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What Happens at a Car Wash?

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Abstract

A class of 3- to 5-year-old children in a child care center in the midwestern United States chose to study a car wash as a group project. This article discusses how the project evolved, describes the three phases of the project, and provides the teachers' reflections on the project. Photos taken during the project and children's sketches are included.

School and Student Background Information

Illinois State University (ISU) Child Care Center, the program described in this article, serves 3- to 5-year-old children of ISU students and ISU faculty and staff in a full-day setting. The Project Approach is used as the basis of curriculum in this classroom. We began using the Project Approach in our mixed-age classroom in 1996.

Classroom enrollment at the Child Care Center is typically 20-25 children each semester. Three team teachers collaborate with teacher aides, who are Illinois State University students from a variety of campus departments. The teachers who participated in the project "What Happens at a Car Wash?" were Barb Gallick, Pam Morbitzer, and Lisa Lee.

During this particular semester, our class consisted of 18 children. The majority of children attended for the full day, 5 days a week. Half of the children had attended the child care center the previous semester and had experienced project work during that time. Eight girls and 10 boys were enrolled at the time of this project. At the beginning of the project (in September), we had six 3-year-old children, ten 4-year-old children, and two 5-year-old children. Four children celebrated birthdays over the course of the semester. The youngest child at the beginning of the project was 3 years, 3 months. The oldest child at the beginning of the project was 5 years, 8 months. Over the course of the project, one 4-year-old girl left the program.

Preliminary Planning and Selection of the Topic

At the beginning of the semester, the children and teachers spent time getting to know each other. The children explored the wide variety of equipment and materials in our classroom. The teachers began to observe and listen as friendships were formed and themed play began to emerge.

The teachers noticed a few recurring topics in both themed play and the toys that children played with regularly. These included cars, car washes, firefighters, hair styling, and babies. At our regular weekly planning meeting, we discussed and analyzed each topic using the following criteria or questions:

- Are there appropriate field sites within walking distance or easily accessible using the city bus? (We do not have our own transportation.)
- How many children have actually been involved in play related to each topic?
- Was this topic worthy of the children's time and energy?
- Would this topic be of interest to both boys and girls?
- Which topic that we had not explored as a project with this or other classes did the teachers find most interesting?

After reviewing the proposed topics, the teachers decided to discuss car washes with the children and begin project work around this topic. We felt that we had a working understanding of what happens in a car wash, and we were intrigued with the idea of learning more, along with the children, about the machinery and the parts of a car wash that are not visible to customers.

Phase 1: Beginning the Project

Phase 1 sometimes includes discussing experiences, sharing knowledge, wondering out loud, raising questions, and preparing letters to parents.

Recalling Car Wash Experiences

Every morning in our program, the children and teachers gather for morning meeting—a time when we discuss the current project, share information about the project, and plan that day's work. During one morning meeting, Pam, one of the teachers, shared a story about washing her car over the weekend. The teachers invited the children to tell us about times that they had gone to a car wash. Many of the children also shared stories about washing their car. The children talked about the car wash you drive through, the car wash you do yourself, and washing cars at home.

The teachers offered to record car wash stories to use to create a class book. After morning meeting, the teachers talked individually with children about their car wash stories. The teachers wrote down each car wash story and later typed the stories on the computer. For example, Joseph (4 years, 7 months) dictated a story about a visit to a car wash: "My Mommy took me to a car wash. She didn't crash into the car wash. The worker washed our car. We got to stay in the car. We washed mommy's car, grandma's car, and Tee Tee's car." Angie (4 years, 2 months) told about washing the family car at home: "We wash our car at my house. Daddy washed my car, and sometimes I help him. We do it when the car is really dirty." Once the stories were printed, the children were encouraged to illustrate their page for the class book (Figures 1-3). This process took several days.

Figure 1. Joseph illustrates the printed version of his car wash story to be included in the class book.

Figure 2. Joseph's drawing shows several family members at the car wash.

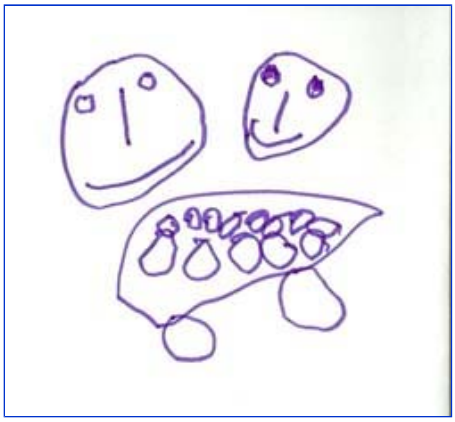

Figure 3. Angie's drawing shows how her family washes the car at home.

