Walt Disney’s Math-O-Mart
Ann Wallace, College of Charleston, wallacea@cofc.edu
Annie Shear (pictured), Walt Disney Magnet School, annies@comcast.net

Walt Disney School in Chicago, Illinois is a magnet school whose philosophy is multi-cultural education. It has an open classroom approach and houses grades Pre-Kindergarten through eight. There are eight classes per grade and a total of eighteen hundred students in the school. There is a multicultural lottery system to attend, and as many as twenty different cultures and different languages are found at the school. Teaching jobs are very competitive. Applicants must go through rigorous interviews, classroom observations, and oral exams to be appointed by a board.

The first time I walked into the Communication-Art-Center I immediately felt like I was walking into an actual grocery store (Figure 1). There were aisles stacked with grocery products, freezer cases full of goods, meat and produce departments, checkout lanes with cash registers, a bakery, a pharmacy and a customer service center. I was amazed to see the second-grade employees running around busily stocking and restocking shelves, totaling groceries, taking money, bagging groceries, and assisting customers.

I soon learned of the long journey taken to get here. I was visiting Disney’s Math-O-Mart in its sixth year, and it had been an evolving process. The mastermind behind Math-O-Mart is a second-grade teacher named Annie Shear. As I talked with Ms. Shear I found she was increasingly frustrated with her students’ inability to ‘add up’ to make change. She explained, “If ice cream bars cost $2.93 and you pay for them with a $5 bill, my students couldn’t go two ninety-four, two ninety-five, and a nickel makes $3.00, another dollar is $4.00 and one more dollar makes $5.00.” To help teach this concept she gave each of her students a set of play money and displayed a picture of an item (such as ice cream bars) that cost less than $5.00. She asked her students to use their money to show her how much change they would receive if they paid for the ice cream bars with a $5.00 bill. This led her to the idea of creating a shopping experience for her students where they would be the ones responsible for making change from purchases others made. She reasoned that if her students were the ones making change, they would learn the concept. She thought of the grocery store concept because shopping is familiar to children as well as an excellent example of a place where mathematics is put to work in the ‘real world.’

With this larger idea in mind, she wrote and was awarded a grant from the Chicago Foundation for Education in the amount of $400. She used the money to buy one cash register, register tape, play money, posters and markers to set up a ‘pretend’ grocery store. Ms. Shear organized the help of parents to contribute household items such as empty cereal boxes, frozen food boxes, laundry detergent, pet products, etc. (no glass products) to stock the grocery store. She borrowed plastic fruit and fake bread from the pre-school. To get other items, such as grocery baskets, smocks, shelves and checkout lanes she “schmoozed” local stores who subsequently donated them. She also used her own money to help finance the project.
Ms. Shear explained to the students and emphasized the importance of their participation. She posted the needed positions, and students were required to fill out an employment application (Figure 2). The positions included cashiers, managers, stock runners, customer service help, pharmacist, price checkers, callers, and labelers (Figure 3). She added, “At first they all wanted to be cashiers…until they realized how hard it was going to be. Just punching in the prices is time consuming, and if the customers were talking to them while they were trying to make change, they might get rattled.” They really had to understand what all the positions entailed before deciding which one was best suited for them. For example, the greeter had to make all the customers feel comfortable as they walked through the door, and the pharmacist needed to help customers locate appropriate vitamins, read labels and find first-aid. Cashiers had to key in the groceries, make appropriate change, and keep up with the discounts and specials that changed each day. The stock people had to know where everything goes. The stock runners had to hurry to put all the food and other products back on the shelves between one class leaving and the next class arriving (Figure 4). I had an opportunity to interview the ‘head stock’ whose job was to make sure the shelves were properly stocked. When I asked him about his job he replied, “[I’m] head stock… I have my own aisle… I have to look after people like if they’re doing something wrong and stuff… if they aren’t stocking right or if it gets backed up.”

