docent/educator overseeing the activity. The museum calls its docents educators, and a number of docents/educators were positioned throughout the museum to answer questions or assist with activities. One docent explained to me that the beauty of this museum is that visitors get to touch and play with the living exhibition, unlike most museums that have signs warning visitors to “please do not touch.”

### --Inner Response—

As an afterschool program teacher, I often took my students on field trips. Taking them to a museum tended to be a more challenging trip because the teachers constantly had to remind students to be quiet, walk quietly, and not touch anything. At the time, I thought that going to a museum was a good thing. However, thinking back and trying to imagine the students’ perspectives, I am uncertain that the experience was so beneficial when they were constantly told to be quiet and not touch anything during the trip. I feel that if students could touch things and express their thoughts, it could promote their intrinsic motivation to explore deeper.

## Scene 3: Polygons



--Existential Event--

The first thing I noticed in the rotunda was numerous polygons and shapes that could be constructed into 3D forms. A sign that read “The Ways We Play: Building Blocks” explained that toys and games that let you think and build can turn play into an invention. The sign stated: “Like the cardboard pieces in PolyCade, the Cade Museum’s architecture is based on an ancient mathematical pattern called a Fibonacci sequence.”

--Inner Response—

This made me look up at the ceiling of the museum. I felt that this activity was well-thought out. While visitors play and build with shapes, they are educated about the museum’s architectural design and the mathematical sequence behind it. They connected this STEAM activity to real-life learning and explained how it could be used and integrated into our lives. I felt that helping children understand how math is used in our daily lives is a motivating way to teach them that math is more than doing drills at school.



4

Edison's  
Pile of  
Junk

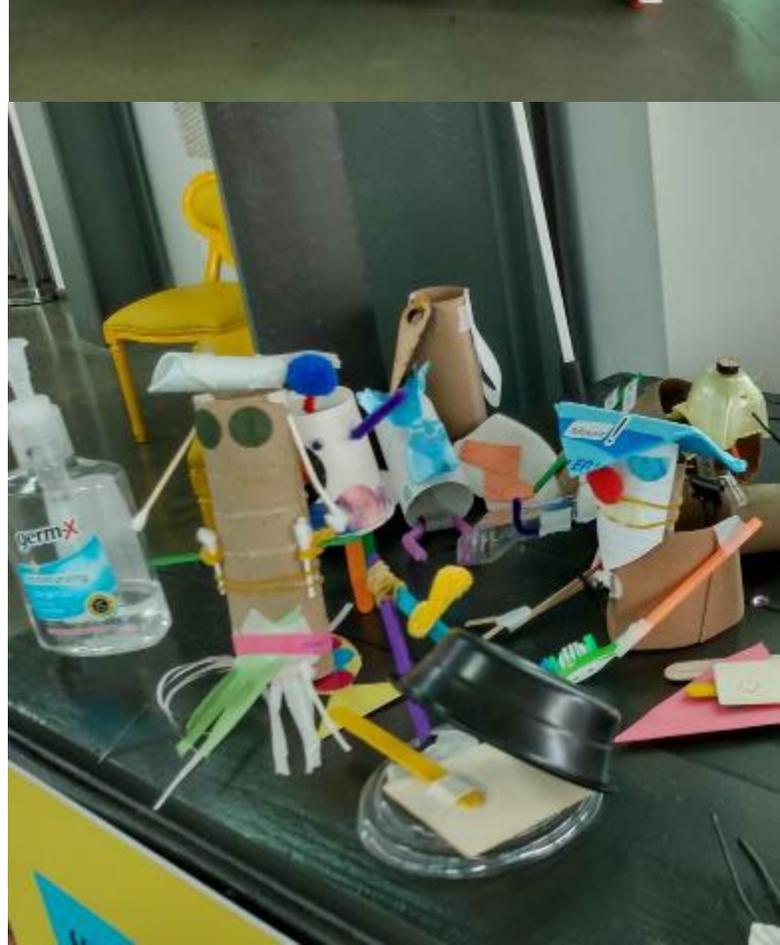
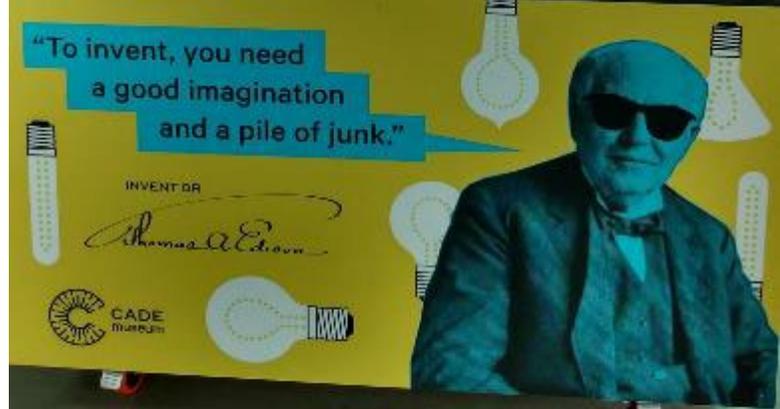
--Existential Event--



The following section was called “Edison’s Pile of Junk.” Edison’s booth had a quote: “To invent, you need a good imagination and a pile of junk.” A docent in the booth handed my children and me a bag, a card, and some tools. Inside the bag, there were random items such as a piece of Styrofoam, some plastic, a popsicle stick, a pipe cleaner, a toilet-paper tube, etc. The card had instructions to make a bug. A docent explained that “Edison invented amazing things from a pile of junk. Try to make what it says on the card using the junk you have.” My children’s eyes sparkled as they opened their bags to see their junk. They eagerly started brainstorming how to make the bug, bragging about what they had in their bags, sharing their ideas, talking to others, giving opinions, and exchanging items.

--Inner Response—

Who would have thought that the junk that we usually consider trash would make children this excited? This STEAM activity made me remember my childhood and doing DIY projects with my great-grandpa, creating toys using things around us. I used to think that the more materials provided, the better. However, now I realize that limited materials can enhance children’s creativity because they have to develop new creative ideas to produce what they imagine. When children are challenged in a positive way, they become intrinsically motivated to explore. This also supports their use of problem-solving skills. A docent in this booth told me that children often surprise her with their unexpected creations or ways of using the materials that they would not have considered.



# Scene 5: Creativity Lab - Making a Rainbow in a Tube.

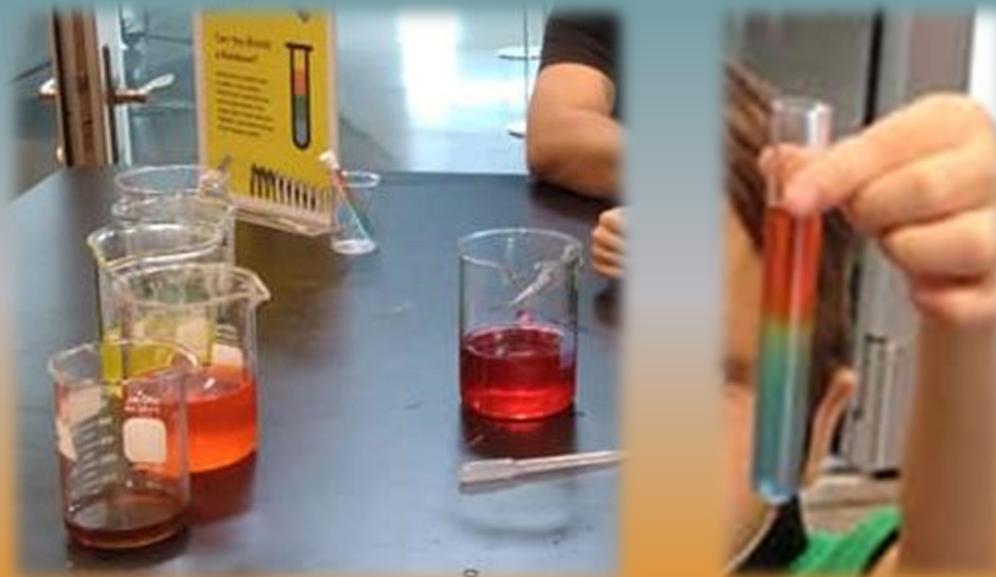


## --Existential Event--

When I entered the Creativity Lab, I saw that many children were engaged in hands-on experiments. There was lots of laughter and “wows.” There were different activities to choose from, including creating rainbows in test tubes, drawing with droppers, making glowing slime, and playing with kinetic sands. The whole room was decorated with a variety of scientific themes. While my children made slime, I joined the station making rainbows in tubes.

## --Inner Response--

I genuinely love hearing children’s excited voices. Listening to someone having fun makes me curious about what they are doing and makes me want to join in. I liked the set-up of the activities; as soon as I entered, I could see each activity booth, each looking exciting to try. Even though the room was decorated in scientific themes, the activities were mess-friendly; the environment felt like a mix of scientific knowledge with the messy, fun part of art. For example, making a rainbow tube was fun and challenging. I had to be very careful to keep each color in place, and I had to try a few different angles and different speeds to see what worked best. After some experimenting, I was pleased to finally have a nice rainbow. My children also tried the rainbow tubes after I did, and I felt that the results showed each of our individual characteristics. The creative lab was a great example of how art brings a joy and fun into STEM learning.



