Kohl Children's Museum of Greater Chicago Presents

Projects of Chicagoland

Successful Implementation of the Project Approach From Early Childhood Connections Participants

Third Edition

Edited by:
Stephanie Bynum
Ericka Farag
Erika Gray
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KOHL CHILDREN'S MUSEUM

THE PLACE WHERE AWESOME LIVES

Dear Friends,

For over 30 years, Kohl Children's Museum of Greater Chicago has been a strong advocate of the project approach in early childhood education. As the only institution in the Chicago area focusing exclusively on interactive exhibits and programming for young children ages birth to 8, we have witnessed firsthand the power of complex play and the significance of enabling children to direct their own learning experiences. Our interactive environment of 17 hands-on exhibits encourages curiosity, creativity, and self-discovery, many of the key elements of the project approach.

By engaging children's natural interests, steering them into in-depth explorations, and helping them embrace the learning process, the Project Approach has been a key element of the Museum's Early Childhood Connections (ECC) program. Hundreds of classrooms and day care centers throughout the Chicagoland area have partnered with the Museum through ECC to provide meaningful learning experiences, teacher training, and parent involvement for children at risk of academic failure from schools in low-income communities.

The following collection of projects is a direct result of the hard work, innovation and commitment of the Early Childhood Connections participants who have embraced the project approach and have successfully integrated it into their curriculum. I encourage you to find inspiration from these projects with the hope that you will begin to implement the approach into your own settings.

Enjoy changing the future!

Sincerely,

Sheridan Turner
President and CEO

Introduction

Kohl Children's Museum of Greater Chicago has trained over 1400 early childhood teachers working with children at risk of academic failure on the Project Approach in the Chicagoland area since 2001. The underlying principles of the Early Childhood Connections program are grounded in the Museum's belief that children learn best when they are engaged, motivated, intrinsically curious and most of all, having fun. The program utilizes the project approach, which encourages children to formulate questions, seek out and discover answers, consider their findings and form conclusions. In this environment, teachers become the facilitators of learning rather than distributors of knowledge. It also encourages **all** children to explore and learn in their own way as well as fostering the development of critical thinking, cooperation and communication skills.

Early Childhood Connections is designed to achieve the following goals:

- To increase the use of the project approach and developmentally appropriate practices in classrooms and childcare settings serving children at risk of academic failure ages 3-8;
- To increase the positive attitudes of teachers and childcare providers toward project approach learning;
- To provide parents with opportunities to play an active role in their children's education.

The Early Childhood Connections Program provides several critical components: professional development for teachers and childcare providers created by Dr. Judy Harris Helm, world-renowned expert in the Project Approach; focused field trips to the Museum; resources and support in the Project Approach; parent/child in-school activities; family celebrations; and family memberships for future Museum visits. The training component consists of three full professional development workshop days conducted in the fall, winter and spring of each school year. Each participating educator conducts one or more projects in their classrooms and childcare settings during the year of training and has opportunities to share their successes and challenges with their peers.

Throughout the past seventeen years, the Museum has been assessing the program using both quantitative and qualitative methods. Through collaboration with Dr. Jan Perney, Emeritus Professor, National-Louis University, we have concluded that through the rigorous standard of a pre- and post-test control group design, and controlling for initial differences between the intervention and control groups, there is evidence that the Early Childhood Connections Program is producing statistically significant and practically meaningful positive changes in educators' attitudes toward the Project Approach and an increase in the use of developmentally appropriate methods and strategies by early childhood educators.

The Project Approach is a valuable tool for learning. It is our hope that the following projects will motivate early childhood professionals to begin to implement this approach into the everyday lives of their classrooms, centers or homes.

Babies

A project by children 2 – 3 years old
Easter Seals Gilchrist Marchman, Chicago, Illinois
Length of Project: *2 ½ months* ***Educator:*** *Theresa Caballero*

Phase One

Beginning the Project

In the beginning, my co-teacher and I noticed that there was a lot of baby play in the dramatic play area. Along with a few children talking about babies and asking questions about babies. The class started with a web and used the web to find out what the children knew and wanted to know. The children had basic knowledge: babies cried, drank bottles, and were brothers or sisters. Their questions were: Why do babies cry? Why do they only drink bottles? Why don't babies eat regular food? I was unsure if they would be able to investigate on their own.

Phase Two

Developing the Project

During phase two, we had a few investigations take place. The investigation the children enjoyed the most was how much urine a diaper could hold. Each child got to pour a cup of water into a diaper. After they poured their cup into the diaper they would hold the diaper up to see if it would leak. Once the diaper leaked the investigation turned to what was inside the diaper? We cut open a dry diaper and one we had filled with water. The children were amazed at the difference. Another investigation happened on our field site to the infant room. They wanted to know why babies do not eat "big people food" and why they only drank bottles. So we set two children with clipboards, paper, pens, and the question written on the paper along with a drawing of a bottle to help remind them of the question. The parents left artifacts with us such as a car seat, baby bathtub, and a boppy pillow. They took turns trying to sit in the car seat and the bathtub and found that they were no longer able to fit in these items because they were no longer babies. During these free play moments is when you could really see how and what the children were learning.

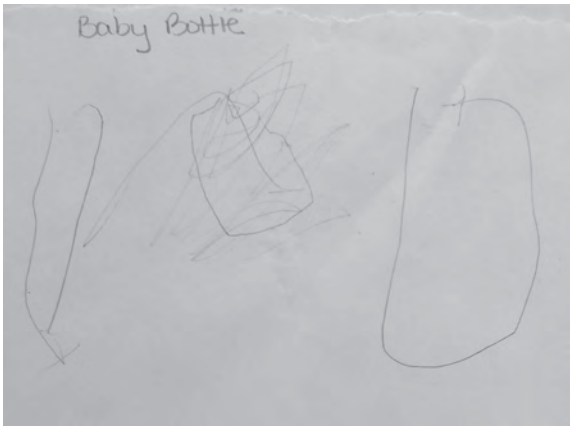
Phase Three

Concluding the Project

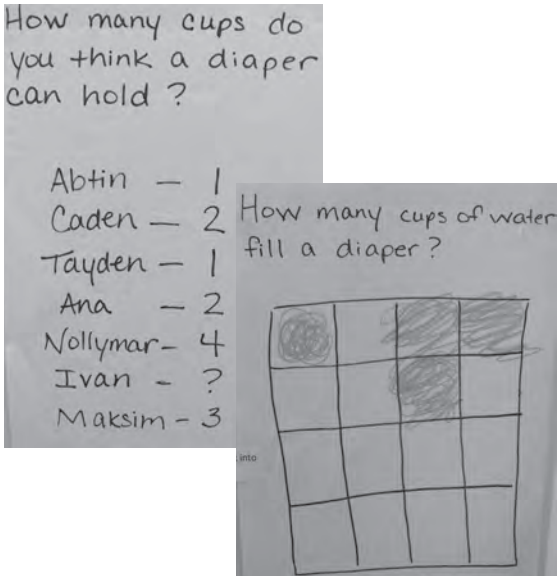
We finished the project by creating another web to see what knowledge the children gained. The children learned they were no longer babies, how much a diaper could hold, how to swaddle a baby, why babies drink only bottles and not "big people food" and how to give a baby a bath. They gained fine motor skills, dramatic play skills, increased attention spans, how to use technology, and knowledge about themselves and others. We shared this knowledge with parents by showing them drawings, pictures the children took, and sharing anecdotal observations.

Comments

The project was very challenging because several children in the classroom do not have language yet. Also, I am so used to teacher directed topics and activities it was hard to believe that the children could investigate on their own. It was tough for them too, so we integrated our topic into our lesson plans. The topic was child initiated, but only part of the class was interested and it was still somewhat of an abstract topic. However, when the children were in the car seat and bathtub, it was exciting to see the younger children realize that they were no longer babies. It was like a light turned on; they were too big to these baby object because they were bigger. There was one girl, who stops her mom when she calls her "baby" and says, "I not a baby anymore, I big!" This was meaningful to me because she is showing she learned self-awareness. This made me aware of the success of our project. As for changes, I think the topic is the biggest change I would make, I would make sure it was "real", something they could touch. This way investigation will be easier for the younger children to participate. A topic can truly decide if a project is successful or not.



▲ During the Baby Project children observed artifacts that babies use and made Observational drawings.



▲ Children were interested in finding out "How much water a diaper can hold?" We tested their predictions to find the answer.

▲ Children investigated how to give their babies a bath.

▲ Children investigated how to swaddle a baby.

Bakery Investigation

A project by children 3 – 5 years old
The Little Scholars Club, Chicago, Illinois
Length of Project: *3 months* ***Educator:*** *Jeanette Rodriguez*

Phase One

Beginning the Project

After beginning, a topic on grocery stores, and exploring it through different activities and taking trips to our local store our topic took a different turn. Our students interest shifted to focusing on a specific department, that being bakery. Their excitement over this topic was over the roof. They wanted to taste different pastries, and they wanted to know how these pastries were being made.

Phase Two

Developing the Project

During phase two we took a site visit to a local grocery store that has a good size bakery department. This trip allowed our children to do observational drawings about all the different pastries they saw. It also allowed them to receive answers to some of the questions that they had. We also had a parent, who is a baker, came in to demonstrate to our students how you decorate a cake. After these few visits and guest speaker, our questions remained the same. If anything it caused the interest in mixing, baking, and decorating to grow more. After gaining more knowledge our children were ready to make some objects of their own. Some of those objects consisted of students making cookie ornaments out of salt and dough for our dramatic play. Another group built a cupcake and donut holder, while another group engaged in an actual baking experience. Once their projects were completed, they presented them to the rest of their peers by sharing what they had made and the materials that were needed.

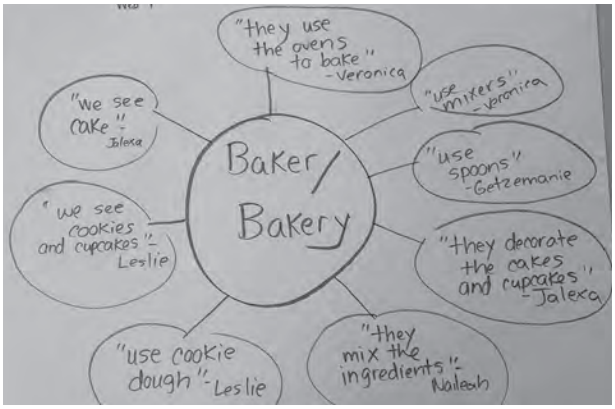
Phase Three

Concluding the Project

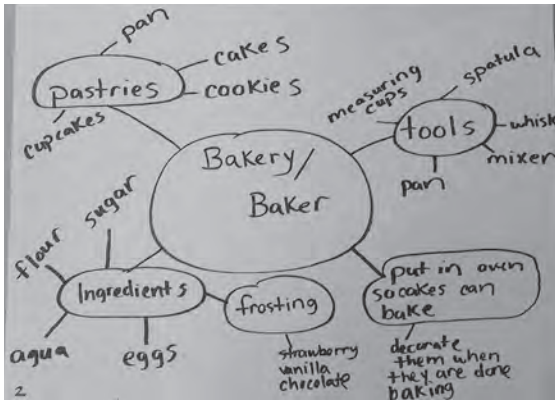
To conclude our project, we held a bake sale that was initiated by the students. We split up into groups and each group was responsible for baking a pastry, which consisted of blueberry muffins and oatmeal cookies. Before beginning our baking we discussed with our children that we would need to let our families know about our bake sale and that we would also need to put a price on our pastries. After a few discussions, we all agreed that $1 was more reasonable than $15. In regards to informing everyone about our bake sale, our children came up with the brilliant idea of making posters to place all around the classroom.

Comments

Reflecting back on my project approach journey, I can definitely say that it wasn't easy, but it was an amazing experience. As a teacher, it is sometimes hard to take a step back from leading, but it's needed in order to let our students grow. I without a doubt know that this approach benefitted my students because it allowed for them to lead us. It helped my quiet ones learn to speak up more and it helped boost self-esteem. The way my students went about their projects, presentations, as well as our bake sale, was very surprising to me. Not once did I think that they would initiate a bake sale and plan all that would need to be done. The topic itself was awesome and it blended so well into my classroom. My students loved it.



▲ Children's Time One web shows what children knew about a bakery.



▲ Children's Time Two web shows the growth in knowledge about what children learned during the bakery project.

▲ A cake decorator came to the classroom to show children the tools and techniques of decorating cakes.

▲ Children used materials to create representations of baked goods and figured out how to display it.

Boxes

A project by children 2 – 3 years old
Childcare Center of Evanston, Evanston, Illinois
Length of Project: *2 months* ***Educator:*** *Tammy Chekos*

Phase One

Beginning the Project

The study of boxes was chosen as children in the classroom emptied out large clear bins which held blocks inside. Rather than using the blocks, they would climb inside the clear bins. I collected various sizes of boxes and set them in the gross motor area. The children represented their beginning knowledge and experiences with the study of boxes by finding a pair of shoes and putting them inside a box. They would also fill the boxes to the brim. Through observation the children were interested in what a box was made of, what shapes are boxes, what do we do with a box, how many sizes are there, and what fits inside a box.

Phase Two

Developing the Project

During the study the children continued to explore boxes. The children colored, painted, and turned boxes into robots. Large boxes were brought in for the children as well. A tall box that held pillows was imagined to be a shower. Once it fell and the children made a ramp for cars. Since our center doesn't take toddlers on a field trip, we had our director come in with many different size hat boxes. After this experience, children discovered that boxes can come in different sizes. The children's learning was represented through the photographs that were displayed. As children became familiar with the parts of the box, they became very interested in the corrugated part of the box. The children did many rubbings on the bumpy surface. In addition to books, we watched a video multiple times about how a box becomes a box. The children saw how the boxes get cut, parts get recycled and then boxes get packaged.

Phase Three

Concluding the Project

The project ended with the children decorating boxes and putting cookies in them. As the children made discoveries it was shared privately with the parent. The children learned that boxes don't last too long if something big and heavy was inside. They learned the parts of a box. Many of the children became familiar with new words: inside, out, under, and corrugated.

Comments

During this project I had no idea what the children were going to discover next. I had an idea where it may go and provide the materials but I never planned on teaching the children about the corrugated part of the box. They absorbed so much throughout the study it was amazing. One of my favorite memories of this study was how the children would read the books to each other and how the book became a very interactive one. In addition it was very funny for me to hear 2 year olds say cogitated or be like "What was that core word again?" One of the challenging children in the class really took to this study. He enjoyed using his strong hands to cut many boxes. I also remember him saying after we had to discard all the boxes due to lice breakout "What happen to all our boxes?" with his hands on his hips.

▲ Children figured out how many children could fit into a box.

▲ Children watched the process of making a cardboard box on the internet.

▲ An expert visited our classroom to share her hatbox collection.

▲ Children explored sizes of boxes.

▲ We tested the strength of a cardboard box.

▲ Children created structures out of boxes.

Buildings

A project by children 3 –5 years old
Ravenswood Community Child Care Center, Chicago, Illinois
Length of Project: *3 months* ***Educator:*** *Ruth Pearson*

Phase One

Beginning the Project

Our Buildings project began when we noticed the children, who were obsessed with The Three Little Pigs, beginning to use play tools and hard hats in the block area. We had two buildings under construction less than a block from school, and children had started asking questions about these when we walked by. We webbed what we already knew about buildings, which was challenging because the kids were so eager to begin asking questions. Once we'd established what we knew already, we generated a list of questions, mostly revolving around how a building is built and why bricks are used so much.

Phase Two

Developing the Project

One of our most valuable resources was the library, where we got dozens of books on buildings, construction workers, contractors, etc. Those books provided the context children needed to start asking questions and investigating, on a mission to find answers to their questions. We had Charlie, a builder, visit the classroom and teach us all about tools and materials and how walls are built. We visited and drew one of the buildings under construction three times during the project. Then Armand, co-owner of the development group building, visited and showed us the real plans for the building, discussed who is involved in the building process and what they do, and detailed how buildings get built from start to finish. This prompted children to build more than ever before, using those plans or drawing their own before building. Charlie's visit sparked interest in our "real tools" area, where children began to discover aspects of buildings in a hands-on, authentic way. These constructions became part of our documentation, in addition to drawings, plans, small-scale constructions, tons of block area play, and all the new ways in which they began using books to answer questions.

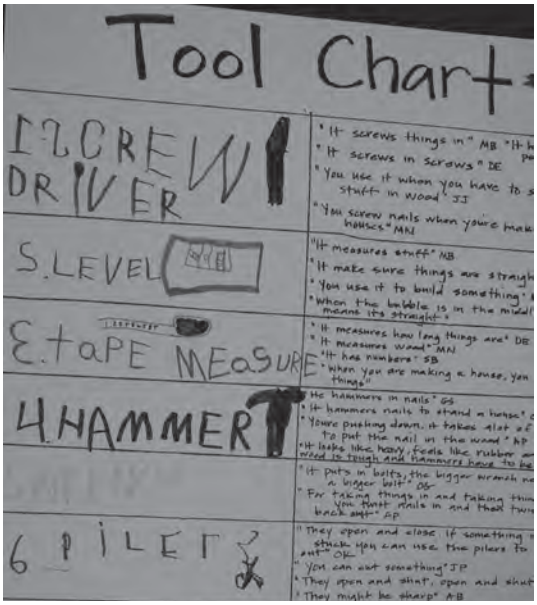
Phase Three

Concluding the Project

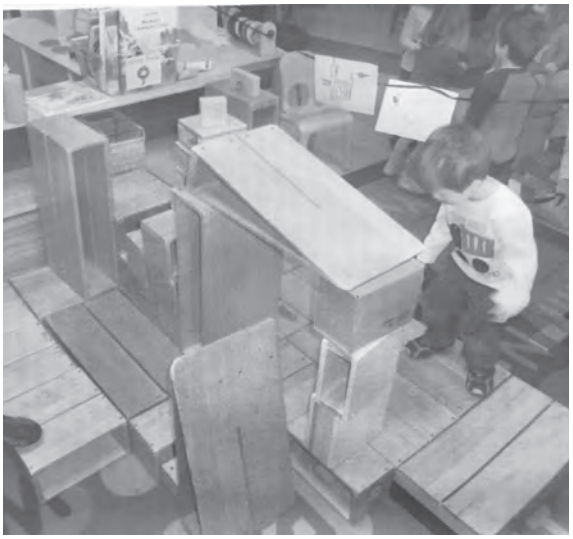
The children decided to put on a play of The Three Little Pigs and display some of our work to culminate the project. They made invitations and a list of what we needed for the show, including a big decision to build a house to be the third little pig's strong, sturdy house—a project for which we consulted our books and invited back an expert to help. Children learned to problem solve, find answers to their questions, measure and construct. They began using a slew of new vocabulary and had the words and skills to discuss construction and buildings with new detail.

Comments

I was amazed at how effectively our experts sparked new questions and investigations, almost as if the project was fresh again each time someone visited. The Buildings topic provided so much opportunity for hands-on learning—perhaps most meaningful was when children decided we needed to build our own house for the play, and started looking at books to make the plans and a list of materials we needed. They measured the floor frame and each other to determine width and height, and it became an incredibly authentic expression of how much they had learned. As far as improvements, next time I will be much more intentional about how we document their learning and encourage children to reflect on their experiences.



▲ Children created a chart about the different tools they explored during the project.



▲ Children began building large-scale structures in our block area.

▲ Expert came in to show children how to lay bricks and mortar.

▲ Children worked together to build parts of the house for the play.

Drum Project

A project by children 3 – 5 years old
Child Care Center of Evanston, Evanston, Illinois
Length of Project: *2 months* ***Teachers:*** *Ann Rappelt and Nicole Ramirez*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

The teachers noticed the children drumming on a variety of things with different materials. They used markers, sticks and pencils to drum on tins, buckets and even tables. We asked the children about drums, making music with drums and if they had any questions. We made a list and posted it. The children drew pictures of their interpretation of a drum. We made drums from recyclables. We decorated them with a variety of art materials. After they were made they tested them out for sound and "drumability." The expectation was that the children's interest in drums/ drumming would deepen.

Phase Two

Developing the Project

A djembe, hand drums and an ocean drum were purchased. The children played these drums and compared them to the instruments they had made. Our first field site visit to Kohl Children's Museum was about music and the children learned the term "vibration." They made instruments from recyclables.

A child asked if we could learn about other instruments and as a group we decided we could. We watched a video about the orchestra. We invited someone who played the viola and another person who played keyboards to visit our class. The children drew instruments and played them. A drummer visited who showed us more about sounds and the tools drummers use. Our last visit to the museum was about music and emotions.

Parents as well as staff and board members were given a wish list of drum materials. Many sent in items. Parents were advised of activities via the bi-weekly newsletter and lesson plans. Parents acted as chaperones during our field trips. The children's work was represented through drawings, photos and videos.

Phase Three

Concluding the Project

When we asked the children, "What would be a good culminating activity?" it was suggested that we should, "do an orchestra." This led to a decision to perform a concert. We made a poster and made copies to serve as invitations. We e-mailed our invitation to board members, field experts, and our Kohl Children's Museum mentors. The children made guest lists, tickets, and a list of songs they wanted to perform. We went back to the questions and answered them and also reviewed our original list of musical instrument knowledge and updated it.

Comments

The project was enjoyable and rewarding. Each child participated at some level and a few got very deep into certain aspects. Their musical and curious dispositions were allowed to grow on their own levels. I discovered that the children had a hard time with questions; they were more used to giving answers. Observational drawing is also something I would like to practice more. The project lasted a long time because the children's interest was sustained. I was most pleased that it came up naturally to find out about other instruments and that books were able to pique their curiosity.

Are drums big and little?

You have drumsticks and what other things can we use?

Can we use sticks?

Can we use our hands?

Is drumming hard to do?

Can we drum with our mouth?

Can we drum on the drums?

Can we get drums and make them?

▲ Children came up with a list of questions to investigate and through a variety of activities and investigations children were able to answer their questions.

▲ Children explored making sounds with aluminum pans and spray bottles filled with water.

▲ Children explored using cans and buckets as drums and pencils as drumsticks.

▲ Children invited the school, parents and family members to a drumming concert as a culminating activity for the project.

Garbage Project

A project by children 2½ – 3 years old
Cherished Children Early Learning Center, Mundelein, Illinois
Length of Project: *8 weeks* ***Teachers:*** *Sharon Southard and Mo Lanier*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

We chose this topic because our kids love to line up along the fence and watch the garbage man empty the dumpster. Our project launch was fun. The kids came in from the playground to find our room trashed with garbage. They looked around in amazement. We worked together to clean up the mess. We've never seen our kids clean up so well before. At circle time, we talked about what they knew about garbage trucks. Some of them knew what color garbage can they had at home, and one child thought that garbage men wore a lifejacket. That was actually a fantastic guess for a 2½ year old; the vests garbage men wear are very similar. None of the children knew where garbage went after the trucks were full, so we knew there was a lot to learn.

Phase Two

Developing the Project

We started our investigations by reading books and watching a video on garbage trucks and recycling. That helped us on our way to finding out about our subject. We learned new vocabulary words like "landfill" and "recycle."

Next, we made a litter truck cart. We took this cart, dressed up in our apron outfits and cleaned up three playgrounds at our center. We learned people throw a lot of garbage on the ground. We also learned about recycling and had fun making things with garbage, rather than throwing it out. We made a garbage sculpture, an aluminum can train and a bowling game. Parents reported that the kids were showing interest outside of school and that they were definitely learning. When asked, "Where does garbage go?" they could now answer, "A landfill." When making our box garbage truck, one of the boys said, "We need headlights."

We involved the parents by having them participate in a garbage game of how long does it take for different types of garbage to disappear. We also gave them information on where to take household items for disposal. For a field site visit we went to a recycling center and landfill.

Phase Three

Concluding the Project

To conclude our project, we took another trip around the playground in our aprons and took a picture out by our dumpster. To share our project with parents, we invited them to our room to look around at all of our projects, and the children explained what they had learned. We also presented parents with the children's project folders, their garbage outfits (aprons and nametags), and an "Oscar the Grouch" puppet made by the teachers. The greatest thing of all to our conclusion was that our school purchased recycle bins for paper, bottles and cans; in the future all of our classrooms can learn about recycling and how important it is.

Comments

The subject of garbage trucks was something the kids were definitely interested in and excited about. I loved researching the topic. I think it would have been great for 4 or 5 year olds. Sometimes I was discouraged because I was not sure how much they were really taking in. I think they enjoyed cleaning up the playground (for a short span), and now they know where garbage goes. That's a start, and isn't that what a teacher's job is, to give the start of information? So, maybe we did ok after all.

◀ Teacher Anticipatory Planning Web

▶ Children working together sorting items that could be recycled or thrown away.

1. Are there seats in the garbage truck?
2. Is the horn loud?
3. Where does the garbage go?
4. How do you pick up the garbage?

One child's comment was "We can't go into the street".

◀ Questions and comments children had about the garbage truck and were later investigated during the project.

Melon Madness

A project by children 2½ – 5½ years old
Evanston Day Nursery, Evanston, Illinois
Length of Project: *1 month* ***Teachers:*** *Stephanie Lane-Baker and Debbie Butcher*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

We chose this topic because we noticed the children's fascination with the melon we served at snack time. They touched, poked and commented on how juicy the melon was. Some children removed seeds and collected them on napkins, while others busily spat out seeds and slurped down the melon. Many commented that they had watermelon at home, and also remarked that they bought it at the store. These comments and others were evidence of their prior knowledge and experience with our potential topic. The children were adamant in their request for another full melon to open in the classroom. Several children giggled and asked if we could drop a melon to see if it would open up or "explode." We recorded the children's questions for our future investigations.

Phase Two

Developing the Project

Our children began this project by measuring, weighing and trying to estimate whether our daily selections—which varied, depending on availability—would have seeds and what color the flesh might be. The children created observational drawings inside and outside of the classroom, using clipboards to hold their work. They also took photographs of melon seeds. We began to develop new vocabulary from books as well as from the different types of melon we brought to the classroom. The children's newly developed interest in seeds prompted us to cut other fruits and vegetables.

We conducted informal field site investigations by observing a neighbor as he tended his large garden. As he prepared the soil and planted early summer vegetables, he demonstrated the maintenance it took to maintain a garden. As the children observed, they also asked questions about seeds. Further field site investigations included numerous visits to Great Opportunities Adult Day Care's greenhouse where the children planted seeds with elder adults. Parent volunteers joined some of these visits, and their help was invaluable. The children developed a greater interest in seeds. We had a seed spitting activity and wondered if any of the wayward seeds would take root and grow in the middle of the playground.

Phase Three

Concluding the Project

Our culminating event was a final visit with our elder friends from Great Opportunities Adult Day Care. During this visit, while enjoying a magic show together, one of the children remarked, "Just like our seeds: now you see them, now you can't."

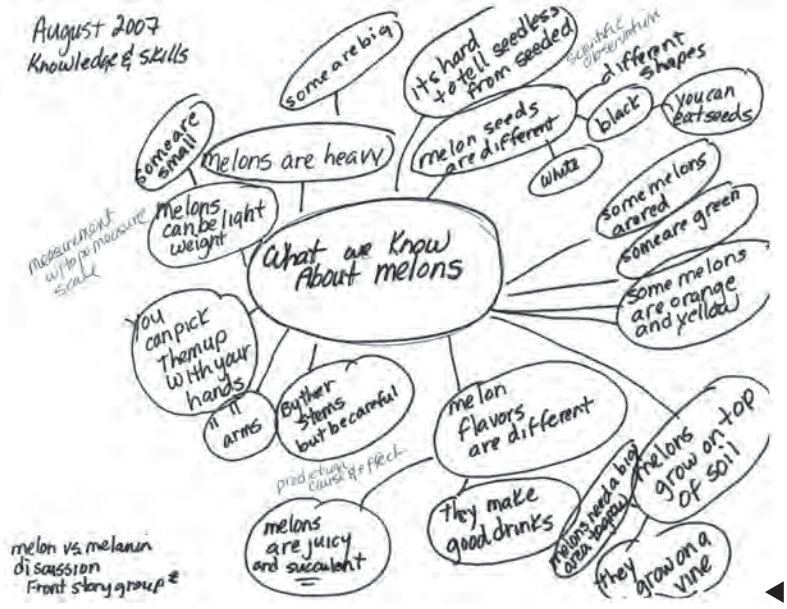
At this time, we were also preparing for the end of the school year, and the children's transition to kindergarten. We discussed melons and seeds less as we focused more on returning to school as an older child who would be welcoming younger children into the school. Our school summer break and subsequent preparation for on-going kindergarten goodbyes may have sped up our conclusion to the melon project; it is also possible that it was the project's natural time to expire.

Comments

This project reaffirmed our belief in the collaborative approach to learning. The children made significant gains in content knowledge, especially in vocabulary development, scientific reasoning and increased inquiry. The 3's and 4's were particularly focused on rote counting and tallying, however, all children took great interest in practicing their developing math skills. The "seed" of another project topic was planted as we observed children picking up sticks and gathering them to dig holes in the dirt. We wondered what questions they might have related to these sticks and/or wood in a future project.

▲ Children used colored dough to create model representations of melons.

▲ Observational drawing of a slice of watermelon.



◀ Final Melon Web

Our Pet Project

A project by children 11 – 22 months old
Laurance Armour Day School, Chicago, Illinois
Length of Project: *16 weeks* ***Teachers:*** *Anthony Bell, Elvira Mata, Annie Jones, and Gabriel Williams*
Participated in Program: 2004 – 2005

Phase One

Beginning the Project

This project emerged from the excitement and enthusiasm we observed in our children while visiting the neighborhood fire station. The firemen did all they could to entertain the children, but the children were only interested in the barking sound they heard in the back of the station. Their facial expressions, imitation of the barking, and the kicking of their legs gave a clear message that they were more interested in the barking than in the fire truck or firehouse. The firemen then introduced Shamo to the children. They had a look of amazement on their faces when he appeared. The firemen shared that Shamo was a Dalmatian puppy who was in training to become a fire dog.

Phase Two

Developing the Project

After returning to the school, we discussed the idea of focusing on dogs as a possible topic for our project. We wanted to include the parents' input in our planning, so we asked them about their pets at home. We discovered that some of them had pets other than dogs; they had fish, cats, and birds. We decided the topic of "pets" would be a more appropriate topic for the children to explore.

The children were exposed to books, songs, sounds, artifacts, activities, and music to enhance body movement that represented each pet. The project investigation began. Parents were invited to share their family pets by bringing their pets to visit the classroom, sharing stories through photos, and sharing artifacts (pet toys, collars, and pet beds).

Using our neighborhood and community resources contributed to the learning process. On our daily walks, we saw many people in the park and on their porches with their pets. They were willing to share the names and dispositions of their pets. We also looked at the aquarium and the aviary in the medical center's office building which is adjacent to our center, on many occasions.

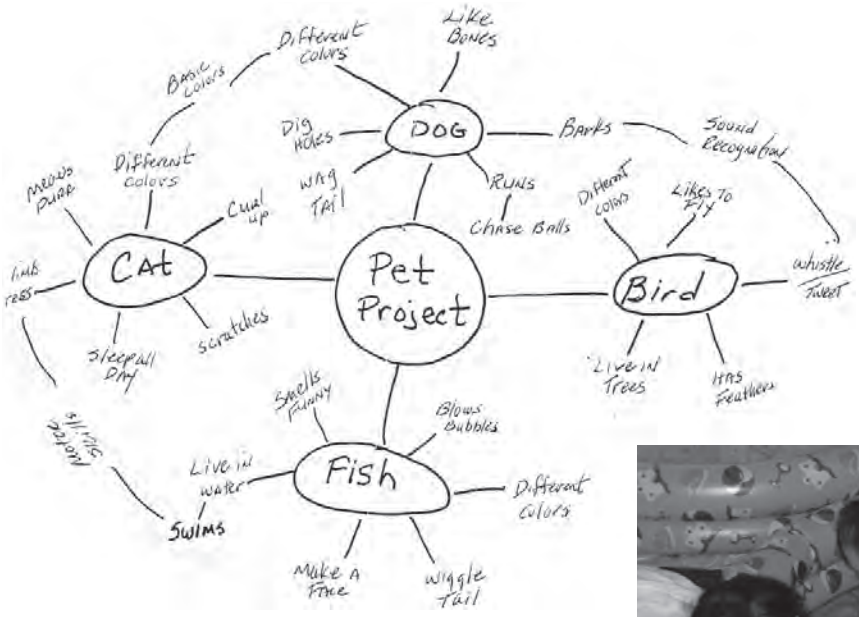
Phase Three

Concluding the Project

As a culminating event, the children, teachers, and parents transformed our classroom into a pet shop. On a Saturday morning, our families attended the grand opening of the "Pet Shop." All of the constructions – which represented each pet – created by the children were displayed in the classroom. For example, we had a bird cage, a dog house, a fish tank, and a cat's pillow. The constructions allowed the children to represent the many characteristics and behaviors of each pet.

Comments

Our Pet Project was the first project in our classroom. When we started, we were only looking for some other curriculum focus to extend the children's learning. We used the project approach as a method of guiding the implementation of our curriculum along with meeting the children's basic needs. The moment we observed how enthusiastic the children were about pets and when we recognized how they were trying to express their interest in them, we began to see the value of using the project approach in our classroom.



▲ Teacher assisted infants and toddlers in creating a web for their pet project.

▼ Infants and toddlers engage in learning about fish environments.

▲ A parent visits the classroom as an expert on dogs.

▲ Toddlers investigate how dogs play with balls.

Growth of Plants

A project by children 2 – 2½ years old
Paul K. Kennedy Child Care Center, North Chicago, Illinois
Length of Project: *4 weeks* ***Teachers:*** *Erica Timms, Donna Chavez, Connie Jones, and Lauren Loechelt*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

The topic of plants was chosen because the children liked picking the dandelions that grew in our play yard in the early summer. To help the children focus, we walked around the VA grounds and pointed out different types of plants. After returning to the center, we helped the children cut out pictures of different plants to make a collage. Besides pulling the weeds, the children knew they needed to water the flowers; this was represented through their play. As the children had comments or questions, a teacher wrote them down and these were discussed during our afternoon circle time. As teachers, our expectations for the project were to focus on the different types and uses of plants, but the children took us in a totally different direction.

Phase Two

Developing the Project

We investigated our topic through books, National Geographic magazines, puzzles, felt board stories, and by growing our own plants. Several teachers at our center grow plants in their classrooms, so the children were able to visit these classrooms and talk with the teachers about plant care. We also continued our walks on the VA property. We were able to get Master Gardener, Dawn Moss-Callahan, from the Botanic Gardens to visit our classroom and talk with us about the life cycles of a bean plant and to plant some bean seeds with us. Some resources that were very valuable to us were a book series about plants written by Gail Saunders-Smith, and our magnifying glasses because the children were able to take a closer look at the different parts of the plants they were working with. Parents were invited to come and talk about their experiences with plants or to try growing plants. The children were also very happy to show their parents their growing seeds each afternoon as they were being picked up. The children represented their knowledge through drawings and through play.

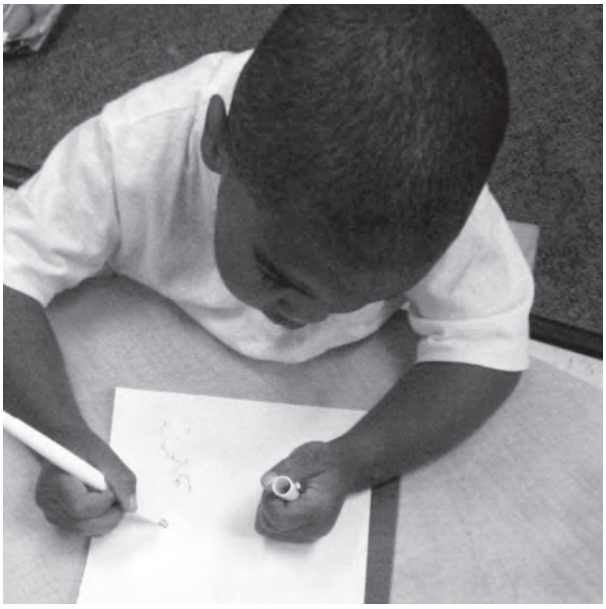
Phase Three

Concluding the Project

Our project is not fully closed. We are still anxiously waiting for our plants to reach full maturity. We made display boards showing the parents what the children were learning. Our plants are proudly displayed in our classroom for all to see. We are hoping that once our plants reach maturity, we will be able to invite the parents to join us in tasting the fruits of our labor. The children learned to care for and respect plants. They also learned the different parts of a bean plant and the different plant stages. Skills that were learned by the children were: sharing, learning to take turns, learning to sit and receive directions before doing a task, focusing on what they are doing, and trying to do things for themselves before asking for help.

Comments

As teachers, we learned the importance of having a hands-on approach to learning. We learned that by being able to use each of their five senses to explore materials, the children learn better and are able to retain more knowledge. Plants were a very good topic for our class because this topic allowed us to learn and grow together; the teachers had little prior knowledge of growing or caring for plants ourselves. The most difficult part of this project was Phase I, getting the children to generate questions for exploration. If I did another project, I would like to do something that required the children to use more of their gross motor skills.



▲ Children created observational drawings of plants. ▲

▲ Children learned how to plant seeds and take care of and cultivate plants in and outside of the classroom. ▲

Life at the Pond

A project by children 3 – 4 years old
Paul K. Kennedy Child Care Center, North Chicago, Illinois
Length of Project: *4 weeks* ***Teachers:*** *Elizabeth McClinton, Dionne Stone, and Yadira Serrano-Melendez*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

When thinking of a project topic, we first examined our childcare center and the surrounding environment. We have access to a beautiful duck pond that we use for nature walks and adventures. During circle time, we simply asked the children, "What is a pond?" Some of the children's responses included simple words such as water and ducks. We asked the children "What swims in a pond?" The children replied, "Fish and sharks!" They were asked to draw a pond. After this, we knew that our children would learn about animals and pond life through our project.

Phase Two

Developing the Project

After talking with the children about their early drawings and displaying them, we knew it was time for a visit to the duck pond. The habitat is rich with wildlife and foliage indigenous to this area and we wanted the children to simply observe the pond and the things they saw. Ms. Yadira collected some pond water for us to bring back into our classroom for close observation. The children loved the animal life and watched as three men caught a fish at the pond.

Once returning from the duck pond, the children constructed a mural of a pond on our classroom wall. We included things the children talked about such as ducks, frogs, and fish. We read stories about freshwater ponds and pond life. We also posted our pictures of the children's experience around the room for parents to use as discussion pieces.

We introduced the use of clipboards for recording and binoculars for the children to use when investigating the pond. We went back to the pond to look specifically for animals that might be at the pond as well as what in nature makes a pond. We were able to collect plant life and rocks to bring back to our class to be incorporated into our final project.

Phase Three

Concluding the Project

For our final project we wanted our children to use what they had learned about ponds to build a pond in our classroom. The children knew that they wanted to include the animals they saw at the pond, sand, water, flowers, and water. The children learned about animals at the pond and what elements in nature make a pond. They also learned how to use clipboards to record data and binoculars to see things that were far away. They also learned about items that sink or float.

The parents were excited to hear about the pond from their children. When picking them up at the end of the day, parents were invited to come into the classroom to see and talk about the pond mural the children created.

Comments

The duck pond presented many opportunities for investigations to be explored, generated, and recorded. Our goal for the children was to allow them to experience and learn about nature through a hands-on approach. It was amazing to watch the children's reactions during our visits to the duck pond. They also communicated to their families about the experience, and we received a lot of positive feedback from parents. This has been a great summer full of fun and exciting experiences, and we learned as much as the children did through our participation in this project.

◀ Children visited a local pond several times at their site visit to investigate their questions.

▶ Children used paint and large paper to make a representation of the pond.

◀ Children observed and documented the different wildlife at the pond.

