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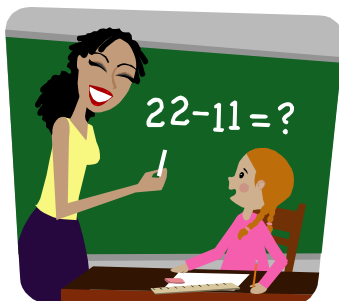
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Project Overview



Math at the Market is an after school activity that provides **students** in kindergarten through fifth grade with opportunities to apply grade-appropriate problem solving skills in a real-world setting. Parental involvement is a key component as **parents** and children work together at a **local supermarket** to solve math problems in all areas of mathematics, reinforcing skills acquired in the classroom. **Community** partnerships between the school and the supermarket are fostered throughout the planning and implementation of the project activities. Ideally, a committee of teachers at your school works together to plan and coordinate the event at a supermarket that is accessible to the school population. Building enthusiasm for the event and preparing students in the classroom are essential prior to hosting a Math at the Market evening.

🔗 **Community** 🔗

🔗 **School** 🔗

🔗 **Parents and Students** 🔗

Academic Goals and Objectives

There are many standards and benchmarks that apply to this project since students will be drawing from many skills in order to solve the problems. They will employ **critical thinking skills** and **reading skills**, and, of course, **problem solving** skills in the areas of Algebra, Number Sense, Operations, and Geometry.

Here are several of the *K – 5 Mathematics Next Generation Sunshine State Standards* that are applicable to this project:

Kindergarten

MA.K.G.2.1

Describe, sort and re-sort objects using a variety of attributes such as shape, size and position.

MA.K.A.1.3

Solve word problems involving simple joining and separating situations.

MA.K.A.1.1

Represent quantities with numbers up to 20, verbally, in writing, and with manipulatives.

First Grade

MA.1.A.1.1

Model addition and subtraction situations using the concepts of “part-whole,” “adding to,” “in all,” “taking away from,” “comparing,” and “missing addend”.

MA.1.A.1.4

Use counting strategies, number patterns, and models as a means for solving basic addition and subtraction fact problems.

Second Grade

MA.2.A.2.3

Estimate solutions to multi-digit addition and subtraction problems, through three digits.

MA.2.A.2.1

Recall basic addition and subtraction facts.

MA.2.A.4.4

Describe and apply equality to solve problems, such as in balancing situations

Third Grade

MA.3.A.2.2

Describe how the size of the fractional part is related to the number of equal sized pieces in the whole.

MA.3.A.1.1

Model multiplication and division including problems presented in context: repeated addition, multiplicative comparison, array, how many combinations, measurement, and partitioning.

Fourth Grade

MA.4.A.2.4

Compare and order decimals, and estimate fraction and decimal amounts in real-world problems.

MA.4.A.1.1

Use and describe various models for multiplication in problem-solving situations, and demonstrate recall of basic multiplication and related division facts with ease.

MA.4.A.6.2

Use models to represent division as the:

- inverse multiplication
- as partitioning
- as successive subtraction

Fifth Grade

MA.5.A.2.2

Add and subtract fractions and decimals fluently, and verify the reasonableness of results, including in problem situations.

MA.5.A.2.3

Make reasonable estimates of fraction and decimal sums and differences, and use techniques for rounding.

MA.5.A.6.5

Solve non-routine problems using various strategies including “solving a simpler problem” and “guess, check, and revise”.



Parental Involvement and Community Outreach Goals:

This project aims to increase **parental involvement** by having parents work closely with their children to solve problems in a real-world setting. In addition, it will provide parents with ideas for continuing to involve and challenge

their children to solve problems in various situations that they encounter together day to day.

By collaborating with a neighborhood supermarket, business partnerships are created and/or strengthened. Being visible within the community engaged in a collaborative activity such as Math at the Market promotes the school's mission and image.