# Scene 6: Creativity Lab - Drawing with Droppers.



In the drawing with droppers section of the Creativity Lab, my children and I were encouraged to draw on a coffee filter with washable markers. After we finished drawing, a docent gave us a dropper of liquid to put droplets on the drawing. When the droplets hit the drawings on the coffee filters, the colors spread. Some of the colors mixed together in unexpected ways, creating soft colors and dyeing the whole coffee filter. Once the coffee filters were dry, we had the option to take them home as is, or we could make something out of the dyed coffee filter. Using the coffee filter and a pipe cleaner, I made a butterfly out of mine. One of my children made a flower, while the other kept theirs as is.

--Inner Response--

It was amazing to watch the water spread slowly and create a gentle mix of colors as it permeated through the washable marker dye. The drawings and colors on the filter mixed in unexpected ways. It was interesting to try a different way to utilize washable features and coffee filters. When I used the dropper to put droplets on the filter, I felt like I was experimenting to see what the outcome would be on each part of the coffee filter. I also loved that we had an option to enjoy the dyed coffee filter as is or to create something new out of it. When my children asked me if we could do the activity at home, many questions, such as would it also work with permanent markers, came to mind. I speculated about what would happen if we used dry-erase makers or natural colors extracted from plants? Would they react any differently when we dropped water on them? How about the paper? Could I use something other than a coffee filter? More exploration ideas popped endlessly into my mind. I realized that we are too used to drawing on paper with crayons or markers explicitly made for drawing. When offered an unusual way to draw and create, I wondered more about what else we could do. Through this STEAM activity, I felt art and science are close together.



## Scene 7: Free Area, Kinetic Sand.

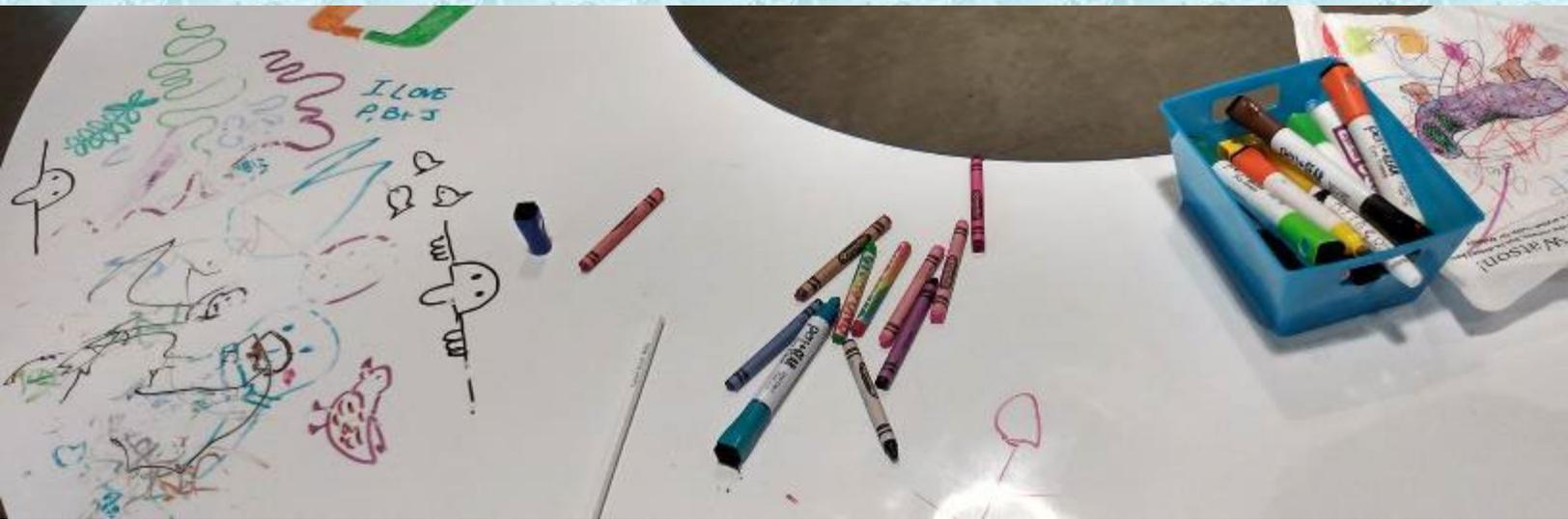


### --Existential Event--

While many sections of the Creative Lab offered activities with explanations, a few of the areas were dedicated to completely free play. I decided to take a break while my children explored other activities in the same room. I sat by the kinetic sand table and just played with the sand. The texture of the kinetic sand was different from regular sand—it tended to hold its shape without having to add any water.

### --Inner Response—

The texture of the kinetic sand felt unusual and weird, yet I couldn't stop touching it. It was interesting to see the sand keep its shape for a while before slowly diminishing its form. I wondered what ingredients gave this sand its funny, satisfying texture. Was it water and a little glue that kept the sand together? Perhaps some cornstarch mixed in? While my children wandered, I tried to see how tall and skinny of a mountain I could make without letting it fall. Then my children came back to me with their finished projects. I realized that I wasn't sure how long I had been playing with the kinetic sand. I knew it was not hours, but it was long enough for my children to finish their small projects at other stations in the room. I felt that I may have been in a state of flow, which is the phenomenon or feeling of being in one's "zone." When one is in flow, they are fully immersed in an activity, highly concentrated, and their skills are challenged. Csikszentmihalyi (1990) explained this further, stating that people find happiness in a heightened state of concentration. I love art, and painting often takes me to flow. However, this time, thinking about science of kinetic sand took me to deep concentration.