Quilting

A project by children 2 – 5 years old
College of Lake County Lakeshore Children's Learning Center, Waukegan, Illinois
Length of Project: *3 months* ***Educator:*** *Marie Schreiber*

Phase One

Beginning the Project

The topic was chosen after there was high interest expressed in "class quilts" that were made in previous years. I had attempted the quilt in years since but it is a very involved undertaking and either time or lack of interest prevented follow through. With interest in the quilts and a project allowing an extended investigation we decided to move forward with that topic. The children were most interested in creating a completed quilt. My goals and expectations were more simple: have the children investigate different types of textiles, and explore and discover how quilts are created. With the mixed age group and various levels of development there are also class objectives for the project; shape and color recognition, recognizing and developing patterns and improving fine motor coordination are some of the class objectives related to this project.

Phase Two

Developing the Project

After enough children expressed an interested in the topic of quilts the investigation began. The children interested researched sewing through books. We then decided to reach out to the college community sending an e-mail to faculty explaining our project and requesting donations of quilting magazines, fabric, and anything else that would be helpful in pursuing our project. The response has been overwhelming! New donations arrive every week. The magazines have been a very important part of our research. The children have all observed that patterns and stories are a very important part of quilting. The children have enjoyed creating their own personal "quilt bag" which contains fabric of their choosing cut into squares for their own personal quilts. Although all of our quilts are fairly simple (traditional squares) some of the children have chosen to follow a color pattern or a print pattern. The enthusiasm of the children watching their own quilts develop is quite amazing. We have produced a "scrap tray" which has involved some of the children that are not as interested in the sewing. The scrap tray involves cutting and gluing; cutting fabric brings a whole new level to improving scissor/fine motor skills and everyone wants to cut the fabric.

In addition to the donations we have had two different quilting groups come in as guest speakers showing us tools that are used in addition to many beautiful quilts. These visitors were served as our field experiences and our experts. The women that shared their quilts are very passionate about it and were happy to let the children touch, handle, and crawl on top of them. We have represented our research through three dimensional artwork, observational drawings, and photography. The children are also continuing to represent their research through their continued work on their own quilts.

Phase Three

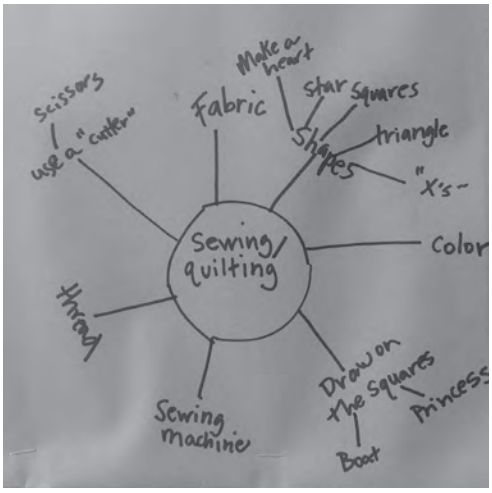
Concluding the Project

The project has concluded by the children making their quilts to the size they desired. The quilts were then displayed at the spring open house for viewing. The children were then able to take their quilts home. The class quilt will be kept in the classroom as a memoir. The children learned many things about quilting, including shape recognition, patterning, basic sewing skills, working independently and how to "create a story" through another area of self-expression. The children working on the project have grown to appreciate quilting as another art form.

Comments

The topic of quilting was a good topic. This project was both larger and smaller than I had anticipated. Larger because of the amount of time and work required by each child constructing a quilt. The project was smaller than I had anticipated because although everyone participated in the class quilt and chose "squares" there was a small core group of quilters that diligently quilted several times a week. This group of children would have been content in keeping the project going even longer. Two of my quilter children really benefitted from the project. These two children sometimes can get "lost in the crowd" in the hustle and bustle of a busy classroom. This project gave them the opportunity not only to work independently, but gave me the opportunity to spend quality time with them doing something that many of the children were not doing at that time. It was gratifying when they would bring their "bags" over to me.

I loved this project and thought it flowed well. It is difficult to determine if I would choose it again in years to come. That decision would be based on the interest expressed. Having quilting examples displayed within the classroom, inquiry could develop in the future.



▲ We began with webbing with the children about what they knew about quilts and sewing.

▲ We set up an area in the classroom as our sewing station with fabric, needles, thread, and quilting books that children could visit regularly.

▲ Children designed quilts on paper and learned how to sew by hand to create their own quilts with fabric.

Shoes Investigation

A project by children 3 – 5 years old
Eyes on the Future, Chicago, Illinois
Length of Project: *5 months* ***Teachers:*** *Mariza Barajas and Sandra Duran*

Phase One

Beginning the Project

The children were asked what they wanted to learn about, since this was one of the first times, we were letting the children choose a topic they were a bit confused on what we were asking of them. We then talked a bit about the topics we had previously learned about and then gave them a few examples and ideas of topics of subjects we had observed that the children had already showed interest in. After voting, we focused on the broad subject of shoes, children wanted to generally know more about the different types of shoes that everyone in the classroom wore.

Phase Two

Developing the Project

The children were able to see and examine a variety of shoes by the artifacts that we brought in. They had the opportunity to take apart a shoe to see what was inside, and then look at a video on how different types of shoes are made. They measured, examined, touched, touched and discovered how many shoes are different and the same. We had the opportunity to visit a shoe store where the kids saw a variety of shoes for sale. They were able to ask the sales person questions about how they priced their shoes and how they measured client's feet to get the right size. We invited a shoe expert to the center to talk about different types of shoes and where or why we wear them; she also brought in examples so the children could see the different shoes. The artifacts helped the children a lot to see the different types of materials that were used to make shoes and how these materials help for the use of a particular shoe. Parents were asked to talk to their children about their shoes and to bring in artifacts that they may have at home to help with our project. The children were able to shoe their learning by drawing, dictating, sculpting and dramatizing their experiences.

Phase Three

Concluding the Project

To conclude our project, children created invitations to invite parents and staff to a gallery of samples and pictures of the work they did during the shoe project. Some children helped set up the gallery in a different building of the school and were told that they would be giving their parents and staff a tour of the gallery. The children were able to talk to parents about the different "exhibits" and talk about the pictures and drawings they had created. They showed knowledge on the topic of shoes and used vocabulary that showed what they had learned. They demonstrated this by speaking or by showing their parents and staff their observational drawings and pictures of them creating and learning about shoes.

Comments

We learned that the children when really interested in a topic would work hard, be extremely engaged and eager to do research, and work to find out more about the topic. The most meaningful part was how the children were able to work together and brainstorm on how to create a shoe using boxes and then paper maché. The children produced the idea, found a shoe to use as a model, then built and painted the shoe with little assistance. We feel that everyone benefited from this project; students, teachers, parents and staff were able to see growth of the children as they learned, explored, and discovered the topic of shoes.

▲ Children explored early math concepts of measurement during the shoe project.

▲ Students sorted their shoes into different categories.

▲ Children selected different shoes to create observational drawings.

▲ Families were invited to the classroom to explore the shoe gallery created by the children.

Vegetable Gardening Project

A project by children 3½ years old
Cherished Children Early Learning Center, Mundelein, Illinois
Length of Project: *2½ months* ***Teachers:*** *Karen Klinger and Kristy Wagner*
Particpated in Program: 2008 – 2009

Phase One

Beginning the Project

We chose vegetable gardening for a couple of reasons. First, we have an on-site garden in our playground that children were watching grow. Second, Karen and our director Carol Sternal, are avid gardeners. Carol brought in packets of flower and vegetable seeds. Our children sorted through them and were drawn to the vegetables. They were able to identify a lot of the vegetables by the pictures on the seed packets. The questions that came up were: "What are roots?" "What do they do?" "What will happen to the seed?" "What do the vegetables grow on?" These questions were generated when we started to weed our existing garden. Our expectations were to create an appreciation of growing things.

Phase Two

Developing the Project

We exposed the children to many activities throughout the project. We created grass buddies: socks filled with soil and grass seeds with faces drawn on them. Our first observational drawing was of a potato plant that Ms. Kristy had grown in another classroom during the school year. We read a number of books related to vegetables and how they grow. We explored with math vegetable counters in several different ways (sorting, counting, etc.). We put soil and beans in the water table and watched the beans sprout without water! We gave the children garden gloves, tools, and a wheelbarrow for them to explore. In the dramatic play area, we set out a garden shop. We also created garden hats out of newspapers and let the children decorate them. For our big portion of the project, Mr. Karen bought two wading pools and let the children explore the pools and poke holes on the bottom. Once the pools were ready, we paraded them outside with our homemade garden hats and filled them with 200 pounds of potting soil! The children then took zucchini plants, pumpkin, watermelon, cantaloupe, and green bean seeds and planted them into the pools. They were so excited; they did not mind their dirty hands and faces. Our parents brought in family recipes and talked about their own gardens.

Phase Three

Concluding the Project

Our class sent out invitations to all of our parents to visit our classroom project mural and the garden itself. Our parents were given the opportunity to visit at their own convenience, when they dropped off in the morning or picked up in the evening. Our parents were quite interested and the feedback was positive. Our children learned about the elements necessary for the growth of plants (soil, sun, water, etc.). They learned the phases of vegetable production (flowers bloom, fall off, and then vegetables grow in its place). They learned to compare the likeness and differences of the plants.

Comments

I learned how powerful it is to incorporate topics chosen by children that are relevant to their lives. What surprises me most is the intense level of enthusiasm project work generates, and how strong the children's focus became. Our topic was excellent because we had easy access to our playground garden, and there was a surprise every day; a baby tomato developing, a leaf growing overnight, etc. Sharing my knowledge about gardening and drawing was especially meaningful. It was easy to execute once I understood the process. We had one child who overcame some of his shyness because of his enjoyment of the project. I would allow more time for planning and field trips.

▲ Children used tallies to count different items in the garden.

▲ Children observed and documented a variety of plants.

▲ Children assisted with planting and maintaining gardens at the school.

▲ Final Web

Our Wheel Project

A project by children 11 – 22 months old
Laurance Armour Day School, Chicago, Illinois
Length of Project: *16 weeks* ***Teachers:*** *Anthony Bell, Elvira Mata, Annie Jones, and DeShonda Webster*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

We noticed that the children were looking out of the windows at different times of the day. They would become especially excited when they heard the beeping sound of the large white delivery truck, as well as when they saw buses, cars, or other trucks go by. As they observed, we would describe the vehicles by saying, "Look at the bus…. The wheels are going around and around, wheels make the bus go." We used that same phrase to describe each vehicle they became excited about. We finally decided to let the children experience, through play, the shapes and sizes of wheels. Wheels of many different shapes and sizes were added to the classroom. Books, magazines (of racing cars), calendars, and many pictures were added as well.

Phase Two

Developing the Project

Our investigations began with field site visits. The first was prompted by hearing the beeping sound of the truck outside of our playground. When we heard it, we quickly went out and asked the driver what was inside his truck and discovered the different goods he delivered. On a different trip to the parking garage's "Car Wash," we met Manni, the car washer. As he let the children investigate the inside of a car, they noticed the steering wheel. We compared the steering wheel to the spinning rims on the tire wheels of the car. We also compared the car wheels with the wheels of a motorcycle and a truck that were also parked in the garage. We stressed the different sizes of each wheel. The last trip was a planned focused field trip to Kohl Children's Museum. The focus was to have hands-on experiences with wheels at the museum. By taking the trip, the children experienced riding in the big yellow school bus. They got to see the big bus tires and the steering wheel.

We involved the parents in the experiences the children were having. They were asked to bring pictures and other artifacts that represented their personal vehicles. They were also required to fill in the pages of a blank album, which we made and sent home with the families. They were asked to include pictures of their vehicles – the steering wheel, the tires, and pictures of the ways in which they used their vehicles.

Phase Three

Concluding the Project

As a culminating event, we transformed the classroom into a highway "Rest Area." The parents were all invited to visit the rest area. They enjoyed picnic snacks and drinks at our "real" picnic table. They were able to push the children on their cars, trucks, and buses around the room, in the hallways, and then back to the rest area where books and pictures were then shared with the parents. Parents could take pictures of their children in front of a large bus mural which was hanging on the wall. There were train tracks to put together and trains to play with. This experience gave the children and parents a way of expanding their knowledge about wheels. They learned that wheels come in many different shapes and sizes. Because wheels help to make vehicles go, they are an important part of our everyday life.

Comments

The project inspired our team because of the way it motivated the children. We were amazed at how the children's interest in wheels expanded. They were able to guide us in focusing on what they wanted to experience due to their interest. The hands-on experiences of having access to expert visitors kept the children and teachers eager to participate.

▲ Examining a wheel on a bike

▲ Documenting the movement of wheels through painting

▼◀ Exploring a tire with sponges and brushes

◀ Representing a wheel using black paint and brushes

Worms

A project by children 3 – 5 years old
Child Care Center of Evanston, Evanston, Illinois
Length of Project: *2½ months* ***Teacher:*** *Deana Scurry*
Particpated in Program: 2007 – 2008

Phase One

Beginning the Project

I noticed that the children in my classroom liked to dig for worms; however, they did not know much about them. They played with worms and unknowingly harmed them. When I presented worms as a topic to my students, they were interested. Watching my classroom dig for worms became the focusing event. Students represented their beginning knowledge and experiences with the topic before the investigation through group discussions and drawings. I asked each child what they wanted to know about worms and wrote their questions on poster board. The majority of my class wanted to know why worms like to dig underground and how worms have babies. My expectation for the project was for my classroom to gain knowledge and respect of worms.

Phase Two

Developing the Project

Nicole Ramirez, a teacher at the Child Care Center, was our worm expert. She brought in four different types of worms: night crawlers, leaf worms, dilly worms, and red worms. She answered all of our questions about worms. We were able to set the four different types of worms out in trays so that the children could experiment with them on their hands, arms, and necks. We used magnifying glasses and rulers and rotated among the table so that everyone had a turn with each type of worm. My class tried digging for worms in many different places. First we tried the wood chips on the Child Care Center playground. We found bugs, but no worms. We put some worms in a large tray that had dry paper towels on one side and wet paper towels on the other side. The children guessed that the worms would move to the side with the wet paper towels, and they did. We put our worms in a worm composter given to us by a family in our classroom. The children helped prepare the composter by shredding newspaper and spraying it with water. Then the worms were transferred to a multi-level composter called, "the worm factory," that automatically separates the food scraps from finished compost. We asked our families to help us feed our worms by sending home a list of things that worms like to eat. My classroom represented their learning through drawings, story dictation, and clay sculptures. My classroom decided they wanted to make a pretend "worm factory."

Phase Three

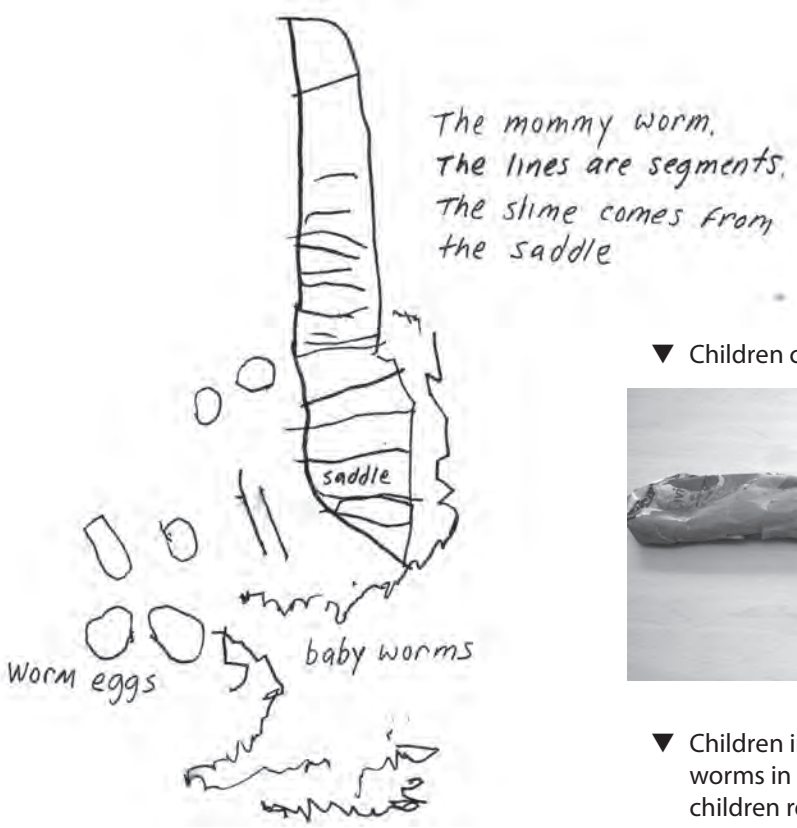
Concluding the Project

The culminating event was putting the real and pretend "worm factory" on the playground. My classroom was able to show others the worms, answer questions, and take pride in the project. This was how we were able to share the project with the entire school. The project was shared with parents through conversations with teachers, their children, newsletters, and activities displayed in the classroom.

My students learned many things from the project. They learned how to investigate and observe. They learned how to make predictions and conclusions based on prior knowledge. They learned facts about worms they didn't know beforehand.

Comments

The Project Approach taught me that investigations that I initially saw as unsuccessful to my classroom were actually learning experiences. For example, I was becoming frustrated when my class wasn't able to dig up any worms. Later, we learned from books that worms burrow deep into the ground during the summer to keep away from the heat. This was a good topic because worms are easily accessible and harmless, giving children opportunities for hands-on experiences. This project showed the children that there is more to worms than meets the eye. One thing I would do differently: record more discussions.



◀ Children observed worms and documented what they saw and dictations were added to children's drawings.

▼ Children created worm sculptures

▼ Children investigated how to compost with worms in the classroom. During the project children represented their learning by creating a worm factory out of cardboard boxes, clay, leaves, coffee grounds, lint, and soil.

▲ Children explored worms and were able to ask worm expert questions.

Aquarium Investigation

A project by children 3 – 5 years old
Erie Neighborhood House, Chicago, Illinois
Length of Project: *3 months* ***Teachers:*** *Lauren Kolack*

Phase One

Beginning the Project

Our students had just completed a pet study, during which we decided as a class to get a new classroom pet. We interviewed our site director and found out that we could either get a pet fish, turtle, or hermit crab. Our students voted and decided on a pet fish. I stated asking the students questions about how we could prepare our classroom to get a pet fish. They represented their beginning knowledge through journal entries, large group discussions and a knowledge web. We decided as a class that we knew that fish needed water to live in. Some students thought we could just put our fish in a bucket or that is could live in the water table, so I suggested we read some books first to make sure that we could take the best care of our fish.

Phase Two

Developing the Project

The students completed several investigations. First, we read a book about how to care for a new pet fish and created shopping lists based on the supply list in the book. Then, we visited another classroom as a field site and viewed their classroom fish tank. The students asked questions about what they fed their fish, what the fish were doing, why there was castle and where they could get one for our tank. Our expert, Ms. Angi answered their questions and we brought our list of supplies to our director to order. After we received the items, we explored them in small groups making observational drawings, comparing our objects to the pictures of them in the book, and taking photos. Once we finished exploring all of our supplies, it was time to set up the aquarium.

A core group of five students were the most interested in this project, so I left it as a choice to setup the aquarium. I read the directions step by step, and they helped me carry out each direction. I read that we had to wait one day before we added fish to our tank, so the students reminded me the following day that it was time to add our fish! The students then made more observational drawings, diagrams, and a book about how they setup their classroom fish tank. They also observed the fish over the next several weeks, and we looked at close-up photos of fills, fins, and scales to get a sense of how the fish live.

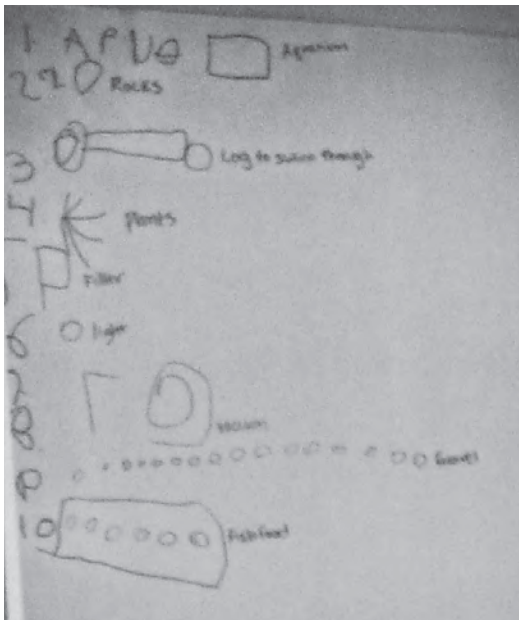
Phase Three

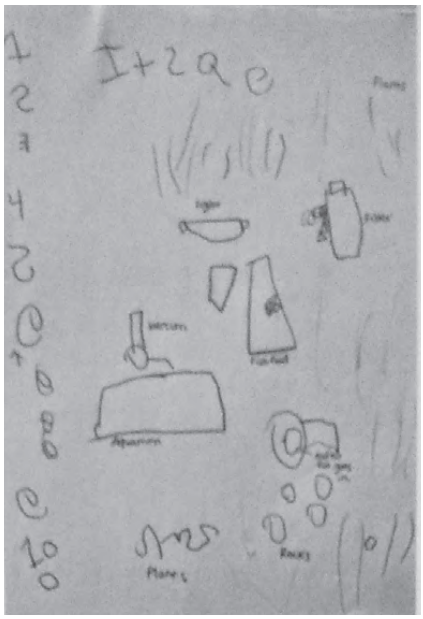
Concluding the Project

We saved the large box that our tank was delivered in, and the students asked if we could paint it to make it look like our fish tank. I took photos of the tank to have in the art area and set out many different materials. The students chose which materials to use to represent each art of the tank, but I stayed close by to ask questions about the shapes, colors, and locations of each item in order to guide them. I noticed many of our students were able to use the words scales, gills, tank, gravel, cave, plants, net, filter and slime. They were very interested to learn that fish have a slime coat to protect their scales. They all knew the function of the heater and thermometer, but had trouble remembering the names. Many students also commented on the behaviors of certain fish and they all love to watch them eat.

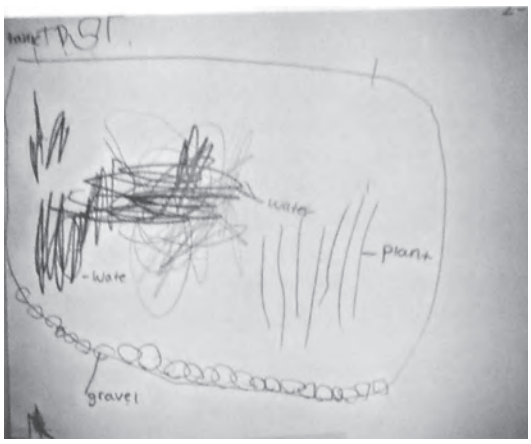
Comments

There were several students that were particularly interested, and I watched them develop so many skills as a result of participating in the project. One student in particular really evolved. She has had some difficulty learning letters and sounds in the past. She was so interested in the aquarium that she always wanted to use the word cards that we made to write out words for her drawings or use the word cards to match them to a picture of one of the aquarium supplies, based on sounds. She also started paying closer attention during story time and contributed her knowledge about fish during our large group sessions. I think this project gave her more confidence and made her feel like an "expert."





▲ Children wrote out their own shopping lists for the aquarium supplies



▲ Observational drawing of the aquarium.

▲ Children used a box and other materials to culminate the aquarium project by creating a representation to share with families.

Bakery Project

A project by children 4 – 5 years old
McKinley Park Elementary School, Chicago, Illinois
Length of Project: *4 months* ***Teachers:*** *Bethanie Smith and Annette Guerrero*
Particpated in Program: 2004 – 2005

Phase One

Beginning the Project

We chose the bakery topic because we regularly observed several children engaging in pretend play using various materials to make birthday cakes and other bakery items. The focusing event was exploring picture books that had actual photographs of bakeries and bakery products. We did a large group KWL chart on bakeries. A small group of children came up with the KWL questions to investigate. We then transferred the questions to clipboards so that the children could use them to interview the experts. We wanted the children to gain new knowledge on how various bakery items are made and sold.

Phase Two

Developing the Project

We continued to explore the photographs in books and came up with more questions to ask the bakery employees. Our project experts were six parents who came in and made tortillas with the children. The class, accompanied by plenty of parent volunteers, took a walk to a neighborhood bakery for a field site visit. The owner and his assistant were interviewed by the children and they guided us through the bakery. While on the field site visit, the questions were primarily focused on what the children had come up with prior to the visit. The parents assisted the children in asking the questions by pointing out various items in the bakery.

Once we left the bakery, the children went back to the classroom and reviewed the questions and photographs. We brought back baked goods from the bakery and displayed them in plastic bags. During the following week we placed various colors of modeling clay, paint, and paper but did not give instructions on what to do with the materials. The children decided to use the materials to make replicas of the items they saw at the bakery.

Another group of children decided that they were going to make a holding tray that they had learned about at the bakery. The children brought in various materials from home and asked me to get the "shiny stuff" (aluminum foil) to make the tray. Once the tray was completed, the children made more clay models for the tray. Throughout the process of making the clay models, we displayed a photo of the item next to the actual item in our project area. The children shared their sculptures with their families and any visitors who came to the classroom.

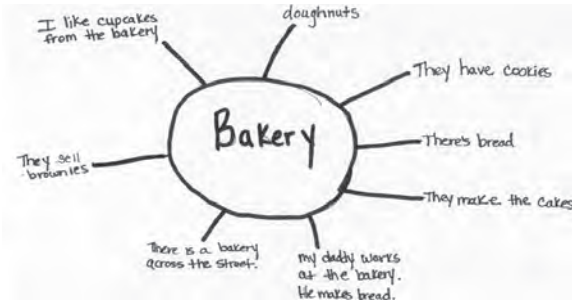
Phase Three

Concluding the Project

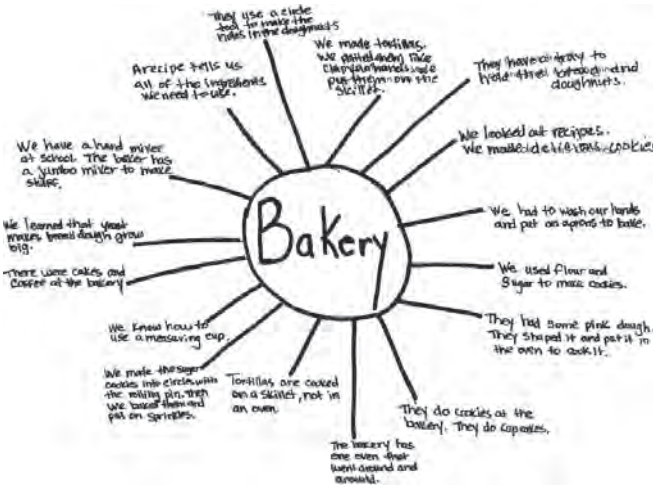
One child suggested that we make real baked items to eat and put on our tray. We brought in a recipe book with pictures of children doing all of the mixing and measuring for the recipes and the children chose recipes from that book to make. As a culminating event, we experimented with the various recipes. We sold the baked goods for "tickets" at our snack booth during our classroom celebration.

Comments

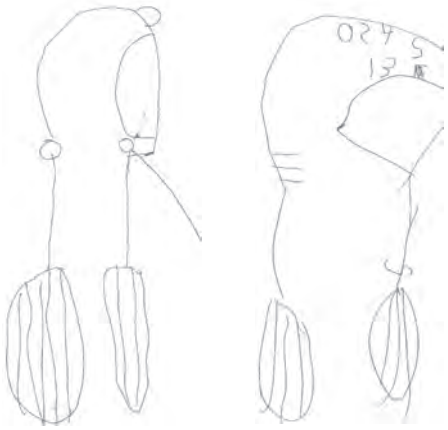
The bakery project was my most successful project to date. We observed children who were considered "quiet" students become leaders. Children were deeply focused on their various tasks during the project. The children had tasks that were meaningful and worthwhile for them; therefore, the interest level was high until the very end of the project. It was a great stepping stone in strengthening our school's partnership with local businesses.



▲ Ms. Smith's Pre-K class created webs about the bakery in phase one and at the end of the project to see how much they learned.



▲ End of Project

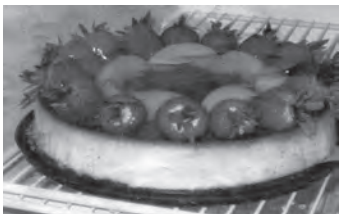


▲ Time One ▲ Time Two

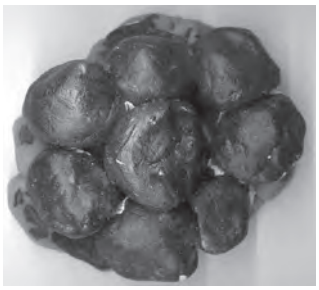
Students created time one and time two observational drawing of different appliances used in the bakery.

▶ Making tortillas

▶ Real strawberry torte



▶ Students created clay sculptures of the different pastries they saw at the bakery. This is a child's representation of a strawberry torte.



Bakery Project

A project by children 3 – 5 years old
Cherished Children, Calumet City, Illinois
Length of Project: *2½ months* ***Teachers:*** *Alanda Klein and Gaby Herrera*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

The bakery project was chosen because we observed the children playing in the kitchen area and with the bakery "prop boxes." They get excited when we have a birthday treat that is baked. We started by talking about bakeries and put together a vocabulary wall and collected pictures and books. They represented their knowledge by showing a lot of interest in the dramatic play area. We decided to look into the following questions: What's a recipe for? How hot is the oven? What are the different ingredients? This project had total class participation including hands-on learning. Our expectations were that the children could share what they learned with their families and that they would explore baking at home and have fun baking.

Phase Two

Developing the Project

As the project was developing, we expanded our vocabulary wall. The children seemed very interested in looking at the new things on the wall. When possible, we did a bakery project each week. Some of the things that we baked/made were: frosting, biscuits, and butter. We do not have a regular oven in the classroom so we were limited in what we could bake. After each bakery project, the children's knowledge increased, and they couldn't wait to do another one.

We visited our director, Ms. Carol, in her home. She has extensive baking knowledge, and taught us how to bake banana bread and muffins. We also visited a local Target Store's bakery department where we saw a cake-decorating expert and visited the bakery aisle in the store. During a field trip to the Lake County Fair, we looked at exhibits in the culinary section. At all three events, the children asked many questions. We wanted something that would have total involvement with the parents so we put together a "Literacy Baking Bag" with different bakery-related items in it. We had each child bring the bag home so they and their parents could work with it. We also asked the parents to share one of their special recipes with us for a future classroom cookbook.

Phase Three

Concluding the Project

For a culminating event, we planned to do a small bake sale in the classroom. Since we only had a small toaster oven and microwave, we had to "make do." We sent a letter to parents inviting them to come and enjoy our baked items. The children worked hard on their baking skills as we prepared for the bake sale. There was a small cost for our baked goods, so the children learned some math skills as well. The children were very excited to share their baking experience, and they felt a sense of pride, sharing something they had worked hard to produce. They learned a lot about baking as well as sanitary baking practices. Our summer project is ending, but we hope their interest will never end.

Comments

This was a good project because it was something the children could understand. It was fun to observe them learning where bakery treats come from and how they're prepared. I also enjoyed how each child's family joined in baking at home, giving us recipes and buying from our classroom bake sale. I was happy to see how eager each child was to bake and how much they could do on their own. Their children have always enjoyed playing with the bakery and kitchen toys, but now I notice them incorporating new ideas learned during this project. One difficulty during the project was that during the summer there are a lot of field trips, and sometimes it was hard to find time to bake.

▲ Children explored using measuring cups to make baked goods.

▲ Observational drawing of an oven.

▲ Children went on a site visit to a bakery and frosted, decorated, and tasted donuts.

Our Investigation of Balls

A project by children 3 – 4 years old
John Hay Academy, Chicago, Illinois
Length of Project: *4 weeks* ***Educator:*** *Cynthia Dressler*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

This topic was chosen after a visit to the IDEA Factory at the Museum of Science and Industry. Many of the students focused on activities that involved balls and their uses. To begin this topic, we webbed information about what the class knew about balls and how they used them. This topic was one that was relevant to all students because of the familiarity of the topic; all children had some experience with balls even if it was only with the materials in the gym at our school.

We continued to develop questions about our topic and decided that we could ask our school's gym teacher to find out more information. The students were interested in the different models and materials related to the balls.

Phase Two

Developing the Project

We began the investigation by listing what we knew about the topic and found that, as a class, our strength was in the uses of balls. We were able to visit the school gym as part of our investigation. Some children asked specific questions about the types of balls used in the gym. Mothers worked with the teacher's assistant to tally the different types of balls available in the gym and complete some observational drawings. After asking the initial questions about the uses of the balls the students developed a curiosity about what the balls were made of and the differences between the types of balls available.

I brought in fiction and non-fiction books connected to the balls. One series of books, *Let's Find Out,* was a great resource because it allowed children to research information through the photographs in the books. Mr. Meyer, the gym teacher, allowed us to cut up some of the old balls from the gym in order to learn how they were made and what they were made of.

Students represented their learning through drawings, journals, vocabulary lists and dictation. After learning how to handle the balls based on different sports, the students also adapted the way they played with them.

Phase Three

Concluding the Project

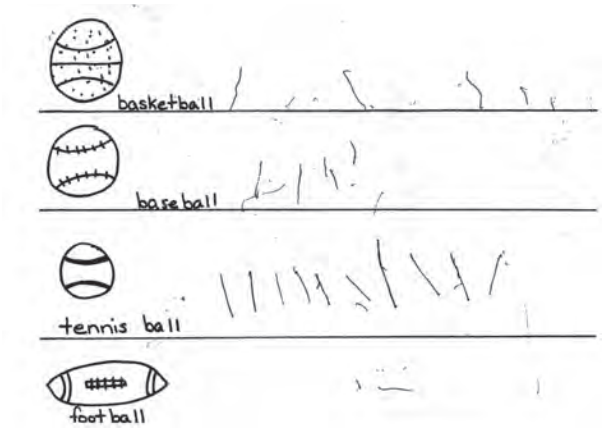
To end the project, we cut open two balls – one hollow and one solid – so the children could satisfy some of their curiosity. We displayed the students' work and photographs of the project on the bulletin board for Literacy Night so that parents could see what their children had been studying.

The students learned how to ask focused questions and record information through writing and tallying. They also discovered purpose in writing and using it as a tool. They became more comfortable sharing their ideas with one another. Some of the students who had previously been less inclined to talk began talking more because they had a reason and need to contribute.

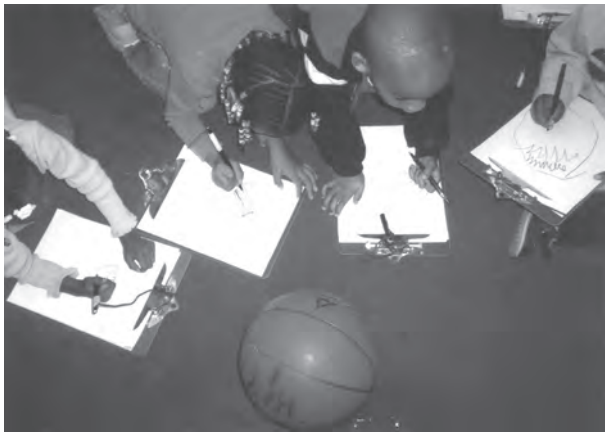
Comments

This topic was a good choice because all of the students had some background knowledge to share and it gave the opportunity for some of my quieter students to feel confident in what they had to share.

It was good to have a topic that all children felt confident discussing right from the beginning. The students have benefited through learning the importance of taking notes and recording information. They have become experts at using books as a tool to gain information as well as reading them for pleasure.

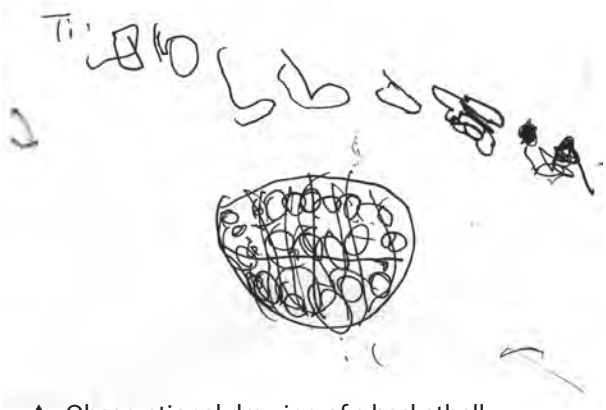


▲ Children used tally marks to count how many balls of each type they saw.



▲ Children documented the different types of balls through observational drawing.

▲ Children investigated different types of materials from which balls are made.



▲ Observational drawing of a basketball

▲ Children explored various sizes of balls.

Beautiful Butterfly

A project by children 3 – 4 years old
De la Cruz School, Chicago, Illinois
Length of Project: *3 weeks* ***Teachers:*** *Maretzy Barrera and Mrs. Fernandez*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

In October we borrowed an insect theme box – modeling butterfly metamorphosis - from another teacher. The children had many questions about how the caterpillars changed to butterflies so we decided to explore this topic further. We asked the students what they knew about butterflies. A lot of the children responded that butterflies are different colors and that they fly.

The children had a lot of questions. Do butterflies have ears? How many body parts do they have? Why do they grow so fast? How do they make their cocoons? Why do they eat so much? What do they eat? Why do they come in different colors? These questions were written on a web and shared with all the children.

Phase Two

Developing the Project

We asked the children to go home and ask their parents if they would help them find information on butterflies. Some children returned to school with some pictures of butterflies and others with names of different butterflies. They were very excited to talk about what they had found.

The first week of the project, we visited the Peggy Notebaert Nature Museum. We spoke with Lisa at the museum and she answered many of the questions we had.

During our investigation the children really wanted to focus on the metamorphosis process. They were amazed when the caterpillars began to make their chrysalis and wanted to know what happens inside the chrysalis.

The museum has a program that allowed us to borrow a box of information on butterflies. It contained models and posters that describe the change that caterpillars undergo. There was a poster that showed Monarch butterflies flying to Mexico during the winter. Since most of my students' families are from Mexico, they were very interested in this information. The children and the teacher decided to buy a butterfly kit for the classroom. The children observed the caterpillar stage, the chrysalis and finally the butterflies. They did observational drawings at each stage. The children investigated the foods that the caterpillars ate and foods that the butterflies ate.

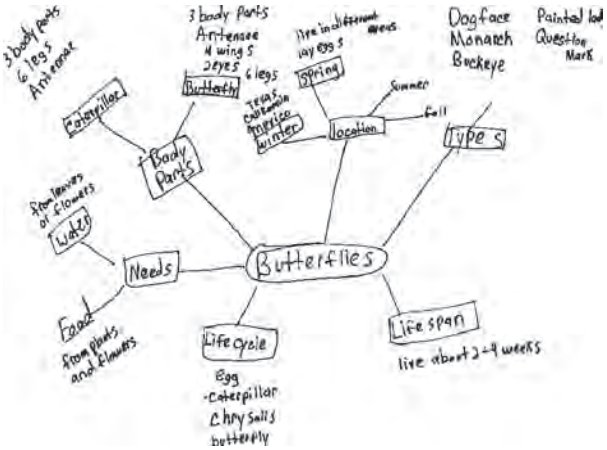
Phase Three

Concluding the Project

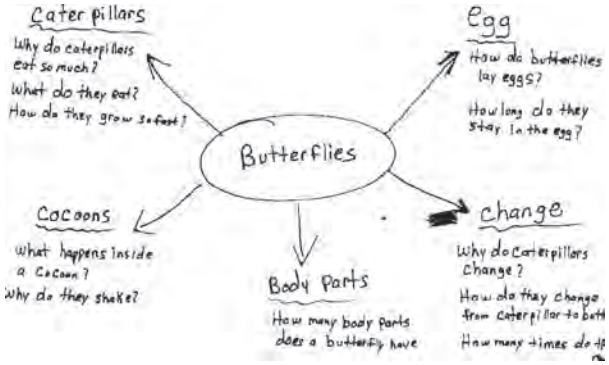
The last day of our project was our butterfly release celebration. Each group of children released ten butterflies. They were very excited to see the butterflies fly away. The parents were able to see the photographs from our butterfly release celebration and all of the project documentation was displayed in the hallway. At the end of the project the students were able to explain metamorphosis and what happens at each stage of the butterfly life cycle.