After one week of story sharing and car wash discussion, we created an idea web with the children during a morning meeting (Figure 4). We asked the children to tell us everything they knew about car washes. The teachers helped categorize the children's ideas.

Figure 4. The car wash topic web, created by teachers and children, categorizes the children's ideas.

Reflections on Phase 1

As we listened to the children tell stories about their car wash experiences, it became clear that most of the

children were aware of automatic car washes, but they might not have experienced going through one. Many of the children talked about their parents washing their cars at home. Some of the children's comments led us to believe that they were not sure about what really happens in an automatic car wash. Some of the children had created theories to explain the parts of the car wash that they could not see when the windows of their cars were covered with soap. As we reviewed the stories that the children had shared, we were delighted to see that we had recorded detailed stories from children who had previously been more reluctant to voice their ideas or thoughts. Based on these insights, we were convinced that we had chosen a topic that would work well with this group of children.

Phase 2: Developing the Project

Phase 2 can include conducting fieldwork, discussing activities that are occurring in small groups, investigating questions that were formulated in Phase 1, visiting experts, representing information that children learned during their investigations, and creating displays to share their new knowledge.

Planning for Fieldwork

We felt that the children were ready to begin some fieldwork. A car wash located in a gas station was within walking distance of the child care center. Lisa (teacher) visited the station and talked to the manager about allowing the children to do fieldwork at the car wash. Lisa explained that the children wanted to investigate how the car wash worked and that they would have questions that they would like answered during the visit. She told the manager that we would give him the children's questions in advance, so he could prepare.

As the list of children's questions below indicates, a core group of children contributed to this list. Many times during a project, we do find that a small group of children will become leaders in moving the project along.

1. How does the car wash work? (David: 5 years, 8 months)
2. How do those pipes work? Where do they go? (Mark: 3 years, 11 months)
3. Where does the water come out? Are there pipes under the car wash? (Mark)
4. Do you have to clean the car wash? (Joseph)
5. Are there windows at the car wash? (Mark)
6. Is there a pumper machine? Does it make the water spray? (Darin: 4 years, 4 months)
7. Is there a soap river? Where does the soap come from? (Mark)
8. Do you put the soap in pipes? (Mike: 4 years, 7 months)
9. How do you fill up the soap? (Mike)
10. Do you have to wear uniforms? (Mike)
11. Do you close the car wash when it's raining? (David)
12. Do you have machines by the door? (Patrick: 3 years, 10 months)
13. Do you have to have a ticket to pay for your car wash? How do you pay for a car wash? (Darin)
14. Do you give kids lollipops? (Darin)
15. What happens if the car wash breaks down? (Barb: teacher)
16. How much money does it cost for a car wash? (Mike)
17. Are they free? (David)
18. Do they have fish at the car wash? (Heather: 4 years, 10 months)
19. Do you have something to turn on the water? (Joseph asked this question during fieldwork.)

Site Visits

The class visited the Circle K car wash in two small groups on two separate days. The manager, Stephen, arranged for a truck to go through the car wash as the children watched (Figure 5). He took the children inside the car wash, explained how the different parts of the machine worked, answered the children's questions, and showed them the storage room (Figures 6 & 7). The children observed the machinery and the washing process, made sketches, and asked questions (Figures 8-10).

Figure 5. The children and Stephen watch the truck as it goes through the car wash.

Figure 6. Stephen, Barb (teacher), and a group of children investigate the inside of the car wash.

Figure 7. Pam (teacher) and a small group of children watch a car as it goes through the car wash.

Figure 8. Jeff (5 years, 5 months) and Mike sketch parts of the car wash machinery.

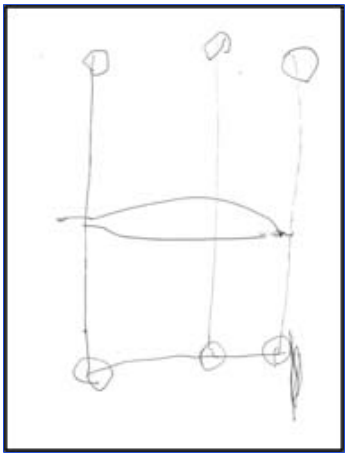

Figure 9. Mike sketched the soap tubes.

Figure 10. Jeff's drawing shows the sign on the car wash advertising the Vortex Dry system.

After each visit, the children shared their observations, thoughts, and details of their fieldwork with the rest of the class. We always include this type of sharing at morning meeting, but we also noticed that the children were "comparing notes" with each other during free play, snack, lunch, and other times throughout the day.