## Scene 8: Fab Lab - Printing Press.

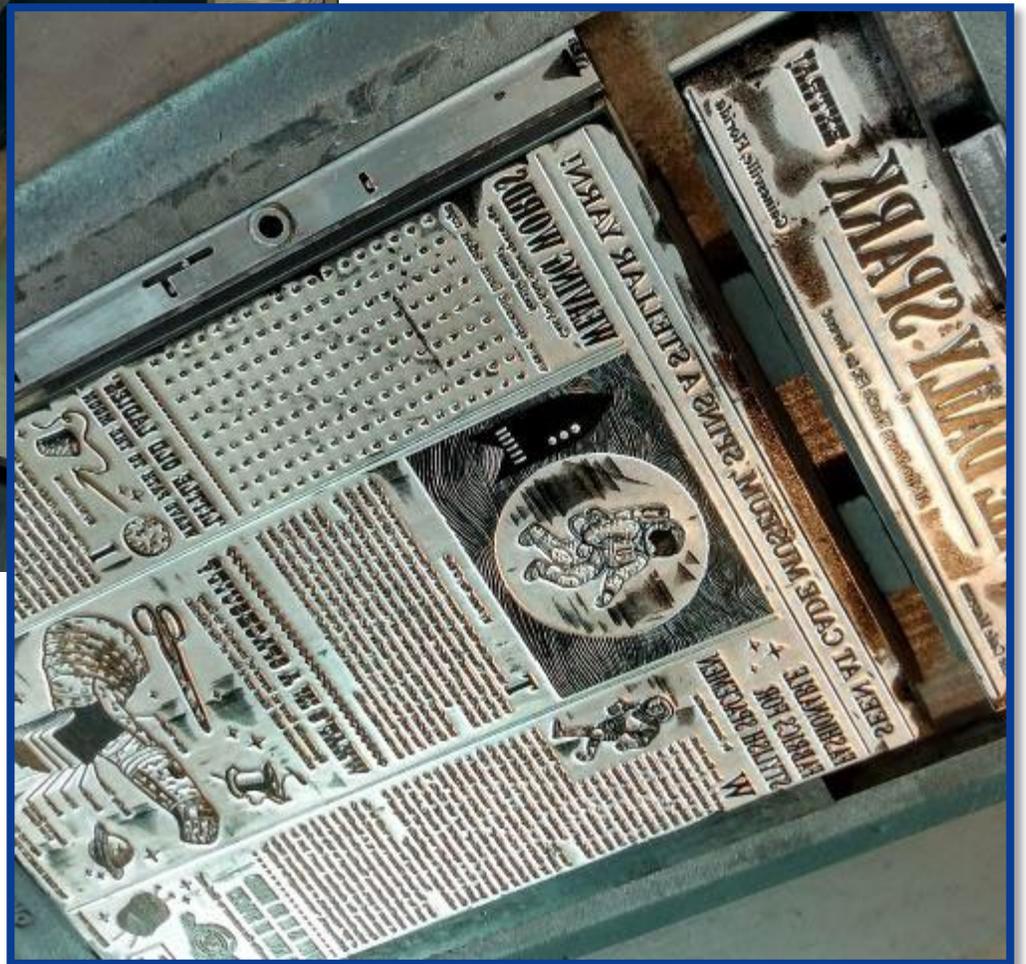
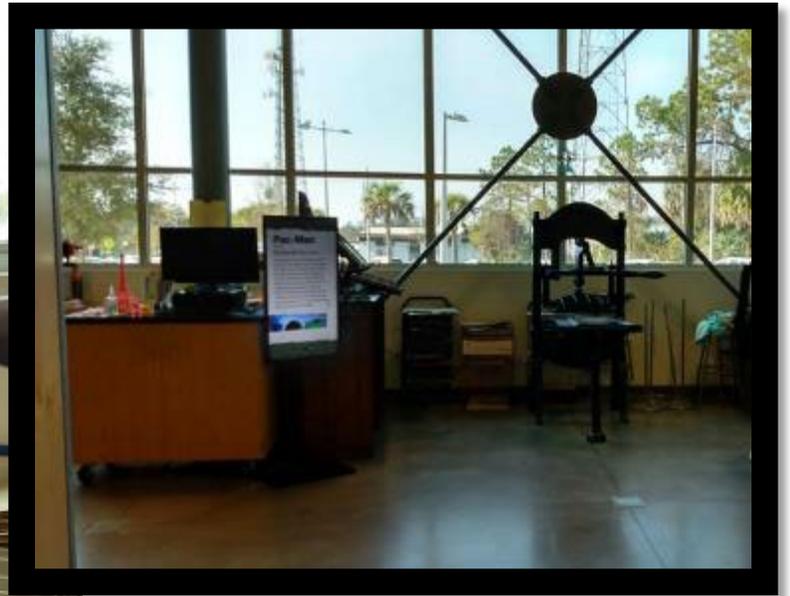
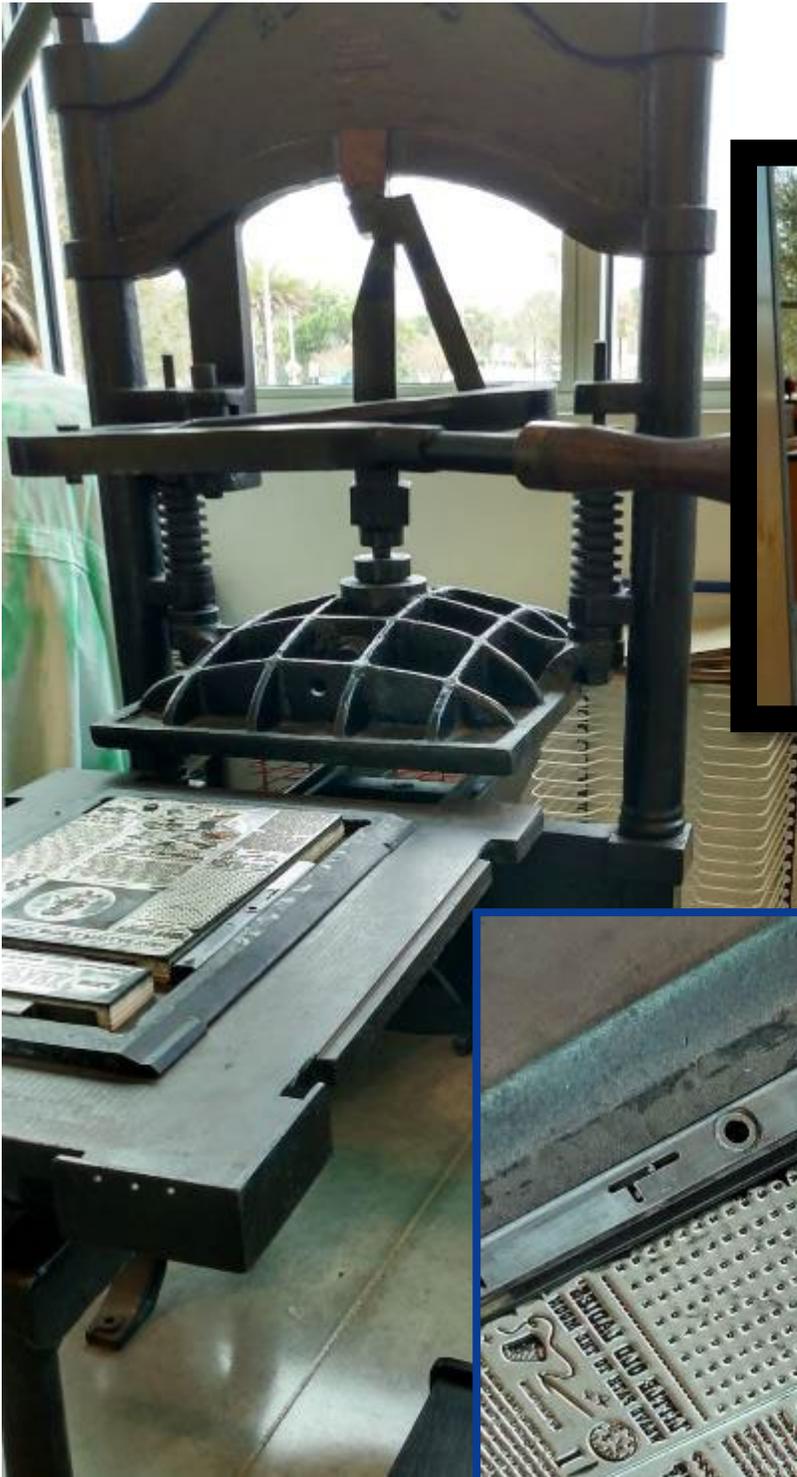


### --Existential Event--

A printing press and 3D printers in the Fab Lab demonstrated the evolution of technology. A boy in front of me was looking at an old printing press and a docent approached him, asking if he wanted to see how it worked. I decided to stay and find out how the machine worked as well. The docent asked the boy's name, showed him how the press worked, and printed a newspaper. The boy received the printed newspaper and exclaimed when he saw that his name was in the newspaper. The docent smiled as the boy's eyes brightened.

### --Inner Response--

It was a wonderful surprise for the little boy, and it made me and the others who were watching smile. Having one's name in the newspaper does not happen very often, and I believe it made him feel very special. The docents used a great synergistic extrinsic motivators that helped in the visitor's engagement in activities. We are surrounded by printed materials like books, newspapers, and flyers in our daily lives, but we rarely think about how these things are printed. I believe the boy will never forget about the printing press. Sometimes small engagements such as these can change a child's life, maybe even leading to their future career. Among the many gifts I have received throughout my life, I most vividly remember the ones that someone made for me. For example, I have received a backpack that my grandmother sewed my name onto, a tote bag upon which my friend drew my favorite things, a picture collage made by my mom, and furniture that my great-grandpa made for me. When someone does something especially for you, it is memorable for a lifetime.

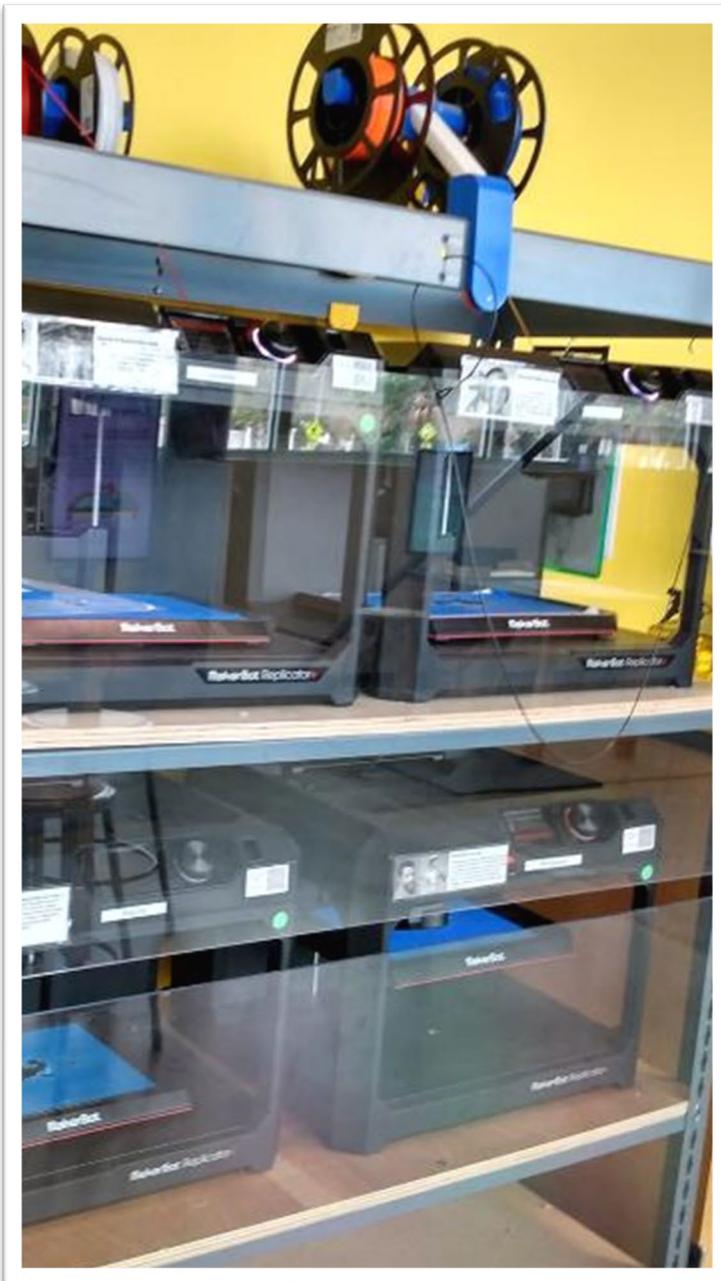


## Scene 9: Fab Lab - 3D design.



--Existential Event--

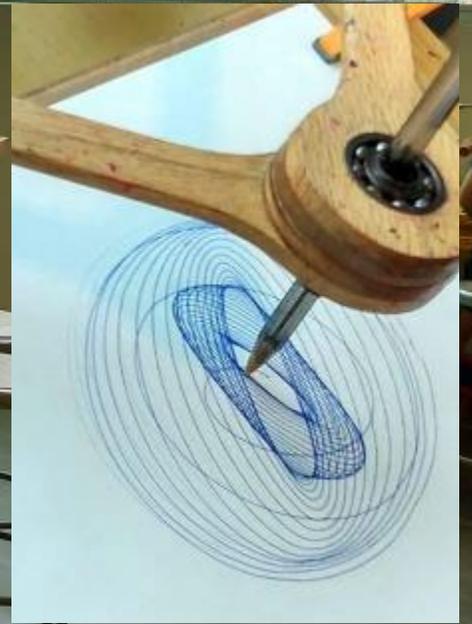
On one side of the Fab Lab there were 3D printing machines. 3D printing machines are great example of STEAM. A family was doodling on a 3D design computer, and a docent suggested that they could make the design into a key chain. The docent explained some design techniques to the family, and some other visitors, including me, gathered to listen as well. Soon everyone started asking detailed questions about how to change specific colors or dimensions to visualize what they imagined.