Comments

We originally thought that the project would be difficult in terms of keeping the students interested without telling them what to do and how. We were so wrong – the children amazed me! They asked such good questions and learned so much that we really finished this project with a different view of my students. A lot of times as teachers we assume that projects are too hard for students and that they may not be interested. We learned through trying project work not to underestimate the capabilities of my students. This was a great experience, for students and staff. We cannot wait to do it again.



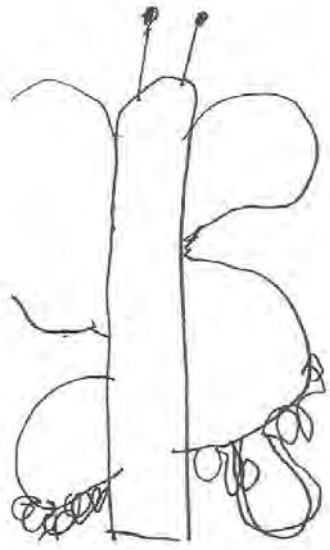
▲ Ms. Barrera's Pre-K class web on butterflies



▲ Questions the children wanted to investigate

◀ Observing a butterfly

▲ Time One observational drawing



▲ Time Two observational drawing

Beauty Salon Project

A project by children 3 – 5 years old
New Field School, Chicago, Illinois
Length of Project: *3 weeks* ***Educator:*** *Lisbeth Herrera*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

The students showed interest in each other's different hairdos. They talked about their own experiences with trips to the hair salon. We used a web to investigate students' knowledge about hair salons. Some students had been to a hair salon, while others shared that their parents cut or groomed their hair at home. Many children were able to name hair salon tools and other hair salon products but they wanted to know more about their uses. Other questions they wanted to investigate were: What happens to the hair that is cut off? Does it hurt when a person gets a haircut? How does hair change color?

Phase Two

Developing the Project

In order to investigate the questions, children took a site visit to 3 Logic Salon. This gave the students an opportunity to observe firsthand what a beauty salon looks like. We began by meeting stylists Carlos and Julio and looking at Julio's work station. The items in his drawer were taken out for the children to see. The students were amazed at the many different types of combs that existed for different hair styles. The students were able to see and feel the hair razor. They wanted to know if they would feel pain when this tool was used on their hair. In addition, the students sat in the revolving salon chair and were also taken on a tour of the salon.

The students represented their learning through drawings and through play in the hair salon play area in the classroom designed for them. In this play area, they pretend to make appointments using the phone, writing down the times in their appointment logs, having clients wait in the waiting area, providing services, and then using the cash register to complete transactions.

Phase Three

Concluding the Project

To culminate the project, our students put into practice their creative skills in doing each other's hair. The project was shared with the parents during parent conferences. They were able to see our classroom's mini hair salon – "Mis Pelitos Hair Salon – which translates to "my little hairs." Many of the boys in the classroom, prior to the field trip, would tend to keep away from the vanity in the dramatic play area. However, their opinions changed after the field observation. They realized that men, too, get a haircut, and don't necessarily always have to go to the barber shop.

The students learned the following: names for different types of hair (curly, straight, short, long, etc.), importance of safety in the salon, variations of combs, variations of hair dryers, and the importance of self-grooming (boosts self-esteem).

Comments

I was surprised at the level of interest the students showed during the field trip. I was not sure that a neighborhood business would leave such an impression on the children. However, our school neighborhood is quite vivid. It just goes to show that neighborhoods have very interesting places which we don't always take the time to make a learning experience for our children.

Time One Web

Time Two Web

Birds of a Feather Project

A project by children 3 – 5 years old
H. B. Stowe Academy, Chicago, Illinois
Length of Project: *3 months* ***Teacher:*** *Barbara Healy*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

The topic was chosen because the children expressed an interest in birds during an observational walk. They asked questions about the different types of birds they had observed and wondered where birds came from and what they ate. After our walk, we created a KWL chart about birds. We kept this posted in the classroom. Some of the students had pet birds at home and shared their experiences and knowledge of their pets.

Phase Two

Developing the Project

The children began by making observational drawings of the birds they observed on our walk. I read informational and narrative texts about birds. After reading several books, the children noted the many varieties of birds. Our project became redirected as they began to question why birds ate different things and why some birds look different from others. We used tools such as pliers, tongs, toothpicks, scissors and spoons, to replicate a bird's beak and to try to eat like a bird; it was very hard not to use fingers! I then collaborated with the art teacher to make bird masks and pictures created from a bird's perspective. We went to Kohl Children's Museum and made birds' nests and listened to, Tanglebird, a story about a bird making a nest. The children used stuffed birds, which produced that bird's song, to recreate the scenes we saw on our walk. The informational texts were a valuable resource for pictures and facts regarding various types of birds, many of whom the children had not personally observed. The children represented their learning through observational drawings, sculptures, dramatic play, graphic organizers, and through free exploration at the water table, which was filled with bird seed. Parents offered to bring their pet birds to school as the weather warmed.

Phase Three

Concluding the Project

The culminating event was the visit of family pets to the classroom. The children were asked to design their own bird. The bird designs were displayed in the classroom and hall for parents to observe at report card pick up day. The children learned the characteristics of birds, the types of foods that birds eat and some observed that the two are related. Their observational skills increased as well as their inquiry skills. Their dispositions changed in that they are now more willing to ask questions and more observant of the world around them.

Comments

I learned that my students, many of whom are English language learners, were quite receptive to initiating their own learning. This was a good topic because it was familiar to the children and easy to observe. It was especially meaningful to me because all of the children participated in the investigations. Each child was able to learn without being frustrated and thus experience success. Some of my students have special needs, so this is particularly important for them. If I did this project again, I would initiate it in the spring when birds are more easily observed outdoors, and it would be easier for parents to bring family pets to school.

The Car Project

A project by a child 4 years old
Completed as a home project in Des Plaines, Illinois
Length of Project: *16 weeks* ***Educator:*** *Rhonda Yost*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

This project was started because my daughter asked me if she could learn about something. I asked her what she wanted to learn about and she told me the car. We sat down and talked about our car. I asked her what she knew about the car and we went outside to take a look at the car. I was unsure about her continued interest in the car so we went to check out books from the library about cars. After many stories and continued conversations and questions, we proceeded with the project on cars. My hope for the project was to increase her current knowledge of the car and to increase her investigative and questioning skills.

Phase Two

Developing the Project

We began the investigation by taking a trip to the driveway. My daughter was given full access to our family van to investigate anything she wished. This was quite an experience for her. She checked out all the buttons and climbed through the entire car. She had many questions that were answered through this investigation, but she also developed new ones through the investigation time.

We then turned to books, the local repair shop, and my father to help us with further investigations. The more my daughter learned, the more questions she had. She was asking questions that I did not even know the answers to. The highlight of her investigations was helping Grandpa change the tire on his truck.

Throughout the project, she also became concerned about our safety in the car. She questioned why adults did not have to have car seats and then why seat belts were not safe enough for her and her brother.

Throughout the project, I took some photos and kept a journal of our conversations and investigations. Zaphillia also took some of her own photos and did observational drawings.

Phase Three

Concluding the Project

As a culminating event, Zaphillia taught her grandparents about our van. The grandparents were taken on a tour of how the van worked, where the safe places were to sit for adults and children, and how to get under the hood. This was very important to her because during her investigations, she emptied the window washer fluid and we had to fill it up so she could wash more windows. This project went far beyond my expectations of increasing her knowledge of our van. Her investigative and questioning skills were also expanded greatly.

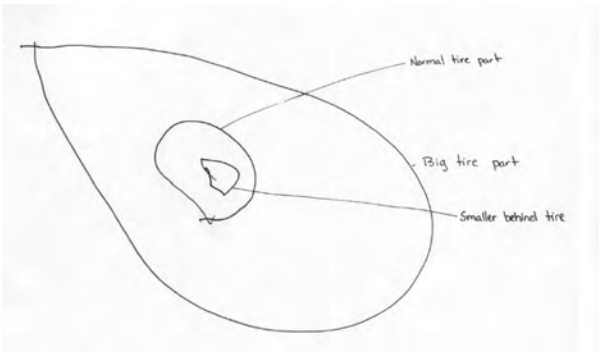
Comments

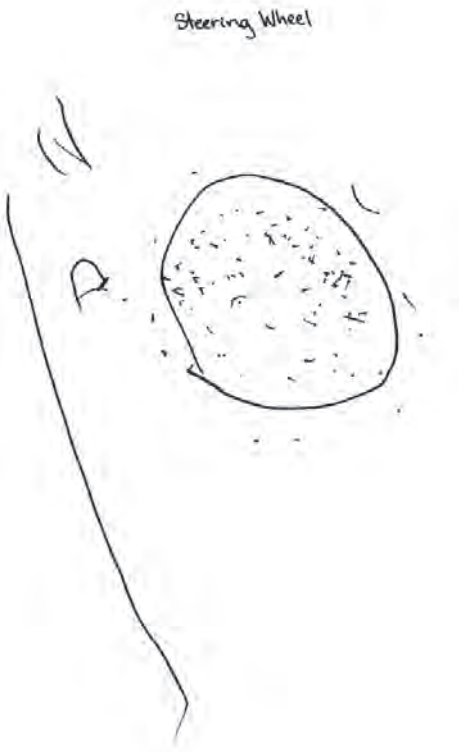
The Car Project was very rewarding and very successful. Zaphillia's interest level in cars kept increasing during the project. Her grandparents were very impressed with the amount of knowledge she had to tell them about the van. She is still asking my father if they can change the tire again. Her grandparents enjoyed being involved in her learning process as well.

▲ Investigating a steering wheel

▲ Changing the wiper fluid

▲▼ Observational drawing of a car tire





▲ Observational drawing of a steering wheel

Car Wash

A project by a Pre-K classroom
Green Bay School, Highland Park, Illinois
Length of Project: *1 month* ***Teachers:*** *Mirela Vesa & Emily Stith*

Phase One

Beginning the Project

The topic was selected based on students' interest. It was always motivating to our students to participate in activities that involve cars and movement. We believed that the Car Wash topic will expand children's interest beyond observing car movements and identifying car parts.

This school year, we brought to our classroom a new, 3-level garage that included a car wash. The students were very interested in moving cars down the ramps and through the car wash. We noted that the students started taking cars to the car wash to make them look clean. When the students started using different cars to play, they noticed that some cars were too large to fit through the car wash. The students also noticed that the car wash has water, bubbles, and brushes.

In addition to driving toy cars through the car wash, the students started using other classroom materials such as maps, brooms, and spray bottles from the toy cleaning set to clean toy cars. During our discussions, the students commented on going to the car wash with their families and asked questions such as why do cars get dirty, what is making the noise in the car wash, who is driving the car in the car wash, and where are the bubbles and the air coming from.

Phase Two

Developing the Project

During the investigation phase, we continued to elicit students' interest and prior knowledge related to the car wash theme. We provided additional materials and resources such as books, car construction sets, car puzzles, wheels and gears, and sensory materials, and we recorded students' comments and questions.

For our field trip to the Kohl Museum, we selected the Wheels in Motion workshop. The students demonstrated high interest in all activities (making tracks, rolling balls down the ramps, and building gear structures). They also spent a significant amount of time in the Car Care exhibit and had much fun with the car wash. The field trip to the museum and the high interest in car wash related activities made us pursue with the car wash project. We transformed our classroom in a car wash site where the students were provided with a wide variety of resources and materials to reinforce their knowledge and skills.

The classroom library included a variety of fiction and non-fiction books about cars, car washes, traffic lights, and community helpers. We also provided big books and books with CDs for large group reading and the listening center. The students also listened to various car related songs and were engaged in music and movement activities that involved both following directions and free expression. In art, we used shoeboxes, paint, stickers, die cutouts, play dough, cookie cutters, sponges, stampers, and construction paper to make cars and car wash related projects. On our classroom computers, the students had the opportunity to watch short videos from different car wash facilities. The students learned about the car wash process and supplies, as well as types of car wash (manual, automatic), and traffic lights.

At the end of the month, we organized a field trip to a car wash. The students had the opportunity to see the phases of the car wash, the equipment and materials used in a car wash, and the operation process. The students were able to hand dry the cars that were recently washed.

The parents participated in various phases of the project. First, they joined the students in the focus field trip to the museum. They also volunteered in the classroom during different group reading, art, and dramatic play activities. We also had a family member for each student during our field trip to the car wash.

Phase Three

Concluding the Project

We concluded the project with a large Car Wash display in the school hallway. The display included pictures of the students, teachers, school specialists, parents, and community workers who participated in the project. The Car Wash display was a big success. The students, the parents, and the school personnel had the opportunity to review and discuss events related to the project.

Children's artwork and language samples were also shared with the parents during parent conferences. Additionally, the parents were informed about the project in our newsletters and daily communication logs.

The Car Wash project greatly contributed to our students' development in all areas: language, social-emotional, cognitive, physical, and literacy. They were also able to generalize the skills learned in the classroom. The parents reported that our students initiated and engaged in discussions about cars and car wash at home. Some parents took their children to the car wash to further enhance the skills learned in the classroom.

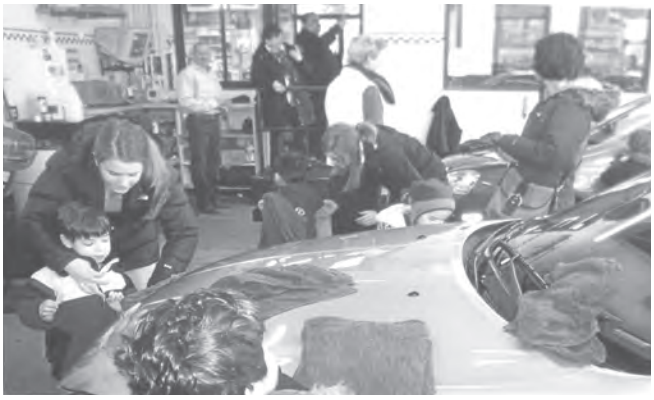
Comments

The Car Wash project proved to be a successful learning experience for students and teachers alike. The classroom teachers and the specialists who worked with our students during the project used the guidelines of the project approach to foster children's interest and learning.

This was the first opportunity for our students with special needs to participate in a field trip. We were very pleased to see that the students were engaged and participated in all activities at the Kohl Children's Museum and at the Car Wash.

The support we received from the museum and from our students' families greatly contributed to the success of the project. Also, the Car Wash managers and personnel were able to provide activities to meet a wide range of abilities.

Our team is determined to continue to participate in the project approach and to fully implement it in the classroom.



▲ Children learned how to dry cars at a car wash with special towels

▲ Children observed a car wash to learn about the different parts and machines.

▲ Children constructed mini car washes out of cardboard boxes.

▲ Children took on the roles of workers at our car wash.

Clothing Project

A project by children 3 – 5½ years old
Murphy School, Chicago, Illinois
Length of Project: *4 months* ***Teachers:*** *Michele Sera & Elizabeth Virella*

Phase One

Beginning the Project

This topic was chosen because clothing is a unit of study for our curriculum, Creative Curriculum. Clothing is something children interact with on a daily basis, so there is quite a bit of background knowledge, but the possibility to deepen knowledge in many related area. There was not a focusing event to begin the project. Before beginning the project, children did not represent their knowledge and experiences. We used a class concept web to record understandings. Students generated a list of questions related to the topic. The class decided to investigate making and caring for clothes. I expected the students to be curious, willing to investigate, and incorporate their understandings in their play.

Phase Two

Developing the Project

The investigations that occurred were: weaving, wardrobe styling, laundromat, and sewing. The field site visited was to Friendly Wash laundromat. Experts interviewed at the laundromat included the owner, Mr. Kahan; Tim, a manager; Elvia, and employees; various customers. In the classroom, the experts interviewed were Heather Bruno, a parent who is a wardrobe stylist and Michale Nuccio, a friend who sews. The investigations did not change or get re-directed by the experience. The most valuable resources were books about taking care of clothing, books about different kinds of clothing, the internet, and our experts. Parents were involved throughout the experience, starting from the introduction to the project, the invitation to participate in class and on our field trip, a checklist of ways to support conversations and concepts at home, and the culminating event.

Phase Three

Concluding the Project

Our culminating event was a slide show presentation using the Haiku Deck application. We used photos from the project. Students narrated what was going on in the photos and we finished by doing the Beanbag Boogie with the bean bags the students made. We practiced with our Learning Buddies as our audience. Children learned to observe and record their observations through observational drawings. They learned to ask and record answers to questions, using tally marks to help keep track of quantities. They learned to work together to create a product and negotiate adjustments along the way. They learned that ideas and concepts are connected. They learned to compare and contrast. They learned to represent ideas with drawings, constructions, and words. They learned how to ask unfamiliar adults questions. Their disposition to make sense of experience was cultivated.

Comments

I learned that allowing students' questions to guide our learning is meaningful. I tend to be on a rigid schedule, trying to fit everything in. The students continued to be interested after my interest waned. I had to adjust my thinking of project and units being synonymous. A project can continue even though you may move onto another unit; conversely, you may begin a project while a unit is in progress. The best way I can describe this is thinking of project work as a layer of what happens in the classroom.

I would definitely do this project again, but be more willing to take diversions. Students did show an interest in the vending machine at Friendly Wash, but I chose not to pursue that because we had so many other things happening. I also see how it would be beneficial to introduce tally marks, questioning, and observational drawing at the beginning of the school year so students are more familiar with those researching skills.

1. How do you make them colors?
2. How do you find them?
3. Why are they so darn cute?
4. Why do you pick clothes everyday?
5. Why do you have to wear them?
6. How are they made?
7. How do you wash and iron them?

▲ Children came up with a list of questions after doing a web about what they knew about clothing.

▲ Children wanted to create a washing machine in the classroom after our visit.

	Question	Answer
1	How do the machines work?	First, you decide which machine to use. You put in the money or use a card to pay the machine to work. You press the buttons for what you want the machine to do and press START.
2	Do You bring people's clean clothes back to their house an put them away?	Friendly Wash will wash, dry, fold and deliver your clothes to your house, but you have to put them away yourself.
3	How much does it cost to wash and dry clothes?	It depends on which machine you use. A regular washing machine costs $2.50. A large washing machine costs $5.50. A jumbo washing machine costs $9.50. The cost of the dryers depends on how long your clothes need to be in the machine.
4	How much clothes fit in a machine?	A small machine holds about 25 pounds of clothes, a large machine holds about 50 pounds of clothes and the jumbo machine holds 100 pounds of clothes.
5	What things have people forgotten at Friendly Wash?	Mostly laundry, especially missing socks. Sometimes people forget their laundry detergent or softener.
6	Why do you call it Friendly Wash?	We wanted to give our customers a bright, fun and friendly place to so their laundry. We have free wi-fi, free coffee, and friendly attendants to help our customers.
7	When does Friendly Wash open and close?	Friendly Wash opens at 6:00 a.m. and closes at midnight. 10:30 p.m. is the latest you can come in and start washing clothes.
8	How do they make washers and dryers?	Check out www.alliancelaundy.com to find out about the machines we have at Friendly Wash.
9	How do the washers and dryers spin around and know when to stop?	Great question! Maybe you can find some information on the internet.

▲ Children came up with many questions to ask the expert at our site visit to the laundry mat.

◀ We also had experts visit the classroom to teach us to sew and design clothes.

Doctor Project

A project by children 4 – 5 years old
Belmont-Cragin Early Childhood Center, Chicago, Illinois
Length of Project: *4 months* ***Teachers:*** *J. Kalousek, A. Fielding, and L. Carrillo*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

The children's interest in doctors began with the use of the doctor kit in the classroom. Play was extended by adding actual doctor equipment, x-rays, and trade books. Through discussions with the students, we created webs to find out what they knew about doctors and what they wanted to know. The web was used to generate questions for the medical staff during the field trip to the community medical center. The expectations for the project were to increase the students' knowledge of healthy lifestyle choices, increase vocabulary, and allow students to express feelings about doctors and doctor visits.

Phase Two

Developing the Project

A doctor's office was created in the book area where students' role-playing ranged from doing checkups to performing surgery. X-rays of a human skeleton were identified and labeled. Nutrition activities focused on making healthy food choices. During the field trip to the medical center, students visited the examination rooms and lab. They asked the nurse and doctor questions and created observational drawings. After the trip, a list was made with information that the students gained from their visit to the medical center.

Phase Three

Concluding the Project

The final product of the project is a book created to show the different phases of the study. Each student will have the opportunity to take the book home to share with his or her family members. The documentation board will be displayed in our classroom during our open house. Students learned that doctor examinations, making healthy choices in nutrition, and exercise will help their bodies grow and continue to stay healthy.

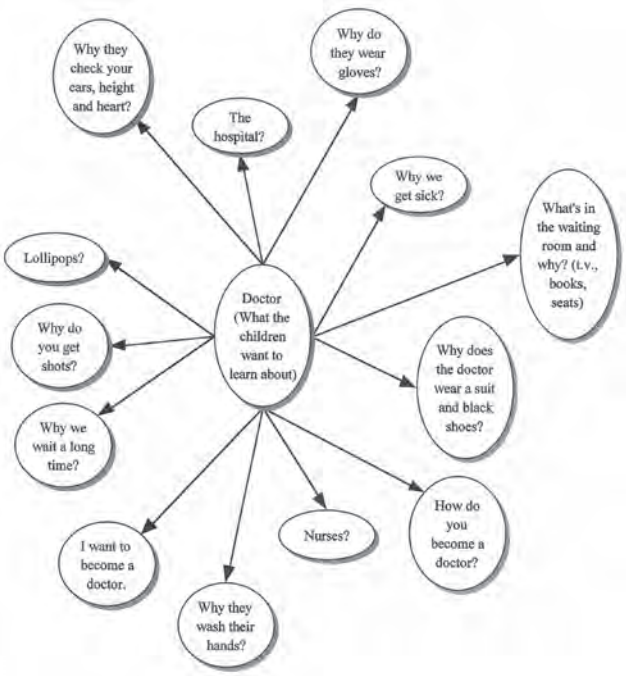
Comments

This project provided opportunities for children to express their knowledge of doctors and to gain a deeper understanding of why doctors are an important part of our lives. The materials and books helped the children to extend their role-playing. Abbas was one child who benefited from this topic. His father is studying to become a doctor. He knew some important facts, such as the need to study and being a gentle doctor. He wanted to label the x-rays and found a book to use as a resource. If I used the project approach again, I would like to do a project on water; I feel that this is a topic that more children would be interested in. There could be more activities and parent involvement.

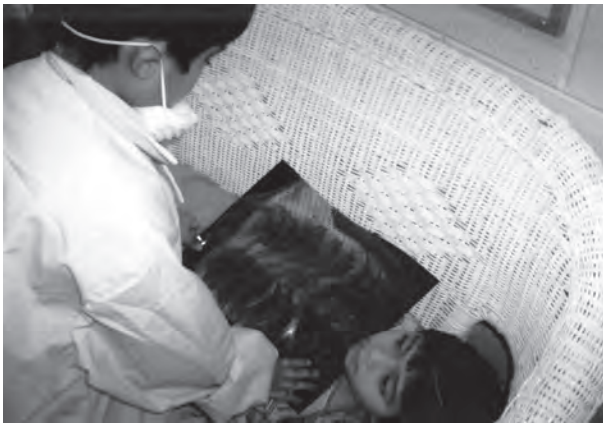
▼ Children's questions for the doctor

Why do we get sick?
How do you become a doctor?
Why do you wash your hands?
Why do shots hurt?
Why do you check our ears and hearts?
Why do we wait a long time?
Why does the doctor wear a suit and black shoes?
What does the nurse do?

▼ Children's first web



▲▼ Children did role-playing as a doctor and patient in the classroom, using stethoscopes and x rays. ▼



Dogs/Cats

A project by children 3 – 5 years old
Belmont-Cragin Early Childhood Center, Chicago, Illinois
Length of Project: *Ongoing* ***Educator:*** *Kirstin Roberts*

Phase One

Beginning the Project

In late September, teachers noticed that children were spending a lot of time pretending to be kittens and puppies during free play opportunities in the gym. Around the same time, teachers read the story, The Stray Dog by Marc Simont. The children were fascinated by this story of a homeless dog finding a family to love in the park. We polled the children to find out who had pets at home and asked the ones who did to bring in pictures to share. Due to the interest in these activities we asked the children if they would like to learn more about dogs and cats. Our expectation was that children's knowledge of cats and dogs would deepen and perhaps extend to other animals.

Phase Two

Developing the Project

We began our study by creating an idea web about dogs and cats with children to activate prior knowledge and to determine particular interests. Knowledge about cats and dogs was broad (everybody in the classroom had something to share about the topic) but shallow and many questions began to emerge about dogs and cats, especially after we brought in a basket of informational texts and stories about dogs and cats and shared these with the children. Children showed particular interests in three areas: (1) The body parts of dogs and cats and what functions they serve (2) What happens to homeless animals (3) Why dogs sometime hurt people. We decided to draw and paint dogs and cats based on photographic images, focusing on learning more about parts of their bodies and the functions these parts played. We then planned a trip to Pet Smart to learn more about dog training and cat adoption. During these experiences we read books, shared items related to dog and cat care, drew, painted, wrote in our journals, heard from parent "experts" about their experiences with dogs and cats, and created diagrams and word lists. Children continued to play kitten and puppy and integrated much of their newly acquired knowledge into their play.

Phase Three

Concluding the Project

It was clear from listening to the children that the fear of being hurt by unfriendly animals was a continuing issue. We decided to wrap up our study of dogs and cats by inviting a guest speaker to our classroom to discuss dog safety and to invite parents to participate. Children brainstormed questions for the speaker ahead of time. When the speaker came to our classroom and brought a trained pet therapy dog with her to teach children how to respectfully touch animals and how to avoid unfriendly dogs, children were thrilled. It was a wonderful culminating activity.

Comments

The project ebbed and flowed and in final reflection I don't think there were enough opportunities for the children who didn't have pets at home to really observe and explore cats and dogs. We all enjoyed and learned some things from the study but in the future, I would not pick this topic again even though many young children have a strong interest in the topic. Given challenges, they did some great work and our field experience and guest speaker was great!

▲ Children observe animals at adoption center during their site visit.

▲ Children did observational drawings during their project.

▲ Field expert teaches children about dogs.

▲ Children used photos to gather information about cats.

Investigating Lucky Hamster

A project by children 4 – 5 years old
Onahan School, Chicago, Illinois
Length of Project: *10 weeks* ***Teachers:*** *Cyndi Lopardo and Sandra Santillan*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

We have a pet hamster (Lucky) in our classroom and the students were very curious about him. Everyday, students were at the hamster's cage observing his behavior and asking questions about what he was doing and what he ate. We created a class web of what the students already knew about hamsters. One of the students had a hamster at home and shared what she knew. We began to gather questions for investigation from the students' observations and the webs. Our webs were posted near Lucky's cage.

Phase Two

Developing the Project

We began to take Lucky out of his cage so that we could take turns holding him. The students used cardboard tubes and boxes to create play areas for Lucky. They made observational drawings of Lucky and of the play areas. They began to explore the informational books we found at the local pet store. We offered Lucky a variety of different fruits and vegetables and kept a list of his favorites. We made a field site visit to the local pet store where we learned more about pets and hamsters. The students used stuffed hamsters in dramatic play and crawled through tunnels like Lucky. We revisited the web and the students added their new knowledge.

Phase Three

Concluding the Project

The students decided to make a movie to document what they had learned about Lucky. Each had an opportunity to share. This DVD was played at our family celebration night held at Kohl Children's Museum. The DVD was also played continuously during Self-Select time in our classroom for the next two weeks. Parents and students visited the DVD often.

Comments

This was our first student-initiated project. It sprang totally from the student's interests. Much of the exploration was done on their own. When their parents volunteered in the classroom, students brought them to the project area to tell them what they knew about Lucky and to explore the books, drawings, and DVD in the project area. About two weeks after our project was completed, a group of students used Kidnex to replicate Lucky's cage.

▶▲ Students observed Lucky in his cage and gathered data through observational drawing.

▲ Observational Drawing of Lucky the hamster sleeping in his cage.

▲ Students went to a local pet store to observe and document pets and their homes.

The Hat Project

A project by children 3 – 5 years old
McPherson School, Chicago, Illinois
Length of Project: *3 months* ***Teachers:*** *Rosaura Torres and Mrs. Guzman*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

We decided to study hats because of a hat with gold sequins that a student found in our indoor gym. One day, one of the boys was wearing this hat as he rode a tricycle in the gym. He told a teacher that he found the hat in a basket where the balls are kept. Since that day, one student would wear the hat whenever we visited the gym. As students shared everything they knew about hats, we discovered that they knew quite a bit. They wanted to know why people used different hats and why they needed hats for certain jobs. We decided that we would make hats out of newspaper and display them in our hallway. We would involve parents by inviting them to help us build our collection of hats in the classroom and also inviting them to our culminating activity.

Phase Two

Developing the Project

The students started their investigations by observing hats that we asked parents to bring in. Parents were very responsive to our request; we had: ceremonial hats, sun hats, cowboy hats, caps, straw hats, and an umbrella hat, to name just a few. Having hats at the students' disposal was a very important part of the project.

We began to read books about hats. A favorite was Ezra Jack Keats' *Jennie's Hat*. We set up a table in our classroom dedicated to hats. We placed bins on the table and put hats inside the large bins and books in the smaller bins. We placed clipboards under the table for the students' observational drawings. Children had easy access to this table during free play time. They used the hats during dramatic play time and in small group activities, acting like police officers and firefighters. The girls enjoyed playing with the sun hats and used them during pretend parties.

When we began doing the observational drawings, some of the students had a very difficult time. One of our young 3-year-olds began to cry when he heard the directions. We sat with him and encouraged him to try to draw just a simple object, like a ball. In time, he started to feel more confident.

Phase Three

Concluding the Project

We asked parents to donate newspaper and masking tape for the culminating activity. We also invited them to come to the classroom to help their child make a hat. I explained how to make the hat's crown and demonstrated how to shape the brim in various ways. Students told their parents what kind of hat they wanted, and the parents molded them accordingly. We had different color tempera paint at each table. Other materials were available to students to decorate with: stickers, feathers, foam cut-outs, pom-poms, ribbons and fake flowers. The students seemed to enjoy decorating their hats which turned out to be unique art pieces! We were excited to display them. The display was ready for parent/ teacher conferences, outside of our classroom in the hallway. We took each child's picture wearing their hat and displayed it with their hat. We hung the hats on a clothesline against the wall. On conference day, we heard many positive comments: one parent said, "You should sell these hats! They are very well made."

Comments

The most difficult part of the project was getting children accustomed to doing observational drawings. Many lacked confidence in their ability to draw. Once students realized I was more interested in the process than the end product, they seemed to gain confidence. The culminating activity was the most enjoyable part of the project. It was a joy to work with parents and students in the learning process. If I did this project again, I would try to find someone who actually knows how to make hats, for instance, someone who knows how to weave a hat out of straw.

The House Project

A project by children 3 – 5 years old
John Hay Academy, Chicago, Illinois
Length of project: *2 months* ***Teachers:*** *Cynthia Dressler and Carmen Perez*
Participated in program: 2004 – 2005

Phase One

Beginning the Project

We had been reading the story of *The Three Little Pigs*. We read two versions of the story and the students wanted to find out if there were more books with the same story. The students were able to relate to the fact that the pigs lived in houses or apartment buildings and that some lived with brothers and mothers. One little boy compared the wolf to the wind blowing at night during a recent storm. The students also related the parts of their homes to the pigs': windows, doors, locks, furniture, and fireplaces.

Phase Two

Developing the Project

We compared two stories – one traditional and one based in Mexico. We then webbed the information that the students knew about houses. We began a discussion about how we could build a house in our classroom. We happened to have many boxes available to us to explore for building. Some of the students had little interest in building but would revisit the books daily.

The students measured out a sufficient space in the classroom to construct the house. The children had many ideas about how to construct the house but the final materials of choice were boxes. They decided that masking tape would be better than nails for assembling the walls. The students used paper towel tubes to assemble as logs to construct the roof. The house became shaky when the students added the roof, so one of the boys suggested that the box flaps be taped to the floor so the house would not move. The students spent more time constructing the house than actually playing in it, so soon it was time for them to "blow the house down."

Phase Three

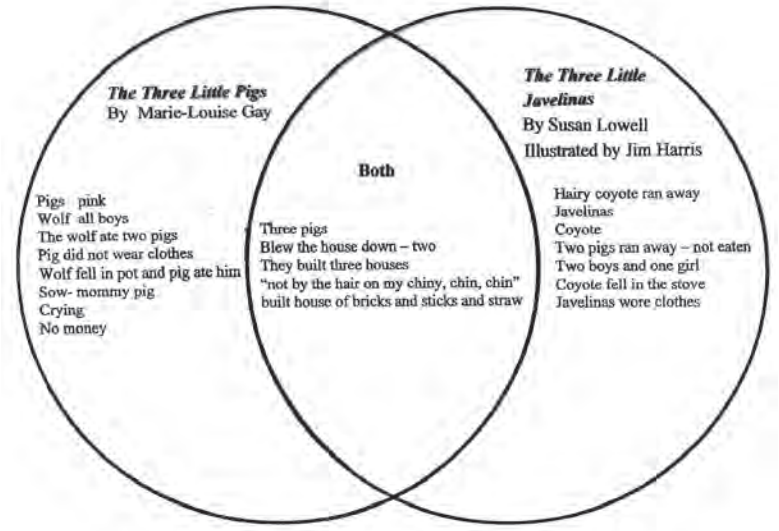
Concluding the Project

One child suggested that we all stand in front of the house and blow as hard as possible to see if the house would fall down, We blew as hard as we could but were unsuccessful in our attempts. The children discussed what else we could try and one of the boys suggested that we remove the tape that held the bottom flaps of the house to the floor. The children gathered in front of the house again and blew as hard as they could. It worked! We blew the house down. As the students reviewed the pictures, we began to note what they were saying. We used the notes to create a book to send home for the students to share with their families.

Comments

This has been one of our favorite projects. The amount of cooperative problem solving that was observed was great. The students benefited from the process of the product and not necessarily the finished product. This particular group of students did not communicate well with each other at the beginning of the project, but because they had a common goal their communication skills improved and were enhanced overall.

▶ Children compared the story of *The Three Little Pigs* and the *Three Little Javelinas* using a Venn Diagram.



▲▼ Children used cardboard boxes, tubes, and tape to construct their house.

▲ Children worked together to paint the house.

Investigating Instruments

A project by children 4 – 5 years old
Onahan School, Chicago, Illinois
Length of Project: *8 weeks* ***Teachers:*** *Cyndi Lopardo and Sandra Santillan*
Participated in Program: 2004 – 2005

Phase One

Beginning the Project

The students started a new music program and enjoyed learning new songs. We began to make a list of what the students knew about music and what questions they had about music. Most of the questions were focused on instruments. Some of the students had instruments at home or knew someone who played an instrument. Teachers brought in a clarinet and guitar for students to investigate. We webbed what the students knew about instruments and then added the questions that students wanted to investigate.

Phase Two

Developing the Project

Students made observational drawings of the instruments. We began to make lists of what the students learned in their investigations. Both children and their families were the experts and brought instruments from home. They talked about their instrument, demonstrated it, answered questions, and taught their friends how to use it. We used Venn diagrams to compare similar (guitar and violin) and dissimilar (guitar and clarinet) instruments. Throughout their investigations of the instruments, students made observational drawings. The group studied vibration and made instruments at a field site visit to Kohl Children's Museum. They continued to make instruments using materials available in the classroom.

Phase Three

Concluding the Project

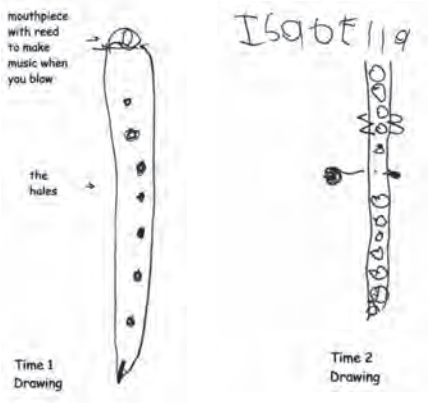
As a culminating activity for this project, the children, after a classroom discussion, decided that they wanted to make a book to share with parents. The students compiled all of the pictures and graphs into a book that was sent home to be shared with each family.

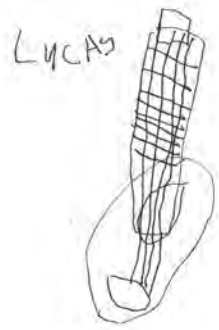
Comments

We were most amazed at our students' enthusiasm toward observational drawing. Students who had been drawing the same types of pictures repeatedly began to take risks and draw new things. Students began to carry around clipboards and draw/write more frequently in the classroom. Even the student who was stressed and frustrated whenever he was asked to draw something began to make observational drawings on his own.

▲▼ Students documented the instruments through observational drawings.

▼ Mrs. Lopardo's Pre-K class investigated different types of instruments and created time one and time two observational drawings.





▲◀ Children explored real instruments.

Tools Project

A project by children 3 – 5 years old
Yeager School, North Chicago, Illinois
Length of Project: *5 months* ***Educator:*** *Pamela Enright*
Particpated in Program: 2008 – 2009

Phase One

Beginning the Project

Our topic was chosen because students seemed to have an interest in tools and building. I added new toy tools to the classroom and books about tools and building to see if these sparked even more interest. We made an introductory web together to further discover the children's knowledge and interest in the topic. We posted the web in the classroom.

It was easier for some students to act out the motion of the tools than to pose a question or describe any tool, so we accepted the information as they could give it and recorded it on our web. My expectations were to give the project approach a try and to see how the students took to it. I didn't really know what would happen!

Phase Two

Developing the Project

The children investigated books and photographs of real tools and building sites. They observed, touched, and drew real tools. They used tools (with supervision) to fix a classroom bookshelf. We were lucky to have a parent who was a carpenter/construction worker who came in as our expert visitor; the children were as excited as if Bob the Builder himself had come!

The investigation questions increased the exposure children had to different tools and their uses. We updated the parents in our newsletter and presented pictures of our work.

From the project's beginning, the children said they wanted to build a house. FedEx/Kinko's donated boxes that we stacked at the back of the room. Students discussed house ideas for a while, and then I suggested that they use the boxes to create a house.

Phase Three

Concluding the Project

The students continued to explore with the boxes and tools. They worked on the house structure, and we set up an open house for other classes, our principal, and the students' families. For the open house, we left the house standing in our rug area. At the tables, we displayed the following photographs chosen by the students: our expert visitor, the day the students fixed the bookshelf, our investigation with the play tools and the new building blocks, and the concluding project—our house. The students were very proud to share our story during the open house!

Comments

I was worried at first about the wide range of abilities in my class. Since we were an early childhood special education classroom and I had a morning and an afternoon class, I wasn't sure if we could do everything that was expected. I also broke my leg in December a week after our introductory Project Based Learning meeting. My leg and the project were the two best things that have happened to me—in terms of my teaching—in a long time. My leg forced me to let the students be more autonomous because I was limited physically so they rose to the occasion! The project taught me how to listen to students better and to hear their interest.

▼ Anticipatory planning web

▶▲ Children explored and investigated how to use real tools to construct a house with cardboard boxes.

How to Make Tortillas

A project by children 3 – 5 years old
Goethe Elementary School, Chicago, Illinois
Length of Project: *2 months* ***Educator:*** *Wanda Ocasio*
Participated in Program: 2004 – 2005

Phase One

Beginning the Project

We have a tortilla song the students enjoy singing and we talked about how the children eat tortillas at home. I asked the children if anyone in their families made tortillas at home. They were able to demonstrate how they flattened the tortillas. The children were interested in telling me how their mothers or grandmothers made tortillas and the different foods they ate them with. I realized that the students did not have the language skills to explain what the steps were so I decided that making tortillas would be a good project topic. They had some prior knowledge so I began to ask them questions about tortillas and recorded their responses on paper as our first graph. By making the tortillas at school, we could find out what ingredients we needed and the steps to take to make them.