Several children seemed to share an interest in the three different colors of soap and how the soap went through tubing from barrels in the storage closet to the dispenser nozzles on the car wash machine. This subject was something that they compared notes about—whether their classmates had noticed the different colors of soap or not.

When some of the boys built car washes in the block area, they discussed the metal rocker plate that they had observed, located on the floor of the car wash. They talked about how a car's wheel engaged this piece and sent a message to the car wash machine that the car was in the right place and ready to be washed.

The teachers also observed child-to-child discussion about the electronic sign that showed the sequence of each cycle in the car wash process. The children were intrigued by the "Vortex Dry System" step and the tornado symbol used to represent the drying cycle. These features generated a lot of discussion, and the children often included them later in their own car wash designs.

"Thank You" Book

After everyone had visited the car wash, the children dictated memories about their observations to be used in a "Thank You" book for Stephen. Each child also illustrated his or her page for the book (Figures 11-14).

Figure 11. Patrick, Faith (3 years, 11 months), and Megan (3 years, 3 months) work on their pages for the "Thank You" book.

Figure 12. "Thank You for showing us the water that washes the soap off." Patrick

Figure 13. "The car moved in there, and then it sprayed water out again." Faith

Figure 14. "Thank you for showing us where the soap comes out." Megan

When the book was finished, the teachers shared it with the children at morning meeting. Delivering the book to Stephen was then offered as an option for children to choose during project/activity time. Five children chose to help deliver the book, and they walked with a teacher to Circle K to take the book to Stephen. He was excited to see the children, and he looked through the book with them.

Representing Knowledge Gained through Fieldwork

The children continued to be excited about the car wash topic. The knowledge gained through fieldwork inspired car wash construction play for many days in the block area. For example, Darin made a road leading to his unit block car wash. The block on top was the car wash machine that moved back and forth to wash the car (Figures 15 & 16). As David played with the car wash with his classmates, he realized that the machine to put the money in was missing. He added this feature and demonstrated how cars stop there first (Figure 17).

Figure 15. Darin takes a toy truck through his unit block car wash.

Figure 16. A close-up view of Darin's car wash shows his use of a variety of blocks.

Figure 17. A child stops his truck at the machine to pay for the car wash.

Scott (4 years, 4 months) built a do-it-yourself sprayer type car wash from unit blocks (Figure 18).

Figure 18. Scott's unit block car wash calls for a design different from Darin's.

The children enjoyed playing with car washes that their classmates built. The designs continued to evolve; for example, Jeff and Patrick added numerous "pay machines" to Darin's car wash (Figure 19).

Figure 19. A group of boys use Darin's car wash.

Many children worked together using large outdoor blocks to create a "car playground," which included a car wash (Figures 20 & 21). Planks as well as hollow blocks and ramps were used to make the playground and the car wash.

Figure 20. Heather and Karen (3 years, 9 months) push vehicles through the car wash section of their car playground.

Figure 21. Todd (4 years, 5 months) has joined Heather and Karen; he is holding a car at the top of a ramp.

While observing the children building car washes, the teachers thought about another way that the children might be able to represent their learning. At morning meeting, we brought up the idea of using shoe boxes and other materials to build car wash models. The children enthusiastically embraced this project. The teachers put a note on the parent table asking for donations of shoe boxes.

While the children waited for us to collect boxes, some of them created construction plans. The children focused on a variety of details in their planning. For example, Mark's plan was that "when the signs move, it makes the

water spray down on the car" (Figure 22). When a teacher asked Megan, "What are you going to put in your car wash?", she replied, "Soap, water, blow dryers" (Figure 23).

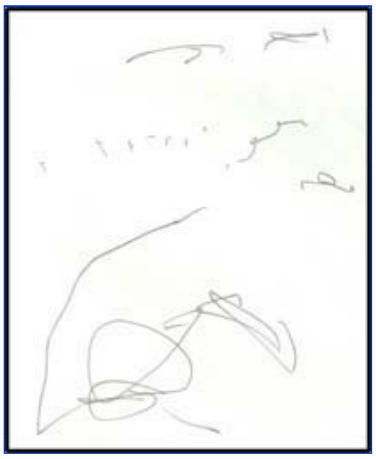

Figure 22. Mark's shoe box car wash plan indicates that "when the signs move, it makes the water spray down on the car."

Figure 23. Megan's plan shows "soap, water, blow dryers" that will be part of her shoe box car wash.