Suggested Timeline of Activities to Prepare for Math at the Market



- Early in the school year visit the supermarket where you would like to hold the event.
- Speak to the store manager and explain that the event will require an area by the entrance to set up a table of materials and sign-in sheet, and suggest an estimated number of attendees.
- The event should be planned for a time when families in your community can attend (e.g. 6:00 – 7:00 pm)
- Depending on the size of your school population, the event may be spread out over two evenings.
- I suggest having a preliminary Math at the Market your first year by inviting only a certain grade level or grade levels

to get an idea of attendance. Remember that students and parents will be walking around the supermarket, and you do not want to disrupt normal business but merely enhance it so that the supermarket will be happy to have you back!!

- Once you have established the date, time, and grade levels to be invited and you have the support of the supermarket manager, it is time to get your students excited to attend!
- Present the idea to the staff at your next faculty meeting, so that you will have the support of other teachers. Having a committee of teachers makes it a more manageable project.
- Print out a flyer to send out with students and with your principal's assistance, send out a *Connect Ed* to the students' families being invited.
- See suggested lesson ideas after this section to help prepare intermediate students for the event.
- Finally gather all materials for the evening: table and chairs, worksheets for students, clipboards for approximately one fourth of the total number of students invited to the event, double that amount of pencils, and a banner with your school's name and the name of the event. (The suggested number of clipboards and pencils is based on my experience, but can definitely be increased!)
- Approach your PTA and the store manager for door prizes. Supermarkets are often willing to provide gift cards, promotional gifts, and/or snacks for the participants. If you will have door prizes, you will also need coupons and a box for student participants to enter their names.



Lesson Ideas to Prepare Students for Math at the Market

- Math at the Market is an activity that should reinforce what is already taking place in the classroom daily with math instruction.
- Students can be prepared for the activity at the supermarket by holding a mock Math at the Market in the days prior to the event.
- Each student can bring in one or two items from his/her home that was purchased at the supermarket (empty containers are better).
- The teacher can “price” each item based on current prices for the products and have the students solve problems similar to the ones on the following worksheets.
- In addition to the many web sites available for math lesson plans, the following are good resources for consumer math activities:
 - www.moneyinstructor.com/spending.asp
 - www.figurethis.org
 - www.fleetkids.com

Below are the actual worksheets that I used for PRIMARY students (the math problems can be adapted and/or changed as per your needs and the supermarket):



WELCOME TO MATH AT THE MARKET

Name: _____ Teacher: _____

Directions: Complete as many problems as you can. You do not have to complete them in sequence. Use the space provided to solve your problems. All worksheets must be turned in by 7:00 pm to qualify for the homework pass and door prize drawing.

Good Luck!

PRODUCE SECTION:

SHOW YOUR WORK
BELOW



1) Estimate the number of red apples on the apple counter. _____

2) Weigh a red apple. _____ oz.

Weigh a green or yellow apple. _____ oz.

Which one weighs more? _____

How much more? _____ oz.

3) How many different kinds of nuts are sold in bags in the nut section?



FLORAL SECTION

4) Choose 2 bunches of flowers that you like. Which bunch has more red flowers?

(bunch 1 or bunch 2) _____

Which bunch has more yellow flowers?

Count the number of flowers in each bunch:

1) _____ 2) _____

How many more flowers are in bunch 1 than in bunch 2? _____

SODA AISLE

5) Find the price of a six pack of Coke.

Find the price of a six pack of Sprite.

Which one costs more?

POTATO CHIP AISLE

6) If you want to buy one bag of Baked Ruffles and one bag of Baked Lays, how much money do you need?

\$ _____



PASTA AISLE

7) Find two kinds of pasta that are shaped like a CYLINDER.

What are they called?

_____ and _____



FROZEN AISLE (ICE CREAM)

8) Find a brand of popsicles that costs more than \$ 4.00 but less than \$ 6.00.

What is it called? _____

How much does it cost? _____



PET AISLE

9) Pick up and hold a bag of dog food.

Estimate its weight in pounds. _____

Check its weight on the bag. _____

Was your guess more or less than the actual weight? _____



CEREAL AISLE

10) How much money do you think you need to buy two boxes of Frosted Flakes?

\$ _____

What is the price of one box? \$ _____

How did you do? How do you know?