Phase Two

Developing the Project

We discussed the different ways the children eat tortillas and how we were going to eat them in the classroom. Our visiting expert demonstrated how to make the tortillas using a tortilleria. She then allowed the children to make a tortilla using the tortilleria. There were many conversations taking place while the children were involved with making the tortillas. They talked amongst themselves and compared the different sizes of the tortillas. We also discussed the texture of the tortilla dough.

The children drew pictures representing the experiences making tortillas in the classroom and at home. We read and looked at different books about tortillas. We learned a new song about tortillas to which the children enjoyed dancing. The children dramatized making tortillas using the tortilleria with play dough. The children represented their learning by making observational drawings, making tortillas, learning new songs, and by pretending to make tortillas in the dramatic play area.

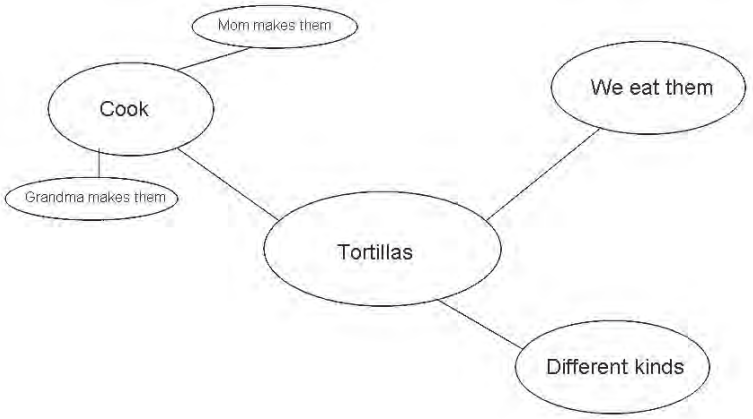
Phase Three

Concluding the Project

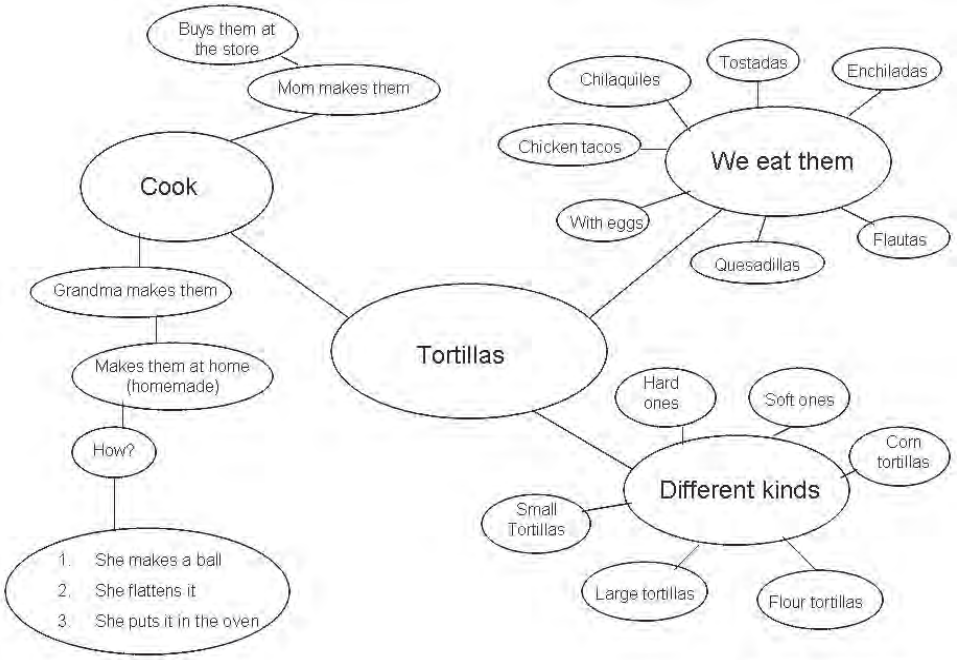
We decided that we would culminate the project by making tortillas. A parent donated a tortilleria and other parents helped the students make the tortillas. We cooked the tortillas and served them either as a quesadilla or a taco.

Comments

I learned that when the children are interested in a topic, they will participate more in the classroom. This topic was great for my classroom because it brought us closer as a class. The children were excited to share what they already knew. By allowing them to do what their mothers and grandmothers do, it gave them a sense of pride about their culture. When we made the tortillas, I realized that my quiet student really benefited by this project. He enjoyed sharing how he and his mother make tortillas at home.



Time One Web



Time Two Web

The Train Project

A project by a child 3 years old
Completed as a home project in Des Plaines, Illinois
Length of Project: *12 weeks* ***Educator:*** *Rhonda Yost*
Particpated in Program: 2004 – 2005

Phase One

Beginning the Project

The train project was started with my daughter because we lived close to the CTA red line and the Metra train. She was fascinated with the trains as they would pass by. We rode the CTA frequently and she was always excited to find out we were taking the train somewhere. She started asking questions about the train. We talked about what she already knew, which was very little. My expectations for the project were to increase her knowledge of the El train and how to ride it safely.

Phase Two

Developing the Project

We began the investigation by watching the El train. My daughter counted how many trains went by and realized that there was more than one train. She was also interested in how many windows and doors were on the train. We observed the train on many occasions.

She then began asking where the trains went. It was time to take a ride on the El train for investigation. We prepared questions to ask the CTA employees at the station by our house. She wanted to know how much it cost to ride and where she could go. The station worker told her that for her mommy, the cost was $1.50 and that she could ride for free with her mommy. He gave her a map of the train system so that she could see where the trains could take her. At this point she also discovered that the red line was not the only train.

She then started asking about other trains. We watched the Metra trains and saw a couple of freight trains. We also made trips to the Museum of Science and Industry and to Kohl Children's Museum to explore trains there.

During the project, I took photos and kept a journal of our activities and the conversations we had.

Phase Three

Concluding the Project

The entire project had included only my daughter and me. She decided that she wanted to take her dad for a ride on the El train. We had tickets to a baseball game and we always took the train to the baseball games. She planned the trip to the baseball game. When we were investigating the map, she found the baseball stadium and pointed to the stop where we would have to get off. She memorized the station names from our house to the baseball game and told her dad which stops we would have to pass to get to the game. She was able to show her dad how much she had learned about the train. This project expanded her ability to investigate, read maps, count, ask questions, and increased her knowledge of the El train and how it compares to other trains.

Comments

The train project was my first home project. It was much different than the projects I had done in the classroom. My daughter's interest remained high during the entire project and still continued after the project was officially finished. This project showed me the importance of doing projects with your children in the home.

▲ Drawing train tracks

▲ Finding her train in the book

▶ Drawing the train on the train tracks

▲ Time 4 drawing of a train

Growing a Water Frog

A project by children 3 – 5 years old
McPherson School, Chicago, Illinois
Length of Project: *2 months* ***Educator:*** *Jacqueline Gilfillian*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

Our first project topic was water. After our H2O focused field trip to Kohl Children's Museum, class discussion led to a decision to observe something that lives in water. At first, most of the students wanted to study fish. Someone said, "Frogs," and another student replied, "frogs don't live in water." This is how our project began. The teacher asked, "Do you know that there are 2,000 different types of frogs? One of those 2,000 types is a water frog. Would you like to grow a water frog?" We voted as a class and everyone voted yes. We made a list of the things we already knew about frogs. We then read our first informational story about the life cycle of a frog and added things we learned to a chart.

Phase Two

Developing the Project

Students investigated the metamorphosis/life cycle of a water frog. The teacher ordered eggs at different stages to ensure that the students would see the final state by April. Due to the cold weather, companies did not want to ship the eggs. One company finally agreed to ship all of the stages. When we opened the package we found tiny tadpoles.

Daily observations were made using magnifying glasses. Students made observational drawings of the frogs and took pictures. We charted the weekly changes we observed at different stages of development. We read books about frogs and discussed differences between types. We played leapfrog by measuring how far we jumped and then charting the distances. We recorded a timeline of the tadpoles' growth. We wrote stories and sang songs about tadpoles and frogs. The class would observe feeding behaviors during different stages and what to feed at each stage. The students took turns feeding twice a day and changing the water twice a week. They also caught frogs with a small net and gently touched the frogs to feel their moist skin.

We visited Shedd Aquarium where we observed various animals that live in water as well as several frogs in different habitats.

Phase Three

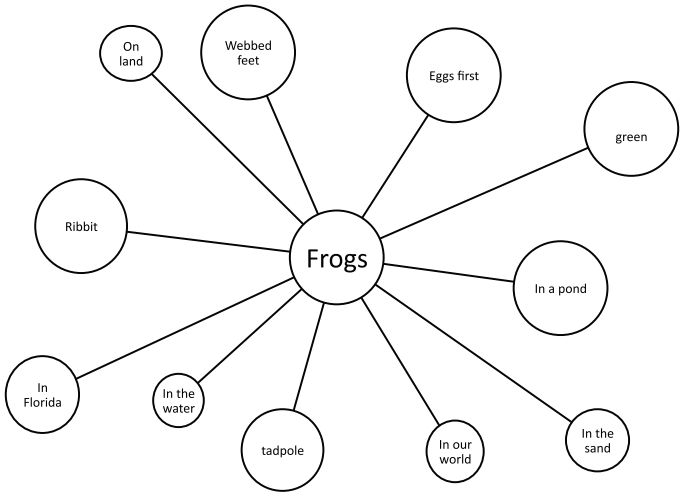
Concluding the Project

The class made their own play dough and molded tadpoles with it. The next day we used the remaining play dough and had a contest to see which group could make the best frogs. The students created great looking frogs by working together. In the end, they were all winners and received treats. We made a large display in the hall outside of our classroom showing our work. On Parent Teacher Conference Day we shared our display with parents and the school community. Students were eager to share the project. They discussed the pictures we took and explained the stages. We have had hundreds of people from our school community stop by to see our frog project. A teacher from another Pre-K classroom asked to join in with the project. We set up another room for our students to observe on their own; only our classroom cared for the tadpoles/frogs. The extra set-up room gave the other classes in the building (Pre-K – 2nd grade) a chance to visit the frogs and watch their changes and growth.

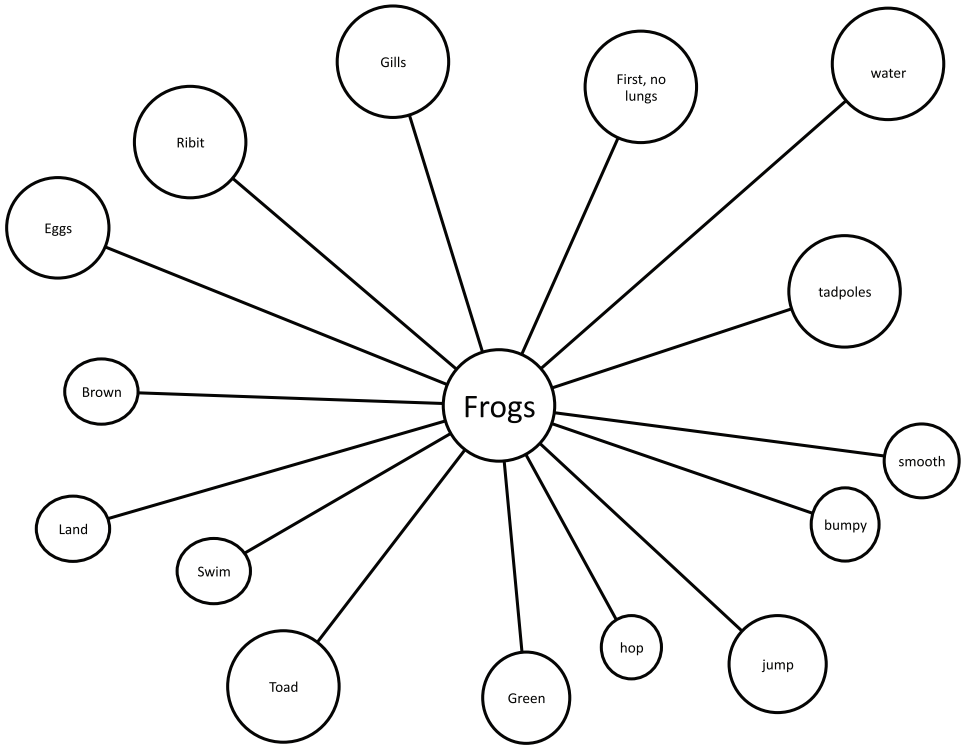
Finally, we planned a visit to the Notebeart Nature Museum to see their frog exhibit and also complete a workshop on babies and growth.

Comments

The project kept students interested and involved. The first day after spring break, students wanted to check on the tadpoles/frogs. One student became sick after break and was out of school for another week. Her mom told me, "All Fatima keeps talking about is the tadpoles and frogs." This project was a great experience for my students, the school, parents, and the teachers. I am thinking of repeating it next year. The other Pre-K teacher expressed the same idea because her students stayed engaged and interested along with us.



▲ Web One



▲ Web Two

Worms

A project by children 3 – 5 years old
Von Humboldt Child Parent Center, Chicago, Illinois
Length of Project: *3 months* ***Teachers:*** *Daria Zavacki and Mrs. Cervantes-Garza*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

The topic of bugs was discussed when a fly entered the classroom at the beginning of fall. The students began naming different types of bugs and discussed what they know about bugs. The worm was not discussed until after the experience of the focused field trip workshop at Kohl Children's Museum on "Animal Adaptations." The teachers listed the names of all of the bugs that the children discussed. The students chose four bugs they were interested in learning about: ant, fly, ladybug, and worm. The students voted, we tallied the score, and the winner was the worm. We asked the children what they knew about worms and used a web to have the students focus on each subtopic. What body parts are on the worm? What shape is the worm? What food does the worm eat? We then asked the children what they wanted to learn about worms. What do they eat? Do they have teeth? How big are they? Can we play with them?

Phase Two

Developing the Project

With our questions in mind, we began our investigation. We borrowed books from the library, researched information on the internet, and we put up a poster of the anatomy of a worm. As we were working on our investigation, one of the students asked, "Why do we have worms?" For this question, we decided to ask an expert. We arranged for a classroom visit from Miss Venus Vargas, nature educator with the Chicago Park District. She taught the class about worm composting. The students took notes and drew pictures using their clipboards.

The students participated in building and preparing worm compost and the parents helped with supplying newspapers and left over fruit from home. A father drilled holes in a large plastic container. We received red worms from the compost community representative of the neighborhood. It was a group effort.

Twice a week, the students took turns feeding the worms, making sure the bedding was moist, and keeping it under the water table because "it was a dark place." They put all of their writings and drawings into a folder they named "Worm Book."

Phase Three

Concluding the Project

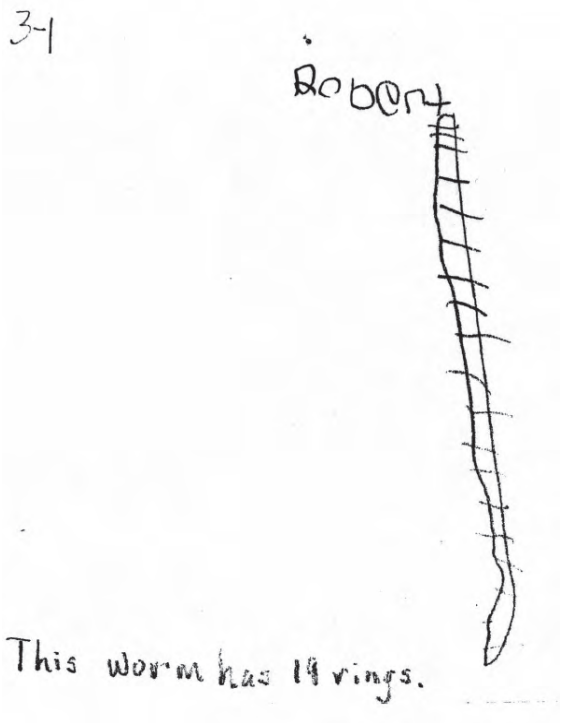
We made three display boards showing our findings and shared these with our parents, teachers, students, and visitors in the center. We also placed the displays in our All-Purpose Room on Parent Teacher Conference Day to share the information with all of the parents. We explained to the parents and visitors that the students enjoyed feeding the worms, using the clipboard, and taking pictures with the camera. They also developed new vocabulary words and learned that the worm is an important insect.

Comments

In doing the project approach, the students learned more about the subject because they were actively engaged in the process and in answering their own questions. The students' vocabulary increased and their writing skills developed. The students observed and asked questions about the worm compost. They enjoyed feeding the worms in the compost and seeing the growth of the worms. We learned to extend learning beyond themes.

▲ Learning web

▲▼ Children in Ms. Zavacki's Pre-K at Von Humboldt Parent Child Center observed worms in the classroom.



▲ Observational drawing

▲ Ms. Zavacki and her students created a worm compost bin in their classroom and made observations daily.

Animal Habitats

A project by children 5 – 6 years old
Stockton School, Chicago, Illinois
Length of Project: *4 months* ***Teacher:*** *Karla McReynolds*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

The topic of our project was chosen after two months of studying animals in the science curriculum pre-assigned by the school. We observed many animals during this unit and the children were really interested in what the animals ate and where they lived. I decided to show videos related to animals that live in water, animals that live under the soil, and animals that live on the land. We read books on different animals' habitats and read about what they eat. We decided to obtain a small pet for our classroom. We took a class vote on which pets to choose and which pet would be first to join our class. We decided to start with crickets and began to make our web. We talked about the things that we knew about crickets and then listed all of the things that crickets needed to live, including building materials for the habitat.

We decided to purchase another pet for the classroom. We went to the pet store and Wally, the store manager, showed us a lot of pets. The students voted on the next classroom pet; the decision to choose a mouse was almost unanimous. The students asked Wally questions about mice, and he told them that sometimes mice bite. The children now had more information so I asked if they wanted to vote again. All of the students voted for birds so we bought two parakeets. We returned to the classroom and made our first bird web that same day.

Phase Two

Developing the Project

During the project the students had to work as a team in order to build the cricket habitat, bird cage, the branches and a swing. The students learned mathematical skills and how to work better as a team. They came up with the idea of using empty plastic bottles taped together to make a cricket habitat. This would not work for the bird cage so they had to investigate other materials. They decided that they needed a bird cage and that they could use string and cubes to build the branches and the swing. The children designed their branches and swing on paper and used measurement to decide on correct sizing.

Our field site visits included the Science Lab at our school. Our expert, Judy Wilson, the science teacher, showed us her many animals and told us about their habitats and what they needed to survive. We visited Kohl Children's Museum and attended the Bird Habitat/Animal Adaptation workshop. Finally, we took a walking trip around the block to locate bird nests and to find branches, sticks, twigs, and leaves for our bird habitat. Parents were very helpful with the project – assisting with the initial set-up of the cricket habitat, donating materials, and going on field site visits.

The students represented their learning by creating drawings, writings, and then creating habitats themselves.

Phase Three

Concluding the Project

The project has been on display in the classroom and the parents have helped the students rebuild part of the first failed cricket home. Steps of the project with pictures are beautifully displayed in the hallway and visitors are constantly coming in. The children enjoy telling the visitors about their project. The students and their families attended a family celebration at Kohl Children's Museum where they shared their project documentation.

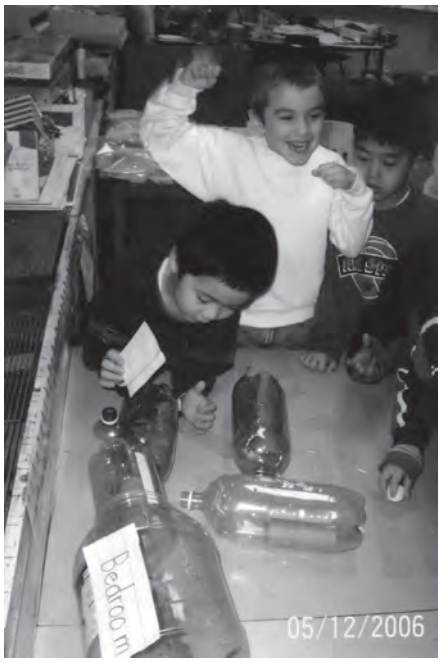
Comments

With young children you have to do a lot of probing, but once interested the students were hooked on the crickets, and they kept themselves going. Now I can't pry them away from the animals. The children will tell me what I should put in the cage, if the animals need food, and how many crickets they see. I think that Ivan and Imani may have benefited the most from the project. These two children tend to not do written work and are very quiet in class but they were very excited about this project. When Ivan's group finished their first stage of the cricket habitat, he said, "We did it as a team!"

▲ Children created a list of items for the cricket habitat and assigned students to bring in the objects.

▲▼ Parents assisted children in creating habitats in the classroom out of recyclable materials.

▲▼ Children created observational drawings of crickets.



Boat Project

A project by a kindergarten classroom
Farnsworth School, Chicago, Illinois
Length of Project: *6 weeks* ***Teachers:*** *Laura Ryan and Becky O'Hearn*
Participated in Program: 2006 – 2007

Phase One

Beginning the Project

The boat project began after we completed an experiment about sinking and floating. Students worked in small groups to see if a crayon would float in water. They created their own tin foil boats to help the crayons float. We discussed types of boats they knew about, who had seen a boat, and who had ever been on a boat. We listed the responses on a chart. The children were also intrigued with how many crayons would fit into their boats, which led to a discussion about what kinds of things boats carry. We made a list of possible items that a boat could carry. The children had many questions; we made a web to record answers to these questions. I felt this was a good topic to explore because of the high interest.

Phase Two

Developing the Project

We began our investigations by making a sketch of any kind of boat. Next, we discussed what we already knew about boats and what we wanted to learn. We started a KWL to record our responses. We read several non-fiction books about boats including, The ABC Boat Book which was a huge success. We read this many times, and the kids looked through the book whenever they could. We brought a projector into our class so the group could look at boat web sites as a class.

We interviewed our expert, Tiffani Fisher, our music teacher who also works part-time as a tour director on The Wendella. She spoke to the students about her job. She also brought in pictures and a brochure and answered their questions. This didn't change our focus, but made them aware that people had jobs working on boats.

The students were interested in many different kinds of boats so we decided to work in small groups to create their favorite. We made lists of what types of materials they wanted to use, and we made copies from books so they could view boat details. Parents helped by sending in items to build boats. Students made drawings, created their own boats, engaged in pretend play, and talked about boats all of the time!

Phase Three

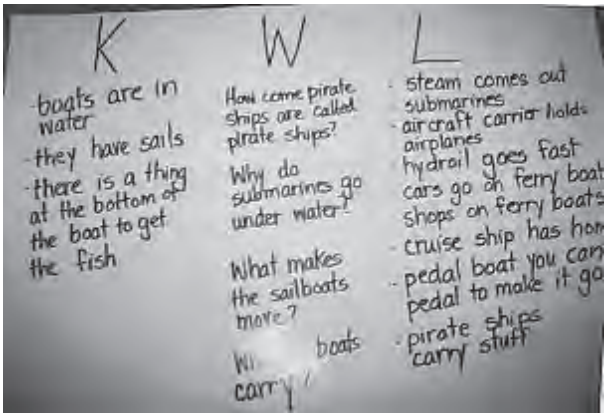
Concluding the Project

The culminating event was held on report card pick up day in our classroom. All of the boats were on display and everyone had a chance to show off their creations. The students were so proud and couldn't wait to tell their parents how they made their boat. They also made a mural which was displayed in our early childhood building.

One of the things that children learned was how to work together in a group. Many talents came to light and most interacted very well. There were 8 students with special needs in our class. They learned how to compliment each other and to share ideas. They learned the parts of a boat and the names of countless types of boats. They learned that people could have jobs on boats and that you can take a tour while on a boat. They also found out that airplanes could land and take off from a boat, cars could be carried on a boat, and that there are swimming pools on some boats. A new fascination was introduced!

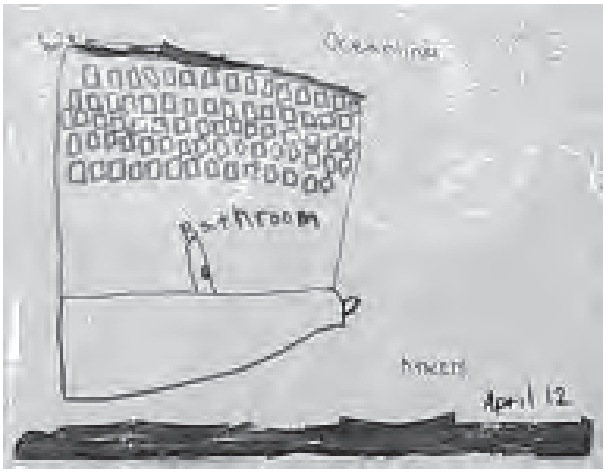
Comments

This project helped me to reconnect with the students. It helped me to see that while our days can be quite rushed and hectic, I need to make more time to let them explore their ideas. Everyone got involved and was excited about building a boat. One of our bilingual students who is usually quiet, really got into this project. His mom gave him special stickers to help decorate his boat. He ran into school holding his stickers. A special needs student also talked with family and other teachers about her boat and every day asked when it was time to work on our boats. These events would not have happened if it were not for this project.



▲ The KWL chart helped organize what children knew about boats, what they wanted to know, and what they learned about boats.

▼ Observational drawing of a boat.



▼ Children painted a mural about boats.

Cooking Project

A project by children 5 – 6 years old
Yeager School, North Chicago, Illinois
Length of Project: *Ongoing* ***Teachers:*** *Virginia Kelley*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

My students like to play with the tool bench and tools in my room, so I thought this would be a good topic to pursue. As I drew the web and we discussed the topic, it became clear to me that they had no desire to pursue this topic. I suggested pets or guinea pigs (we have one in our classroom), but they were not interested. When I mentioned cooking, they lit up! We created a web and all of the children's questions were, "How do you make . . . ?" I also brought up the point that in order to be successful cooks they would need to learn hygiene, reading a recipe, measuring, counting, numbers, etc.

Phase Two

Developing the Project

We explored several cookbooks and chose some recipes to try. First, we made green eggs and ham. It was a pre-planned activity that just happened to coincide with the beginning of our cooking project. Before we began cooking, we discussed the items we would be using, and what their idea of the recipe might be to access prior knowledge.

My challenge was to make these experiences as child-centered as I could. When we made milkshakes, I asked them how to make it. They gave me a list of ingredients. I took as many of those ingredients as I had on hand and put them in the blender. They all tasted it and some thought it was ok. Then, we made milkshakes with milk and ice cream and added chocolate syrup and candy for more flavor. They all liked those milkshakes! We made cookies without a recipe as well. I paired the children and gave them flour and water to mix. They worked together to get the right consistency and they were in charge of keeping a tally of how many cups of flour and water they used. Then, we added different types of flavorings to see which tasted good. We decided these cookies were not too good! We made cookies with a recipe, and they were delicious! Now we always follow a recipe. We also made fresh squeezed orange juice, pizza, cake, macaroni and cheese, and deviled eggs with our visiting expert (our principal).

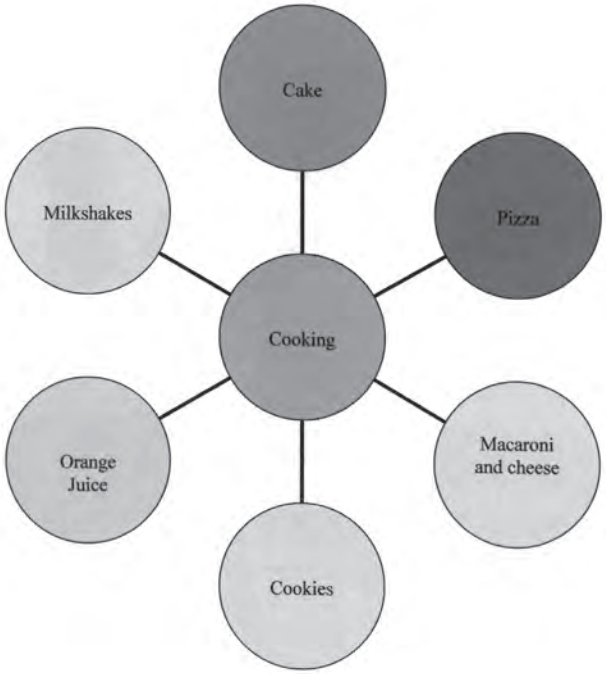
Phase Three

Concluding the Project

The children decided that they wanted to conclude their study of cooking with a cookbook. Again I was left with the question of how to make this a child-centered activity. We named our class and took a picture for the cover of our cookbook. As a group, we sounded out all of the words for the cookbook. Each child was responsible for writing three or four of the steps onto index cards that were then glued onto the page with their drawing and their photograph. Each child was able to assemble one or two pages for the finished cookbook. To date we only have one recipe in our cookbook, but hopefully we will be able to add a few more before the end of the year.

Comments

Throughout this experience I have struggled with the question of how to make these activities child-centered. I feel that I have followed the children's lead in choosing the topic and in choosing the culminating activity, but I knew it would be difficult to make cooking a child-centered activity given that following the recipe is critical (in most cases). I did find that I needed to allow a lot of time to complete our cooking activities so that everyone could be involved in all phases of the recipe. I also needed time to help the children process all of the information they were taking in. All in all, it was a lot of fun, especially for the children, but it is hard to apply the project approach to cooking.



◀ Children's first web about cooking

◀▲ Children explored with a variety of baking and cooking tools and used them with several recipes.

Fire Truck Project

A project by a bilingual kindergarten classroom
Walt Whitman School, Wheeling, Illinois
Length of Project: *2 months* ***Teacher:*** *Roberta Schiavinato-Manley*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

The topic was chosen because students showed an interest in fire trucks. This interest stemmed from a brainstorming session and discussion of our community and the people who work in it. After our discussion, students were excited about fire trucks and wanted to find out more about them. They had basic knowledge of fire trucks but also had many questions. We decided to investigate and write their questions on butcher paper. Some questions included: how many wheels does a fire truck have? How much water does it hold? How many firefighters climb the ladders? I expected my students to be engaged and excited about the project. I wanted them to be able to find answers to their questions and much more!

Phase Two

Developing the Project

Students were encouraged to read books purchased for the project. During this phase, we also investigated videos and pictures that were taken at the fire station by me and the other kindergarten teacher. As a group, we talked about the fire truck pictures. Students decided which part of the fire truck they were most interested in: wheels, ladders, steering wheel, lights/sirens, etc. and then made observational drawings from the pictures.

We visited the fire station for a tour and information session with the firefighters. Students explored, drew, and asked questions. We took many pictures to use as resources for building our own fire truck. Parents were invited to be part of the field site visit. The fire fighters at the site were very receptive to the students' questions about the firehouse, fire truck, fire fighters, and their gear. Students represented their learning by observational drawings, writing letters to another class, and by the final project in Phase III.

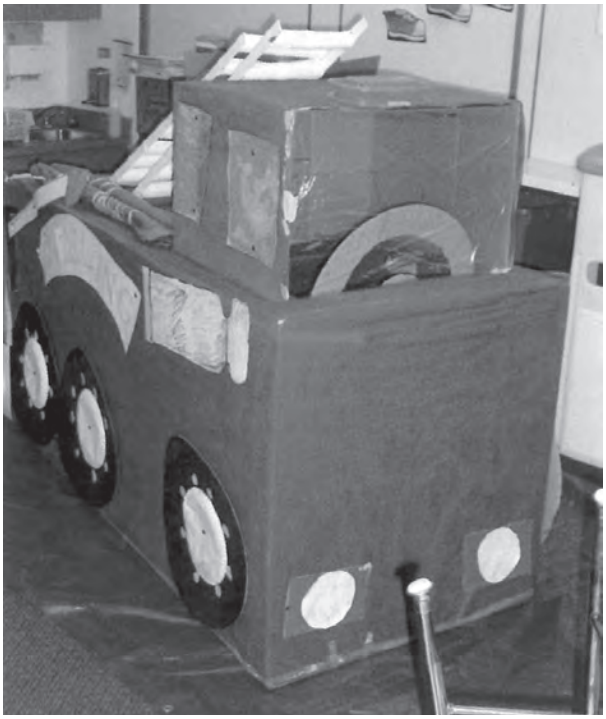
Phase Three

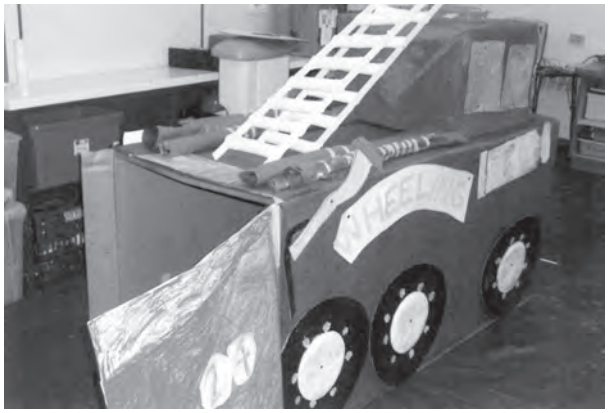
Concluding the Project

Our culminating event was to build a fire truck out of cardboard boxes. We reached out to the local community for project supplies. The children really had to learn to work together in their groups to build all the different parts of the truck. Every student helped paint the fire truck and students exchanged notes with each other to monitor the progress of the project. Students became engaged and felt like experts on fire trucks. They developed problem-solving skills, drawing with details, and asking questions. They were able to see the importance of different community members. The project was shared with the parents through newsletters and pictures sent home. Parents were able to visit the classroom the day of the celebration at the museum. We also sent out invitations to all homerooms in our school to come see our awesome fire truck.

Comments

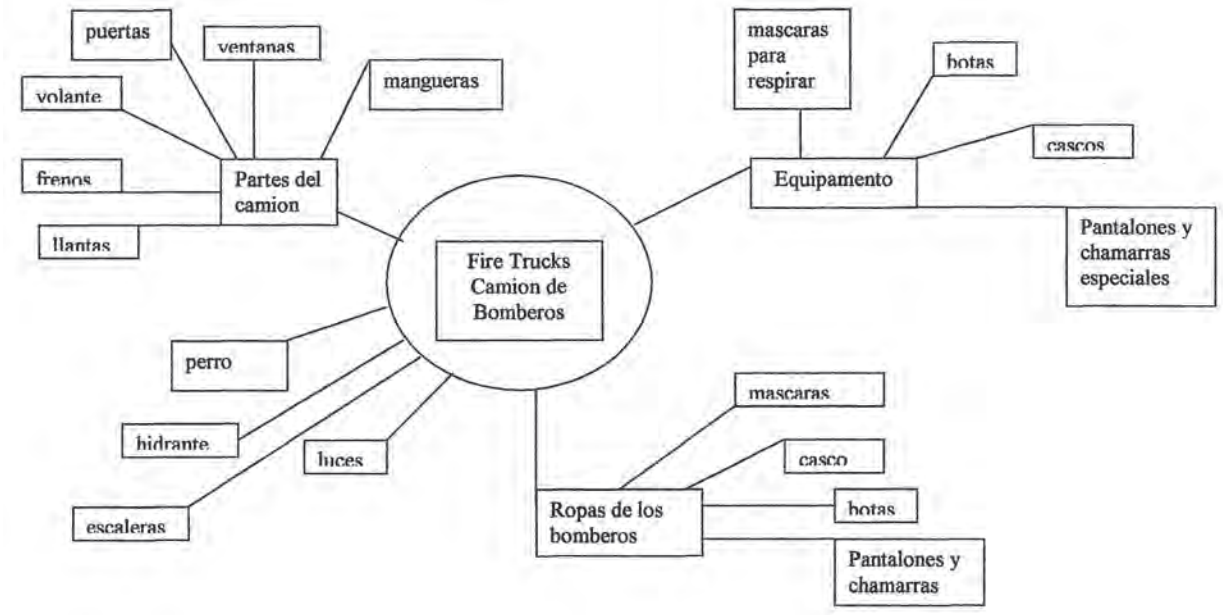
It was exciting to do this project with my students. It is amazing what "little people" can accomplish. The students were interested and engaged in investigating, observing detail, and building the fire truck. I did not think that at this age they would be able to be independent and come up with such great ideas. The field site visit was a crucial experience for my students. They were so thrilled that they couldn't wait to get back to class to build their own fire trucks. They are very proud of their accomplishments, and so am I. It was a challenging time management experience and at times a little overwhelming, but when I saw how engaged students were, it was all worth it!





◀▲ Children constructed a fire engine out of cardboard boxes, paper, paint and other material during their investigation.

▼ Final Web



Going Green Project

A project by a kindergarten classroom
James G. Blaine Elementary, Chicago, Illinois
Length of Project: *5 months* ***Teacher:*** *Mrs. Krystal Verstraete*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

Brainstorming a possible topic was more difficult than I expected. In December, one of my kids brought in a book to share with us, and the topic of interest became clear. She brought in *When Santa Turned Green,* by Victoria Perla. The focusing event was developing a web to see what we knew about the topic. It wasn't until we broke it out into the 3 R's (reduce, reuse, recycle) that the kids could contribute what they knew. The broad question we decided to investigate was: "What can I do to help save Mother Earth?" My expectations were for an increased awareness of what it means to "go green," make eco-friendly improvements, and play an active role in saving the world by recycling, reusing, and reducing.

Phase Two

Developing the Project

We broke the project into three categories: recycling, energy conservation, and water conservation. During our recycling exploration (which lasted 3 ½ months), we read several books about why it is necessary to recycle, what items could be recycled, and where things go once they are sent to the recycling center. In an effort to learn to appreciate our own paper more, we made paper using recycled paper and other items found on a nature walk. We also each brought in an item we wanted to recycle, talked about it and then created something using the items. The children decided to do this project in two groups: a boys' team and a girls' team. The girls created a stage and puppets, and the boys recreated the City of Chicago. We also had a parent come in to share with us how recycling is done in Japan (we learned that the U.S. still has a long way to go!).

A few other project highlights: Whole Foods donated 30 reusable shopping bags, EcoBags donated 30 eco bags, Arne Duncan wrote us a letter personally thanking us for bringing attention to this topic, and the children developed an invested interest to start making changes now.

Phase Three

Concluding the Project

There were two culminating events that closed the project. First, we wrote a book about small things we can do to save our Mother Earth. Each of the children wrote a page, and we were actually published! You won't see our book in bookstores, but each family got a hardbound copy of *Make Every Day Earth Day: A Kindergarten's Guide to Saving Mother Earth.*

The second culminating project was a photo scrapbook. Over the course of the exploration, students took pictures of things they were doing at home to help our environment. They then created a scrapbook showcasing their photos with captions that detailed how they helped the environment. The scrapbooks were due on April 22, Earth Day!

Comments

Looking back, I believe this first attempt was more of a unit that had several projects within it. The two actual projects were the making of paper and the projects they made from their recycled "trash." The projects they constructed took about two weeks to complete, and through it all, I've never seen the students work so well together. They were deeply focused and engaged in what they were creating. Their interest level was sky-high, and the finished pieces were very meaningful to them and me. Overall, I feel the project was extremely rewarding for all involved.

◀ Children's web about what they know about recycling

▶ Children created a book that is about what we can do to keep the environment clean.

◀ Children created recycled art sculptures.

Horses

A project by kindergarten students
Newport Elementary, Wadsworth, Illinois
Length of Project: *4 months* ***Teacher:*** *Jennifer Ruesch*

Phase One

Beginning the Project

I happened to be teaching a math lesson the moment our topic was born. I was mid-sentence when one of my students caught a glimpse of two horses trotting on the street directly in front of our school. That student erupted into a joy-filled squeal, "HORSES!!" Immediately my students were out of their seats, and leaning over the heat register looking out the window at the horses. It dawned on me in that moment… "I think we have a project topic."

I quickly switched plans for the afternoon, as the students went off to recess. My goal was to provide an opportunity to ask questions, and see if their interest in horses was short term or long term. We filled out our first web, and I knew this was it… a topic was born in classroom 196!