Constructing Models of Car Washes

When some shoe boxes became available, the children began working on their car wash models. This process took about 3 weeks, with a few children at a time working on their individual models. In the end, 13 of the children constructed a car wash model. The children used a variety of materials including shoe boxes and lids, Kleenex boxes, craft sticks, tongue depressors, colored match sticks, foam shapes, paper, markers, glue, glue sticks, colored masking tape, small plastic lids or caps, toilet paper tubes, construction paper, tag board, Easter grass, scissors, crayons, drinking straws, and tempera paint.

Each day at morning meeting, the children shared their car wash constructions. Some days, other children or the teachers provided suggestions about construction techniques or ideas about things to add to each car wash. As construction continued, the teachers observed children adapting and using ideas that they had seen on other classmates' car wash models. The teachers made photos from our fieldwork available every day for the children to reference. Many children carefully studied the pictures as they made decisions about which parts of the car wash they wanted to include in their models.

From the beginning, the children showed a high interest in representing the car wash machinery that moved back and forth over the vehicle. Every child who constructed a car wash represented this part of the car wash. In the children's models, the machine became a moving archway (Figures 24 & 25).

Figure 24. The archway in this car wash model has been constructed of cardboard and tongue depressors.

Figure 25. Toilet paper tubes and cardboard from the shoe box lid are the main structural components of the archway in this model.

As the car wash model construction progressed, the children put a great deal of effort into figuring out ways to move the archway; their goal was to be able to play with the models using Hot Wheels and other small vehicles. Some of the children constructed models that required the child to hold the archway at the top and move it back and forth. Many children cut slits in their shoe boxes to accommodate craft sticks that could be used to move the archway over cars being washed (Figures 26-28).

Figure 26. To "wash" a car with this model, the user grasps the top of the archway and slides it

back and forth.

Figures 27 & 28. These are two of several models in which slits cut in the shoe box sides accommodate craft sticks, which can be used to move the archway.

Joseph was the first of the children to build a replica of the water sprayer for his car wash. After noticing that he included this feature in his design, many other children added sprayers to their car washes. Joseph described his car wash this way: “We had to make it straight. I have a water sprayer. The car wash machine goes back and forth. I colored it. I had a green light and a red light. The lights tell when the car is done. The lights go off, and the truck goes because it’s clean. It costs $46.00” (Figures 29 & 30).

Figure 29. The red, orange, and green object is Joseph’s replica of the water sprayer.

Figure 30. Joseph washes a toy fire truck immediately after finishing his car wash model.

Other children incorporated Joseph's water sprayer idea into their models (Figure 31).

Figure 31. Heather's model also features water sprayers.

Karen began her car wash construction by attaching doors to the entrance and exit. She remembered Stephen, the car wash manager, talking about how they closed the doors when it's cold outside so the water would not freeze. After cutting doors out of her shoe box, she decided to reattach the doors. Typically during project construction activities, the teachers put out a variety of materials including Scotch® tape, masking tape, and clear packing tape. Karen was familiar with using clear packing tape from her work in past projects, and she chose it to serve as hinges to attach working doors to her car wash model (Figure 32).

Figure 32. Working doors on Karen's car wash model are based on the car wash manager's statement that car wash doors are closed during cold weather to keep the water from freezing.

Karen and many of the children used Hot Wheels type cars when playing with their car wash models. When her model was complete, Karen dictated this description: "I just was making some beads. The car drives on the beads. The machine goes back and forth. The doors open and close. I close the doors in the winter. It costs $3.00." The teachers speculated that the "beads" Karen described were purple pieces of paper that she had

glued to the bottom of the box, which seemed to represent part of the guide rails in the real car wash (Figure 33). Perhaps Karen did not pick up on the term “guide rail” and described this part of the car wash using terms that made sense to her. The guide rails in many car wash models were represented by drinking straws.

Figure 33. Karen’s completed car wash model includes paper “beads.”

Vera was one of the last children to create a car wash model; she had been observing her friends’ construction processes and looking at each of the models that they shared at morning meetings. She also looked at the photos of the car wash prior to starting her own construction. She continued to look at photos as she was building her model. She sometimes walked over to the car wash model display area to refresh her memory and consider what she wanted to include in her model (Figure 34). She added many details, including green and red lights on the inside and outside, a pay machine, soap and water dispensers, and grass along the outside of the car wash.

Figure 34. Vera works on her car wash.

Later, Vera described her model: “You can come in. Tell me if my car wash is broken. If it’s broken, you can’t come in. It has grass, a machine with soap and water and doors that open and close. It costs $18.00” (Figure 35).

Figure 35. Vera's completed model includes "a machine with soap and water."