Ms. Shear stated, “I had to suggest to some students what a good choice of job would be.” On the job application the students had to include their qualifications for different jobs so they really had to think about what the job entailed and what they had to offer. For example, one student who wanted to be a cashier wrote, “I am responsible, reliable and good at math.” Ms. Shear reasoned, “If they couldn’t answer [qualifications], why would they be hired?” The students were expected to fill out the application as if they were filling out an actual job application – if they used poor grammar or misspelled words they were not hired.

Once the positions were filled, students had to be trained to perform their jobs, which Ms. Shear said was very difficult for the students to learn. She later relied on students who had previously held the jobs to help with the training. She explained, “Once the store managers and assistant managers are trained, they are in charge. If there is a problem, that’s who they go to, not me.”

After the first grocery store was created and the students were trained to perform jobs, they had to have customers. Ms. Shear invited another second-grade class to shop at the Math-O-Mart. As other teachers began to see what was going on, they wanted to bring their classes to the Math-O-Mart too. More and more students wanted to participate, and eventually the whole school became involved, so it was moved to the large, open Communication Art Center.

After the entire school became involved, a local grocery store (Jewel-Osco) assisted by setting up a model of a real grocery store including checkout lanes, actual store shelves and freezers, shopping carts, scales, and smocks for the student workers. Ms. Shear enlisted the help of second-grade team member Cheryl Henry, who helped with scheduling of all the classes, and her students participated with the store operation.

Once the Math-O-Mart was ready for customers, all of the classes from Pre-Kindergarten to grade 8 were invited to shop. They could pay for their purchases with play money and receive change and a
receipt verifying their purchases. The Math-O-Mart was meant as a learning tool, and lesson plans for each class or entire grade level were encouraged. “The teachers bring their classes because they are able to teach a variety of curricular activities, standards, and skills at once,” said Ms. Shear.

Six years after Annie Shear created the Math-O-Mart, I was invited to its opening day. I was welcomed by third-grade student Carey who, for the second year, delivered the greeter speech. Hi. Welcome to Disney Math-O-Mart. You will each receive some money to shop with. After you receive your money to shop with, you will get a cart or a basket. After you get your cart or basket, you will be able to shop in the store. Please...no skipping, running or jumping in the store. Shop as you wish, but don’t go overboard! After you make all your selections, get in line to pay. If you receive any change, please drop it on the tray at the end of the aisle. Wait for your teacher on the carpet. Thank you for shopping at the Walt Disney Math-O-Mart. I hope you will enjoy your shopping experience.

Teachers took advantage of this incredible opportunity and wrote lesson plans to support a variety of skills and content standards. Letters were sent to parents prior to children shopping at the Math-O-Mart asking them to familiarize their children with a grocery store. In the following table we have included a list of some of the activities and assignments from each grade level that teachers planned:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lesson</th>
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<tbody>
<tr>
<td>Pre-Kindergarten</td>
<td>Pre-K teachers visited the Math-O-Mart prior to bringing their students and determined some ‘price adjustments’ to help their students. Four-year-old students shopped in pairs (Figure 5). Each pair was given a play $1 bill. Their task was to purchase an item(s) without spending more than $1 (if possible). After making their purchases the students were asked to identify the coins they received as change. These students did not understand why they had to leave the items after they made their purchases. They wanted to take everything home with them!</td>
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<tr>
<td>Kindergarten</td>
<td>A Kindergarten teacher visited the Math-O-Mart before its opening and determined items she believed her students would recognize and then created a ‘Shopping List’ (Figure 6) with pictures of various products. Students were to shop for the items and to circle them if they found them or put an ‘x’ on an item they could not find. This gave them practice using a shopping list. After they returned to the classroom, the students had to tell how many items they found, did not find and how much money they had spent.</td>
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<tr>
<td>First Grade</td>
<td>This grade was introduced to four 3-dimensional shapes (cone, cylinder, cube and rectangular prism) before they visited the Math-O-Mart. Students in this class were asked to purchase at least one item of each shape. They compared similar and different items once they were back in their classroom. For example, a soup can and an oatmeal container both represented cylinders (Figure 7). They were also asked how they could sort their items by different characteristics such as ‘items that roll.’</td>
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<tr>
<td>Second Grade</td>
<td>One second-grade teacher asked her students to help with her shopping list that she created</td>
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from a store circular. She told her students that she would like to know ‘about’ how much her groceries would cost. She provided a store circular from a local grocery store to aid in their estimations. Next, she asked her students to create their own shopping list of five items and to estimate its cost. The students purchased their items and then compared the actual cost to their estimation. Another second-grade teacher asked his students to make a shopping list if they had to purchase items for their own birthday party. What would they need? This gave students the opportunity and experience to really plan. The teacher prompted their lists by making comments and asking questions such as, “I’m glad you’re planning to have a cake. What do you need to serve it? What do you need to eat it? If you have ice cream, do you need a utensil other than a fork?”