As time went on, and as we looked at our web once again, it became apparent that the students were mostly interested in caring for a horse/grooming a horse, and how to feed a horse.

Phase Two

Developing the Project

We started Phase Two with a K-W-L chart. It was interesting to see the ideas and facts my students already had or knew about horses. The questions (like usual) fat outweighed what they knew, and were impressively, at a higher level of thinking, compared to the facts in the K-section of the chart.

It was interesting for me to see what each student brought to the table, as far as background knowledge of horses goes. Our school is located in a very rural part of Wadsworth, and most students pass at least one horse ranch on the way in, however, most had never interacted with a horse, and some only knew about horses what they had seen on TV.

To begin our investigation, we asked the staff for any horse tools, props, or paraphernalia that they had available; as I knew we had a few horse "experts" on staff. They were more than willing to share their equipment! We also had a few parents contribute items to our classroom horse museum. The students manipulated horse grooming tools, like a hoof pick and brush, and a curry comb. They touched and smelled hay, oats, and grains.

We interviewed a 5th grade student who rides and jumps her horse. We had a teacher come in and share her love of horses. She showed us how to tack up a horse with an English saddle, and even came dressed in her English riding wear. Finally, we had a police officer come in and talk to our class about the various jobs of a police horse.

We looked at numerous books and magazines. We watched videos online; we looked at different horse websites, and even watched a few minutes of an actual horse competition that had been recorded. The students made clay horses, constructed their own life-size pony, and played with the farm toys on a regular basis.

Phase Three

Concluding the Project

Our culminating event was supposed to be a trip to a local farm. Three weeks before the farm visit, the animals were quarantined and all visitors were shunned for a month. The hard part about choosing a topic that requires outside activity is that you can never depend on the weather, so when the farm/barn couldn't allow us to visit, we had to go with our back-up plan, which was to have a horse on Newport grounds.

This actually turned out to be an incredible opportunity which the students thoroughly enjoyed. The opportunity was so hands on, and informative! The students fell in love with Max, the horse. I overheard one student say to a friend as they were talking about the experience being a 'dream come true,' "If this is a dream, please don't wake me up!"

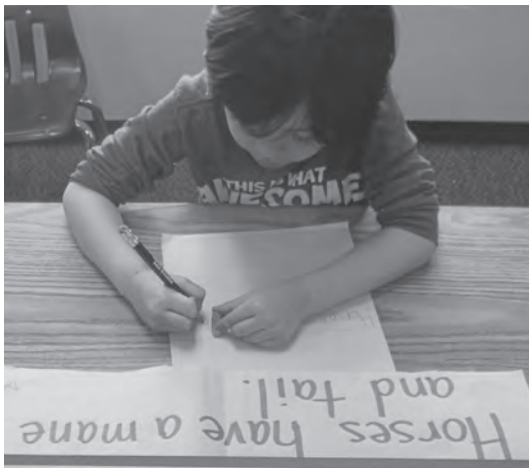
For our final project, we focused on literature, and writing and publishing a nonfiction story. As researched and read books, a few students became frustrated that the nonfiction books had so many words, and not many that they knew how to read. They wanted to write a book about horses that other kindergarten students could read on their own. So, that is exactly what they did!

Comments

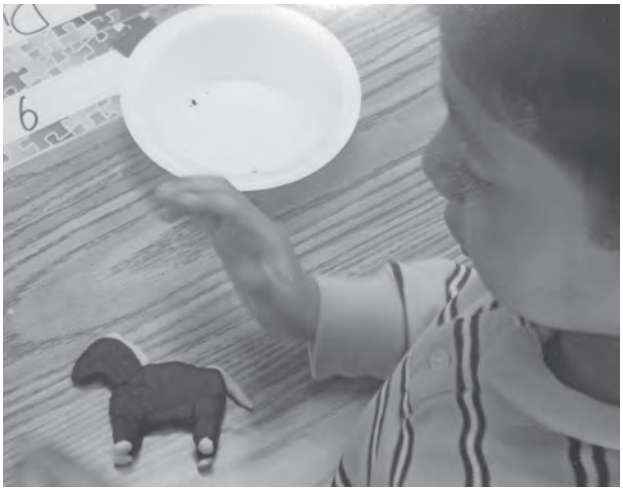
This project actually taught me a lot about myself, and the capabilities of my students. I learned that letting go of some control and giving my students more of the tools they need to be independently successful is not as stressful as I originally thought. I was shocked to see how creative and intuitive my students were with a few tools relating to the horses. With very little assistance from me, the students chose their own project, and worked hard on each piece.

This project was very meaningful for me, because like I mentioned before, these horses have always been in our backyard, but were not accessible. I can bet a majority of my students would never have the opportunity to interact with and learn about horses in such a way, without this program. I absolutely love providing students with that once-in-a-lifetime opportunity, and watching their reactions. This time, the reactions were priceless, and all the energy, time, money, etc. that I spent helping be successful was worth it all!

▲ Children learned about different brushes and tools used to groom horses.



▲ Children did writing about horses.



▲ Children used clay to make representations of horses.

▲ Horse rider expert came to class to show children how to tack up a horse.

Exploring Ice Cream Project

A project by children 5 – 6 years old
Solomon School, Chicago, Illinois
Length of Project: *4 months* ***Teacher:*** *Amy Gawlick*
Participated in Program: 2006 – 2007

Phase One

Beginning the Project

Our topic was chosen after a child brought in *Curious George Goes to an Ice Cream Shop.* The children were very interested in learning more about ice cream after I read the book. This was the focusing event that began the project. The children represented their beginning knowledge and experiences by asking questions and letting me know what they knew about ice cream. We created a web about what more they wanted to know. The class wanted to investigate many things. We decided that we wanted to investigate how to make ice cream. My expectations for the project were that I wanted to let the children explore all aspects of ice cream and to have fun.

Phase Two

Developing the Project

We read many different ice cream books and studied different types of ice cream. We discussed the ingredients needed to make it. We also enjoyed exploring syrups. We investigated how long it took for a popsicle to melt. The children wrote predictions about how long they thought it would take (it took 1 hour and 21 minutes for it to melt). We also tasted cones and tallied our class results. We created an ice cream shop, and the children explored what it was like to be in a shop. It was also a fun way to explore money. We made menus for our ice cream shop. The children also pretended to make flavors by using food coloring to change cotton balls into different colors. The children wrote about their favorite types of ice cream. They also created ice cream artwork.

Our expert visitor taught the children a lot about ice cream. She discussed the history of ice cream, what country eats the most and what flavor is the most popular. She shared many interesting ice cream facts. The investigation questions were redirected by the experience and more questions were asked after the visit with the expert. Parents were involved through verbal communication. The children represented their learning through artwork, writing, playing ice cream shop, books, and pictures.

Phase Three

Concluding the Project

The culminating event that closed the project was actually playing ice cream shop. Most of the school knew we had been working on an ice cream project and came in to see the kindergarteners playing and exploring ice cream. Their awesome artwork and writings were displayed for the whole school to view. The children learned so much from the project! They obtained a lot of knowledge on the topic, improved their social skills by working together, developed a positive attitude about investigating new things, and really let their creativity shine. The children gained a greater interest in exploring new topics. It was a wonderful experience.

Comments

I learned a lot after concluding the project. I learned that children really do learn from one another and love to teach each other. I appreciate that children never want to stop learning. They came up to me everyday with a new question regarding ice cream. I learned that I also enjoy investigating, and it is fun. I was surprised by the incredible questions the children asked throughout the project. They continue to ask more questions and want to conduct more experiments. I believe this was a good topic. I loved watching them play ice cream shop. This project made me remember why I love being a teacher.

▶ Children listed questions they wanted to investigate.

◀ Final Web

The Mail Project

A project by children 5 – 6 years old
New Field School, Chicago, Illinois
Length of Project: *4 months* ***Teacher:*** *Susan Orozco*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

The topic was chosen as a result of the children's interest in writing letters to one another and to me from early on in the school year. They would "write" the letters at home and bring them to school or they would get together and write them at our writing center during center time.

We made a basic web that included five or six facts that the students knew about mail. I asked them if they knew how the mail process worked and told them that my sister is a mail carrier. We called her from the classroom and invited her to visit during the following week. We wrote a list of questions on chart paper that the students wanted to ask her. After the mail carrier visited us, the class chose to investigate how to write a letter, address the envelope, and how mail is delivered. All of the ideas generated from the mail carrier's visit were written on chart paper.

Phase Two

Developing the Project

We went on a field trip to the Museum of Science and Industry and visited the Zephyr train's mail car exhibit to learn about how mail was collected, sorted, and delivered by train. Parent chaperones accompanied us and helped children to ask their questions.

We also took a walk in the neighborhood to see the different types of mailboxes. A mail carrier visited our classroom and the students asked her many questions. We learned a lot from her.

A parent also visited our classroom and helped students practice letter writing.
Parents encouraged letter writing at home. Some allowed their children to help mail bills and correspondence from home. The students wrote letters home from school and parents were excited to receive letters from their children.

In addition, we turned part of our housekeeping area into a pretend post office. Students role-played as the classroom mail carrier. We kept journals about the mail project in our portfolios.

Phase Three

Concluding the Project

We built a large mailbox out of cardboard boxes in our classroom and also wrote a class book about the mail. The children have learned to work together in teams or groups to solve problems. The problem-solving skills really developed as we worked on building the mailbox. They have become experts at how to address envelopes and writing the basic parts of a letter. They have also learned how to create observational drawings.

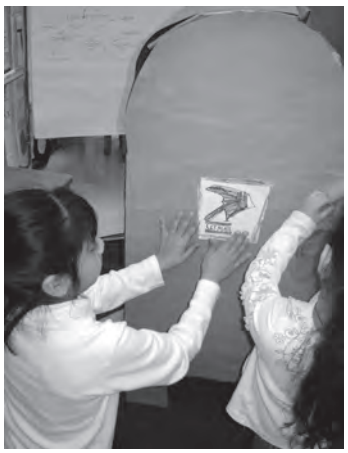
Comments

The students really directed the topic. Although we put the project on hold a few times as other things demanded our time, we always returned to it. Even as we began the culminating activity for the project, the students remained very interested in writing letters and role playing in the post office. I would not be surprised if their interest in the mail lasted beyond the end of the school year. I was also surprised by how many of the Illinois Early Learning Standards were covered and in how many content areas: Language Arts, Math, Science, Social Studies, Physical Development/Health and Social/Emotional Development.

▲ Web 1

▲ Web 2

Students investigated how to address envelopes to mail letters to friends and family. Students created a post office in the classroom and role played being a postal worker.



Pumpkin Investigation

A project by children 5 – 6 years old
Early Education Center, Round Lake, Illinois
Length of Project: *1 month* ***Teacher:*** *Clarese Ornstein*

Phase One

Beginning the Project

With October approaching, students were expressing an interest in pumpkins and Halloween. Only one student's family was growing pumpkins, but many shared experiences about carving pumpkins. After further questions, it was apparent that the students knew very little about pumpkins or the pumpkin life cycle.

Phase Two

Developing the Project

Our students' knowledge grew from several experts. Jody May presented a lesson on the life cycle of a pumpkin, including the names for parts of a pumpkin. The students enjoyed assisting her in producing a no-bake pumpkin pie to eat. Further knowledge about pumpkin farms was gained with our field trip to Richardson's Adventure Farm. Mr. Weber's photo of a pumpkin that was eaten in her garden had triggered many questions before our trip about what animal could be eating Mr. Weber's pumpkin (based on the book "Who is eating Mr. Weber's Pumpkin?". Both Farmer Ryan and Jen Berlinghof, Lake County Environmental Educator, assisted my students with answers to their questions. The students were also able to view a video of Mr. Weber's garden.

Several students took the opportunity to have their photo taken with a 676 pound pumpkin in their teacher's neighborhood. This led to questions about how big can pumpkins grow and our class observed 1,000 pound pumpkins being used for boat races (You-Tube). Of course, we then had to test our classroom pumpkins to see if they also float!

Phase Three

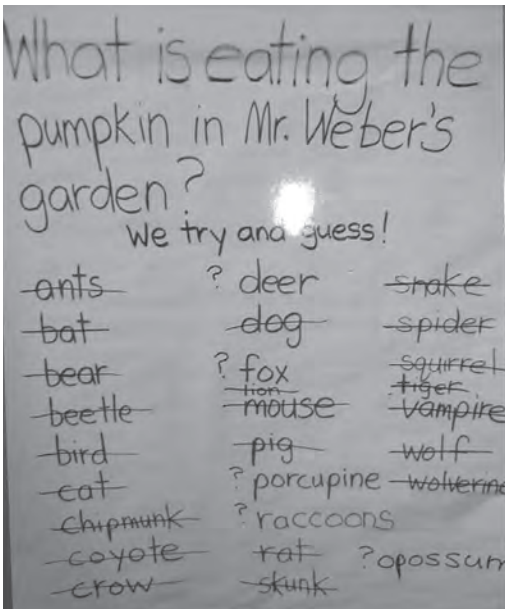
Concluding the Project

Students enjoyed viewing You-Tube videos of animals eating pumpkins. We learned that several zoos and Disneyworld feed pumpkins to animals for treats on Halloween. Students narrowed their list of top suspects to five animals (fox, opossum, deer, raccoon, and porcupine) to research nonfiction books (there were no tracks found in Mr. Weber's garden). Berlinghof suggested looking again at the bite marks/chews for clues. We learned that bears, wolves, and porcupines do not live in northern Illinois and that foxes are typically carnivores.

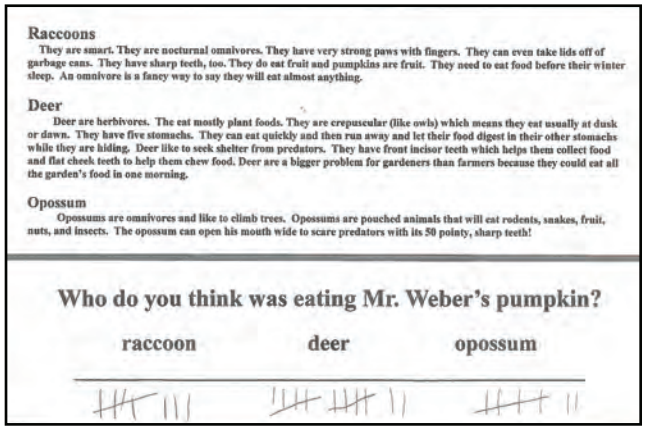
Students then simulated tearing a pumpkin with sharp teeth while using forks and simulated biting a pumpkin with flat teeth by using pant hang clips. Students then tried to make observations like a scientist and decide who they thought had eaten Mr. Weber's pumpkin. "The skin on a pumpkin is not as thin as the skin on an apple!"

Comments

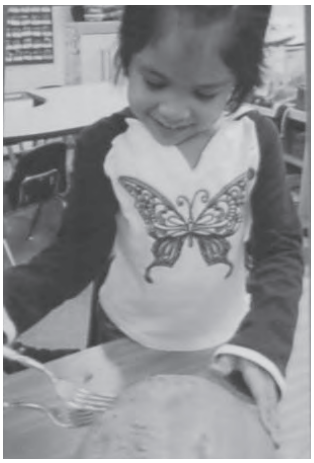
It was fun to incorporate an iPad with the student research during this investigation. It is still challenging to embrace project based learning within our literacy and math block schedules with 27 students. I wish I would have had the time to ask each student why he thought it was a raccoon, deer, or opossum that ate Mr. Weber's pumpkin (students cast ballots). Clearly our October web demonstrates much growth in our knowledge about pumpkins!



▲ Children made predictions on what animal was eating the pumpkins.



▲ Children researched animal diets and type of teeth to narrow down what animal could be eating the pumpkins.



▲ Children used various tools and techniques to mimic the type of tooth marks left in the pumpkin.

▲ Children visited a pumpkin farm to meet with expert to ask him questions about animals that eat pumpkins.

School Buses

A project by a kindergarten classroom
Gladstone Elementary School, Chicago, Illinois
Length of Project: *6 months* ***Teacher:*** *Ann Kuhlman*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

The students at first generated a long list of topics that interested them. We decided to use a voting process to come to a final decision. We agreed that we wanted to learn more about buses and used a web to gather information about what the children already knew about them. I was concerned that including both city buses and school buses would be too much for my students to handle. However, the students decided to focus specifically on school buses.

I began the project by using one of our favorite songs, "The Wheels on the Bus." This helped my students get into the mode of thinking about buses. We read many books about buses and then completed observational drawings of a toy model school bus.

The students decided that they wanted to focus mainly on the physical characteristics of a school bus. I recorded some of their questions for later use.

Phase Two

Developing the Project

My students observed and took detailed drawings of a school bus on three separate occasions. I arranged for Maurice, the school bus driver, to bring his bus to our parking lot. This allowed the students to safely observe, take notes, and investigate the bus. The students chose a particular part of the bus in which they were interested. This allowed us to create several groups of "experts" who knew about the dashboard, front, back, side, wheels, and inside of the bus. The children asked the bus driver many questions and recorded their own answers.

The students were able to work in groups to reproduce a bus using clay, paint, play dough, construction paper, and drawing a representation on a fabric square.

Students represented their learning through creating clay models, observational drawings, fabric square drawings integrated into a classroom quilt, dramatic play, art and written notes. The student's written interview notes included numbers, measurement, shapes and words.

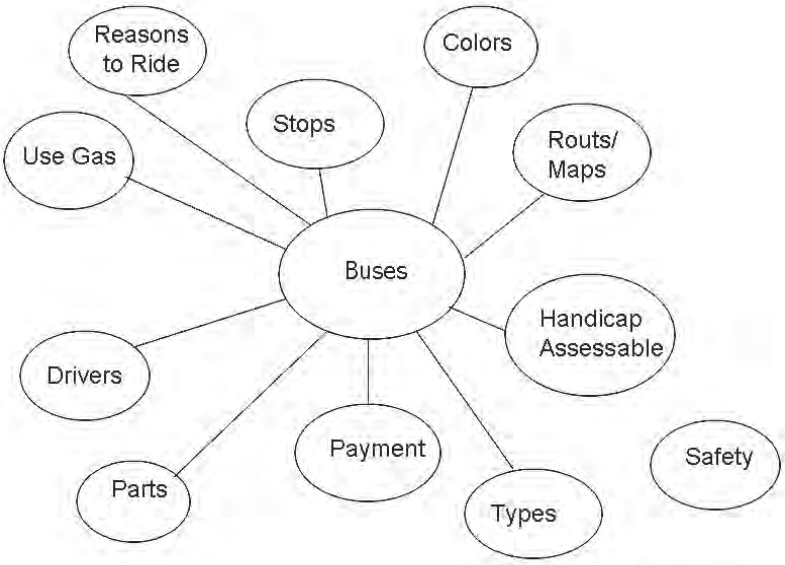
Phase Three

Concluding the Project

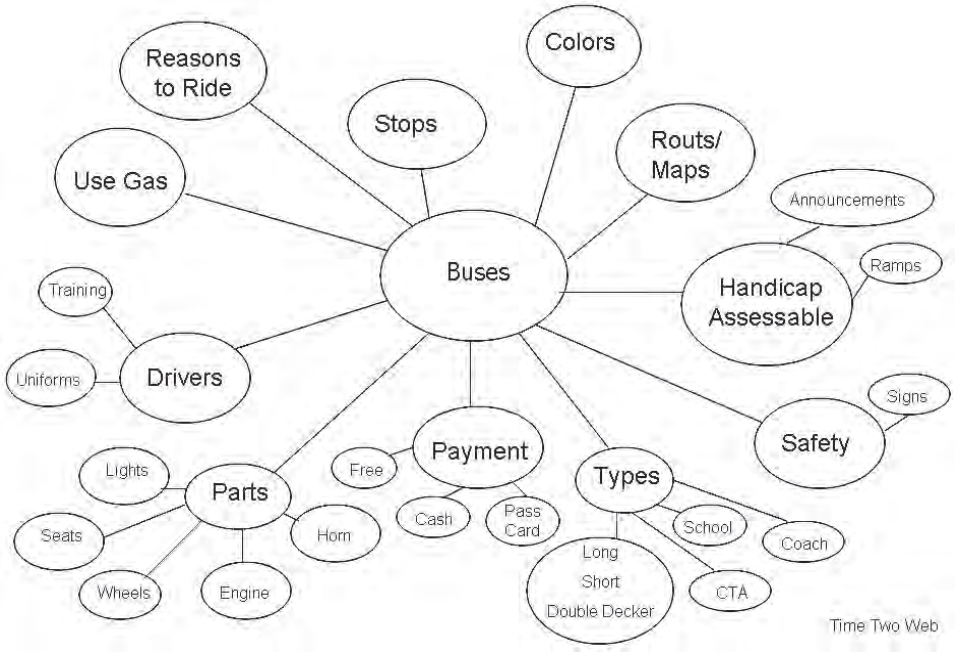
Our project fueled a lot of curiosity from the first grade class. They came into our classroom and talked to the students about why and how we built a school bus. We also had a group of senior citizens visit our classroom. They were very excited to hear the pride in the voices of our children as they explained all about their school bus. We extended an invitation to the administrative staff at our school to look at our bus and find out about all of the things the students have learned about school buses.

Comments

I am thrilled that the children have enjoyed every aspect of our project. They have taken ownership of their learning and show pride in their accomplishments. My students have learned so much from this project investigation. Most importantly, they have learned how to better communicate with each other. They enjoyed working in small groups and taking lead roles in the development of the school bus. My students were taking written notes that were meaningful to them and after being posted in the hall, their writing abilities even impressed the writing specialist. I wanted them to develop their own knowledge about school buses – their function as well as their design. I wanted them to develop their own questioning strategies and be responsible for the course of this project. I feel that we accomplished these goals.



Time One Web



Time Two Web

Spiders Project

A project by a kindergarten classroom
South Loop School, Chicago, Illinois
Length of Project: *4 months* ***Teacher:*** *Melody Grimes*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

I first began by asking the children about different things that they liked. I made of list of topics they would like to learn more about. We voted on which topic they wanted to investigate and learn more about. The final list consisted of spiders, snow, butterflies, the zoo, cars, and horses. When we tallied the vote, spiders won, and the class was excited. Next, we created a KWL web. The kids asked a lot of questions about spiders and had some prior knowledge. I was unsure about how to explore this topic, so I did internet surfing and discovered I could order a tarantula! It arrived the same week we returned from winter break. I was so excited!

Phase Two

Developing the Project

To aid in the discovery and investigation process, I ordered books, videos, and arts and crafts supplies related to arachnids. The kids were very excited when the spider arrived. They drew a picture of a spider after I read a spider story. Most drawings included spiders in a web or in a park. We spent a lot of time observing and learning how to care for our class spider. We had a naming mini-party. The tarantula was called a rose-haired tarantula, but the children came up with the name "Rosie" by observing the spider and before they knew her scientific name. They were fascinated by how Rosie moved. Videos about arachnids helped provide important information on habitats, habits, and care. We observed tarantulas while on a field trip to the Lincoln Park Zoo. There was a tarantula's molted shell on display for students to view and touch. Before this experience, we did not know that tarantulas molted! After the field trip, they daily asked when Rosie was going to molt. Unfortunately, we did not get to observe this in class. I noticed that, independently, the students began to draw more detailed pictures of Rosie. Everyone was excited about Rosie—parents, other teachers, the janitor, lunchroom staff, and the principal. The students loved to share important facts with all visitors. They drew detailed pictures of spiders on dry erase boards and wrote down words from the science wall. They also used Unifix cubes to make spiders.

Phase Three

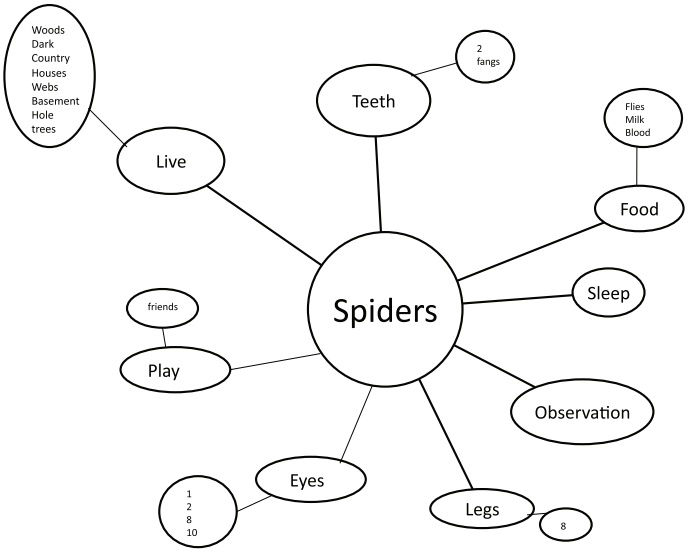
Concluding the Project

I held a parent workshop to discuss project based art and to inform the parents about the process and discovery. We made webs; however, we found out that tarantulas don't spin webs like other spiders. I noticed that their drawings became more detailed and descriptive. By the end of the project, the children were very knowledgeable and able to answer any questions that visitors had. As a culminating activity, we created a class book about Rosie. One of my students took Rosie home for the summer.

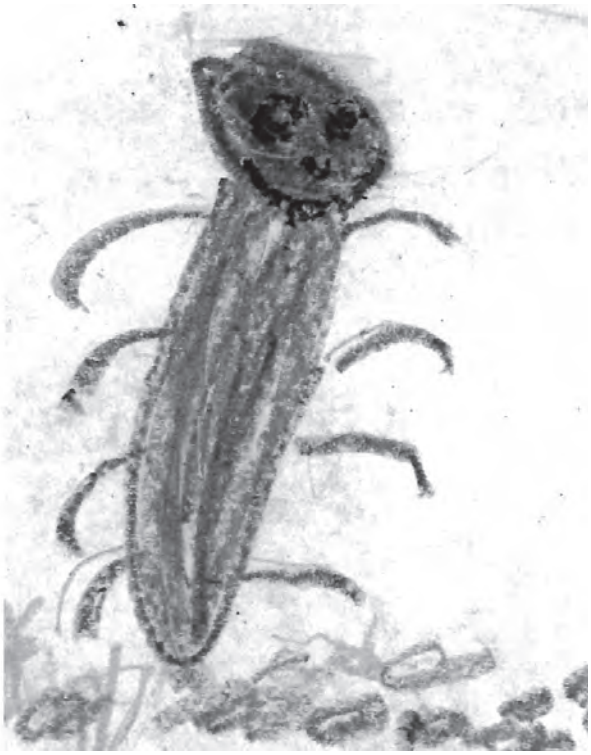
Comments

I learned a lot during this project. I thought that I was familiar with basic information about spiders, but I found out that there was a lot that I did not know. One of the most fascinating things for me was learning that tarantulas don't spin webs like other spiders. This project was completely out of my comfort zone because I am very squeamish about anything that is creepy or crawls. I sacrificed my comfort for their learning, which was a great discovery for me. I really let the kids take the lead for this project.

▶ First Web



▼ Time One Drawing



▼ Time Two Drawing

The Spider Project

A project by a kindergarten students
Hitch School, Chicago, Illinois
Length of Project: *4 months* ***Teacher:*** *Ms. Makovec*

Phase One

Beginning the Project

Phase One: After noticing that a few children had written books about tarantulas, I decided to borrow a tarantula from another teacher and see if the other students found it interesting. There was a noticeable buzz throughout the classroom for the first few days we had the tarantula, so I decided to pursue the spider topic. To begin the project, I borrowed about 20 spider books from the library for students to explore independently. After about a week of exploration, we created a web and a list of questions that interested students. I posted this list of questions in the room, and we referred back to it occasionally and checked off each question as we answered it. When all of those questions were answered, we made a list of deeper questions that took more research and expert help to answer.

Phase Two

Developing the Project

To begin Phase Two, I challenged students and their parents to find spiders around their houses. A few students brought spiders to class and we created homes for them. I gave students a lot of independent observation time with the different spiders, and often heard them discussing the differences they noticed. For example, we noticed that one type used a web to help her burrow at the top of the container; another spun a new web every day and caught many of the fruit flies we put in her cage; and after waiting for weeks to see the tarantula spin a web, students observed that she chose to pounce on her prey instead!

We visited the Peggy Notebaert Nature Museum about halfway through phase two. Du ring a bug workshop, students were given the opportunity to observe a yellow striped tarantula, a black widow, and a wolf spider. Students were thrilled to see spiders they had been reading about! They found it surprising that the black widow was on a web in her container just like the spiders we kept in our classroom.

Students brought their clipboards and had the chance to ask questions they had prepared ahead of time.

Throughout the unit, students represented their learning by participating in discussions with partners and small groups, creating observational drawings, and writing books of their choice during writing workshop.

Phase Three

Concluding the Project

To close the project, we created a class book highlighting the knowledge students learned. After creating an end-of-unit web, each student chose one topic to write and draw about. After showcasing our book at the Project Celebration, students will have the chance to take the book home to read with their families. We also had a family art night during which students had the opportunity to form spiders out of clay in addition to other activities. The students gained quite a bit of knowledge about silk and the many ways spiders use it. They also became quite adept to observational drawings; this skill will benefit them in future science lessons.

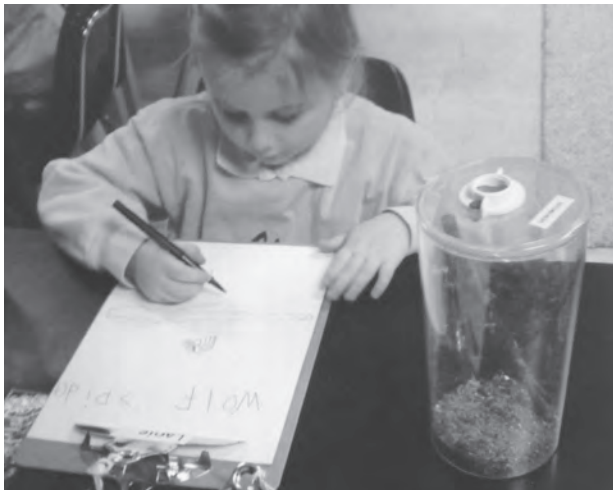
Comments

The students and I greatly enjoyed learning about spiders. Even those who were squeamish at the beginning of the unit (myself included) were fearless and excited by the end. Whenever a student would notice the tarantula doing something out of the ordinary, we would drop everything and line up to take a quite peek; otherwise students would be sneaking out of their seats to get a closer look! That being said, I had a difficult time bringing this unit to an end. If I were to do it again, I would provide additional focused lessons to help students directly research their topics of interest. Students would have learned more from their observations had they received more direct instruction.

▲ Children observed spiders to gather information about their questions.

▲ Several live spiders were kept in the classroom for children to observe and to provoke new questions during the project.

▲ Children used clay to make representations of spiders.



▲ Children observed spiders in the classroom and documented the body parts through observational drawings.

Trees

A project by children 5 – 6 years old
George Manierre School, Chicago, Illinois
Length of Project: *fall through spring* ***Teacher:*** *Mary Bell DuBois*
Participated in Program: 2006 – 2007

Phase One

Beginning the Project

The project topic was chosen by the students after our first trip to The Grove Nature Center in Glenview. Our visit to The Grove was taken at the height of the fall season with leaves changing color. Students were fascinated with the tree sizes, shapes, leaf colors, and the feel of walking in a nature center. My students are from the Cabrini Green Projects and surrounding areas and had little previous experience with nature, trees, insects, ponds or animals found at The Grove Nature Center. Students asked why certain leaves are different from others, and, "Why the trunks of the trees are not all the same?" "What holds up the trees?" Students expressed interest in their observation of nests in some of the trees in and around The Grove.

Phase Two

Developing the Project

After returning to school, students observed, categorized and described the characteristics of trees near the school. This process continued throughout the project, from fall to spring. After the fall field trip, we visited The Grove for a second time in January to observe, draw and describe the changes of the trees and surrounding areas. After the second field site visit, students compared The Grove's trees with those around the school.

On neighborhood walking trips, students took note of evergreen trees with needles still intact during the winter, and they began to speculate about animals they might see on future walks. We started a list of possibilities on the chalkboard. Eventually, the class was divided into smaller exploration teams, with one student from each group in charge of carrying the clip board and felt pen. All explorers were encouraged to point out any life they saw in the trees for the recorder to draw a picture of or to write down. Students looked for birds' nests, squirrels, bees or other flying insects. Students discussed their observations and checked off on the chalkboard any of the creatures they observed. Parents were invited to participate in a hands-on activity: observing and measuring tree trunks and estimating a tree's age.

Phase Three

Concluding the Project

At the time of reporting this project, there was no culminating event because we were planning a spring season visit to The Grove. We did attend, "Go, Dog, Go!" at the Chicago Children's Theater in Grant Park which told the story about dogs that end up having a party on top of a very large tree. Parents were invited to attend the play. The students enjoyed this very much.

Comments

Reflecting on this project, it is now clear during our regular discussion times that the students' tree knowledge and vocabulary has dramatically increased. Students frequently express the understanding that trees are all around us in their inner city community, not just on a nature walk through The Grove, and that trees are important to us in everyday life. They know that trees are home to many livings things and that these living things depend on trees for survival. What surprised me most about this project was the amount of detail some of the students used in their observational drawings of trees around their school.

Turtles

Kindergarten (5-6 years)
West Ridge Elementary, Chicago, Illinois
Length of Project: *8 weeks* ***Teacher:*** *Katie Keuler*

Phase One

Beginning the Project

The topic was chosen because of my students' obsession with the class pet turtle, Donatello. At just about any point in the day, students could be found next to the turtle tank staring at Donatello. As our focusing event, I had students observe Donatello and then draw/label their findings. I purposefully did not give them too much guidance, but told them to pay careful attention to where he was, what he was doing, and what they saw. At the start of our project, we created a web to demonstrate our prior knowledge about turtles. Then from this web, students thought about what they still wanted to know.

Phase Two

Developing the Project

We completed many investigations for this project. For many of them, I had students write/draw what they thought they knew. After we explored the topic, I had students again write/draw what they now knew was true. This was a great way for my students to enact the "growth mindset." Students also completed observations, watched various videos, read and explored books about turtles, created turtle homes, compared turtle weight to other animals, and wrote about turtles.

As our field sites, we visited the Peggy Notabaert Nature Museum and the Shedd Aquarium. Parents were involvement in these trips, and I asked them to pay special attention to the turtles that they saw while at the museum/aquarium and speak with students about them. This allowed children to be experts on a topic, and to hopefully learn new things about the topic as well.

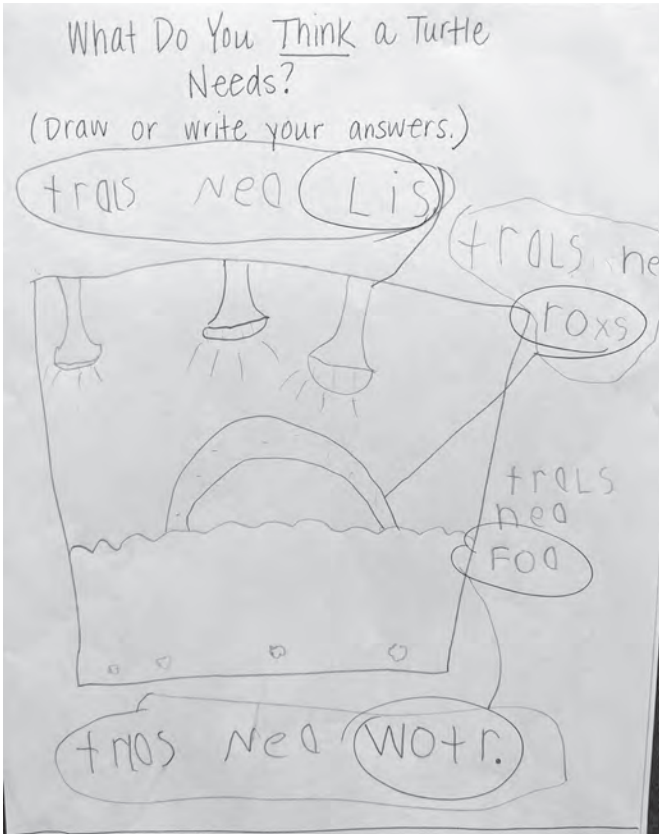
Phase Three

Concluding the Project

As the culminating event, students created their own red eared slider. Some students even thought to create a rock or food for their turtle with left over clay from their models. Once their models were entirely finished, students got to bring them home to keep and share with their families. The most meaningful part of this project was the culminating event. Students, who were typically loud, disruptive, and argumentative were quiet and focused, while creating their turtle models. It made me realize how important the last part of the project was – they truly wanted to show their knowledge to the best of their ability. They wanted their work to be great because they wanted to feel proud about it!

Comments

Overall, I would consider this project to be a huge success. I remember feeling overwhelmed at the prospect of taking on this type of learning approach because of the forethought and planning it required. But even after the first day, I knew it would be worth it.



▲ Student drawing of what turtles need. "Turtles need lights. Turtles need rocks. Turtles need food. Turtles need water."

▲ Ms. Keuler and her students found a turtle replica, while at their site visit to the Aquarium.

▼ Students used clay and paint to make their own turtle representations. ▶

El Veterinarian

A project by children 5 – 6 years old
Willard School, Evanston, Illinois
Length of Project: *7 weeks* ***Teachers:*** *Maria Torres and Alicia Quiroz*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

We selected this topic because a large number of students showed an interest in the veterinarian's office following our visit to Kohl Children's Museum. Several students talked about currently having dogs or having had dogs, and one student had gotten a puppy that I thought the students could observe. Through a whole group discussion about vets, I learned that about ¾ of the class was familiar with some aspects of what a vet does. During our visit to a vet's office, students took an interest in some of the equipment; they noticed similarities in the equipment at the vet's office and their pediatrician's office.

Phase Two

Developing the Project

During our visits to the animal hospital, students saw a variety of medical equipment. The vet explained how the equipment was used and answered questions that the students had generated prior to our visit. Our classroom expert was the parent that brought in the puppy. "Stanley" the puppy was brought in weekly so that students could chart his growth. Parents were also involved by supplying two stethoscopes, teaching students how to use them, how to use microscopes, donating gauze, tape, bandages, syringes, and other props for the students to use in the clinic.

Students represented their learning by charting Stanley's weekly measurements. Other students represented their observation of Stanley through painting, story writing, and labeling, and through the creation of an animal hospital building, including painting bricks on their creation since, "that's the way the building looked." Students also used the equipment and supplies on one another and on play animals.

During the course of the creation of the building and other equipment, there was plenty of discussion and negotiation about what needed to be done and how problems would be resolved.

Phase Three

Concluding the Project

The culminating events were the video tape session. During these sessions, students talked about their area of interest or what they worked with during the project. The project was shared with the school community when it was exhibited outside of the classroom in the hallway. One of the biggest student growth areas was in the communication and cooperative group process as students negotiated how their creation should be built and then discussed and sought input from one another. Oral language development and socialization were key areas of growth during the project. The students had exposure to writing including labeling, mathematics through measurement and data collection of Stanley's growth, and science through using the equipment.

Comments

Students directed their own learning by creating or building and trying alternatives to accomplish their goals. It was challenging for me to know when to step into the activity to provide direction. I think I provided sufficient intentional guidance during their play exploration while they created their vets clinic. My learning goals were not always clear during the project. Further, I wish that I would have asked more questions during their independent work to understand their thought processes and to determine what they were learning. During future projects, I would document student learning during the course of study instead of waiting and having them summarize at a later date.

Worms Project

A project by children 5-6 years old
Hitch Elementary School, Chicago, Illinois
Length of Project: *5 months* ***Teacher:*** *Erica Alvarez*

Phase One

Beginning the Project

The topic of worms emerged after Thanksgiving when we were trying to decide what to do with our rotted pumpkins. We asked our neighboring 8th grade science teacher Mrs. Perry what we could do with the pumpkin carcass. She suggested we feed them to her worms in her compost bin. She explained how the worms would eat the pumpkin and leave behind castings (worm poop). This in return would create great fertilizer for our school garden. Mrs. Perry opened up her compost bin and turned over the soil so the kids could see the red wiggler worms. The kids were excited about seeing and touching the worms. Mrs. Perry suggested we keep the compost to observe what happens to the pumpkin. After two weeks the pumpkin was gone and the kids were still very intrigued about the worms. This is how our project inquiry began. The students decided they wanted to know more about worms. They came up with a list of questions. Some of them included: How do worms move through the dirt? Where do worms come from? Why are they slimy? My hope for this project is that the kids will have an appreciation for science, investigation, and gain an appreciation for worms in our environment.