David began by drawing most of the details in his shoe box car wash model with crayons, but he decided to "build" some of the details and draw others after looking at models made by Patrick, Todd, and Heather (Figure 36). He later described his model: "My car wash has blow dryers on it. It has red and green lights inside to tell the car if it can go or not. It has a thing to tell what the cycles are. It has a payer on the outside. The lights on the outside tell the car whether it can go in or out. The yellow thing is where the wheel pushes it down to let the car wash know to go. It costs $14.00" (Figure 37).

Figure 36. David explains to Barb (teacher) that he wants to make most of the details on his car wash model with crayons.

Figure 37. David's completed model includes such 3-dimensional features as blow dryers, red and green lights, and a payment machine.

Themed Play about the Car Wash

As the project began to reach an end, the teachers noted that the children were still interested in using their car wash models for play with Hot Wheel cars and other small vehicle toys (Figure 38).

Figure 38. A child moves a miniature car to her

completed shoe box car wash model.

One day, in the block area, Scott, David, and Karen, the director of the Child Care Center, created different types of car washes using their bodies. They took turns pretending to be cars going through the car wash. Sometimes they made an arch with their arms to move around the car as in a car wash that sprayed and operated automatically. At other times, they pretended to be manual washers, being sure to clean headlights, taillights, the roof, and hood of the car with cloths (Figures 39-41).

Figure 39. Two children and the center director take turns being the car that was washed.

Figure 40. The "car" goes through the automatic car wash.

Figure 41. The "car" is cleaned and dried manually.

Throughout this play, the children talked about the sequence of going through a car wash.

Throughout Phase 2 of the car wash project, we thought that the children's questions showed a keen interest in the "behind the scenes" portions of the car wash and the details of how the machinery worked. Later, when they constructed the car wash models, we saw the same details emerging in their work.

These same details began to show up in the car wash themed play that took place in both the indoor and outdoor classroom. We were pleasantly surprised to see how many details the children remembered and how easily they incorporated this new knowledge into their play.

Reflections on Phase 2

Throughout Phase 2, the children spent a lot of time discussing their model constructions and receiving feedback from each other. The teachers encouraged these supportive interactions. We observed that many of the children who were not as engaged in the topic at the beginning of the project developed a stronger interest because of the enthusiasm of their peers.

One of the biggest challenges that the children seemed to face during the process of making representations of the car wash was getting the details right. The teachers observed much discussion among the children about which parts they still needed to add (such as the pay machine). Different children remembered different features, and discussion included comments and questions such as, “Oh, you still need to add a pay machine to your car wash.” and “How did you make the machine that moves over the top of the car?”

We found that having detailed photos of all the different parts of the car wash, especially the sections that the children asked the most questions about, provided significant support as they constructed their models. Being able to revisit the car wash through the photos encouraged the children as they explored ways to represent the different parts of the car wash machine. Taking good photos while we are doing fieldwork is important because we are not always able to revisit the field site in person. We have learned that it is important to photograph the children interacting with the fieldwork expert but also to take detailed close-up photos of objects the children see during the field experience.

The teachers also noticed that the children learned and used a number of new vocabulary words during Phase 2 of the project—tubing; sequence; stages; automatic; Vortex Dry System; spinning sprayers; pay machine; entrance; exit; blow dryers; cycles; drain; grate; sensor; quarters (coins); rinse; machine; rails; red, green, and yellow lights; pink, blue, and green soap; flashing lights; tornado; and bubbles.

Phase 3: Bringing the Project to a Close

Phase 3 can include a culminating event, collaborative evaluation, further activities related to the topic, discussions around planning a culminating event, discussions about future projects, setting up displays for parents and other pertinent people to view, and soliciting comments from parents.

Planning the Car Wash Museum

The teachers talked to the children about culminating our project. We told the children that we wanted to find a way to share what we had learned with other people. David suggested that we put the car wash models in a museum. The teachers said that no museums had asked for the car wash models, but that we could create our own car wash museum in the dramatic play area. Heather said we should make some invitations so other people could come see our car washes.

As part of the decision-making process, the teachers helped make a list of ways that the children thought we could share our car washes. The choices were to make a museum, make invitations, display the car washes around our classroom, make a poster, or write a letter. During the discussion of all the different choices, the children seemed to focus most on the idea of creating a car wash museum. The teachers felt that a car wash museum would provide an opportunity for the children to summarize their learning as well as showcase their representational work.