Third Grade

A third-grade teacher discovered that many of her students did not know the difference between a name brand and a generic brand (Figure 8). Her activity had the students finding the difference of the cost between name brand and generic brand of items as well as comparing different name brand items. Afterwards, she had a ‘taste test’ to compare several of the items (e.g. Coke®, Pepsi®, and generic cola; Heinz®, Hunts®, and generic ketchup; Kraft®, Velveeta®, and generic macaroni), tallied the votes for the preferred products and then created a class graph for Preferred Products. In addition, the students determined the ‘best buy’ on various food items they compared. This segued into writing opinion papers. Some kids were very opinionated and stated directly, ‘We use Tide®. My Mommy doesn’t like Cheer®.’

Fourth Grade

A class was asked to make a balanced food plan for one day using the Food Pyramid (Figure 9). They were only allowed to purchase 20 items, and the items had to represent the correct fractional part of the food pyramid. For example, 1/5 (4/20) of the Food Pyramid is vegetables, so the students would purchase 4 vegetables. Another class integrated the grocery store concept with Social Studies when studying other countries. Groups of students were assigned a particular country and part of their research included identifying different staple foods common to that country. The students had to conduct research on their selected country to find out what foods the people ate. They had to plan a meal, make a shopping list and subsequently shop for the foods at the Math-O-Mart. Prior to assigning the different countries, the teacher visited the store to make sure certain goods were available.

Fifth Grade

A health-conscious fifth-grade teacher was interested in nutrition. His students were given $20 to purchase low calorie/low fat food. Students learned how to read a label to determine the amounts of calories, fat content, fiber, cholesterol, etc., found in each product. They also learned how to look for the number of
servings, how many calories, fat, etc. per serving so that they would recognize how serving size affects
the contents of the product. During their shopping excursion
students answered questions such as, “Which brand of cereal is
healthy and affordable?”

Sixth Grade

One class learned how to adjust the cost of a shopping list based
on store sales and coupons as well as to calculate the appropriate
sales tax (8.5%). Another class made the ‘dinner to go’ items
available for purchase (Figure 10). Instead of just thinking about
what foods they personally liked, they had to consider what made a
balanced meal. To do this they examined the six food groups to
help determine what would make up a healthy meal.

Seventh Grade

Students had to ‘make’ dinner for four people. They first had to
decide on the menu, and then make their shopping list before
going to the Math-O-Mart. I asked an excited student what
dinner he planned to make and he replied, “Tacos! With lettuce,
tomato, and cheese…like we have corn with it…and cookies and
milk for dessert.” I asked him if it was a meal he had at home and he
said, “U-huh. It cost a lot!” Other students had to estimate how
much they would spend on a meal they were preparing for four.
Jeremy, a student customer said, “It was embarrassing when you’d
hear ‘Over ring on lane 3’ and know they were talking about
you! We had to figure out what to put back. We weren’t thinking.”