Phase Two

Developing the Project

Our class took a field visit to Peggy Notebaert Nature Museum. Students were able to get an up close look as they picked up and explored the worms in their habitat. Students learned how these worms can recycle food and paper waste. They practiced classifying items that can and cannot be fed to worms. We were given step-by-step instructions on how to build our own do-it-yourself compost bin for our classroom. Students used their clipboards and recorded their observations. Students were thrilled to see and hear in more detail about worms and vermicomposting. They were able to connect classroom learning to real life experiences. Students also investigated other invertebrate animals as well. They were able to contrast the similarities and differences between them and record their observations in their investigations journal. Students learned more about the ways these animals move, eat and protect themselves from danger. They really enjoyed this field site visit and had a lot to share when they returned to school.

We continued our observations at school with store bought night crawlers, red wigglers and earth worms. They compared the different attributes of each worm. Students used a magnifying glass, a flash light and water to experiment how worms react to light; sound, and water.

Phase Three

Concluding the Project

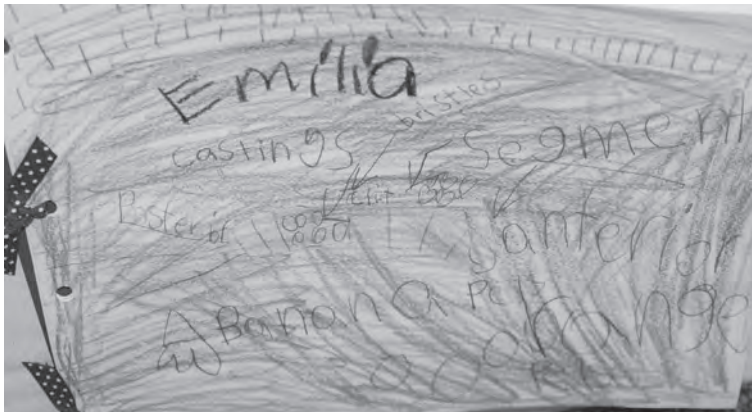
For our ongoing/cumulating project we decided to build a classroom compost bin since the one we currently had was on loan from our science teacher. Students were responsible for feeding and harvesting the worms. They had to check the bin and record their observations in a shared class journal. Several students mentioned they wanted to start composting at home. In order to connect what we were learning at school to home we decided to build a family worm bin. Students were asked to bring in 24 liter recycled containers. They participated in building their own compost together. They added layers of rocks, dirt, newspaper shredding, water and food scraps. Once their bedding was layered they added red wiggler worms purchased from a local worm harvester in Chicago. Each student proudly took home their worm composts. We continue to harvest and maintain our class compost bin and plan to make compost tea for our vegetables that we plant in the spring.

Comments

The worm project was a hands on approach to learning. Students gained knowledge from their own investigations and research. Students needed to study and learn the vocabulary of a worm's anatomy. They learned how a worm moves, digests, and reproduces. They had to think critically and analytically by first observing the life of a worm and then creating an environment to support life. The students were connected to their learning because they investigated and asked questions. Their excitement extended into writing stories about worms and sharing them with their friends. Learning about worms was interconnected with Language Arts, Math, Science, Social Studies Social/Emotional and Health. I was surprised to see how touching and feeling the worms helped to calm a normally hyper child. I enjoyed the project approach and plan to continue this investigative inquiry of my students.

▲ Children examine different types of soil.

▲ Children learned how to take care of worms.



▲ Children created books and drawings about worms.

▲ Children used the internet to research worms.

Bicycles

A project by a second grade classroom
H.R. McCall School, Waukegan, Illinois
Length of Project: *Three months* ***Teacher:*** *Julie Huber and Laurie Shields*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

Our class was reading a book about a boy who has to learn to ride a bike for a school bike-a-thon. The children were very intrigued by the boy's dedication and his fears. They began to make connections to their own experiences. Several children eagerly shared stories about how they learned to ride a bicycle. We began by making a web of what they already knew about bicycles. We also had the children fill out a bicycle survey to gauge their prior experiences. The classes had a brainstorming session and came up with an incredible amount of questions to investigate, which the teachers then recorded.

Phase Two

Developing the Project

The first thing we did was go to the public library to find every book we could on bicycles and simple machines. The children huddled over the books in groups oohing and aahing over the new information. Many of the children also used their computer time to investigate and uncover new information. This was very exciting for the teaching staff as in the past they only wanted to play learning games that were set up like video games.

We were fortunate to have someone from Zion Cyclery come and spend the morning with us. He brought a bike and tools. The students were ready with questions, clipboards, paper, and pencils in hand to absorb and document everything that the expert visitor said. The students took more notes than we could keep up with and amazingly these notes were never lost.

Next, we conducted a field visit to the new BMX Park in Waukegan. Two teenage boys met us there and talked to the children about bikes and gears.

Throughout this project, the children represented their learning through drawings, clay sculptures, books, videos, play environments, constructions, writing, and webbing.

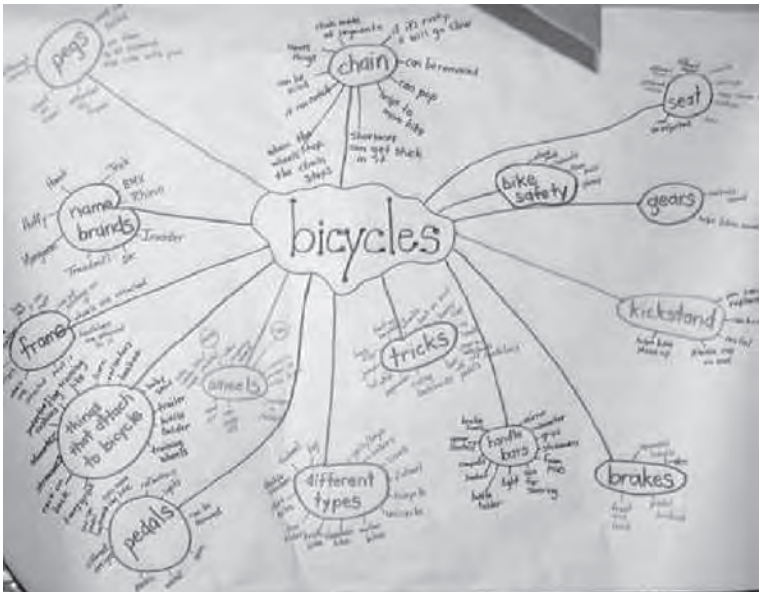
Phase Three

Concluding the Project

The bicycle project was concluded when the children created a video of a children's news show. The children were provided with a variety of materials and given the opportunity to demonstrate what they had learned about bicycles in their own way. Students created presentations to share their final product. We planned a special night for the children's parents to come to the school for a viewing of the video that the children created. A copy of the students' video will be placed in the school library as a resource for other teachers.

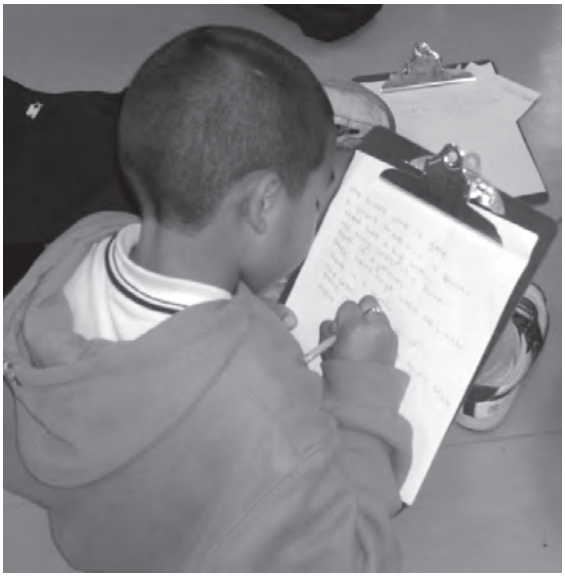
Comments

The topic really interested the children. They maintained this interest and dedication to the project through its completion. We admit that we had some doubts as to whether our children would be able to keep the investigation going and focused. We were ecstatic about what we saw. The more we "let go," the more the children "held on." There were times when we, as teachers, felt overwhelmed but we just kept pushing forward and learned from our mistakes. With more practice and hard work we feel that we will be able to get to a place where we are comfortable and confident in utilizing the project approach.



▲ Web on bicycles

▲▼ Creating observational drawings of a bike



▲ Generating a list of questions to ask the bike expert

▲ Opportunities to ask the bike expert questions

Birds of Prey

A project by children 6-8 years old bilingual students
Cotton Creek School, Island Lake, Illinois
Length of Project: *8 months* ***Teacher:*** *Amanda Nehring and Ashley Obermeier*

Phase One

Beginning the Project

Birds of prey was chosen as our topic because our students showed a large interest in animals, particularly predatory animals like sharks and lions. Those animals are obviously not very accessible in our area, so we tried to see what the interest would be in birds of prey near our school. We found out quickly that the students were very interested and had considerable background knowledge about our topic. The students had enough experiences seeing and learning about birds of prey to create some great, in-depth questions to investigate throughout the project. Some of those questions included: Do all birds of prey live in nests? How can owls turn their heads almost all the way around? Why are feathers important to birds of prey? How long can birds of prey fly for? Why do owls hoot? How do owls regurgitate and does it hurt them?

Phase Two

Developing the Project

Throughout the project, we investigated several things including the dissection of owl pellets. We did observational drawings, dissected them, and then put the bones back together to hypothesize what the owl ate. We also investigated replica talons of various birds of prey and then reproduced our own talons using clay. We measured and compared them and made models of them. We also brought in several experts from the community. We had a parent come in to talk to the students about his encounters with birds of prey (he is an avid outdoorsman). We also had people come in from the nearby conservation district and Barnswallow to show live birds of prey including owls, falcons, and hawks. Throughout phase two students had exposure to numerous resource books, videos, and artifacts to help them learn about birds of prey. During phase two most of the investigation questions remained the same, but got more in depth than originally thought, which was great to see.

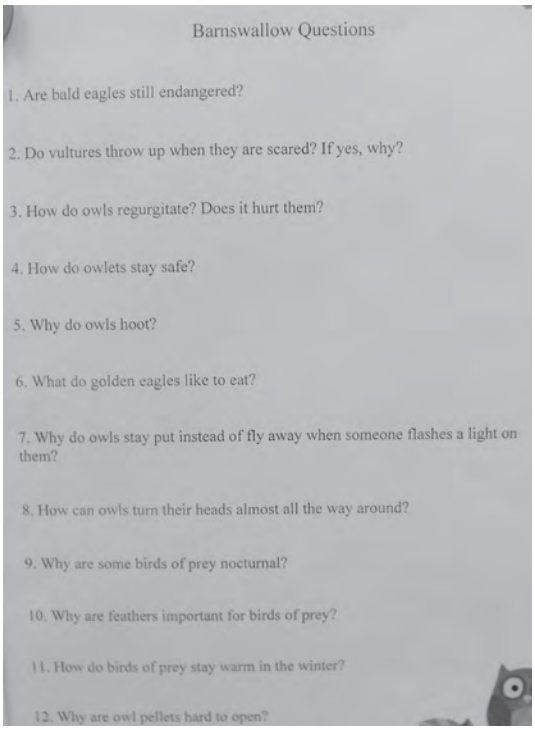
Phase Three

Concluding the Project

The students split into ten small groups and worked to create poster boards on a specific concept of birds of prey. The posters included the important information the students learned throughout the project. Once all of the posters were completed, we set up a birds of prey "museum" which will display all of the boards along with all of the models and sculptures the students created. The students' families were invited to explore our museum to see what we have been working so hard on. Throughout this project, the students learned all about what classifies birds of prey from other animals. They learned about their life cycles, habitats, and what they eat. They also learned about what we can do to keep them from ending up on the endangered species list.

Comments

Completing this project was a great experience. As teachers, we learned things about our students, but also about how to implement curriculum in our classrooms. The project approach was very conducive to student-centered learning because the students had many opportunities to make their own choices and decisions regarding their learning. The project also provided many opportunities for hands-on learning and exploring. We found that it was very easy to integrate many subject areas and meet numerous standards throughout the project. The students also surprised us in what they were curious about and how much information they attained. It was wonderful to be able to combine our classrooms so that the general education class could collaborate with the multiage bilingual class. The project required cooperation, collaboration, and other social skills to make it successful, which created a great community of learners.

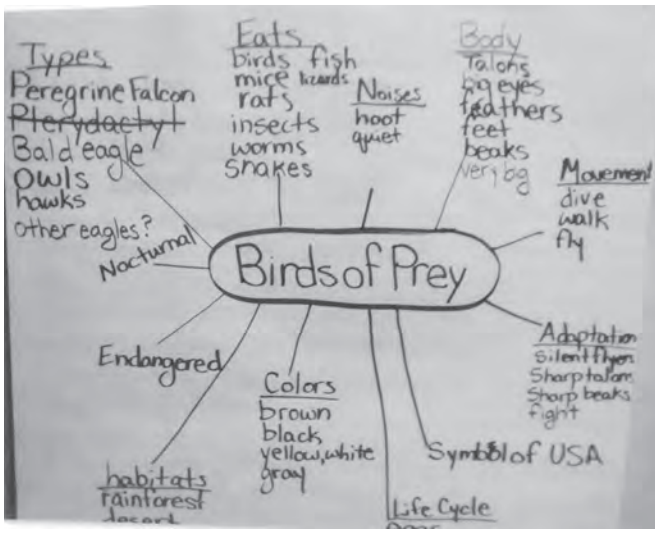


Barnswallow Questions

1. Are bald eagles still endangered?
2. Do vultures throw up when they are scared? If yes, why?
3. How do owls regurgitate? Does it hurt them?
4. How do owlets stay safe?
5. Why do owls hoot?
6. What do golden eagles like to eat?
7. Why do owls stay put instead of fly away when someone flashes a light on them?
8. How can owls turn their heads almost all the way around?
9. Why are some birds of prey nocturnal?
10. Why are feathers important for birds of prey?
11. How do birds of prey stay warm in the winter?
12. Why are owl pellets hard to open?

▲ Children's questions for expert classroom visitor.

▲ Children measured hawk, eagle, owl and falcon talons and used clay to replicas.



▲ Children's web of birds.

▲ A student works on an observational drawing from a real nest.

Building Houses

1st grade students
Whistler Elementary, Chicago, Illinois
Length of Project: *8 weeks* ***Teacher:*** *Jenna Frasor*

Phase One

Beginning the Project

Buildings was chosen as a topic for my project for three reasons. First, during Fun Friday, I noticed that my students enjoyed playing with the building materials like magnatiles, k'nex, and using jenga blocks to build, rather than playing with our games, puzzles, or art activities. Next, we went on a field trip to Navy Pier, which was under construction, and they were absolutely in awe seeing construction happen right in front of their faces. Last, when we went to the Kohl Children's Museum, they become even more engaged in buildings after doing "The Three Little Pigs" building experiment, and asked if we could build the three houses in our classroom. From there our focus moved from "buildings" to "building houses." They wanted to know specifics like: How do you fit a window in a wall, why is a roof slanted or flat, how is a basement made, how do you make the size of the building, how long does it take to make a house, how do they make cement like a rectangle block, and how do you make the walls?

Phase Two

Developing the Project

We started our investigation by taking a walk around the building to explore the different materials our school is made of. Students came back and drew what they saw. From there, we did a community walk and observed the types of houses in our neighborhood. Students chose how they wanted to take notes. Some drew pictures, others took tallies on the types of materials they saw, how many windows were on each house, the types of roofs or colors of homes. Throughout all of this, students were able to practice building different homes with materials of their choice. They chose to plan first, like a real architect, then build. I heard things like, "I'll be the architect, I'll be the manager, I'll be the builder!" and "I'm just like a builder, this is really hard work because the floor won't stay and I need to figure out how to make it work," "I'm going to be smarter than the pigs and make my house out of straw, built I'm going to make it sturdy by building a strong roof." Students represented their Learning through play, exit tickets, drawings, data collection, note taking, and conversations.

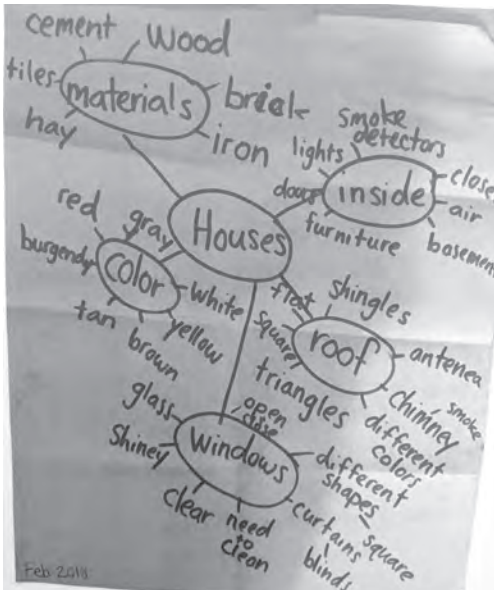
Phase Three

Concluding the Project

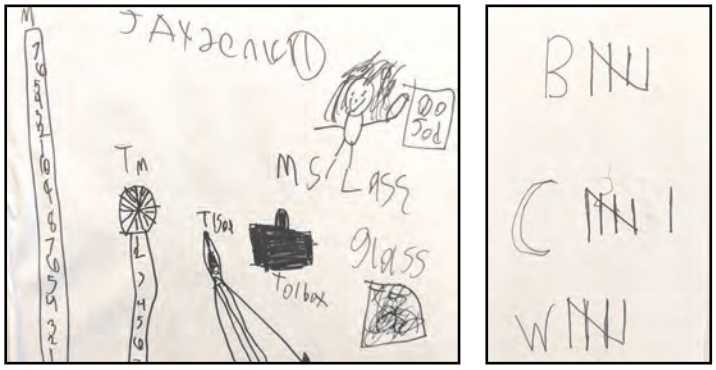
My students chose to showcase their work at parent-teacher conferences knowing that all of their parents would be able to see their fabulous work! Throughout the project, I took pictures of the houses/buildings they built that they then put into a photo book. I also kept their drawings, notes, and exit slips that we stapled together so they could show their parents as well.

Comments

I have to say, before starting this project, I was a little skeptical of how project based learning could fit into our already jammed packed day. However, after doing this project, I have a new respect for project based learning and I know this is only the beginning for me. It exceeded my expectations of student engagement and made me realize how important it is for students to choose what they are interested in learning. ALL students were extremely engaged in the topic and couldn't wait to learn more. They took ownership in their learning, and were so excited to teach me what they had observed and learned! As a teacher, there is nothing better than seeing your students love learning, seeing them work as a group and solve problems on their own, watching them come up with questions and finding ways to answer them by independent exploration. I was in awe at how much they accomplished and honestly felt like a facilitator, more than a teacher, as they really were teaching themselves. It was also extremely reassuring hearing our guest carpenter tell my students that the math they are learning now, he uses every single day, meaning the "play" that some principals may see as "not rigorous" was indeed rigorous enough. It was an extremely positive experience for me, and I can't wait for the next time we can incorporate project based learning into our class.



▲ Time 1 and Time 2 webs. Student vocabulary and understanding of how to build a house increased.



▲ Students did observational drawings of tools and collected data during a site visit about the school by tallying the number of concrete, bricks and windows.

▲ A student's dad, who is a carpenter, brought in a telescope and other tools for students to explore. The student whose dad it was, was the star, when he is normally extremely shy and reserved.

Instruments

A project by children 6 – 7 years old
Cooke Magnet School, Waukegan, Illinois
Length of Project: *6 months* ***Teacher:*** *Ellen Gordon*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

As a class, we brainstormed and came up with topics about which the children were interested in learning more. A child who was just beginning to learn how to play an instrument suggested investigating instruments. The children wanted to investigate how they got the word instrument, how different instruments sound, what the instruments looked like, and what the first instruments sounded like. They were also interested in watching people play instruments and experimenting with instruments themselves. We recorded all of the questions on a web and branched out with other questions of interest.

Phase Two

Developing the Project

Our class began our investigations by researching the different instruments using books from the library. The children were partnered up and they chose an instrument book that interested both of them.

The investigation questions remained basically the same after the library research time; the students primarily wanted to focus on developing a concrete understanding of different instruments. The children also created journals into which they recorded information from our experts and then illustrated their information.

Our experts included Ms. Diamond, who teaches instrument instruction to the older grades. She visited and spoke to us about the woodwind family. Mrs. Dudley, whom some of the children know from instrument instruction, spoke about different types of instruments.

A few of the parents were actively involved when we created our own unique tambourines. The children experimented with and observed the different sounds from each tambourine.

The children were able to experiment with different instruments such as rhythm sticks, maracas, brass cymbals, triangles, egg shakers, jingle wraps, sand blocks, jingle clogs, cluster bells, hand tom-toms, snare drums, and mini cymbals. We also used clay to create our favorite instrument to display.

Phase Three

Concluding the Project

Our culminating event was to create our own orchestra by experimenting with some instruments such as tambourines, maracas, rhythm sticks, jingle clogs, brass cymbals, egg shakers, hand tom-toms, snare drum, and mini cymbals. We planned and gave a music performance at our Family Celebration in June at Kohl Children's Museum. The children experienced the feeling of playing the different instruments, as well as learning how the instruments produce amazing different sounds.

Comments

The children developed their problem-solving skills and enhanced their abilities to find solutions to the different questions. We documented our data through journaling and artwork. The children benefited from learning about the sounds and the acoustics of different instruments. When we did partner work, the children learned how to work in a collaborative fashion. One child would read the material and record the data, while the other child would illustrate the instrument or information.

▶▲ Musical experts came to the classroom to allow students to investigate different types of instruments.

▶▲ Students created paintings and replicas of various types of instruments with paint and recyclable materials.

Pizza Project

A project by children 7-10 diverse learners
Rudolph Learning Center, Chicago, Illinois
Length of Project: *4 months* ***Teacher:*** *Karina Shimkos*

Phase One

Beginning the Project

The topic of pizza was chosen because it was something that the students really love, was easily accessible and feasible and was something that all of the students could relate to. Our project began when the class started noticing that certain foods were being served on certain days for lunch. We would look at the school menu and highlight the days when pizza was being served. Students were curious about who made the pizza, how much it cost, how the pizza was made and what was each other's favorite pizza. During dramatic play, students would pretend they had money and the only thing they wanted to buy was pizza. Previous knowledge of pizza before our project included student's general feelings about pizza, what was their favorite type of pizza, and do they also eat pizza at home. My expectations for the project was to find a topic that could keep the students interest for a long period of time, be integrated into a variety of subject areas, and also opportunities to work on IEP goals.

Phase Two

Developing the Project

Our project started by creating a list of items associated with pizza and making sensory materials that would represent each item. Students explored the textures and smells of pizza and looked at a variety of pizza cookbooks and menus. Students explored the shapes of pizza and toppings and worked on skills such as counting, measuring, writing, describing and social conversations. Finally we visited our school kitchen to learn about pizza from our school chef. Investigation questions required prompting by adults to keep students focused on the task. We stopped the project for a short time when students showed an interest in another topic, however after a couple of days the students were interested in pizza again. To help guide questions and discussions, in collaboration with our Speech Pathologist, we created communication books and pages for augmentative communication devices. This opened a new path for communication which made our students very excited and increased communication skills. Children represented their learning throughout the project by demonstrating growth in their IEP goals and benchmarks, observation notes and work comparisons. Students also improved social communication skills while participating in dramatic play and improved question and answering techniques in a more structured learning environment.

Phase Three

Concluding the Project

Throughout this process the students improved on their individual goals that tied to subject content areas, increased their communication skills and also gained confidence in presenting their work. The culminating event that closed the project was a group discussion and review of all of the items we had collected and the work they had completed. The administration was invited to see our work, and then we took a final photo to close the project. We posted our project outside on our bulletin board during report card pick-up night for all of the parents and staff to see.

Comments

Reflecting on this project I learned that it is ok to let go of control and allow knowledge to be gained organically. I was not surprised by the way the project progressed, but I was surprised by what information students retained verses what I thought they would have learned from the experiences. It was a good, feasible project to work on within the class and was easy to do once some rescheduling was completed to best integrate the project. I think in the future if I did this project again with the same population of students, there are some steps in planning that I would not do based on the learning styles and cognitive abilities. Project based learning can work in a low incidence setting, however planning strategies and techniques look much different than what a traditional project approach looks like.

▲ Students visit the school cafeteria to ask about pizza.

▲ Students act out different roles at pizza restaurant.

▲ Representations of pizza were made out of clay.

Pizzeria

A project by children 8 – 9 years old
Little Fort School, Waukegan, Illinois
Length of Project: *6 months* ***Teacher:*** *Jaime Rojas*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

I decided to begin the project by walking around the school with the students to help them choose some possible topics. We came up with the following alternatives: Jewel supermarket, bank, pizzeria, gas station, pharmacy, and fast food restaurants. Before we voted on a topic, I reminded the children that the place we selected needed to be near the school, accessible, interesting to them, and provide the opportunity to communicate in Spanish. The students voted and decided on the pizzeria.

Once the students decided on the topic, they expressed their knowledge and experiences during an informal conversation. This conversation took us over some questions that they decided to write and integrate into their webs.

Phase Two

Developing the Project

Once they had the web and the questions written, we decided to form three groups that would be in charge of the next areas of investigation. Group 1 would investigate the main ingredients in the pizza (flour, cheese, and tomato). Group 2 would investigate the equipment and prices to be used in a pizzeria. Group 3 would investigate sales, costs, records, prices, etc. The students seemed to be very shy to ask questions of people they did not know. Therefore, we practiced the tone of voice to use and the way to ask questions.

Our visit to Little Caesar's Pizzeria was very interesting. First, one person gave us an explanation about how the pizzeria works. Then the children had the chance to talk to any of the employees in the pizzeria. Some went into a huge refrigerator and talked to a manager. Other students talked to the person kneading the dough. Another group of students talked to the other manager, who taught them how to prepare the pizzas.

All of the students showed their learning by drawing, writing, and discussing how a real pizzeria operates. They were all very curious and eager to know about the pizzeria.

Phase Three

Concluding the Project

We culminated with some reflections about the project. This may have been the most important part of the project because it provided me with important feedback. We displayed our project documentation for the parents and the Little Fort community during Math Night.

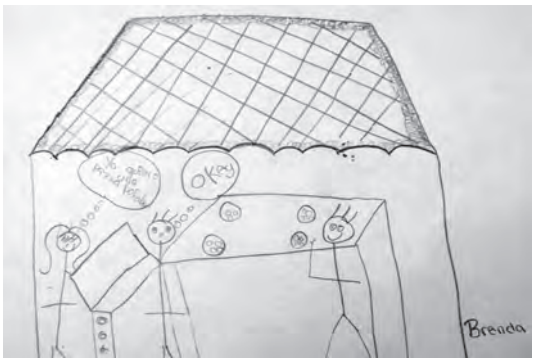
Comments

I think this was a great opportunity to apply knowledge to a real-life situation. The students used many skills with this project. I felt satisfied with the investigation, the participation of my students, and of course with the achievement of the class.

▲ Creating a web about pizza

▲ Painting giant pizzas

▲ Visiting a local pizza restaurant to learn the process of making a pizza



▲ Examples of children's observational drawings ▲

Pond Project

A project by children 7-8 years old
Martin School, Lake Villa, IL
Length of Project: *4 months* ***Teacher:*** *Cathy Mack*

Phase One

Beginning the Project

The pond project stemmed from our discovery of two ponds within walking distance of Martin School. Our school, located in a suburb of Chicago near Wisconsin, is in the middle of nowhere, surrounded by fields and farms, so transportation was not an option. We explored various ideas within the school building such as exit signs, drainpipes, but after reading an article about fish dying in the area and noticing the proximity of a pond to the school, the topic became clear. Our kickoff event was visiting the ponds to write down initial observations using all senses. We then generated a list of questions and interesting topics about ponds. The biggest questions seemed to be who/what lived in the ponds and how will the pond change in the winter. As the teacher, I noticed students did not have a solid vocabulary in English or Spanish so my expectation was to develop more vocabulary and knowledge through the pond project.

Phase Two

Developing the Project

We visited the ponds at least three more times during Phase II, including one visit with some parent helpers and two visits with an expert. We met an expert fisherman at the ponds in late fall and again in January. We learned about strategies to measure the depth of the pond, as well as pond safety, fishing and ecology. At the beginning of the project we had a six-week visit with a Mississippi map turtle. Students were tasked to research turtles and find out what kind type of turtle the class pet was and the best way to care for the turtle. This led to other research on animals and turtles found in the area. They were interested in reading several books about ponds, and finding "our" ponds on Google Earth. To represent what they were learning, the students collaborated to create a giant wall mural of pond life above and below water. Since it is a bilingual classroom, we did hands on activities and games to develop vocabulary in both languages. Students, in particular, loved the visit in the winter with the expert fisherman. They saw how an auger is used to drill a hole in the ice and saw how ice fishing works, many had never seen either before! The fisherman later sent our class a video of him filleting a fish and described the fish body parts to help with vocabulary. The parents were amazed that the students became so interested in nature and said their children carried over this interest at home.

Phase Three

Concluding the Project

Our culminating event was an early spring visit to the pond. We took pictures to document the visit and drew pictures to observe the seasonal changes and noted differences in the ecology. Students demonstrated their final understanding of the pond with the large mural and labeling the different life and plants around and also by creating a three-dimensional model a fish and labeling parts in both languages. We shared our project with families at our school Open House. We also invited the second grade bilingual class to our room to share what we learned about how the harsh winter had affected the pond and the life in the pond. Another student who was highly engaged in the project decided to create a PowerPoint presentation based on what the class had learned. Other students collaborated and added to the power point during the year. I noticed the students developed skills in observation, data, synthesizing information and questioning.

Comments

The pond project was an excellent topic, in particular because we could easily visit the pond on multiple occasions during various seasons. The pond project lent itself to many aspects of learning, including multiple subjects. I realized the importance of expert visitors and hands-on experiences. The opportunity to have a pet turtle was also invaluable and generated so much curiosity and interest in the world of animals and nature, especially at the beginning. We learned to work as individuals, as a team, and as partners, depending on the activity. The whole school was interested in our Pond Project, and our pond mural has been on display in the hallway all year. The direction of the project did take a bit of a turn when children became more interested in fish and fishing, instead of with the ecology of the pond. I learned that taking a break from regular classroom work has more benefits than I could ever imagine. When we visited the pond students were energized and more ready to work. I also learned that the many different talents and skills of my students can all be put to good use with such a unique and variable project as ponds, such as allowing a child to take care of the turtle or a student creating a PowerPoint. The time was well spent.

▲ Students used cameras to collect and document data to bring back to the classroom.

▲ An expert came to measure the pond, identify local wildlife and answer questions about pond life.

◀ Students created a mural about what they learned about the pond life and shared it with other classrooms.

Post Office

A project by children 6-7 years old
Oak Terrace School, Highwood, Illinois
Length of Project: *3 months* ***Teacher:*** *Chelo Perkins*

Phase One

Beginning the Project

The topic of the post office was chosen after a brainstorming session about our neighborhood in which several students mentioned that their parents mailed bills at the post office. When questioned further, some students had more knowledge than others about the post office, but had a common thread that all their parents mailed/received bills and/or letters. Since students differed in their knowledge, we explored the topic of a post office further by generating questions we had about the post office. The class decided to investigate the question of how letters were mailed. My expectations for the project were for students to gain further knowledge of how letters were mailed and the importance of the post office for communities.

Phase Two

Developing the Project

Students began the project by investigating how letters are mailed within our building. We visited the school office to see teachers' mailboxes and how letters were sorted. For our site visit, we visited our local post office. Before our visit students wrote their parents a letter to be mailed on our visit. During our walk to the post office, students were asked to tally the number of mailboxes they saw on the way. The local postmaster served as our expert in the field. He explained the importance of stamps and gave all of us a stamp to mail our letters. He showed us the P.O. boxes and also explained the behind-the-scenes steps that take place in order for letters to get to their destination. Our investigation questions did not change much although students were really excited to see the different stamps and to get to put stamps on their letters! The different style stamps were valuable to see as was seeing how the mail got sorted. Parents were invited to attend the field trip with students (3 attended) and they were also invited to share their experiences with the post office and its importance to them to the class. Children represented their learning through drawings and play environments.

Phase Three

Concluding the Project

Our class post office project has not officially ended. Although the initial excitement has worn off, students really enjoy the idea of sending and receiving letters and we have incorporated it into our daily writing center. Students take turns sorting the mail and delivering it within our school. They take pride in being responsible for an important task and it has served as a motivation for some students. Students learned so much from this project. Aside from reinforcing the writing and reading skills, the post office project reinforced that writing is a way to communicate and share thoughts and ideas.

Comments

As a teacher I learned that project based learning is a valuable tool for students and teachers. At first, giving students the freedom to choose a topic to study was a bit daunting, especially for first graders. I soon realized that when students have the freedom to make that choice, they take more responsibility and ownership of their learning. I think the post office project was a good topic because it reinforced the important meaning behind reading and writing. I think all of the students in our class benefitted from the experience, but there was one in particular that surprised me. This particular student had a very difficult time writing and putting his thoughts on paper. He needed his own space and support from the teacher to generate ideas. After dictating his thoughts I would write them in his journal and he would copy them. During this project, he became more interested in writing and wanted to sit at his own table. After some time he then asked me not to help him, he wanted to write on his own. To my surprise he was able to generate his own ideas and attempt to write them as he could. He started to visit the writing center more to write letters to his friends and to me. If I could do anything differently in this project, I would include more classrooms or the entire school to work as a post office. Making this a central theme for our school would make it more cohesive and inviting for the school community.

▲ Children read books about post offices to collect information to answer their questions.

▲ Observational drawing of a mailbox.

▲ Children decided to build a mailbox for their classroom.

▲ Children wrote letters to each other.

Post Office Project

A project by children 6 – 7 years old
Walt Whitman Elementary, Wheeling, Illinois
Length of Project: *2 months* ***Teacher:*** *Alicia Gallegos*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

The project began when the students expressed interest in a student's letter written to Santa Claus. We talked about letters and letter writing which led to many questions about how letters are prepared to be received and how mail moves from place to place. These questions were usually generated as a group when we first began exploring the post office. As we began to prepare for our visit from the postman, individual students began generating questions. At this point, my expectation was to "feel out" where the students wanted to take the investigation.

Phase Two

Developing the Project

The students began the investigation by exploring how teachers within our building received mail and where it came from. From that experience, they learned that mail was dropped off by teachers, personnel and the local mailman. They developed questions for the mailman, particularly how he was receiving, delivering, and moving the mail. Our post office visit resolved many of these questions.

The students began investigating how they would move mail within the building. They set up their own post office in class to prepare themselves for communicating (through letter writing) with their friends in Mrs. Zuren's third grade class. They spent part of their center time "working" in the post office, and delegating how it would be run. By the end of phase two, the investigation questions changed as students began showing more interest in stamps. This led to an investigation of how they would create stamps that were similar to the ones they observed. Throughout phase two, students represented their learning through observational drawings of mailboxes, the mail truck, and stamps.

Phase Three

Concluding the Project

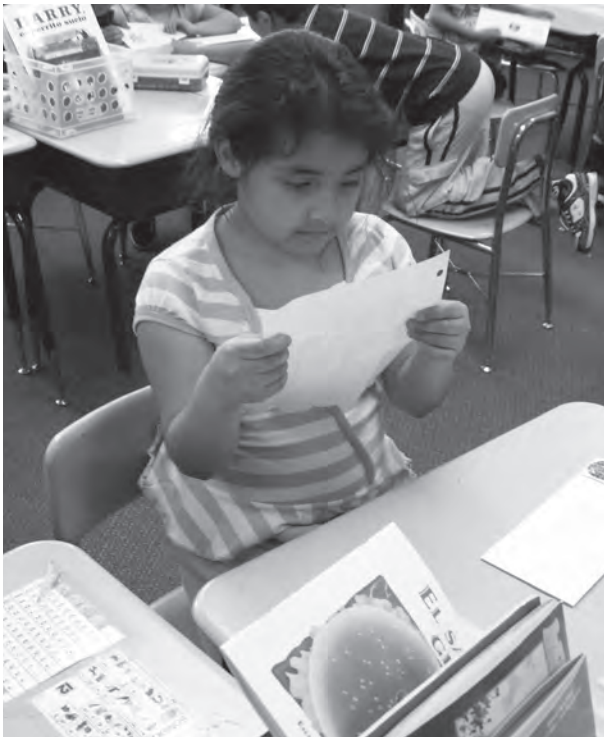
As interest in the project began to lessen, students were still interested in stamps, particularly in the notion of commemoration: the idea that symbols, people and events could be celebrated and remembered. For their final project, they designed their own stamps. They shared their stamps with their third grade buddies, their families and with the staff. The students also had an opportunity to vote for their favorite stamp to commemorate into a real one! Students were able to take the knowledge they learned from the sources within their community and apply it in a very personal and meaningful way. This concluding project gave students an opportunity to see themselves in something that would otherwise bear little meaning for them.

Comments

I feel that this project was particularly tough because there were not many artifacts students could get their hands on. Even with teacher prompts and questioning, the project felt limited in its potential for students to be more enveloped and invested, particularly when I couldn't prompt them on something they were seeing or exploring. I feel that the observational drawings are very powerful, and I am amazed at how capable the students are in capturing the details that they see. If I could do this project again, I would definitely change two things: I would focus the students on something that is more accessible to them, and I would document a whole lot more!

▲ Children documented the different parts of the mail truck though observational drawings.

▲ Children explored how to use and create postage stamps.



▲ Children wrote and received letters from friends and family members.

▲ Children visited the local post office to learn about the process of sorting mail.

Radio and Sound

A project by a second grade classroom
Little Fort Elementary School, Waukegan, Illinois
Length of Project: *6 weeks* ***Teacher:*** *Winona Kay Landrus*
Participated in Program: 2005 – 2006

Phase One

Beginning the Project

The students discussed topics about which they were interested in learning. They completed a survey of 20 different topics of interest and then broke that down to the top five topics. The topic of most interest was radio and sound. We began by looking at photos of a local radio station, listening to a broadcast, and taking a field trip to Kohl Children's Museum to experiment with sound and musical instruments. The students completed an interest web and discussed further questions that they wanted to investigate. The questions were recorded by students.

Phase Two

Developing the Project

The students were encouraged to read research books from the local library, listen to radio broadcasts, and discuss a future field trip to the local Waukegan radio station. On our visit to the radio station the station manager answered the students' questions or redirected them to other sources. He took small groups into every part of the station, while other groups worked on observational drawings of the towers, satellite dishes, and the studio. Students also had the opportunity to meet and observe a DJ on the air.

We included parents by sharing surveys, sending a letter about our project, and inviting them on our field trip. The students represented their learning through drawings, a diorama, posters, and creating a broadcast script and a mock studio in the classroom.