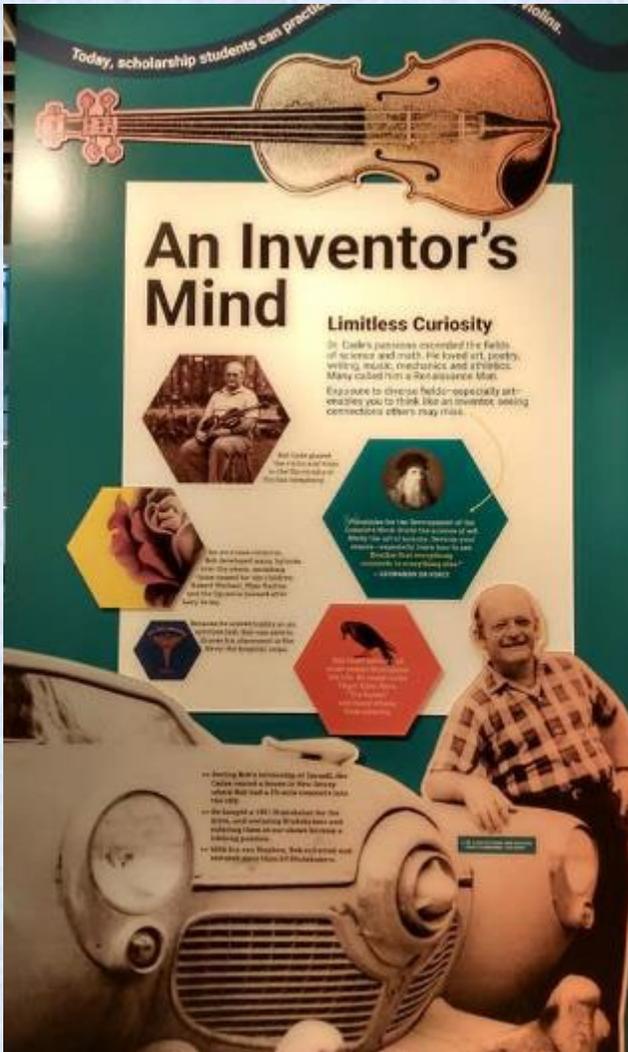
--Inner Response--

At first the family was just doodling on the computer, but when the docent approached the family to show them some design techniques, the doodling became spontaneous 3D-design learning. The family and the other visitors came up with many questions that allowed the docent to teach us about 3D design in more detail. I had never done a 3D design before. And seeing others learning from scratch and watching the design come to life intrinsically motivated me to try it. Others must have been inspired in the same way because people began lining up to try it. All we needed was a little kickstart and a little bit of knowledge to try something new. I liked how they juxtaposed the ancient printing press against the leading-edge 3D printing machines to show how printing technology has evolved.

# Inside Fab-Lab



# Scene 10: Dr. Cade's Invention Booth.



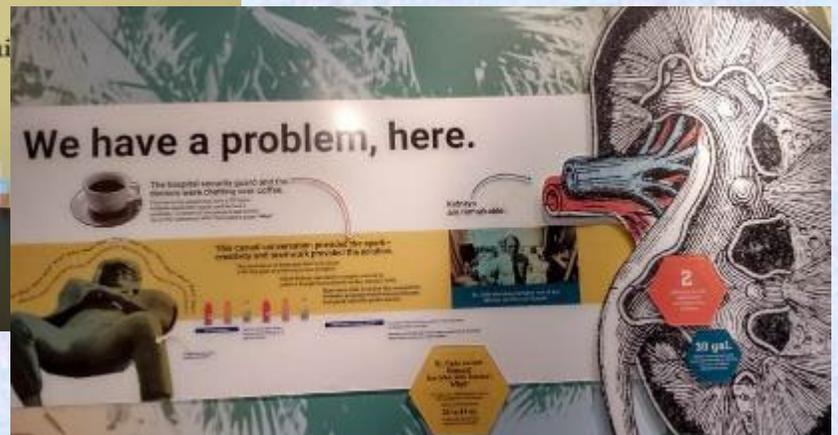
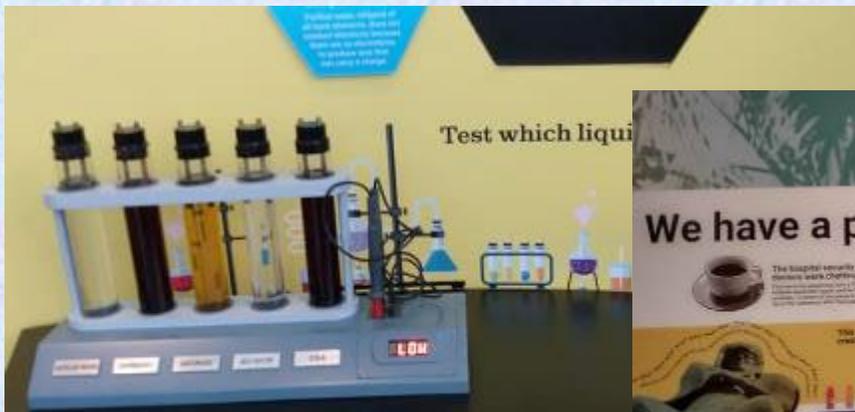
## --Existential Event--

After walking through the other activities, I reached Dr. Cade's invention booth. The introduction at this station began by stating that an inventor's mind contains limitless curiosity. Dr. Cade's passion extended past the fields of science and math—he loved art, poetry, writing, music, mechanics, and athletics. It went on to state that exposure to diverse fields, especially art, enables us to think like an inventor and see connections that others may miss. Dr. Cade's booth showed how Gatorade was invented: it started with a conversation between a security guard and doctors about a problem with coffee. This casual conversation provided a spark of creativity, and teamwork provided the solution. The museum also recreated Dr. Cade's lab for the exhibit.



--Inner Response--

I believe that exposure to diverse fields is the best way to open our minds. Things I see in a certain way might look very different from other perspectives. I was happy to learn that Dr. Cade embraced art as important component of invention and this museum integrates STEAM in its living exhibits. Dr. Cade's room made me realize that science and art are closely related, and curiosity and experiments lead people to new inventions. Artists often experiment with different mediums and art forms to find their way; this becomes their expression invention. I liked the idea of having a lab in the museum—it will be fun to have a lab in the art facility.



# Scene 11: All About Game



--Existential Event--

The first room on the second floor was all about games. The theme for this exhibit was Toys and Games: The Way We Play. There was an old-fashioned arcade game, an activity for creating pixel pictures, a game with controllers made of real pumpkins, and puzzles. I looked at the arcade game, and the character in the game was Dr. Cade. A docent explained that they had created this arcade game, from designing the character to programming the game, downstairs in the 3D-design area. Next to the arcade game was the station for creating pixel pictures. This activity was analog: I had to put small square pieces together to create a picture. After that, I tried the game with pumpkin controllers. I had to put my hands on the pumpkins to complete the circuit to use the mouse and play the game. I was there near Halloween, and I noticed that the docents were dressed up in unique costumes.

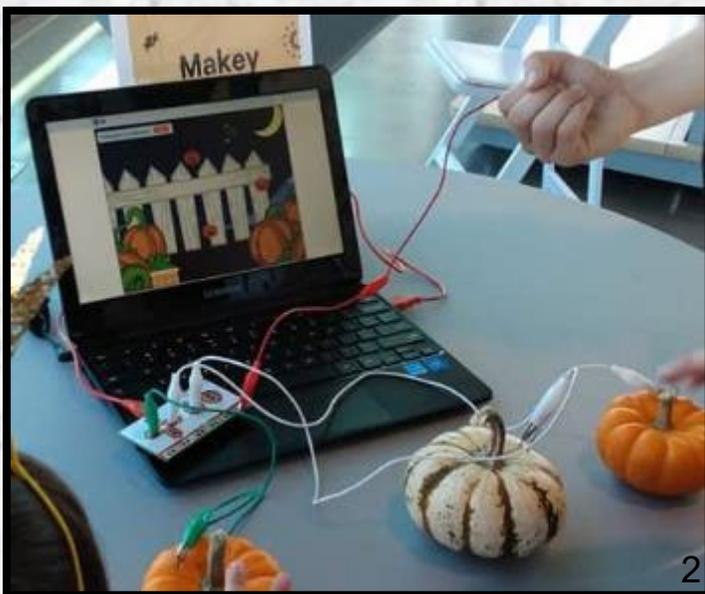


## --Inner Response--

This room was a full of amazing STEAM activities. The big old-fashioned arcade game at the entrance grabbed my attention first. It brought me back to my childhood. When I looked into the screen, I noticed an unfamiliar character. When I realized that the character was actually Dr. Cade, the inventor whom the museum is named after, it brought a big smile to my face. What a fun way to introduce his story and go through this quest together. It made me wonder how he could have become a character in the game. I was surprised to hear that the museum staff, educators, and developers had worked together to create everything from scratch for the Fab Lab. People from different professions contributed their skills to create a one-of-a-kind exhibit. It sounded like so much fun, and I wished I could have been part of the team. Being able to experience the programming and see the images come to life must have been rewarding. I was inspired and intrinsically motivated; in fact, that I looked up internship opportunities and filled out a volunteer application when I got home.