After the decision was made, the children and teachers assembled a list during morning meeting of what needed to be done to create a car wash museum. The list included rearranging the dramatic play area, removing toys and equipment that would not be found in a museum, making a sign for the museum, writing descriptions of the car wash models to include in the display, creating invitations to the museum event, and posting the invitations for parents.

Each day at morning meeting, we discussed which items on the list we would work on during activity/project time. The children then volunteered to help with the “jobs” that interested them. Some children moved

equipment and furniture in the dramatic play area (Figure 42). Others helped to create display space for the car wash models (Figure 43). Patrick wrote the words “Car Wash Museum” very large in pencil on poster-size paper, then painted the sign (Figure 44). Heather and Mark drew representations of cars along the bottom of the sign for decoration (Figure 45).

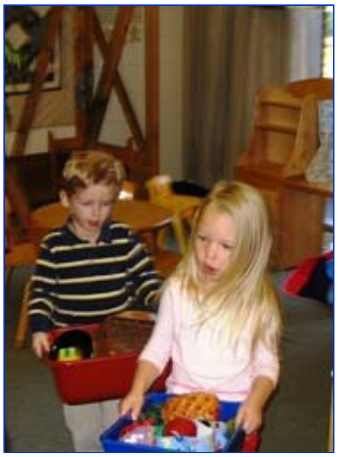

Figure 42. Mark and Faith help move equipment and furniture in the dramatic play area.

Figure 43. Car wash models are displayed in the dramatic play area after children removed furniture and equipment.

Figure 44. Patrick paints the sign for the car wash museum.

Figure 45. Heather and Mark decorate the sign by drawing cars along the bottom.

Heather, Patrick, David, Todd, Jeff, and Faith helped Pam (teacher) write a letter inviting family and friends to visit the Car Wash Museum (Figure 46). When the invitations were finished, Nicole helped to "mail" them by hanging them on the children's cubbies in the classroom (Figure 47).

November 6, 2007

Dear Parents, Family, Friends and Teachers,
We are going to have a car wash museum at our school. The kids made car washes out of boxes that we want to show you. We would like to welcome you to the car wash museum on Monday, November 12, 2007. Please stop by for a tour between 7:30 and 11:30 a.m. or between 2:45 and 5:30 p.m. You will be charged no money to go in the car wash museum but you will get a sucker when you get here.

Love,
The Kids at ISU Child Care Center

** Note: The letter sent home during the project included the children's signatures, but these have been removed to protect the children's privacy.

Figure 46. The invitation to the Car Wash Museum was created on the computer.

Figure 47. Nicole helps hang invitations on children's cubbies.

As the class prepared displays for the car wash museum, the teachers wanted to be certain that every child would be included in some way. We decided to ask the children who had chosen not to create a car wash model if they would be willing to draw or paint a car wash to display in the Car Wash Museum.

Angie made a memory drawing with markers, which she described in a way that showed her understanding of how the car wash worked: "This is the green light. It says Go. The red light says Stop. This is a car getting bubbles from the soap. The water washes away the bubbles" (Figures 48 & 49). Nicole made an especially detailed memory drawing with markers (Figure 50). Her dictated note said, "The circles turn and the soap

comes out. The soap cleans the car. The red light says Stop. The green light lights up" (Figure 51).

Figure 48. Angie makes a memory drawing for the Car Wash Museum.

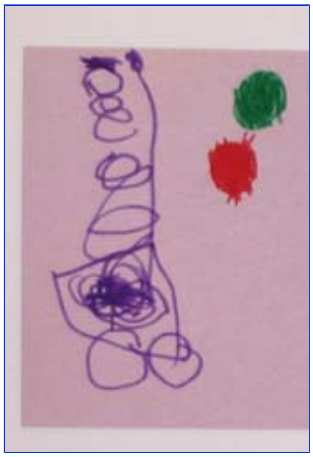

Figure 49. Angie's drawing depicts lights, bubbles, and water.

Figure 50. Nicole includes many details in her drawing for the Car Wash Museum.

Figure 51. Nicole's drawing includes the signal lights and the soap in the car wash.

Even though David had a car wash model to display, he enthusiastically created a painting for the Car Wash Museum. As he painted, Barb (teacher) noticed him looking sideways at his painting. She realized she was doing the same and asked if the painting was going to hang vertically. When he said "Yes," she offered to change the orientation of the paper for him. He said, "No, I'm okay" and completed the painting, turning his head from time to time to look at it sideways (Figures 52 & 53).

Figure 52. David begins his car wash painting.

Figure 53. David's completed painting, as displayed in the museum, shows the orientation he intended, although he intentionally painted it sideways.