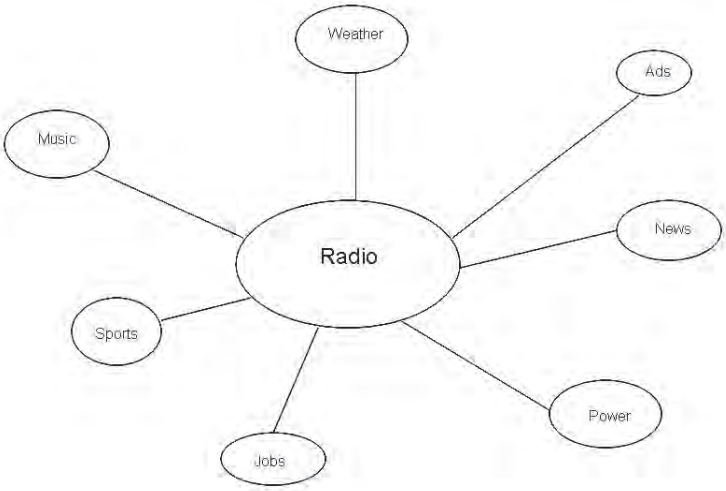
Phase Three

Concluding the Project

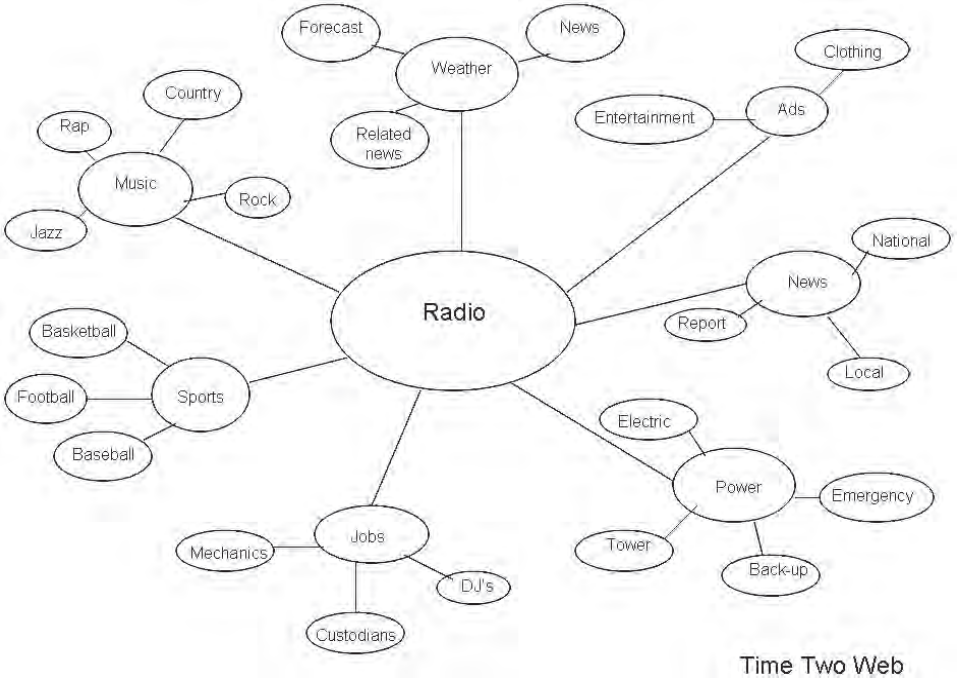
The culminating event included shared time to present each group's report and projects. The students displayed their projects in our school lobby during the last two weeks of May and shared their Radio Project with parents at the Second Grade Family Math Night.

Comments

I learned that my students have a good idea of what they want to learn and how they want to learn it. I learned that I was able to give the authority to the students to become involved and more self directed in their own learning. I was pleased with the way that many of my students became involved and self-directed. The topic they chose was of great interest to them. I think they would have benefited more from trips to other stations or a recording studio. I enjoyed the experience and saw that teaching using the project approach increased student drive and interest. I would encourage other teachers to utilize the project approach in their teaching.



Time One Web



Time Two Web

How Are Rocks Made?

A project by a first grade classroom
Greenwood Elementary, Waukegan, Illinois
Length of Project: *1 month* ***Teacher:*** *Pam Buhrmester*

Phase One

Beginning the Project

Students collect all kinds of things, and once students realized that I had a rock collection, many students began collections of their own. Many interesting questions were naturally asked, which led itself to an investigation. Students contributed to a web about what they already knew about rocks. Soon after, I brought in my personal collection and allowed the students to explore them and discuss in their groups. Next, we listed all of our questions about rocks. After processing all of the questions, it seemed clear to me that the class was most interested in how rocks were made. I expected us to investigate the three ways rocks are made on Earth.

Phase Two

Developing the Project

Each student chose one rock that appealed to them to make their first observational drawing on. We then put the rocks in water, and observed how the colors became much brighter. Students wanted to make new observational drawings to include the details they saw when the rocks were wet.

The class collected and discussed rocks from our school surroundings, recording their new discoveries in their Science notebooks. We watched Smart Board videos on how rocks are formed, and what rocks are used for. Our classroom was filled with interesting books on rocks. Many of the books were geared towards higher readers, but we took that opportunity to practice using our features of print, such as headings, diagrams, bold words, illustrations, etc.

To further investigate, we even had an amateur geologist, Mr. Dennis Pavlik, visit our class. He brought five collections boxes from the Field Museum for us to explore. They included rocks, minerals, and fossils from right here in Illinois! Did you know that Illinois used to be underwater? The fossils we got to explore taught us that new and exciting fact! All through our investigations, students were encouraged to record their new discoveries in their Science notebooks with sentences and illustrations.

Phase Three

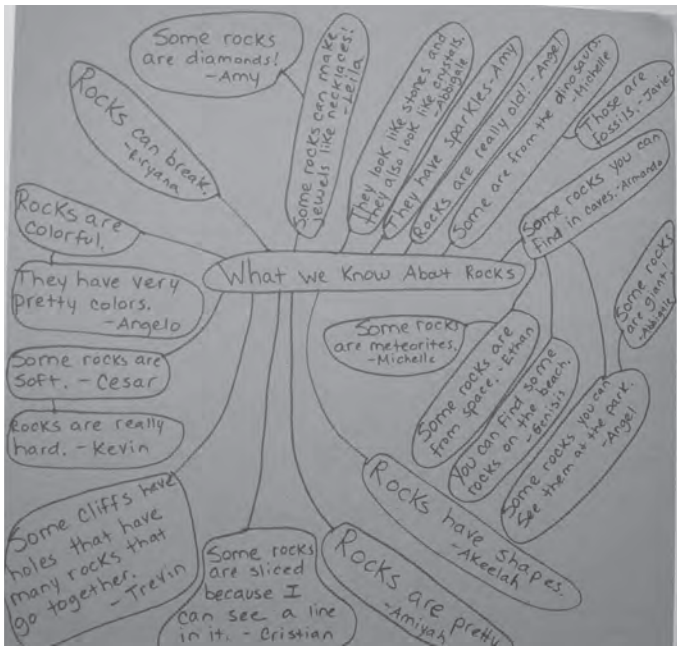
Concluding the Project

As you could imagine, there was a lot of excitement over fossils. To create our own sedimentary rock models, we completed an experiment in plastic water bottles. Students mixed Plaster of Paris, sand, water, and food coloring in a bowl. After spooning the "rock mixture" into the bottle, students set small rocks and shells into the mixture. They repeated the process two more times, creating three layers of sedimentary rock. After a few days, the rocks were "excavated." Students found how fossils are formed, and casts are left in the Earth for geologists to find much, much later. This project taught us how rocks are formed, questioning, problem solving skills, measurement, observation, and recording. We were very busy and enjoyed the project.

Mrs. Buhrmester's class looks forward to inviting other member of Greenwood Elementary to view our projects. We are most excited for our family day at Kohl Children's Museum to show off all of our hands-on learning and hard work.

Comments

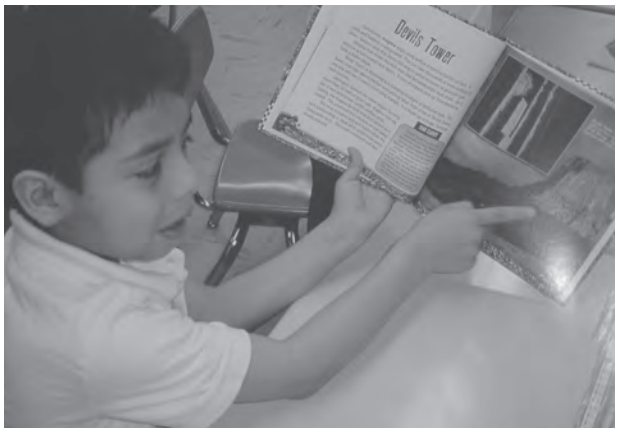
I am pleased with this project. I feel that the students really took ownership of their learning and were motivated to find the answers to their questions. I enjoy nature thoroughly, and find beauty and peace when interacting with it. I feel that I have sparked the naturalist in many of my students. I shared my special rocks with the class, and discussed how I use certain rocks to anchor my thoughts. I have dedicated rocks for wishing and creating (my dream rock), and one for showing my thanks for all of the wonderful things in my life (my gratitude rock). I feel that many of my students were inspired to explore the world around them, and keep finding the answers to their many, many questions!



▲ Student's Web of what they know about rocks.

▲ Students made plaster casts of rocks to explore the process of making replicas.

▲ Students explored rocks and compared their attributes.



▲ Students used books to research types of rocks.

States of Water

A project by children 7-8 years old
Raymond Ellis Elementary, Round Lake Beach, Illinois
Length of Project: *8 weeks* ***Teacher:*** *Kathy Goers & Danielle Cwikla*

Phase One

Beginning the Project

The states of water project began after the students took their field trip to Kohl Children's Museum. All the students showed the most interest in the water gallery and if felt natural to develop a web revolving around water. As the web was created, the students' questions clearly pointed to states of water: How does water turn into ice? Why does it sometimes rain and sometimes snow? How does ice turn into a cube? How do clouds know it is time to rain? Why can't you (or can you?) see steam?

Phase Two

Developing the Project

Our class started the project with a KWL chart to help guide us through the activities. The students recorded personal webs of liquid, gas and solid through the weeks. They engaged in activities to understand the properties of a liquid: Predicted/experimented with floating/sinking, created water/oil bottles, discovered how water travels through celery and observed how water takes the shape of whatever it is in. Students wondered what would happen if we put salt water (water bottle with salt) in the freezer, so we tested this and compared it to a regular bottle of water in the freezer. Groups collected/measured snow and slowly observed solid to liquid. As days went on their liquid measurements began to decrease and students were able to visualize that water evaporated. A humidifier was brought into the classroom for students to experiment with gas, and students also breathed onto hand-held mirrors, to see how water particles go into air.

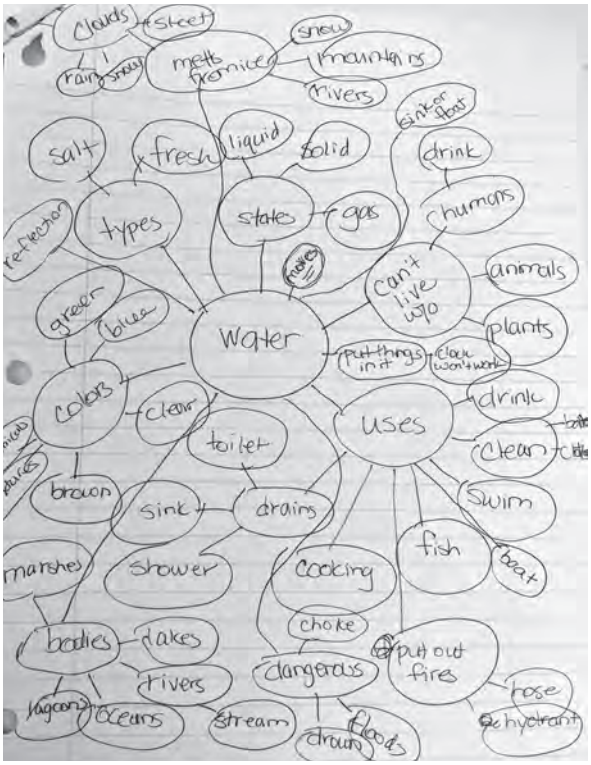
Phase Three

Concluding the Project

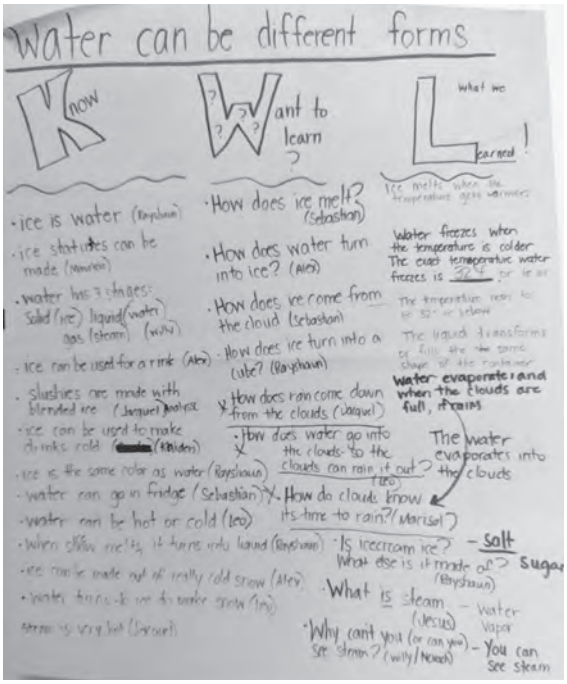
To culminate the project, students reflected on what they learned by reviewing the KWL chart. Students wanted to share their learning with other students and their families, so they wrote a paper about the states of water and illustrated it. Their papers were put into a classroom book and displayed outside of the classroom, during conference time. Children learned how to predict, form a hypothesis, observe and form conclusions while working in groups. They learned the properties of liquids, solids, and gas. They came to the conclusion that temperature plays a role in transitioning between the states of water.

Comments

As a teacher, this project reaffirmed my belief that students are driven to learn when they take ownership in their learning and are provided hands-on opportunities. The students looked forward to working on the activities.



▲ Classroom web on water. After looking at student questions the topic narrowed to states of water.



▲ Student KWL chart with their questions and what they learned.

▲ Student explored and conducted experiments to collect data about water as steam and ice.

Airplanes

A project by children 18 months – 9 years old
Sun Children's Home Childcare, Bellwood, Illinois
Length of Project: *2 months* ***Teachers:*** *Faith Arnold and Danisha Crawford*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

Our childcare facility is located 14 miles from O'Hare International Airport and ½ mile from the interstate. During outdoor play, children frequently watch airplanes and a traffic news helicopter coming and going from the airport.

We held a brainstorming session with the children to determine their potential interest in airplanes as a project topic. At this time, they expressed their knowledge and experiences with airplanes while we recorded their responses in a journal. Some of their questions included: "How fast does an airplane travel during take off?" "What is the tail of the airplane used for?" "Can we get on an airplane?"

Phase Two

Developing the Project

We began our investigation by reading books and watching videos about different types of airplanes. Airplanes other than passenger planes, the ones children were more familiar with, were of great interest to the children. Parents provided field trip suggestions, including the idea of visiting colleges with aviation programs.

We made a field site visit to Midway Airport where a pilot provided a tour of a private airplane. We learned that airplanes have control panels similar to a television screen and that a control stick can be used to steer. The pilot described differences between airplanes and helicopters.

While developing this project, the children made several drawings, clay sculptures and paintings with different tools. All of the children enjoyed the process of exploring new and different art materials, especially the eldest child in the group, a 9-year-old boy.

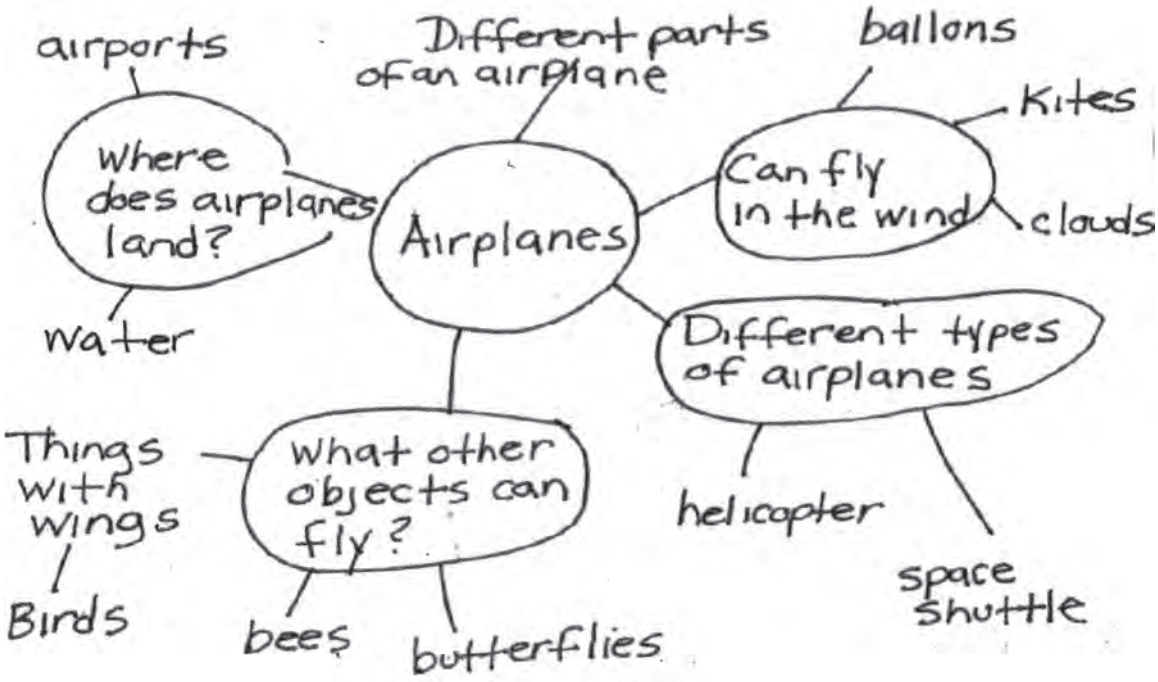
Phase Three

Concluding the Project

The conclusion of the project was an exhibit of the children's artwork at Kohl Children's Museum. Children and parents were invited to the exhibit.

Comments

We discovered that children were more intrigued by the different types of airplanes than how airplanes worked. I was convinced that our airport visit would be the highlight of this project; however, upon leaving Midway Airport, the children expressed disappointment at not having boarded a passenger jet. Also, the most valuable lesson I learned is that timing is an important factor. The children were not as focused on the project as expected due to their regular summer program activities, including bowling, gymnastics, swimming and other field trips.



▲ Children's first web

▼ Children molded and painted clay airplanes.

▼ Children used tape and large craft sticks to replicate an airplane.

The Bean Project

A project by children 1-8 years old
Ruby's Little Angels Day Care, Chicago, Illinois
Length of Project: *10 weeks* ***Teachers:*** *Ruby Williams*

Phase One

Beginning the Project

The bean project was chosen because one day during circle time, I read the story of *Jack in the Beanstalk*. As I was reading this book to the children they were curious about the beans. Some of the children began to ask me if the beans in the story were like the beans that are used for lunch and dinner. The older children commented that their moms cook beans at home and that some of the beans look and taste different. Although in the story magic beans were discussed, this sparked the children's curiosity to learn about the bean. They wanted to know where beans come from, how they grow and do they grow as tall as the one in the story. My expectations for the children were to learn everything they could about beans.

Phase Two

Developing the Project

Our children began this project by planting beans in a growing kit. They were excited to see the growth of their bean plant each day. As we waited on the beans to grow, we decided to investigate the bean itself. We took our first site field trip to the library to find every book on beans. We tried to find books for all the ages of the children in the daycare. One book we observed was called *Beans*, this book was for younger children. During circle time we discussed the pictures of the beans in the book. Also, we talked about the different varieties of beans and the part of a bean. Our second field site was the Garfield Park Conservatory where we visited the garden center. At the time of our visit, one of the experts was maintaining the beans and the children began to ask questions about the beans. The children found out that a bean can grow in a pot and in the ground. Since we planted our beans in pots, this was helpful information for us. Also, an expert gardener visited our daycare to discuss the process of growing beans in her garden. She was an 88 year old mother who still plants her own vegetables. She even brought seeds for the older children to plant in the future. At the end of her presentation, she invited the children to come to her garden to help pick green beans. The children were excited about going to see her garden.

Phase Three

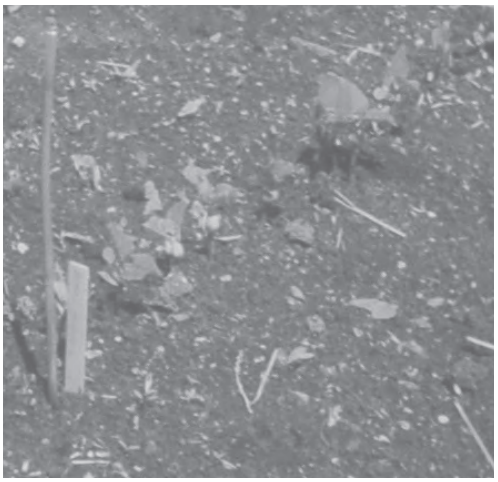
Concluding the Project

At the end of the project we decided to take a trip to the store to look at different types of beans. The children were fascinated with the varieties of beans on the shelves. Also, we ventured to the produce area where the children felt the texture of the fresh beans. One of the children asked how a bean can be on the shelf and in the produce area. We would soon find out in our project. We decided to purchase five types of beans (black, pinto, lima, green, northern). We placed these beans in water and let them soak overnight. The next day, we cut them open and used magnifying glasses to investigate the insides of the beans. The children were fascinated to find out that some of the beans had more than one layer. Some of the parents came in and helped prepare some of the beans that we purchased. The children immediately noticed the color, taste, and texture of the different beans. We even created a memory game where we blindfolded the children to see if they could identify the bean through touch and taste.

Comments

The bean project was the first project in my daycare. When I started this project, I was concerned about studying this topic with the younger children. As the project progressed it was very interesting; all the children were able to participate in the project. Whether it was learning colors, counting, or shapes of the beans. When it came to the toddlers, we placed different types of beans in containers and had the children fill the cup with beans. Also, we incorporated science curriculum because we studied the growth process of the bean. For a future project, we will continually investigate the bean. We plan to study how some beans are good for our health. One little boy said, "There is so much to learn from the growth of a bean." Although our beans plants are still in the growing process, the children cannot wait to see how tall their plant will grow. I have never seen children of my daycare so excited to learn. Another child in the daycare felt like she was a mother to her plant. She was so proud of her plant's growth.

◀▼ Children planted beans and observed the growth of the beans over time.



◀ Children drew observational drawings of the plants at the Garfield Park Conservatory.

The Summer of Cicada Adventures

A project by children 2 – 8 years old
Hand in Hand Learning Center, Glenview, Illinois
Length of Project: *4 months* ***Teachers:*** *Linda Kraft, Sarah Lennert, and Lauren Rust*
Participated in Program: 2007 – 2008

Phase One

Beginning the Project

We decided to investigate insects because the children frequently explored the yard, looking for bugs. We worked on a web for cicadas and a web for insects.

Our focusing project was to classify big plastic bugs by using library insect books. Since we had studied insects in the past (butterflies, praying mantis, and ants) and cicadas are part of our outdoor play, the teachers directed the project toward cicadas. Our goal was to build on children's prior knowledge and skills about insects in general. We also expected the children to learn how to tell the difference between insects and to strengthen their observation skills.

Phase Two

Developing the Project

Our first investigation was a field trip to the Glenview Grove Nature Center. After an expert talked with the children about cicadas and we examined live and preserved cicadas, we made observational drawings using clipboards and felt pens. We made a second trip to the Nature Center and this time the children shared their expertise, along with their new questions, with the staff.

At our home school, the children collected piles of empty cicada shells. They watched as cicadas molted and their wings dried. They also collected different kinds of insects and made comparisons. They measured all sizes of insects, using hand magnifiers to see the differences. On their own, the children compared periodical cicadas to annual cicadas.

Parents were supportive, sharing Internet resources and encouraging children to observe and investigate the cicadas they saw at home and share their experiences with the group. One family found cicada nymphs while digging a hole for a tree, so we dug a hole and also found many cicada nymphs! We used clipboards to create observational drawings. We gathered and watched for over a half hour as a cicada emerged from its hole. Some children made cicadas from clay.

Phase Three

Concluding the Project

Our culminating event was to go to the Field Museum's "Underground Adventure" exhibit. The children were intrigued about "shrinking" to be small like insects and going "underground with the insects." They identified most of the insects at the exhibit. They also sat in the pretend cicada's large shell. They enjoyed pretending to be cicadas! One parent chaperoned the trip.

Comments

Overall, this was a good project for children to investigate. Cicadas were a large part of our everyday outside life. The topic generated interest, enthusiasm, and curiosity daily from the children, teachers and parents! Sometimes, children would take the subject down a new path, such as a side study of worms, and we encouraged their interest and exploration. It would have been helpful to have more science tools on hand for investigations. I would also use more experts from the field of study. The children seemed to most enjoy learning from the experts during our cicada adventure.

▲ Children explored and searched for cicadas in the yard.

▼▲ Observational drawings of cicadas

▲ Children engaged in dramatic play.

Learning About Corn Project

A project by children 2 – 8 years old
Imelda's Home Daycare, Chicago, Illinois
Length of Project: *40 days* ***Teacher:*** *Imelda Rodriguez*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

One afternoon I was making *gorditas;* they are like tortillas but thicker. The children were eating while I was cooking in the kitchen, and they started to ask questions about what I was making. They asked, "How were they made?" "Why are they yellow-looking?" I answered that they were made from corn. They asked more questions about corn, and I thought that it would be a good idea and a good experience for them to learn about corn since they were really interested.

Phase Two

Developing the Project

We took field trips to the library to investigate corn. We needed to learn how to plant the seed and what it needed to keep growing. We also read books and learned the names of corn plant parts. While reading, we leaned that corn is an international product and different countries consume it differently, depending upon their customs. We learned that the seed is used to make different types of food and the leaves are used to wrap tamales and to make crafts.

We had a field trip to the grocery store and shopped for fresh corn and other products made from corn. The children shared their experiences of how they eat corn at home. One student shared a story about how he and his father planted corn while visiting Mexico.

Phase Three

Concluding the Project

The children enjoyed every corn activity. They followed and enjoyed recipes related to corn. We made and ate gorditas from raw to cooked corn. We ate chips and tamales. We drew corn and cornfields. We planted corn plants and sang Spanish songs about "tamales and tortillitas."

The project surprised me as it progressed. I thought that it would be a little hard for the children to understand or that they might lose interest as the days went by. To my surprise, they kept motivated and interested. I think this was a good topic to learn about because corn is an international vegetable. If I was to do this project again, I don't think I would change anything. I think that things turned out really well, since I know that the information stayed with them.

Comments

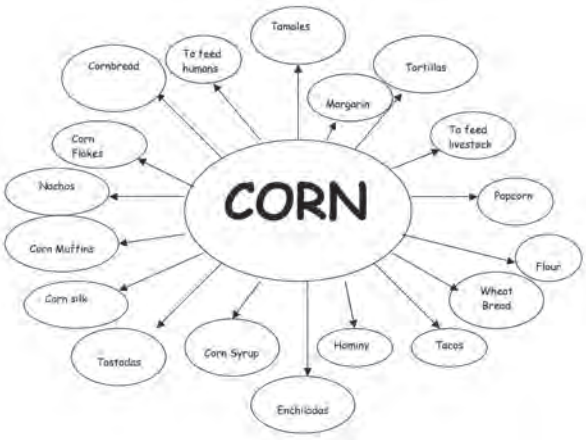
The easiest thing about the project was getting the kids interested in the project. From the beginning they had many questions, and it was just a matter of time before we figured out how to answer all of them. The hardest task was waiting for the appropriate time to begin planting corn. Planting allowed the kids to do the project hands-on, as opposed to just listening to a story.

▲ Children explored different types of corn kernels.

▲ Children learned how to grind corn.

▶ Created drawings of corn plants.

▼ Web about corn



Dogs

A project by children 1 – 12 years old
Our Little Playland Family Childcare, Hillside, Illinois
Length of Project: *2½ months* ***Teacher:*** *Mrs. Alice Dixon-Zollicoffer*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

My daycare children would get excited every time one of them saw a dog or puppy walking by with its owner. I would hear, "Guys, look!" or "Mrs. Alice, a dog!" Running to the door they would go. I was considering gardening or butterflies for a project topic. When I told the children about these project topics, they didn't seem interested at all. Then, two days later, one of the girls said she was going to get a Yorkie puppy for her birthday. A three-year-old asked, "What is a Yorkie puppy?" We gave him a description of a Yorkie and then another child said, "We are getting a dog if my mom lets us." That was when I got my "ah" moment.

Phase Two

Developing the Project

I began our investigation by asking the children questions. First, "Does anyone know what a dog is?" I got interesting answers! Next, each child was given a clipboard with paper and pencil, and I asked them to draw a dog without looking at any pictures or getting any clues.

We visited a pet store to see what kinds of foods and other items there are for dogs. The children asked the staff questions. On our library day, I asked the children to find books about dogs; they found a lot and were excited to hear the different dog stories. We also played the game, "Doggie Pattern," where the children separate dogs by color or breed and put them in a pattern.

We visited *Pet Vet* at Kohl Children's Museum. The children all enjoyed pretending to be a vet!

Phase Three

Concluding the Project

We closed the project with painting a dog model made from clay. We also did a "My Favorite Dog" poster. Each child was able to bring in a picture of his or her favorite dog and to name that dog. Parents helped children find different breeds of dogs in magazines, newspapers, and the internet.

The community was great as well. After I told neighbors about our dog project, whenever we saw them walking with their dogs, they would talk to the children and let them pat their dog (if it was a child-friendly dog).

The children learned a lot about different dog breeds, how to bathe and care for dogs, and they learned that dogs have feelings too.

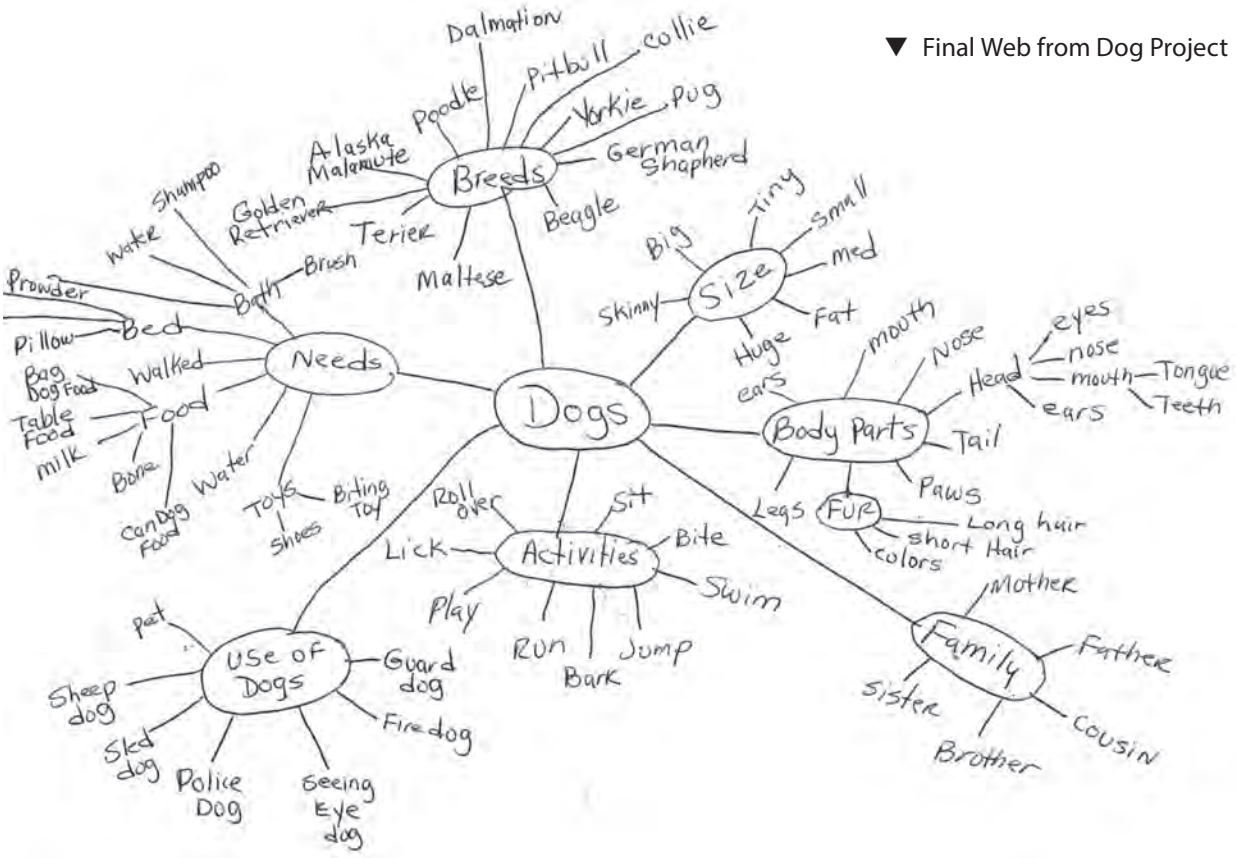
Comments

I feel this project went very well. The topic was great. I feel really good about my project on dogs. If I could change anything, it would be to take the children to visit a vet. That would have given them more information about a dog's doctor. I wouldn't change anything else; I had fun!

▲ Children worked together to create and paint a model of a dog.

▲ Children went on a site visit to a pet store to touch and see different types of dogs.

▼ Final Web from Dog Project



Egg Project

A project by children 2 – 8 years old
Ms. "D's" Jump Smart Early Learning Academy, Chicago, Illinois
Length of Project: *2 months* ***Teachers:*** *DeCarla Burton and Lolita Pace*
Particpated in Program: 2005 – 2006

Phase One

Beginning the Project

The children represented their prior knowledge and experiences through group discussion about chickens. We divided the children into two groups – each group had children ranging in age from two to 7 and 8. We paired the children according to verbal skills. The older children helped by setting the tone of the discussion but most of the children participated. I taped the conversations and played it back so the children could hear themselves. From their comments, a list of questions were formulated for the younger children as the older children asked what they wanted to know. Some of these included: How do chicks break out of the egg? What do chicks eat? Do chicks bleed? Where do chicks live? Who are chicks' enemies?

Phase Two

Developing the Project

Our field site visits included a trip to Kohl Children's Museum to observe the incubation of baby chicks. The children observed first hand what the chicks looked like after they hatched and viewed diagrams of the hatching process.

We created a web based on what the children wanted to know about the egg and the baby chicks. Next, the children were involved in observational drawings to allow opportunity to examine an egg by attempting to draw what they observed. Additional resources were brought into the classroom such as charts of the incubation process, books about chicks, roosters, hens, story books, and other resource materials. Children were encouraged to explore these books and other resources based on their interest and at their own pace. Additional questions did arise from their exploration and we continued to explore the world of chicks, which eventually led to exploring eggs. We then purchased an incubator and eggs to hatch in our center. Each day one of the older children marked four eggs with a date and placed them in the incubator. The children took turns caring for the eggs. We created a felt story board that we used to show what we learned.

Phase Three

Concluding the Project

The children were excited as we decorated the backyard displaying the materials we used to explore "The Egg Project." We invited the parents to stop by so that their children (the experts) could share with them what they learned from the egg project. They were prepared to explain how the incubator worked, how long the incubation process lasted, and the difference between a grocery egg and a fertile egg.

Two webs were provided for the parents to view. One of the webs displayed what the children wanted to learn before the investigation and the second web outlined what the children had discovered through their exploration.

Comments

Unfortunately, we had an unsuccessful hatch in our center – not one of the eggs produced a baby chick. The children formulated their own theories about why the chickens did not hatch. David, age three, did not think that the incubator was hot enough.

The children wanted to see what was inside the eggs. We cracked the eggs that did not hatch and the children saw that the chicks had not grown and the inside of the eggs were like the inside of a store bought egg.

▲ Time One Drawing

▲ Time Two Drawing

▲ Children and parents view chicks at Kohl Children's Museum.

▲ Children explore the difference between a fertile and a non-fertile egg.

▶ After observing chicks over the course of the project children created chick sculptures out of clay.

Life on a Farm

A project by children 16 months – 5 years old
Never Ending Childcare, Inc., Gages Lake, Illinois
Length of Project: *3 months* ***Teacher:*** *Patricya Merchant*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

We chose this topic because we wanted to know why the farms around us were so different. It all started when Emily wanted to know, "Why the farmer has all this corn and no animals?" "Why Miss Shirley has all horses and nothing else?" Questions to investigate also included: "Why do cows give milk?" "Do horses poop?" "How many different farms are there?" "What kinds of animals live on farms?" "How does a farmer grow food?"

I did not expect this project to hold the younger children's interest; I expected them to learn about farms.

Phase Two

Developing the Project

We began our investigation at the Grayslake Feed Store where we spoke to several farmers about their farms and what crops they grew. We decided to plant our own vegetable garden. The children drew a map of the garden and what seeds to plant. We grew corn, tomatoes, green beans, wheat, cucumbers, and watermelon. The children all helped to construct a carrot frame. We planted the carrots so the children could watch the carrots grow in the frame.

We visited several farms. Our first visit was to Apple Holler. Farmer Bob showed us 75 varieties of apple trees and took us on a hayride through the orchard. We learned that bees are very important to the apple farm. We went to the store and purchased a bag of apples and made applesauce and homemade apple butter. Our next adventure led us to Golden Oakes Dairy Farm in Wauconda, IL. Here we learned all about cows. We also made ice cream for snack. We next visited Green Meadows Petting Farm where we handled chickens, fed goats, and milked a cow. We also rode ponies and played with kittens. We visited the Dynasty Lippizan Farms where we watched horses, fed them, and after brushing them, were rewarded with a ride for all of our hard work.

Phase Three

Concluding the Project

Our final adventure took us to Wagner Farm in Glenview. Here we saw animals, learned to shuck corn and feed chickens. We learned how to candle eggs and grade them. There was a pretend cow that we "milked" – it was so much fun! Milking the pretend cow was much easier than the real cow! We made butter and ate it.

We read books about the farm. We played "farmer" and sold plastic vegetables at our store. We made a cow out of cardboard boxes and butcher block paper. It took several weeks to complete and looks great! We learned a lot about teamwork and sharing.

Our project will officially end when we harvest our garden and invite parents to lunch. Parents were provided photographs of the activities, joined us on field trips, and brought their children to day care early on trip days.

Comments

When I started the project, I went into overload. By day six, I was ready to quit! We had put in our garden and visited a dairy farm. Most of my kids are two years old—they did not understand all this high tech milking jargon. Patrick, age two, came up to me and said: "No cry, Miss Patty, I teach you about cows! Brown cows have white milk and go moo, milk makes ice cream and yogurt and tastes good. That's all you need to know." They were learning something! I learned that my initial expectations were out in left field. This was an excellent topic! If I were to do it again, I would limit my trips to two sites, and each site would be totally hands-on for the kids.

▲ Children constructed root view panels out of wood, plexiglass, and screws.

▲▼ Children visited a farm to explore the different types of work that is done on a farm.

▲ Drawing of child watering the garden.

Grocery Store Project

A project by children 25 months – 10 years old
Beyond Your Dreams Daycare, Gurnee, Illinois
Length of Project: *2 months* ***Teachers:*** *Alicia Falls, Norma Herrejon, and Alyssa Ashley*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

Our project initially began as a gardening project; however, after a few weeks, the group lost interest in growing things and became more interested in the fruits and vegetables they had learned about while on a field trip to the local grocery store.

We switched gears. I asked the children what they liked most about their visit to the grocery store and what they would like to know more about. They came up with many questions for investigation. I called Dominick's to see if they would be willing to give us another tour. They were delighted to have the children visit again.

Phase Two

Developing the Project

We created a web to discover what the children were interested in learning about. During the first week of the project, we explored many books on grocery stores, fruits, and vegetables. We visited Dominick's grocery store as our focused field trip. Our field trip expert reviewed the food pyramid with the children. She also gave us a tour of the entire grocery store. The children tasted food from each of the different departments and also worked the cash register. The children were amazed at the amount of sugar that is in cereal. Upon return from our trip, everyone drew pictures of their favorite food. We also discussed the food pyramid more in depth.