Eighth Grade

Some eighth-grade students made
checks (Figure 11) for seventh-
and eight-grade students to write
and to pay for their purchases.


and incorporated the interviews into a
Language Arts assignment and
wrote journal articles. They made
up their own books with
construction paper and created the
Disney Star and the Disney
Astrologer, which were available
for customers to read in the check
out line and in the pharmacy
waiting area.

Ms. Shear reflects on the progression
of Math-O-Mart, “Students who have been
here for 5 years know the routine. One
student in second grade didn’t want to work,
but now, he’s in fifth grade, and I can’t run
the store without him! To see him grow as
an individual and a responsible person…it’s
phenomenal and the children are so proud of
themselves.” One parent added, “It’s
unbelievably fun. It teaches [children] how
to shop. It teaches them the value of a dollar
and you know what Mom and Dad are doing
at the store.”

Ms. Shear continued, “The kids love
it. Everyone looks forward to it. Everyone
wants to work at it. Everyone is so tired at
the end of the day. It’s a real job experience.
From the first day of school people are
asking when Math-O-Mart will be. Students
who did not appear to be hard workers
surprisingly exhibit such enthusiasm in this
project and take this job seriously. You learn
a lot about the students. The children are
respected in their jobs by their peers. There
is no teasing.”
Conclusion

Teachers are continually urged to integrate their curriculum in a manner that is both developmentally sound and motivating. Money is a common focus of people everywhere. It is of natural interest to children from an early age. Whether children work for money and/or receive it in the form of allowances, they learn the function of money in obtaining things that are needed or wanted. This integrated curriculum project demonstrates the more practical aspects of mathematics as well as developing advanced planning skills and responsible work habits. An experience, such as Disney’s Math-O-Mart, that engages children in related social studies, science, mathematics, and language arts activities, gives students real-life experiences in everything from shopping on a budget to employment skills and management responsibilities.
Family 2's Shopping List

How many did you find?
How much did you spend?

GENERIC? WHAT'S THAT?

Q. What is a generic brand?
A. It is a product in a plain package that costs less.

Q. Why does it cost less?
A. Because no money is spent on fancy packaging and advertising.

Q. Is there any difference in food value?
A. No.

Q. Is there any difference in taste?
A. There might be. For instance, if you prefer one brand of peanut butter because of the taste, you may not like a generic peanut butter.

Directions: Figure the difference in cost between the name brand and the generic brand of each food below. Write your answer in the space after each entry.

<table>
<thead>
<tr>
<th>Food</th>
<th>Name Brand</th>
<th>Generic Brand</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Canned Green Beans</td>
<td></td>
<td></td>
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<tr>
<td>2. Pancake Mix</td>
<td></td>
<td></td>
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<tr>
<td>3. Pancake Syrup</td>
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<td></td>
<td></td>
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<tr>
<td>4. Canned Tomatoes</td>
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<td></td>
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<tr>
<td>5. Roasted Peanuts</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. Applesauce</td>
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<td></td>
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<tr>
<td>7. COff Drink</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8. Macaron</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>9. Orange Juice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Tea Bags</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TOTAL</td>
<td></td>
<td></td>
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</tbody>
</table>
The Food Pyramid

- Make a balanced food plan for one day.
- On the pyramid, draw the foods you select.
- Fats, Oils, and Sweets: This is not a food group.
- Limit your servings.

- Milk, Yogurt, and Cheese Group: 2-3 servings
- Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts Group: 2-3 servings
- Fruits Group: 2-4 servings
- Vegetables Group: 3-5 servings
- Bread, Cereal, Rice, and Pasta Group: 6-11 servings

You may purchase 20 items at the Math-o-Mart. However, those items MUST be the correct fractional parts of a food pyramid.

- Fats, Oils, Sweets: 20
- Milk, Cheese: 10
- Meat, Poultry, Beans, Eggs, Nuts: 20
- Fruit: 4
- Vegetables: 4
- Bread, Cereal, Rice, Pasta: 8

Figure 9

Figure 10

Figure 11