Doing the pixel-picture activity made me feel closer to the character design job. Designing a game character sounds like a job that would require special skills, but if I was able to put small squares together to form a picture, I should be able to combine pixels into an image on a digital platform. This activity also showed me that I could practice pixel drawing without a computer. It will be great to introduce this idea to students who do not have a computer at home but are interested in learning digital imaging.

The game with pumpkins was full of surprises. For example, it would never have occurred to me that vegetables could be used as controllers. My first thought was, how does this even work? Then, after a docent explained that our bodies and the vegetables work together to create ionic circuits, I was amazed that they had used this knowledge to come up with idea to turn pumpkins into gaming controllers—such a creative and fun way to engage children in activity and inspire numerous questions.



## Scene 12: Measurement Rules

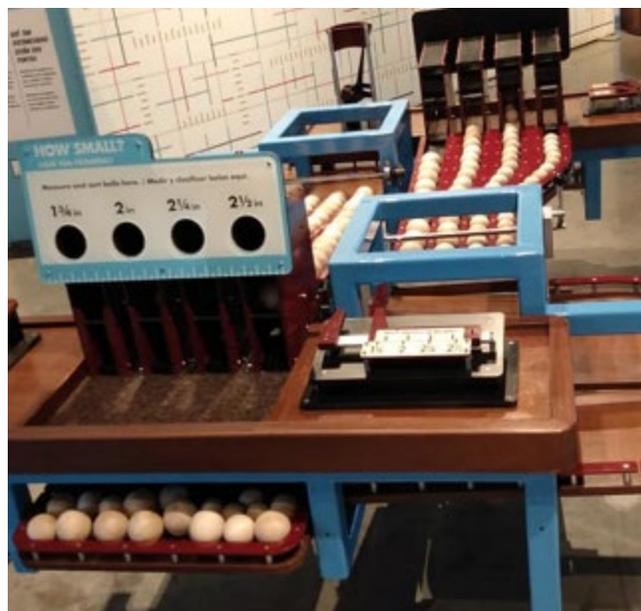
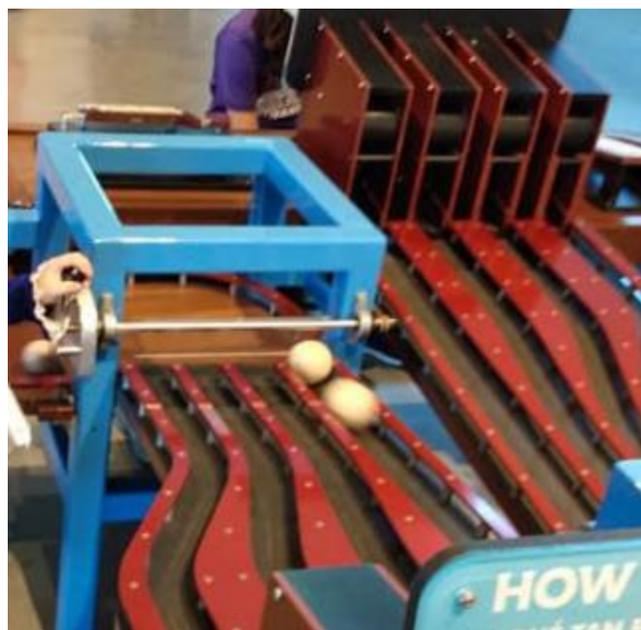


--Existential Event--

One room was dedicated to measurement rules. It explored the meaning of size, height, length, weight, volume, and more through hands-on activities. An educator explained that this is a moving exhibition and that the Children's Museum in Pittsburgh created this interactive exhibit. My five-year-old son tried the activity of putting balls into the right-sized holes—only the correct-sized ball would fit into the correct hole to roll down the trails. My son put balls into the holes randomly, and the balls kept coming back. He tried for a while, and he did not want to leave the activity, so I moved on to the weighing activity, which challenged visitors to match the weight of pumpkins with other objects. When I returned to my son, he was still throwing the balls in the holes, but now he knew precisely which ball was  $1\frac{3}{4}$  inch, 2 inches,  $2\frac{1}{4}$  inch, and  $2\frac{1}{2}$  inch.

--Inner Response--

Collaborating with other museums is a great way to share each museum's unique activities and exhibits. I tend to have a hard time with numbers, and I felt like these activities made numbers more tangible, as I could experience them through hands-on interaction. In the end, I was surprised that my son was able to tell me the size of each ball by just looking at and touching them. Math was a difficult subject for me when I was little, and I love how STEAM makes math a fun and motivating activity.





--Existential Event--

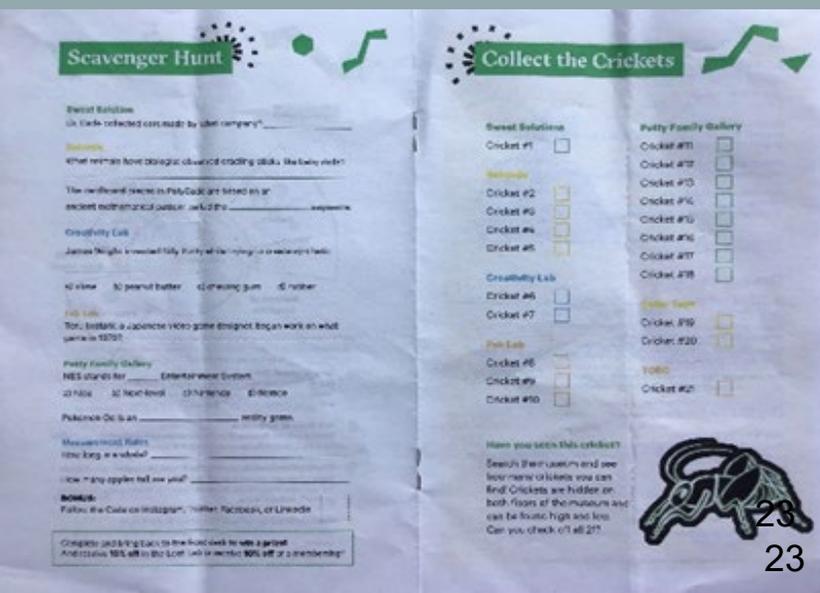
## Scene 13: Scavenger Hunt

We were offered the chance to do two scavenger hunts that took place throughout the museum. The first one was a question scavenger hunt with the goal of answering all of the questions in the brochure. We had to actively find the answers throughout the museum. There was a prize for this hunt if we answered them all. The other hunt was to find paper crickets that were hidden throughout the museum. My children did not finish the question scavenger hunt, but they spotted all of the paper crickets.



--Inner Response--

This was a fun way to engage people in actively exploring the museum. I enjoyed finding the answers as I moved through the museum. Interestingly, even though a prize was involved, my children were not interested in answering the questions in the brochure. They were more interested in doing the hands-on activities and exploring. They were, however, excited to look for the paper crickets, and they found them all. I noticed that other families were similar, with the parents rather than the children looking for the answers. The children were more interested in doing things that were intrinsically fun for them rather than trying to earn prizes.



## Scene 14: Exhibit Change



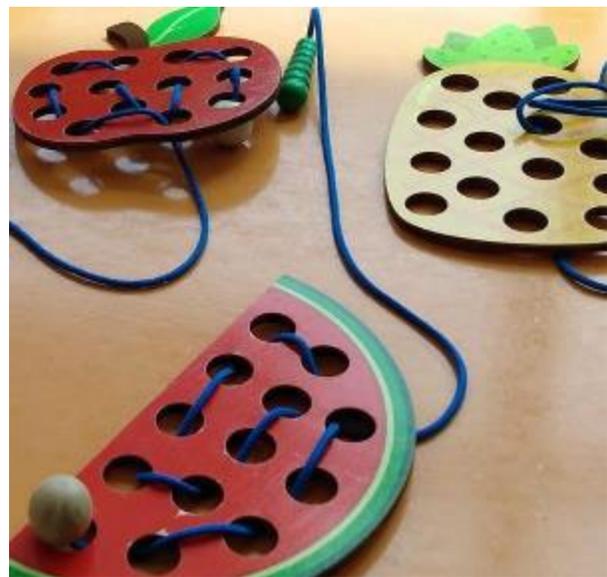
### --Existential Event--

The museum changes its theme and activities every few months. A docent told me that educators, scientists, and developers work together to develop the creative STEAM activities. Therefore, I went back to the museum when they introduced a new theme. This new theme was Tech Tapestry, and the exhibit name was Fabric Frontiers – Textiles and Technology. Besides a few permanent exhibits, the museum was filled with new and different activities. For example, the activity in the Creative Lab was to make thread from wool using spindles.