Using the cash register sparked the children's interest in money. Using real money, the children leaned to identify coins as well as the value of each. They also learned about new fruits and vegetables. Each child brought in a fruit and a vegetable they were not familiar with. We researched each one. Afterwards, we tasted each fruit and made soup using every vegetable. We involved parents by inviting them on the focused field trip as well as to the family celebration at Kohl Children's Museum. The parents also contributed food containers for the grocery store we planned to build in our classroom culminating project.

Phase Three

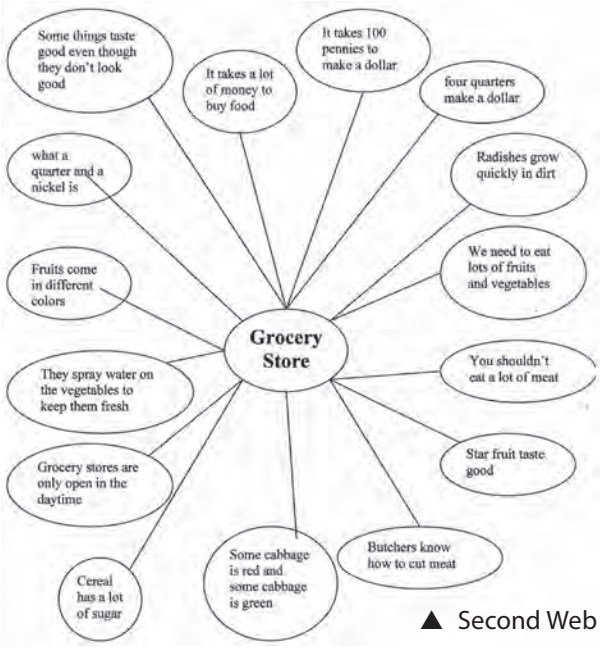
Concluding the Project

As a culminating project, we transformed the daycare into a grocery store. The children stocked the shelves with the many empty food containers they brought in from home. They made all the signs and determined what each item would cost. They also made a shopping cart, using cardboard. Children took turns being cashier and bagger.

Comments

This topic idea really came from the children. I thought gardening would be their interest, but I was wrong. This was my first project, but not my last. We met over 40 Illinois Early Learning Standards doing this project. The most meaningful part for me was constructing the shopping cart because the children worked together as a team. Brain-storming how they would get the legs to stay on the box was most impressive! As I reflect back, when we do our next project, I plan to do more journaling. I wish I had recorded some of the conversations that were going on during the construction of the shopping cart.

▲ First Web



▲ Second Web

▲ Children decided to create a grocery store in a section of the daycare. They role played as shoppers and different types of jobs at the grocery store.

▲ Children wrote lists of their favorite foods.

▲ Children investigated different types of fruit and vegetables.

Horse Project

A project by children 2-6 years old
Meriyen's Day Care, Chicago, Illinois
Length of Project: *2 months* ***Teachers:*** *Maria Hernandez*

Phase One

Beginning the Project

We choose this topic because last year we had the opportunity to have a pony visit Meriyen's Day Care. I noticed how delighted and attentive the children were by the pony's presence. They were asking all type of pony and horse related questions, so I read to them books about horses and their natural habitat. They had some prior knowledge and some even had experienced riding a horse, but they were eager to learn more about them. During circle time, I used a recorder to record their questions. Children asked all sorts of questions including what they ate, where they slept and even how horses went to the bathroom. We then proceeded to work in a learning web based on the kids' interest. We also offered variety of toys in the dramatic play area related with the theme. We used materials like play dough, construction paper, paints etc. to have them sculpt or draw their favorite horses. My expectation as a teacher at this time was that the children were already starting to collect a great deal of information about horses.

Phase Two

Developing the Project

In the second part of this project we revised and continued to work with the learning web. It became bigger and wider because a lot of ideas emerged during this phase. Also, we planned a field trip to a ranch. Staff, parents and children were all included and were asked to work as a team. Some parents snapped photographs and recorded videos, other parents collected information and materials, while other parents looked after the children. At the ranch, the kids had the opportunity to see more than ten different breeds of horses and be part of their ranch. For a lot of kids this was the first time meeting a horse. During the field site, the children had the opportunity to speak to an expert and had all their questions answered by a professional with plenty of hands-on experience with the animal. The kids also had the chance to walk around the horses' stalls and see and touch more than twenty five artifacts. The children were even fortunate to get on a horse. During the end of our field trip we gathered our things, including some horse objects so we were able to continue working on our project back at the day care. After the field trip, children had mini presentations to show us what they had learned. They presented what they learned through drawings, paintings, play dough sculptures, construction paper projects, and even recreating small ranches with the toy horses and stalls that we had purchased. We also revised the learning web to see which of their questions had been answered and to identify their strengths, skills and knowledge acquired.

Phase Three

Concluding the Project

In the concluding part of the project we organized an open house where we exhibited all the materials, artifacts, children's works, pictures, videos, and recordings we gathered through this project. All the parents were invited and the children had the opportunity to share with them all that they learned in the process of this topic. Children surprised me with their stories because they had learned many new words. They learned the names of the new objects that were related to horses, they learned facts about horses, and new things about the how horses lived. They shared their own stories and experiences. They also demonstrated their work and showed us pictures of themselves at the ranch. Children's observation skills increased as well as their inquiry skills. Their disposition changed in that they are now more willing to ask questions and interact in conversation with adults.

Comments

At the beginning of this process, I had some knowledge about the topic which I thought would be sufficient. But as the project went along, I learned that my knowledge for this animal was minimal. As the kids were getting more involved about this topic, I noticed myself learning along with them. During this whole process, as a teacher, I had the opportunity to increase my teaching skills and abilities. I learned how to better develop a project in a more professional manner, how to choose a topic that was proper for young children, and how to keep the kids interested and motivated in order to work as a team. It was a great topic and, as a teacher, the more meaningful thing for me was the great teamwork the staff, children and parents showed. We really enjoyed working together. Personally, I loved developing this project. I would have liked to have more time to enjoy and collect even more information about the topic. Also, I would have liked to document what the children learned during the process instead of waiting and having them collect and summarized at the last minute.

Children's Questions

1. Where the horses live?
2. How the horses are born?
3. What the horses eat?
4. Who takes care about the horses?
5. How the horses sleep?
6. How the horses take a shower?
7. The horses use shoes?
8. Who teach the horses to dance?
9. What are horses for?

▲ Children came up with a list of questions about horses that they wanted to investigate.

▲ Children were able to ask questions and collect answers on their site visit at the farm.

▲ Children explored the horse stables.

◀ Children were able to manipulate and explore a variety of artifacts related to horse care (horseshoes, types of food, grooming supplies).

Plants Project

A project by children 2-5 years old
Jump Smart Early Learning Academy, Chicago, Illinois
Length of Project: *12 weeks* ***Teachers:*** *DeCarla Burton*

Phase One

Beginning the Project

The Plant Project was teacher initiated and because of the need to expose the children to gardening concepts so they could maintain our outdoor children's garden. We wanted children to understand how plants grow, parts of a plant and how to take care of them. This was a great project because it was hands-on, created family involvement and addressed many of the Illinois Learning standards for science. The project was exciting because there was soil to explore and new science tools for investigation which allowed all ages to participate.

Phase Two

Developing the Project

IThere were not a lot of questions in the beginning, more derived from watching the plants over time. Children wanted to know: How tall is my plant? Why they refused to grow? They compared and recorded growth on graphs and learned how to use scientific tools such as magnifying glasses, eyedroppers, rulers, and tape measures. Other questions were: Where are the roots located? What is the difference between plants that are dead or alive? This provided new opportunities for exploration as we went outdoors to examine living and non-living plants and even nursed a sick plant back to health.

We discovered holes on leaves which entailed problem solving as we investigated insects that ate our plants. Labeling parts of the plant provided a natural way to record information. We created vocabulary cards with important words like absorption and found ways to understand the process by watching plants absorb water. Our field site visit included visiting a community gardening center where each child selected a vegetable to plant.

Phase Three

Concluding the Project

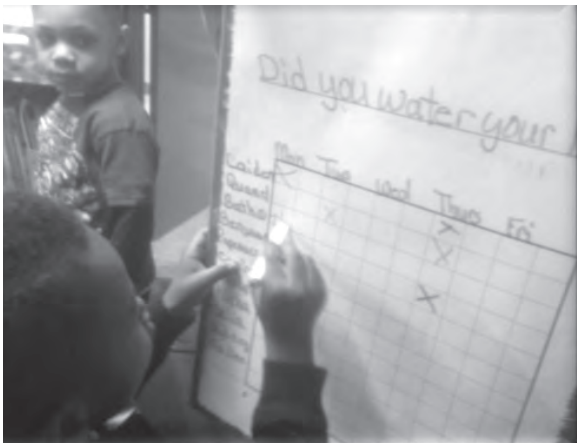
The project continued for several weeks as they journaled the growth of their individual plants, carefully keeping track of how much water and sunlight was required to produce healthy plants. Eventually some grew out of the pots so they were transplanted to larger containers. We harvested our vegetables and made a salad during lunch. I noticed that the children were eager to taste the vegetables because they were vested in the process. Our final culminating event occurred in September as the children picked green and red peppers, bay and basil leaves, and fresh mint for our tea. Parents created delicious meals with their children using the vegetables from the garden and shared pictures with the class.

Comments

The cycle of plants was derived from our STEM project on absorption in which the children compared materials to see how absorption worked. Many other topics can emerge from one project.

▲ Children examined different types of seeds, comparing sizes and shapes.

▲ Children used observational drawings of seeds to practice writings skills.



▲ Children recorded on a daily log of watering their plants to track the amount of water.

▲ Children learned to use scientific tools to investigate their plants.

Children's Questions:

- *What do plants look like when they are dead?*
- *How can you tell if they are alive?*
- *What causes plants to die?*
- *How tall will my plant be?*
- *Where are the roots?*

◀ Children's questions we investigated during the Plant Project to find out the answers.

Playhouse Project

A project by children 3 – 12 years old
Wee Are the World Home Day Care, Calumet City, Illinois
Length of Project: *4 months* ***Teachers:*** *Patricia Twymon, Steven Twymon, and JoeAnn Hunter*
Participated in Program: 2008 – 2009

Phase One

Beginning the Project

This topic was chosen as a result of the children's interest in building and repairing in our pretend areas. On my first day of class, I was given the opportunity to walk through the museum. One of the hands-on exhibits was a house in need of repair. This is when the idea of building a playhouse started. During our circle time, I brought up several topics that might be of interest to the children. They told me right a way that this was the project they wanted to do. Our focusing events included reading books about different kinds of houses, and house building with different materials. We made a web on the very first day we decided to build a playhouse. Our first web showed the limited knowledge the children had of houses and what it took to build one.

Phase Two

Developing the Project

House Building for Children is a book we found at our local library that gave us an overview of what we would need. Mr. Tony Bradley was our expert and guided and visited us twice a week; we met him in our local home improvement store. We attended a hands-on wood working class at Home Depot where the children built birdhouses. After the class, we were given a guided tour of the store and the children asked questions. Our questions remained the same throughout the project. Because some of our field site visits took place on weekends, the parents made themselves, as well as the children, available. The parents took their own children on field trips to see different structures being built. The children represented their learning in drawings, sculptures made of blocks, paper, and popsicle sticks.

Phase Three

Concluding the Project

Once the door was in place, the children deemed the project finished. When the parents arrived, the children provided them with personal tours. They were able to tell their parents the names of things and what they were used for. Seeing a child correctly using a level that we have had in our play area for years said it all! Our word wall kept the new words the children learned fresh in their minds on a daily basis. The children learned the importance of safety when working with tools. Their vocabulary grew and their knowledge of what materials and tools are needed to build a house.

Comments

This project took on a life of its own. The playhouse was to be a 4' x 4' wood-framed floorless and windowless structure. At the children's request, the playhouse kept growing and growing. Our work had to take place outside, and it was a hot summer. The children's excitement kept this project alive. One of our children was a loner; that same child, who worked so closely with everyone else during this project, is a loner no more. It was a lot of work, but worth it!

▶ Children learned new words related to building a house.

◀▼ Children learned how to use different types of tools and worked together to create a playhouse.

Shoe/Boot Project

A project by children 9 months – 36 months
Never Ending Childcare, Gages Lake, Illinois
Length of Project: *3 months* ***Teachers:*** *Patricia Merchant*

Phase One

Beginning the Project

I selected this topic because the children liked to play with shoes and assorted footwear. They would often try on my shoes. To introduce the topic we read books, sang songs, and I brought out shoes for them to explore. With the help of my parents, I collected about 100 pairs of shoes and boots. When I brought out shoes for them to look at I noticed that they were gravitating mostly to the boots. They were putting on all the boots and leaving shoes like the high heels alone. The children also were touching the bottoms of the shoes a lot. Though their language is limited, I noticed that were wondering about the bottom of the shoes. Some other questions were: Where do shoes come from? Why shoes no fit?

Phase Two

Developing the Project

After the focus became more about boots, I redid my web this time on boots. I thought the children could learn about colors, patterns on boots, the size of boots, and just practice putting boots off and on. I hoped they could learn to cooperate with each other. For our field site we went to Payless and we met Maria, the store manager. Maria took us to the toddler section of the store and she measured each foot. She also gave us a foot sizing chart. One child's foot was measured to be an 8 ½ and his shoes were a 7 ½ so we all helped him pick a new pair of shoes. With the boots we made rubbings on the boot's soles and played matching games with the rubbings. Even the 11 month was putting the boots on. One time, I cut out pieces of cardboard and saw three children working together to put a shoe together. I saw a lot of proud faces when they finished making a shoe.

Phase Three

Concluding the Project

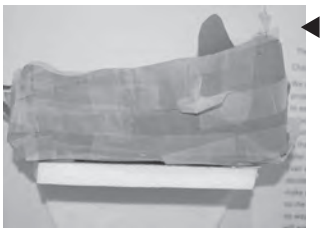
The children learned a lot about boots such as boots are hot, boots keep your feet dry, and more about color and textures. They shared their progress with their parents and showed them their constructed shoe. We also had a shoe party where the children could put shoes on, then step in paint and then walk on giant sheets of paper to make a collaborative art work.

Comments

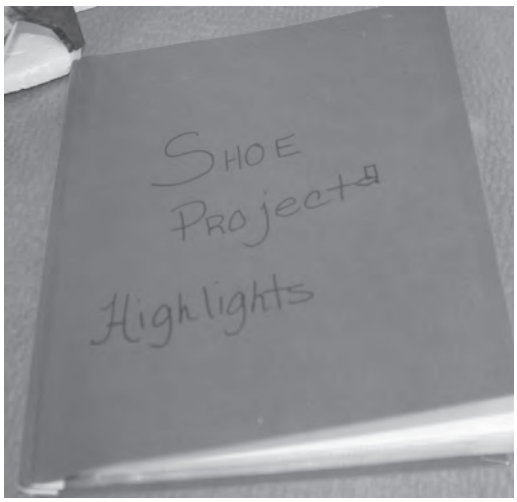
This project was a learning experience for me as well as the children. For me I learned never to assume that 2 ½ year olds are not capable of making artifacts. I assumed it would be too difficult for the kids to construct a shoe so I started piecing the shoe together showing the children how to make a shoe. All I heard was "gimme, me do." I tried to explain that they were too little that this was grown up work, but they had to try. I watched the toddlers work on constructing a shoe. It took over two hours but they did it. It may not be perfect but, golly it looks like a shoe. I think next time I will just set out the materials and let them attempt to construct things on their own. For me I learned that little ones are more capable than most adults give them credit for.

▲ Children looked at different types of shoes and boots and we compared what we saw.

▲ Children put on the boots to explore the different treads.



◀▲ Children worked on constructing a shoe out of cardboard.



▲ To culminate the project we created a Shoe Project Highlights book.

Trees

A project by children 2-4 years old
Hand in Hand Learning Center, Glenview, Illinois
Length of Project: *5 months* ***Teachers:*** *Fran Keffe*

Phase One

Beginning the Project

The topic was initiated as we took an observational nature walk. The children began to observe various trees in the neighborhood. It became apparent that they had an interest as they began to ask questions "What animals live in trees, do trees have flowers, how do they grow?" The children were very enthusiastic about learning the answers to their questions. We then proceeded with a teacher directed conversation about what we know about trees and created our web. Their knowledge was basic, identifying parts, types, leaves, what lives in trees, and life cycle of trees.

Phase Two

Developing the Project

We began our project with observational drawings and the use of manipulatives/ samples of various tree items on loan to us from The Grove, a local nature preserve. The children also had a variety of resource books available to be used for identification and comparison. Story time also centered on a variety of tree books throughout our project. As we proceeded it became apparent the children were focusing on the parts of the tree. We investigated each part through various projects, making a painted mural using various leaves, needles, leaf rubbings, making our "kid tree", planting and graphing our seeds and their growth, making leaf collages, creating leaf people, and making paper bag trees. During various tree exploration walks at the nature center and The Grove, the children experienced seasonal changes, various sizes and shapes of trees, holes in the trees, different types of seeds and various animal inhabitants. All of these observations developed further learning as well as questions for our specialist from The Grove who visited our facility to answer our questions. She brought along visual aids that further reinforced many tree facts.

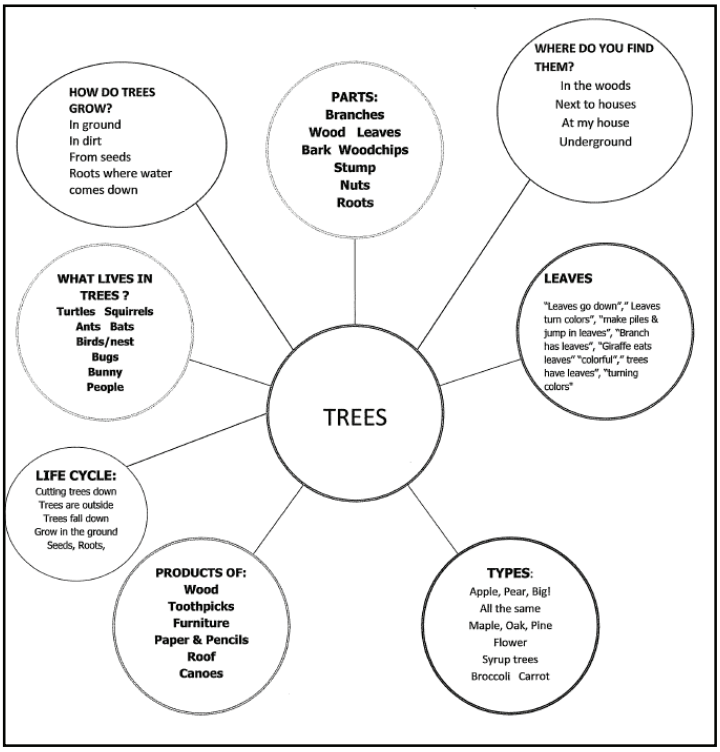
Phase Three

Concluding the Project

There were several culminating events that concluded the project. First the children made a collaborative book by individually illustrating and dictating a page to complete a book entitled Our Tree Story, about a special crystal apple tree. The second project was making their own paper bag trees and adding personalized details using various mediums each adding their own special touches to their trees. During this project it was noted that the children were able to identify easily the parts of the tree. They then picked a season and decorated their trees for that season. Finally parents became involved as we asked them to take pictures of trees at their homes. This is an ongoing project as the children are now drawing their interpretation from the photo and we will compile a book with their photos and drawings. The children learned the parts of the trees and details about the parts, roots water the tree, stumps tells the age of a tree with the rings, trunks are different sizes, and there are different kinds of trees. Bark protects the trees; trees grow from seeds, branches grow from the trunk and buds form on branches and turn into flowers, leaves. Trees change with the seasons.

Comments

Reflecting on this project it was a good topic because the subject is a part of their everyday environment and was easily observable. Everyone was able to participate and learn at their own pace and level and finally it was a very visual and tactile subject allowing the younger children to experience learning though the use of their senses. It was rewarding to listen to the children as they readily shared the information they learned with their parents and to see their enthusiasm in sharing their OWN trees.



▲ Children's Web

▲ Children compare and contrast the different nuts and pods from trees.

▲ Children work together to move and explore the trunk and bark of trees

▲ Children sorted and looked at a variety of leaves.

Appendix I

How to Create Thinkers

Judy Harris Helm Ed.D.

Our Nation's Challenges

As the events of September 11, 2001, reminded us, predicting the future is difficult, if not impossible. Our current understanding of what our children, or our nation, will face in the future is limited. We cannot predict what new knowledge, what discoveries, will be needed in medicine, environmental science, education, economics or social relations. But we do know that those who will be responsible for these new discoveries are in our classrooms today. Recent research in neuroscience has shown us that the brain and the capacity of the mind to think are shaped in large part by the thinking that it does. The intellectual capacity (the knowledge, skills, and dispositions) of the decision makers of our future, for a large part, are determined by the experiences we provide them today.

When we observe the teachers whose projects fill this book, we see the impact they can have on the development of not only their children's knowledge and skills but also their curiosity and intellectual dispositions. As Lilian Katz explains, "what teachers do with children all day" can build a solid foundation for the intellectual work our society will need in the future. Teachers can have an enormous impact on the capability of today's children to face their own challenges tomorrow.

Principles for the Discovery of New Knowledge

In a hospital waiting room one day I was browsing through a copy of Science magazine, a publication for scientific researchers, where I came across an editorial by two research physicians, David Paydarfar and William S. Schwartz[1]. They shared their ideas about the processes of creating new knowledge by "asking the right question, pursuing the unknown, making discoveries" and about "boosting the rate and magnitude of discoveries" (Paydarfar & Schwartz, 2001). Their analysis resulted in an "**algorithm for discovery**," five simple principles for creating new knowledge and for creating deep thinkers. What struck me was the similarity between their principles, their algorithm for discovery, which I quote below, and the experiences we advocate for young children when they are engaged in good project work.

> *1. Slow down to explore. Discovery is facilitated by an unhurried attitude. We favor a relaxed yet attentive and prepared state of mind that is free of the checklists, deadlines, and other exigencies of the workday schedule (p.13).*
>
> In the project approach, teachers are encouraged to follow, support, and extend children's interest for as long as they remain reasonably curious about the topic and are developing more questions. Instead of learning about a particular piece of information or knowledge for a week (much of it "presented" by the teacher) then moving on to the next piece, children are encouraged to come up with a list of further questions and then proceed to find the answers. Projects evolve as the children progress and their questions become more focused and in-depth. Projects often last 4-6 weeks or even longer.
>
> *2. Read, but not too much. It is important to master what others have already written. Published works are the forum for scientific discourse and embody the accumulated experience of the research community. But the influence of experts can be powerful and might quash a nascent idea before it can take root (p.13).*
>
> We advocate that young children read books and listen to stories related to their topics to develop background knowledge and build vocabulary; but then we encourage them to engage in firsthand exploration as a way of helping them to learn that they can often find answers to their questions directly, without using books. They learn that knowledge is not only what someone else has already said or done but that they can construct their own knowledge. Literacy skills then become valuable tools for thinking and for checking their thinking with that of others and for representing their findings with words that either they write or dictate to someone who can write for them. In these ways, children create their own books in which they represent their own processing of what they have learned.

3. Pursue quality for its own sake. Time spent refining methods and design is almost always rewarded. Rigorous attention to such details helps to avert the premature rejection or acceptance of hypotheses. Sometimes, in the process of perfecting one's approach, unexpected discoveries can be made (p.13).

During good project work children are encouraged to review their own work and to evaluate their own thinking. For example, we encourage children to sketch and draw relevant objects from observations frequently. We then encourage them to look at the object sketched or drawn and to re-draw it as they learn more about it. Throughout the project, the teacher collects children's successive attempts at drawing, building, or constructing and encourages them to examine the sequence and to talk about additions and changes to the drawings or constructions from the first one to the successive ones. The teacher also engages the children in discussions of how the drawings changed and what they did differently or wanted to do better, and what they think remains to be learned. Children also are encouraged to help each other by giving advice and suggestions on what to add to their representations or how they might refine their questions.

4. Look at the raw data. There is no substitute for viewing the data at first hand. Take a seat at the bedside and interview the patient yourself; watch the oscilloscope trace; inspect the gel while still wet (p. 13).

We encourage children to develop the habit of gathering data by using interviews, surveys, and tally sheets to record their observations (even 3-year olds can do tally sheets). In other words, projects provide contexts in which young children develop their disposition to seek information for themselves, and then to record it and process it. For example, while studying farm machinery, children found out how many wheels each machine had by counting them and making tally graphs.

5. Cultivate smart friends. Sharing with a buddy can sharpen critical thinking and spark new insights (p. 13).

Projects are collaborative experiences - usually children work in groups based on their interests. They learn to work together towards a goal and to appreciate the unique gifts of each of the children in their class.

Paydarfar and Schwartz (2001) hoped that their essay could "serve as an inspiration for reclaiming the process of discovery and making it a part of the daily routine" (p.13).

Preparing children for the future

In participating in Kohl Children's Museum of Greater Chicago's Early Childhood Connections project as a consultant and trainer, I hope that teachers will be inspired to do good project work with children. It is in the best interest of this nation that all children, regardless of what is happening in their lives today, develop academic skills, intellectual dispositions, and confidence in their own ability to discover new knowledge. I hope that teachers will be inspired to provide rich, meaningful project work where children have an opportunity to think, create, problem solve and work with others. If they can learn to do that well, it may be the greatest preparation we can give them for the challenges they will face in our complex future.

Parts of this article are adapted from Helm, J. & Beneke, S. *The Power of Projects: Meeting Contemporary Challenges in Early Childhood Classrooms – Strategies and Solutions*. Teachers College Press, Columbia University, New York, 2002.

Appendix II

Resources on the Project Approach

Compiled by Judy Harris Helm & Rebecca Wilson, Best Practices, Inc.

Getting Started: *Books that provide rationale and guide implementation*

Helm, J., and Katz, L. (2016) Third Edition. *Young Investigators: The Project Approach in the Early Years*. New York: Teachers College Press. Provides a step by step guide for implementing projects with children who are not yet proficient in reading and writing – toddlers through first grade. Includes a planning journal for recording guiding planning and also for documenation. A good first book for teachers of children in the early years. Video: *A Children's Journey: Investigating the Fire Truck* encourages teachers to try projects by showing a simple project from beginning to end in a preschool classroom.

Helm. J. (2016) Becoming Young Thinkers: Deep Project Work in the Classroom. New York.: Teachers College Press. Helm provides specific strategies for deepening project work, including how to select meaningful topics, plan for projects, integrate standards (including the Common Core), support children's questioning, create provocations to promote engagement, and help children represent their ideas. This practical resource will extend practitioners' knowledge about project-based learning so they can move beyond the basics to create project work that is more engaging, meaningful, and productive.

Katz, L., and Chard, S. (2000) *Engaging Children's Minds: The Project Approach. Second Edition,* Norwood, NJ, Ablex Publishing Corporation. Updated second edition of *the classic* on projects, provides rationale for project work and many project descriptions.

Helm, J., and Beneke, S. Ed. (2002) *The Power of Projects: Meeting Contemporary Challenges in Early Childhood Classrooms, Strategies and Solutions*. New York: Teachers College Press. This edited book shows how good project work can help teachers meet challenges and also provides strategies for maximizing project work for reducing effects of poverty, helping children learn a second language, supporting children with special needs, incorporating standards, and moving children towards literacy. Each chapter has a project from a classroom which illustrates the strategies recommended.

Chard, S. (1998) *The Project Approach: A Practical Guide I,* New York, NY: Scholastic Inc.

Chard, S. (1998) *The Project Approach: A Practical Guide 2,* New York, NY: Scholastic Inc.

These two books answer practical questions about implementing project work in primary and elementary classrooms. Excellent resource for incorporating curriculum goals.

Helm, J., Berg, S., and Scranton, P. (2004) *Teaching Your Child to Love Learning: A Guide to Doing Projects at Home*. New York: Teachers College Press. Written for parents who are readers, this book explains the importance of active, engaged meaningful learning experiences and how to do projects at home. Especially helpful also for home child care providers or home schooling.

Helm, J., Berg, S., Scranton, P., and Wilson, R. (2005) *Teaching Parents to Do Projects at Home: A Tool Kit for Parent Teachers*. New York: Teachers College Press. This book and CD can be used as an accompaniment to *Teaching Your Child to Love Learning* for book study groups or as a stand alone workshop series for parent education programs. The CD provides everything needed to conduct a series of workshops including PowerPoint presentations, handouts and planning journals in English and Spanish. Information is provided for adaptation for family literacy programs, home visiting programs, Head Start programs and library programs.

Other Ways of Doing Projects: *There are other ways of doing projects with young children. These books explore the projects of the schools of Reggio Emilia, Italy*

Hendricks, J.(Ed.) (1996) *First Steps Toward Teaching the Reggio Way.* Upper Saddle River, NJ: Prentice Hall.

Edwards, C., Gandini, L., and Forman, G. (1998) *The Hundred Languages of Children, 2nd Edition*. Norwood, NJ, Ablex Publishing Corporation.

Learning from Others: *The best way to learn how to guide projects is to do it with children. The next best way is to study the work of other teachers and the projects of their children. These publications provide many project descriptions. These resources can be accessed through the* ***Early Childhood and Parenting (ECAP) Collaborative*** *at the University of Illinois.* ***http://ecap.crc.uiuc.edu/***

Beneke, S. (1998) *Rearview Mirror: Reflections on a Preschool Car Project.* An excellent example of an in-depth project in an American school. Shows the growth of one child and a wonderful example of a social problem solving sequence. Good for discussion of teacher decision-making during project work. Video: A video is also available which also has Lilian Katz and Sallee Beneke discussing the project approach.

Helm, J. Ed. (1996, 1998, 2000, 2002) *The Project Catalogs. These catalogs are issued in conjunction with major project exhibits at the NAEYC annual conference. Included in each catalog are the descriptions of every project exhibited and articles about implementation issues. Some of these are on the ECAP site and can be printed, others are still for sale.*

Illinois Early Learning Project. Classroom videos filmed at child care centers at a public university and at a community college that used the project approach as part of their curricula. *http://illinoisearlylearning.org/videos/*

Listserv – The Project Approach Listserv discussion group can be accessed from this site. *http://ecap.crc.uiuc.edu/listserv/projec-l.html*

The Project Approach Website operated by Sylvia Chard. *http://www.projectapproach.org/*

ECRP – *Early Childhood Research and Practice* – Online Journal. This online journal has articles of good project work from diverse settings. Teachers can also be encouraged to submit articles. ECRP is now available in Spanish. Articles may be printed or saved and shared with staff and during training experiences. *http://ecrp.uiuc.edu/*

Learning How to Document: *An important part of project work is the documentation of children's work. These publications are helpful for learning what to observe and collect and how to share it.*

Helm, J., Beneke, S., and Steinheimer, K. (2007) *Documenting Young Children's Work: Windows on Learning.* New York: Teachers College Press. A basic introduction to the process of documentation including portfolio use – new edition.

Helm, J., and Helm, A. (2006) *Building Support for Your School,* New York: Teachers College Press. How to use documentation to share the power of your project work with others.

Appendix III

List of Contributing Teachers

Alvarez, Erica, Hitch Elementary School, Chicago, IL, 100
Arnold, Faith, Sun Children's Home Childcare, Bellwood, IL, 126
Ashley, Alyssa, Beyond Your Dreams Daycare, Gurnee, IL, 140
Barajas, Mariza, Eyes on the Future, Chicago, IL, 24
Barrera, Maretzy, De la Cruz School, Chicago, IL, 40
Bell, Anthony, Laurance Armour Day School, Chicago, IL,16, 28
Buhrmester, Pam, Greenwood Elementary, Waukegan, IL, 122
Burton, DeCarla, Ms. "D's" Jump Smart Early Learning Academy, Chicago, IL, 136, 144
Butcher, Debbie, Evanston Day Nursery, Evanston, IL, 14
Caballero, Theresa, Easter Seals Gilchrist Marchman, Chicago, IL, 2
Carrillo, L., Belmont-Cragin Early Childhood Center, Chicago, IL, 51
Cervantes-Garza, Mrs., Von Humboldt Child Parent Center, Chicago, IL, 70
Chavez, Donna, Paul K. Kennedy Child Care Center, North Chicago, IL, 18
Chekos, Tammy, Childcare Center of Evanston, Evanston, IL, 6
Crawford, Danisha, Sun Children's Home Childcare, Bellwood, IL, 126
Cwikla, Danielle, Raymond Ellis Elementary, Round Lake Beach, IL, 124
Dixon-Zollicoffer, Alice, Our Little Playland Family Childcare, Hillside, IL, 134
Dressler, Cynthia, John Hay Academy, Chicago, IL, 38,58
DuBois, Mary Bell, George Manierre School, Chicago, IL, 96
Duran, Sandra, Eyes on the Future, Chicago, IL, 24
Enright, Pamela, Yeager School, North Chicago, IL, 62
Falls, Alicia, Beyond Your Dreams Daycare, Gurnee, IL, 140
Fernandez, Mrs., De la Cruz School, Chicago, IL, 40
Fielding, A., Belmont-Cragin Early Childhood Center, Chicago, IL, 51
Frasor, Jenna, Whistler Elementary, Chicago, IL, 106
Gallegos, Alicia, Walt Whitman Elementary, Wheeling, IL, 118
Gawlick, Amy, Solomon School, Chicago, IL, 84
Gilfillian, Jacqueline, McPherson School, Chicago, IL, 68
Goers, Kathy, Raymond Ellis Elementary, Round Lake Beach, IL, 124
Gordon, Ellen, Cooke Magnet School, Waukegan, IL, 108
Grimes, Melody, South Loop School, Chicago, IL, 92
Guerrero, Annette, McKinley Park Elementary School, Chicago, IL, 34
Guzman, Mrs., McPherson School, Chicago, IL, 57
Healy, Barbara, H. B. Stowe Academy, Chicago, IL, 44
Hernandez, Maria, Meriyen's Day Care, Chicago, IL, 142
Herrejon, Norma, Beyond Your Dreams Daycare, Gurnee, IL, 140
Herrera, Gaby, Cherished Children, Calumet City, IL, 36
Herrera, Lisbeth, New Field School, Chicago, IL, 42
Huber, Julie, H.R. McCall School, Waukegan, IL, 102
Hunter, JoeAnn, Wee Are the World Home Day Care, Calumet City, IL, 146
Jones, Annie, Laurance Armour Day School, Chicago, IL, 16, 28
Jones, Connie, Paul K. Kennedy Child Care Center, North Chicago, IL, 18
Kalousek, J., Belmont-Cragin Early Childhood Center, Chicago, IL, 51
Keffe, Fran, Hand in Hand Learning Center, Glenview, IL, 150
Kelley, Virginia, Yeager School, North Chicago, IL, 76
Keuler, Katie, West Ridge Elementary, Chicago, IL, 97
Klein, Alanda, Cherished Children, Calumet City, IL, 36
Klinger, Karen, Cherished Children Early Learning Center, Mundelein, IL, 26
Kolack, Lauren, Erie Neighborhood House, Chicago, IL, 32
Kraft, Linda, Hand in Hand Learning Center, Glenview, IL, 130
Kuhlman, Ann, Gladstone Elementary School, Chicago, IL, 90
Landrus, Winona Kay, Little Fort Elementary School, Waukegan, IL, 120
Lane-Baker, Stephanie, Evanston Day Nursery, Evanston, IL, 14
Lanier, Mo, Cherished Children Early Learning Center, Mundelein, IL, 12
Lennert, Sarah, Hand in Hand Learning Center, Glenview, IL, 130
Loechelt, Lauren, Paul K. Kennedy Child Care Center, North Chicago, IL, 18
Lopardo, Cyndi, Onahan School, Chicago, IL, 55, 60
Mack, Cathy, Martin School, Lake Villa, IL, 114
Makovec, Ms., Hitch School, Chicago, IL, 94
Mata, Elvira, Laurance Armour Day School, Chicago, IL,16, 28
McClinton, Elizabeth, Paul K. Kennedy Child Care Center, North Chicago, IL, 20
McReynolds, Karla, Stockton School, Chicago, IL, 77
Merchant, Patricya, Never Ending Childcare, Inc., Gages Lake, IL, 138, 148
Nehring, Amanda, Cotton Creek School, Island Lake, IL, 104
Obermeier, Ashley, Cotton Creek School, Island Lake, IL, 104
Ocasio, Wanda, Goethe Elementary School, Chicago, IL, 64
O'Hearn, Becky, Farnsworth School, Chicago, IL, 74
Ornstein, Clarese, Early Education Center, Round Lake, IL, 88
Orozco, Susan, New Field School, Chicago, IL, 86
Pace, Lolita, Ms. "D's" Jump Smart Early Learning Academy, Chicago, IL, 136
Pearson, Ruth, Ravenswood Community Child Care Center, Chicago, IL, 8
Perez, Carmen, John Hay Academy, Chicago, IL, 58
Perkins, Chelo, Oak Terrace School, Highwood, IL, 116
Quiroz, Alicia, Willard School, Evanston, IL, 99
Ramirez, Nicole, Child Care Center of Evanston, Evanston, IL, 10
Rappelt, Ann, Child Care Center of Evanston, Evanston, IL, 10
Roberts, Kirstin, Belmont-Cragin Early Childhood Center, Chicago, IL, 53
Rodriguez, Imelda, Imelda's Home Daycare, Chicago, IL, 132
Rodriguez, Jeanette, The Little Scholars Club, Chicago, IL, 4
Rojas, Jaime, Little Fort School, Waukegan, IL, 112
Ruesch, Jennifer, Newport Elementary, Wadsworth, IL, 82
Rust, Lauren, Hand in Hand Learning Center, Glenview, IL, 130
Ryan, Laura, Farnsworth School, Chicago, IL, 74
Santillan, Sandra, Onahan School, Chicago, IL, 55, 60
Schiavinato-Manley, Roberta, Walt Whitman School, Wheeling, IL, 78
Schreiber, Marie, College of Lake County Lakeshore Children's Learning Center, Waukegan, IL, 22
Scurry, Deana, Child Care Center of Evanston, Evanston, IL, 30
Sera, Michele, Murphy School, Chicago, IL, 49
Serrano-Melendez, Yadira, Paul K. Kennedy Child Care Center, North Chicago, IL, 20
Shields, Laurie, H.R. McCall School, Waukegan, IL, 102
Shimkos, Karina, Rudolph Learning Center, Chicago, IL, 110
Smith, Bethanie, McKinley Park Elementary School, Chicago, IL, 34
Southard, Sharon, Cherished Children Early Learning Center, Mundelein, IL, 12
Stith, Emily, Green Bay School, Highland Park, IL, 47
Stone, Dionne, Paul K. Kennedy Child Care Center, North Chicago, IL, 20
Timms, Erica, Paul K. Kennedy Child Care Center, North Chicago, IL, 18
Torres, Maria, Willard School, Evanston, IL, 99
Torres, Rosaura, McPherson School, Chicago, IL, 57
Twymon, Patricia, Wee Are the World Home Day Care, Calumet City, IL, 146
Twymon, Steven, Wee Are the World Home Day Care, Calumet City, IL, 146
Verstraete, Krystal, James G. Blaine Elementary, Chicago, IL, 80
Vesa, Mirela, Green Bay School, Highland Park, IL, 47
Virella, Elizabeth, Murphy School, Chicago, IL, 49
Wagner, Kristy, Cherished Children Early Learning Center, Mundelein, IL, 26
Webster, DeShonda, Laurance Armour Day School, Chicago, IL, 28
Williams, Gabriel, Laurance Armour Day School, Chicago, IL, 16
Williams, Ruby, Ruby's Little Angels Day Care, Chicago, IL, 128
Yost, Rhonda, Home Project, Des Plaines, IL, 45, 66
Zavacki, Daria, Von Humboldt Child Parent Center, Chicago, IL, 70

Appendix IV

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Mission Statement

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to build a foundation for a lifetime of learning.

It's important for us to be good stewards of the environment in order to maintain a world that our children can enjoy for many years to come. As a silver-level LEED (Leadership in Energy and Environmental Design) certified building, Kohl Children's Museum has created an environmentally friendly, energy-efficient facility and is committed to using earth-friendly materials.

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