FINAL CHALLENGE:

WRITE YOUR OWN PROBLEM FOR OUR NEXT MATH AT
THE MARKET
BELOW:



Below are the worksheets that I used with
intermediate students:



WELCOME TO MATH AT THE MARKET

Name: _____ Teacher: _____

Directions: Complete as many problems as you can. You do not have to complete them in sequence. Use the space provided to solve your problems. All worksheets must be turned in by 7:00 pm to qualify for the homework pass and door prize drawing.

Good Luck!

PRODUCE SECTION:   SHOW YOUR
WORK:

1) Find the watermelon wedges and locate the price for that size wedge. Estimate the price of an entire Watermelon at that rate.

Price of a wedge: \$ _____

Price of a whole watermelon at that rate: \$ _____

2) Find a bag of apples and locate its price.

Estimate the price of each apple.

Bag price:\$ _____

Price per apple:\$ _____

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3) Find the section for bags of nuts.



Choose a bag and locate the expiration

date:_____ Estimate the number of

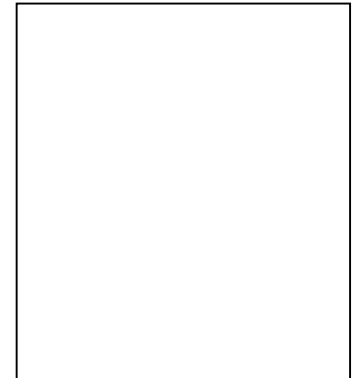
weeks _____ and days _____

until it expires.

FLORAL SECTION

4) Find a flower with more than two lines of symmetry.

Draw it and draw the lines of symmetry:



5) Choose one bunch of flowers.

Which is your favorite color in the bunch? _____

What fraction of the flowers in the bunch have that color? _____

6) CHALLENGE:

Choose two different flowers. Count the number petals in each.

Flower #1 _____

Flower #2 _____

What is the least common multiple for those two numbers? _____

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SODA AISLE

7) Compare the price of a 2-liter Sprite bottle to the price of a six-pack of Sprite (500 ml bottles)

Price for 2 liters \$ _____

Price for 6-pack \$ _____

Which is the better deal? _____

How do you know? _____

POTATO CHIP AISLE

8) Find a family size sack of chips (the kind with many small bags).

Price of ENTIRE bag: \$ _____

How many small bags are in the large bag? _____

Estimate the price per small bag \$ _____



9) Find a package of Baked Ruffles.

What percent of its calories are from fat? (Look at the nutritional information:)

Calories per serving: _____

Calories from fat: _____

Percent? _____% Is it more than 50% fat? _____

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BAKING NEEDS AISLE

10) Which is a better deal:
Buying 5 bags of 2 lb. flour
Or 2 bags of 5lb. flour?

How do you know? _____

PASTA AISLE

11) Estimate the length of
spaghetti:

in inches: _____

in centimeters: _____

Explain your thinking: _____



FROZEN AISLE (ICE CREAM)



12) Which brand of ice cream
packages their product in a:
cylinder carton? _____

rectangular prism carton? _____

Which brand sells a cone-shaped product? _____

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HARDWARE AISLE
WORK

SHOW YOUR

13) Choose a brand of air conditioner filter. Notice the measurements of its dimensions. _____ X _____ X _____

What is its area? _____ sq. in.

What is its volume? _____ cu. in.


REMEMBER: Area = Length X Width

Volume = Length X Width X Height

PET AISLE

14) Estimate the fraction of the pet section that is dedicated to dogs?

_____  (Use fractions like $\frac{1}{2}$, $\frac{3}{4}$, $\frac{3}{5}$, $\frac{1}{4}$)

To cats? _____ 

Explain how you decided: _____

CEREAL AISLE

15) How much would you pay

for each ounce of Froot Loops
if you buy the small box or the
largest box on the shelf?

Small box ounce price \$ _____

Big box ounce price \$ _____

Which is the better deal?

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FINAL CHALLENGE:

WRITE YOUR OWN PROBLEM FOR OUR NEXT
MATH AT THE MARKET:



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