### --Inner Response—

I had heard that the museum changes its exhibits a few times a year, but I was surprised by how much they actually changed. After the exhibit change, it felt like I had come to a different museum; it was a completely new experience. I like how they have a theme for each exhibit and all of the activities are related to the theme so that children can explore it more deeply through the numerous activities. My children never get bored of going to the museum—they always have a new experience. One visit to a museum usually satisfies me, but this museum intrinsically motivates me to visit repeatedly; I'm excited about what we will learn next time I visit.





# Scene 15: Fab Lab – Stack a Screen Print



--Existential Event--

This activity mimicked the silkscreen print process without using real ink or silkscreen. I chose a piece of clothing to which I could add a design, then I laid a transparent design sheet and stacked more layers on top to create a multi-colored design. I was able to change the layers around to see if the colors looked better in different orders and rearrange the layers to create a design I liked.

--Inner Response--

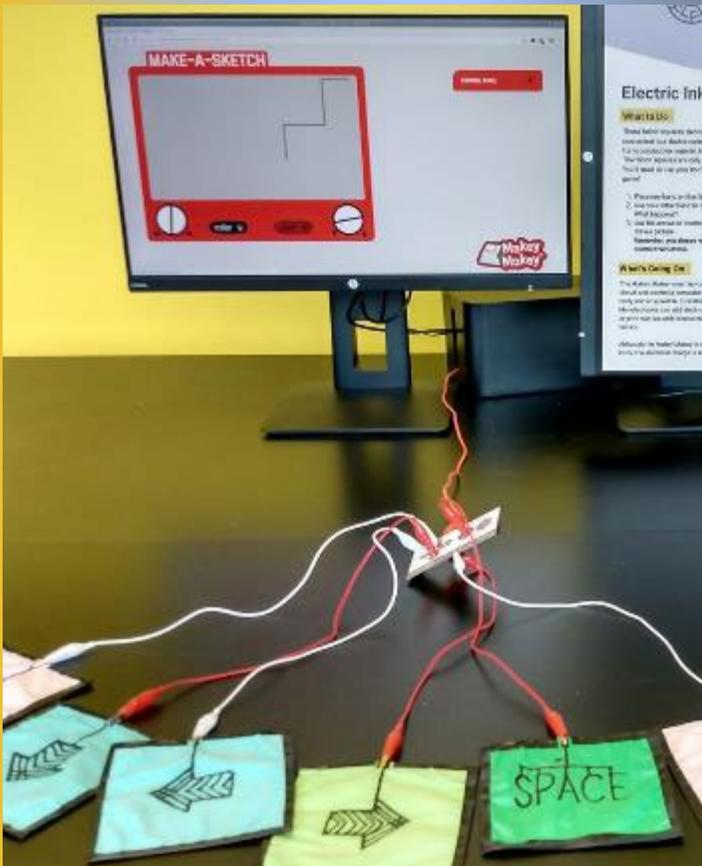
This is a great way to introduce silk screen printing to early-elementary-aged children. Screen printing may be challenging for younger children, but this activity demonstrated the concept of screen printing and how it works. If this activity was used in the classroom, children could also draw their designs on a transparent design sheet with opaque colors. I have thought of screen printing for older students, but this activity made me realize that we can develop ideas to make more complex things more accessible to younger children. Doing this activity in the classroom would also give educators the opportunity to determine whether the children are interested in screen printing before buying the materials to do it in class. This activity could also help explain silkscreen printing to adults who are visual or kinesthetic learners.



## Scene 16: Fab Lab – Computer Drawing

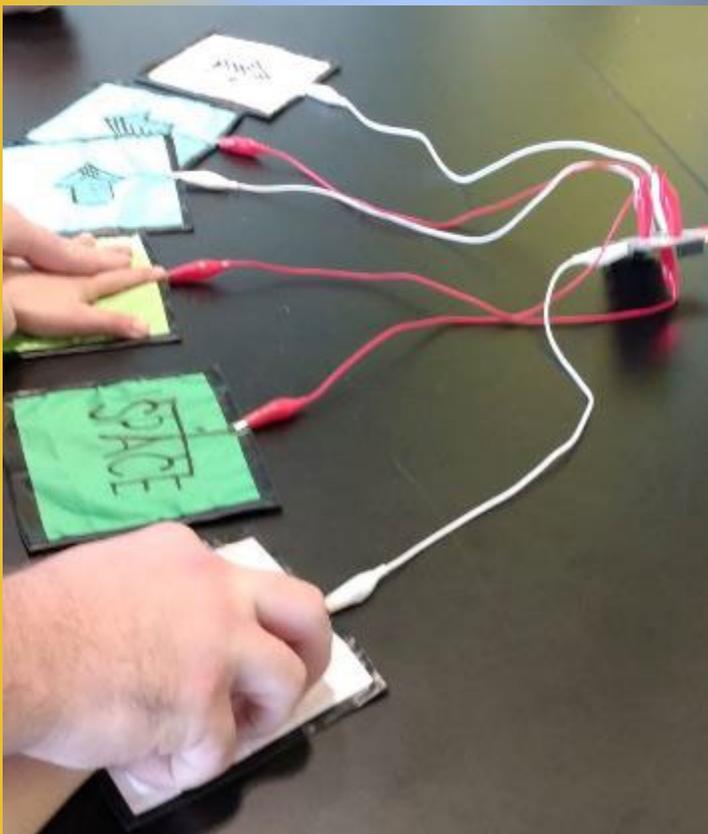


--Existential Event--



This time the Fab Lab had an electric drawing activity that used fabric squares. Fabric squares decorated with conductive ink were connected to a device that used two conductors to complete an electrical circuit and control a computer. The sign at the activity explained that when we place our hands on the fabric and draw electronically, our body acts as a conductor to complete the electrical circuit. The fabric, which is called E-textiles, contains electrics. Manufacturers can add electronics to these fabrics using conductive thread.

--Inner Response--



This activity both inspired me and stimulated my curiosity. In my mind, fabric was something that would not conduct electricity—I had never thought about it any further. This activity showed me that many things become possible with new ideas. In this case, weaving conductive thread into fabric turns the fabric into an electric conductor. Using my body as a conductor and watching the electric ink create a drawing on the PC made me imagine the electricity going through my body even though I could not feel a thing. Being able to imagine something we cannot see or feel was a valuable, unique experience that I want my students to experience. This STEAM activity motivated me to try new ideas.

# Scene 17: Free Area – Blocks and Engineering



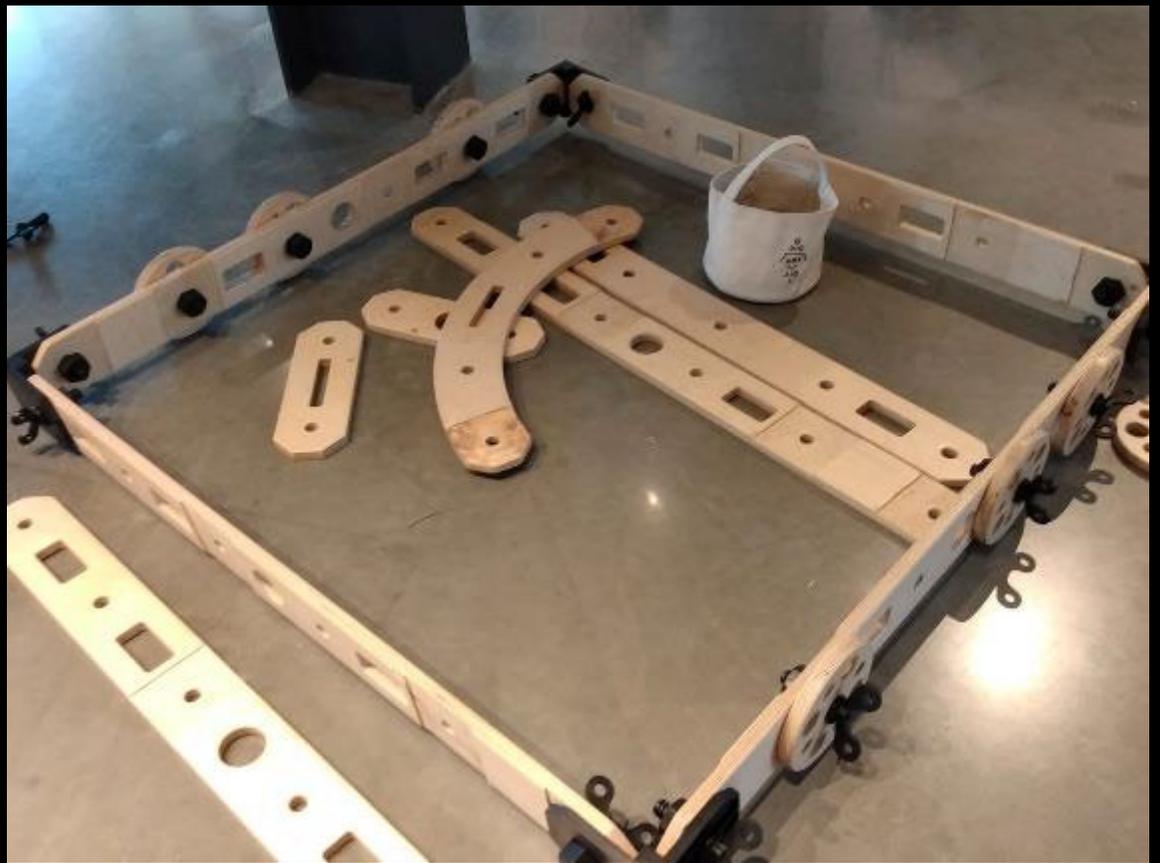
--Existential Event--

The museum had new free areas with thread and fabric activities, blocks, and engineering. I got to feel different kinds of fabrics, weave thread through holes on the wall to create a picture, and make patterns with square fabrics. My children were especially interested in the blocks and engineering. My son stacked wooden blocks straight up and soon found out that they were not stable. He started to intersect blocks to make the stack more durable. My daughter and some other children worked on a building together, creating a house. A docent told me that children became little inventors when left alone in a free area with all these materials.