The completed Car Wash Museum sign was mounted on a tall piece of furniture (Figure 54). The children seemed eager to welcome visitors. Their drawings and models were displayed along with descriptions dictated to the teachers by the children (Figure 55).

Figure 54. The completed sign welcomes visitors to the Car Wash Museum.

Figure 55. The children's dictated descriptions of drawings and car wash models are displayed next to their work.

Many people came to visit throughout the day of the Car Wash Museum open house. The children gave tours, showing guests their own work as well as that of classmates (Figures 56 & 57). Approximately 30-35 people attended the event. Attendees were mainly parents and siblings of children in the class, but attendees also included ISU practicum students or student workers, as well as the chair of the Family and Consumer Science Department. Unfortunately, Stephen, the car wash manager, was not able to attend.

Figure 56. Mike shows his car wash model to his mother.

Figure 57. Darin explains how his car wash worked to the chair of the university's Family and Consumer Science Department.

Reflections on Phase 3

Often at the beginning of Phase 3, we ask the children, "How do you think we can share with others what we have learned during this project?" Many times, the children struggle to generate ideas that would encompass the entirety of the project in one event. This difficulty may be caused by a lack of experience with ways to share information to a broader audience. At this point, the teachers suggest a variety of options for culminating events to the children for their consideration.

The teachers had never considered the idea of a museum display as a culminating event. When David suggested having a museum, we realized that his life experiences had prompted this idea. His mother was a student in the art department on campus, and he had attended gallery openings and displays of her work. We thoroughly enjoyed the interactions and discussion that followed David's suggestion. We were very pleased that during this project, the children generated more culminating event ideas than the teachers.

At the end of each project, the teachers review the Illinois Early Learning Standards and post the benchmarks that were met over the course of the project. We add this list at the end of our project documentation so parents can see how valuable project work is for young children. We found that 70 out of 105 benchmarks were addressed by activities that occurred over the course of the car wash project (see the Appendix).

Throughout the car wash project, we observed a great deal of peer interaction and support for each other. The children in this group were especially good at sharing their ideas with others and willingly helping a peer learn how to represent an idea or part of the car wash machine.

As we reflect on this project, we realize that it might be beneficial to post a list of terminology and vocabulary that is relevant to the topic being explored. We could support literacy by displaying photos along with pertinent terminology. Over the years, we have gotten much better at taking photos of details that we might want to refer to later, but we could possibly improve on the ways that we use our photos to support reflection and information recall.

The children seemed to focus their attention primarily on the technological and mechanical aspects of the car wash. The sequence of events that take place in an automatic car wash and all the machinery involved in each step in the sequence interested them—the driver making payment, the signal lights flashing, the car driving in, the car activating the alert mechanism, the cycles proceeding, the car leaving after the exit signal. We saw virtually no water play (such as actually washing cars) during this project. The children seemed to view the water as secondary to the mechanical parts of the car wash machine, much as they saw the soap as just one aspect of the whole car wash process.

In terms of understandings of technology, we believe that the children began to grasp the idea that all parts of a car wash had to work together at the correct time to create a successful car wash experience. The children learned that the car wash was made up of a variety of small machines working in a particular order. During fieldwork, the children looked very closely at all the different parts of the car wash machine and asked many

questions about what each part did. Later, as they constructed car wash models, we heard them use terms that the manager had used. We also observed them exploring ways to represent all those machine parts. Through their questions and the information shared by the manager, the children also developed an understanding that machines do break down and that specialists can be called to repair a problem.

We have found throughout our years of experience with the Project Approach that young children are very interested in learning about the machines that are used in a variety of life settings. Quite often, the children focus on the machines, how they work, and what happens when they don't work. We believe that part of the reason this project was so successful and enriching for the children was that they were given a new perspective from which to view the car wash process. We did not just sit in the car while it was being washed. We stood on the outside, watched what was happening, and then went inside the facility to look closely at all the parts and at areas to which most customers are never allowed access.

We would like to improve our approach to soliciting comments and feedback from parents. We have not actively sought parent feedback or comments. Now, as we work to share our project work with others, we are seeing value in creating a parent feedback form that might be used at the end of each project that we complete in our classroom.

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Appendix

Illinois Early Learning Benchmarks Addressed by the Car Wash Project

Listed below are the Illinois Early Learning Standards that were met over the course of the car wash project. The project addressed 70 of 105 early learning benchmarks: 15 of 21 Language Arts benchmarks, 9 of 20 Mathematics benchmarks, 12 of 15 Science benchmarks, 7 of 10 Social Science benchmarks, 8 of 14 Physical Development and Health benchmarks, 5 of 10 Fine Arts benchmarks, both Foreign Language benchmarks, and 12 of 13 Social/Emotional Development benchmarks.