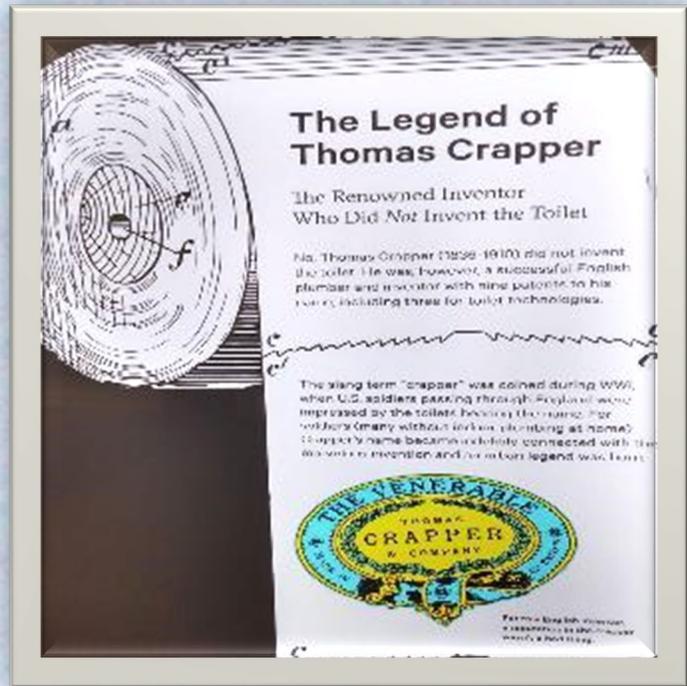
--Inner Response—

I agree with the docent that children become little inventors when they are given a variety of materials and time to explore. Children can always find ways to use the simplest of materials. When adults decide on specific times and activities for children, we may be limiting their creativity and potential. I grew up spending time with my great-grandpa, and he let me do what I liked all day long. He always supported me in the things I tried, so I was never afraid to try new things. I still appreciate the freedom and loving care he gave me.





# Scene 18: Toilet & Guest Speaker



--Existential Event--

The museum's bathroom walls were decorated with the history of toilet-related inventions. When I went to wash my hands, I noticed that the mirrors were decorated with the history of soap inventions and an explanation of how soap works. The museum also has a website for home activities that use soap. On the day I was there, the museum had invited a guest speaker who invented toilet steps, and my children were able to talk to the inventor and try his invention.



--Inner Response--

It was an innovative idea to use the bathroom as part of the exhibit. I have never seen an exhibit extend into the bathroom, but if we aim to connect children's learning to real life, it seems only natural to use the bathroom as a place to learn about toilet-related inventions. I loved that they informed me how soap works while I was washing my hands—it was a great time to learn about the chemistry of soap. I love how STEAM brings new, unusual ideas to learning. I was also impressed that they offered home activities related to soap that children could do at home; this will encourage visitors who is intrinsically motivated, to learn further in their own homes.



# High-Tech Sanitation

*A Cade Prize-winning toilet stays clean without running water*

Sanitation in the developing world is a serious public health challenge. The 2014 Cade Prize-winning NEWgenerator toilet is among the innovations addressing this problem. BASES was created by the University of South Florida to illustrate how NEWgenerator converts waste into food and clean energy.

## 1 Wastewater: First Pass

Humans excrete waste into toilets. Toilet water joins water from sinks and showers to become wastewater.



## 2 Anaerobic Digestion

In a process called anaerobic digestion, microorganisms break down the organic materials in wastewater. Engineers use anaerobic digestion to make biogas. Biogas can fuel electrical generators or heat stoves for cooking and warmth.



## 3 Wastewater: Second Pass

Anaerobic digestion can't filter all the nutrients from wastewater. The process starts again, or the wastewater is used to grow plants or algae.



## 4 Hydroponics: Microalgae

Wastewater can feed microalgae. The algae create an oil that can be used to manufacture biofuels like ethanol, diesel, and gasoline.



## 5 Hydroponics: Plants

The remaining wastewater can be used in hydroponic systems to grow plants. Plants use the remaining nutrients to grow and produce oxygen. People eat the plants, starting the carbon cycle over again.



## Scene 19: Scene Nineteen: JA BizTown



### --Existential Event--

This time, the upstairs was dedicated to JA BizTown. The museum had partnered with Junior Achievement's JA BizTown program, which combines in-class learning with a day-long visit to a simulated town. This learning experience allows elementary school students to operate banks, manage restaurants, write checks, and more (JA Biztown, n.d.). I noticed that the stores in the pretend town were stores that we have locally, which made it feel more realistic. In addition, I learned that the museum collaborates with local public schools to bring every fifth grade class in the local county to experience this exhibit.

### --Inner Response—

Partnering with other organizations is a great way to involve the community in a learning space. I was amazed to learn that all fifth grade classes from the local public schools get to experience JA BizTown. It is vital to connect with local schools so that children can tie their school learning to real-life scenarios outside of school. If we teach children academics to enrich their lives, we should also offer them places and opportunities that is intrinsically motivating to utilize their knowledge.



# Welcome to BizTown!

## Who Says Work Isn't Fun?

**JA BizTown is a place where students can learn about workplace skills and finance in a fun interactive environment.**

This kid city represents a partnership between Junior Achievement and the Cade Museum. The Cade is proud to host Junior Achievement's first JA BizTown Mobile program.

This student-sized town will serve 100% of Alachua County's 5th-graders. During their visit to BizTown students are assigned a job. They might spend the day working in a shop, managing a credit union, or reporting the news. As they embark on their new career, students can meet local professionals who volunteer to mentor the citizens of BizTown.

The first JA BizTown opened in 2001. Originally, there were 25 BizTowns in cities around the US. This mobile version of the town will give more students opportunities to participate in the program.



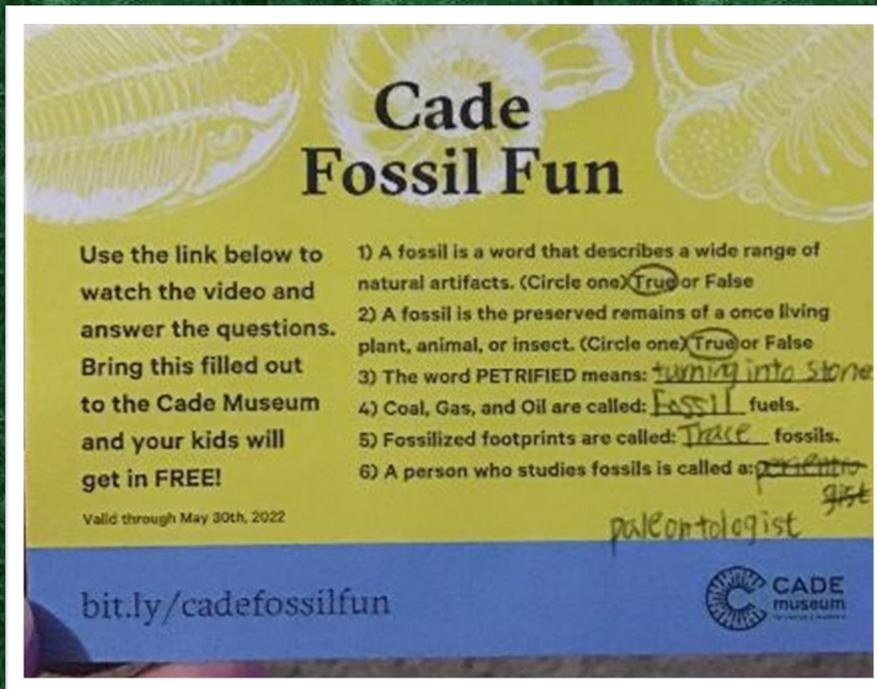
## Scene 20: Collaborative Fossil Fun



The Cade Museum, the Florida Museum and the Alachua County Library District collaborated to present the fossil fun exhibit. The Alachua Library provided a "Take & Make Fossil Box" that allowed children to dig into a hands-on prehistoric activity. I picked up one of the fossil boxes and my children enjoyed digging for the fossils. Then we joined the live virtual programs that the museums hosted to uncover the mysteries of Florida's prehistoric past and learn how fossils are formed. The fossil boxes also included passes to the Florida Museum of Natural History and the Cade Museum. After we learned about fossils, we visited each of the museums, which had exhibitions that elaborated the coherent theme of fossils and dinosaurs.

--Inner Response--

This STEAM opportunity provided a full month of fun learning for my children and me. It cultivated our intrinsic motivation with the fun fossil digging box, and it scaffolded our learning with live virtual programs. It was fun to learn together as a family at home. My children were excited to go to two different museums to see fossils and dinosaurs. They were also excited to share their new knowledge with the people at the museums. The collaboration between the museums offered a great synergistic extrinsic motivator that kept us learning.



# The Cade Museum + Florid Museum + Alachua Library

**Thank you to our sponsor and partners!**

*The Take & Make program is supported by a donation in celebration of Suzanne Stockdale's 75th birthday.*

**FLORIDA MUSEUM.** **CADE museum.**

*Learn more about fossils and the scientists who study them with books and movies from the Alachua County Library District!*



[www.aclib.us/takeandmake](http://www.aclib.us/takeandmake)



**FLORIDA MUSEUM.** **tiny TITANS** dinosaur eggs and babies

**Good for one child entry into Tiny Titans with purchase of a regular priced adult admission**

*Cannot be combined with other offers or discounts. | Expires Jan. 9, 2022*

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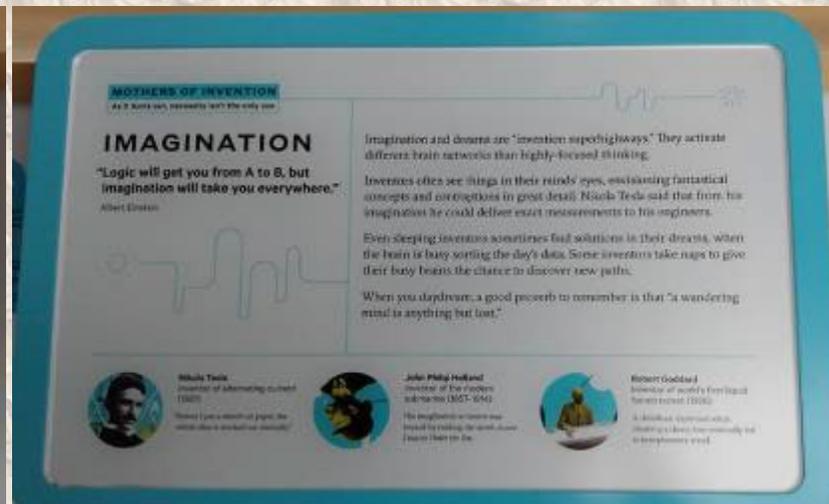
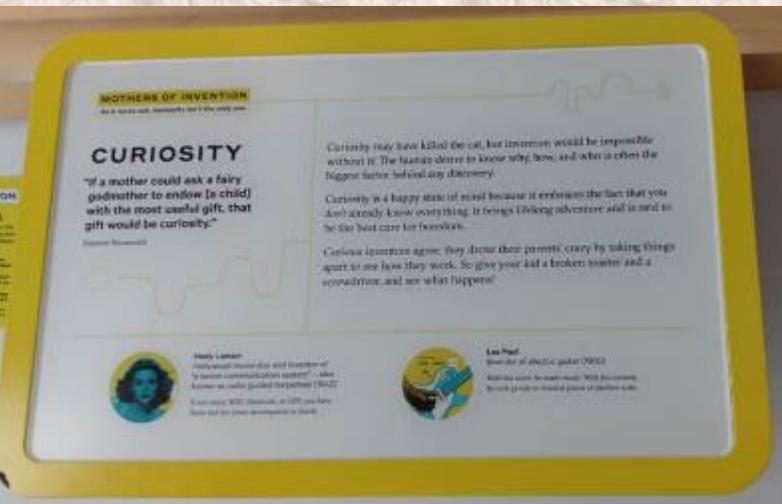


# Scene 21: Decoration & Inspirations



## --Existential Event--

The Museum's wall was decorated with quotes from inventors from various backgrounds. One sign explaining curiosity said, "Curiosity is a happy state of mind because it embraces the fact that you don't already know everything. It brings lifelong adventure."



## --Inner Response--

The wall decoration was full of inspiration. I used to think that scientists and doctors were highly focused; however, many had various interests. By walking around and reading signs, I felt empowered that we all have the potential to become who we want to be.



## Scene 22: Operation Full STEAM



I learned that the Cade Museum offers a program called Operation Full STEAM. The program started in 2018 to help schools with historically low scores in STEAM subjects. The students visit the Cade Museum and participate in hands-on activities that reinforce classroom learning throughout the school year. For example, with crayons, aluminum foil, and a little heat, second graders learn to differentiate magma from lava and how the rock cycle works; handling slime, meanwhile, teaches students about solids, liquids, and gases (Johnson, 2021).

--Inner Responses--

Operation Full STEAM was not part of the exhibit, but I learned about this program on the museum's website. I felt that this is exactly the meaning of STEAM education: reinforcing classroom learning with motivating hands-on activities that touch on many subject areas. Collaborating with local schools allows students to visit the museum as part of their classroom learning so that all children can experience the fun of the museum, not only those students whose families visit the museum outside of school hours.



# Author Biography

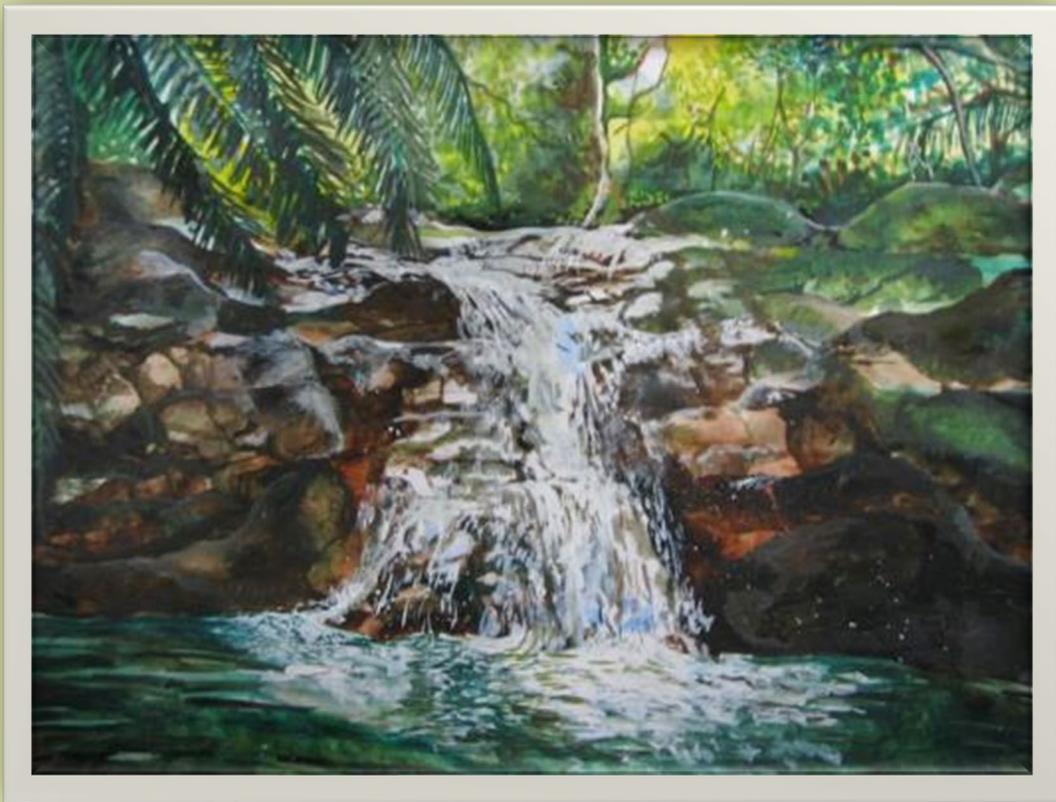
Yuno Bounds holds a Bachelor of Arts in Liberal and Fine Arts from the Kyoto University of the Arts in Japan. This research was conducted as part of her Master of Arts in Art Education from the University of Florida. The full capstone project can be found at <http://yuzu.site/?p=4529>.

Yuno Bounds is an artist, art educator, and nature lover. Yuno grew up on Okinawa Island, the southernmost prefecture in Japan. Growing up on a subtropical island naturally led her to develop a love for the ocean and nature. She spent most of her childhood with her great-grandfather doing DIY projects that used materials around them. Inspired by nature and DIY and drawing, she became an art lover.

In high school, Yuno met an art teacher who used student-centered learning, which showed her that art is more than drawing and creating. Yuno matriculated into the Kyoto University of the Arts and learned that art is essential not only in her life but in everyone's.

Yuno worked as an education technician in the Children, Youth, and Teen program on American military bases located in Okinawa, Japan, for a total of 8 years. Yuno was fortunate to work with children from a variety of backgrounds. She acknowledges that the experience made her more open-minded and made her realize that accepting diversity and differences is essential to building great relationships with others. While Yuno's job was to contribute to whole-child education, she specifically focused on art-infused projects.

During her master's study, Yuno developed a strong interest in STEAM education. She believes that STEAM education is a great way to support children's intrinsic motivation and learning through life experiences. Now, Yuno seeks to explore ways to foster students' intrinsic motivation through STEAM education and develop effective STEAM curriculums.



Yuno's Gallery and UF studies can be found at <http://yuzu.site/>