Language Arts

1.A.ECa Understand that pictures and symbols have meaning and that print carries a message.
1.A.ECb Understand that reading progresses from left to right and top to bottom.
1.A.ECc Identify labels and signs in the environment.
1.A.ECd Identify some letters, including those in own name.
1.A.ECe Make some letter-sound matches.
1.B.ECa Predict what will happen next using pictures and content for guides.
2.A.EC Understand that different text forms, such as magazines, notes, lists, letters, and story books, are used

for different purposes.
3.A.EC Use scribbles, approximations of letters, or known letters to represent written language.
3.B.EC Dictate stories and experiences.
3.C.EC Use drawing and writing skills to convey meaning and information.
4.A.EC Listen with understanding and respond to directions and conversations.
4.B.EC Communicate needs, ideas and thoughts.
5.A.EC Seek answers to questions through active exploration.
5.B.EC Relate prior knowledge to new information.
5.C.EC Communicate information with others.

Mathematics

6.A.ECa Use concepts that include number recognition, counting and one-to-one correspondence.
6.C.ECa Explore quantity and number.
6.D.EC Make comparisons of quantities.
7.A.ECb Construct a sense of time through participation in daily activities.
7.B.EC Show understanding of and use comparative words.
8.B.ECb Begin to order objects in series or rows.
9.A.EC Recognize geometric shapes and structures in the environment.
9.B.EC Find and name locations with simple words, such as “near”.
10.B.EC Gather data about themselves and their surroundings.

Science

11.A.ECa Use senses to explore and observe materials and natural phenomena.
11.A.ECb Collect, describe and record information.
11.B.ECb Become familiar with the use of devices incorporating technology.
12.A.ECb Show an awareness of changes that occur in themselves and their environment.
12.C.EC Make comparisons among objects that have been observed.
12.D.EC Describe the effects of forces in nature (e.g. wind, gravity and magnetism).
12.E.ECa Use common weather-related vocabulary (e.g. rainy, snowy, sunny, windy).
12.E.ECb Participate in recycling in their environment.
12.F.EC Identify basic concepts associated with night/day and seasons.
13.A.EC Begin to understand basic safety practices.
13.B.ECa Express wonder and ask questions about their world.
13.B.ECb Begin to be aware of technology and how it affects their lives.

Social Science

14.A.EC Recognize the reasons for rules.
14.D.EC Develop an awareness of roles of leaders in their environment.
15.A.EC Identify community workers and the services they provide.
15.D.EC Begin to understand the use of trade to obtain goods and services.
16.A.EC Recall information about the immediate past.
17.A.ECa Locate objects and places in familiar environments.
17.A.ECb Express beginning geographic thinking.

Physical Development and Health

19.A.ECa Engage in active play using gross motor skills.
19.A.ECb Engage in active play using fine motor skills.
19.B.EC Coordinate movements to perform complex tasks.
19.C.EC Follow simple safety rules while participating in activities.
21.B.EC Demonstrate ability to cooperate with others during group physical activities.
24.A.ECa Use appropriate communication skills when expressing needs, wants and feelings.
24.A.ECb Use socially acceptable ways to resolve conflict.

24.C.EC Participate in activities to learn to avoid dangerous situations.

Fine Arts

25.A.ECd Visual Arts: Investigate the elements of visual arts.
25.B.EC Describe or respond to their own creative work or the creative work of others.
26.A.ECb Drama: Participate in drama activities.
26.A.ECd Visual Arts: Participate in the visual arts.
26.B.EC Use creative arts as an avenue for self-expression.

Foreign Language

28.A.EC Maintain the native language for use in a variety of purposes.
30.A.EC Use and maintain the native language in order to build upon and develop transferable language and literacy skills.

Social/Emotional Development

31.A.ECb Exhibit eagerness and curiosity as a learner.
31.A.ECc Exhibit persistence and creativity in seeking solutions to problems.
31.A.ECd Show some initiative and independence in actions.
31.A.ECe Use appropriate communication skills when expressing needs, wants and feelings.
32.A.ECa Begin to understand and follow rules.
32.A.ECb Manage transitions and begin to adapt to change in routines.
32.A.ECc Show empathy and caring for others.
32.A.ECd Use the classroom environment purposefully and respectfully.
32.B.ECa Engage in cooperative group play.
32.B.ECb Begin to share materials and experiences and take turns.
32.B.ECc Respect the rights of self and others.
32.B.ECd Develop relationships with children and adults.