Week by Week MATHEMATICS Essentials... Grade 3 WEEK 1

Fun with Multiplication

- Use 30 counters.
- Group them by twos.
- Count by twos and record the numbers.
- Continue recording the numbers counting by twos. What do you notice about the one's digits? Is there a pattern?

(1.03a)

Writing About Math

Make a list of things that come in twos in the world around you. Why is two a good number for these groups?

Make a list of things that come in fives in the world around you. Why is five a good number for these groups?

(1.03a)

(1.03a, 5.01)

Let's Explore

Use a calculator to explore skip-counting.

Enter: CLEAR

Enter: 2 + =

Describe what happens as you press =
over and over. If you continue will the calculator display 125? Why? Can you discover a way to make the calculator skip-count by 5's?

Seeing Math

Skip-count by twos beginning with two.
Record in red on a hundred board.
Describe the pattern.

Skip-count by fives beginning with five.
Record in blue on a hundred board.
Describe the pattern.

How are the patterns alike?

How are they different?

(1.03a, 5.01)

Let's Find Out

- How many girls are in your class?
- How many boys are in your class?
- Double the number of girls.
- Double the number of boys.

If you doubled the number of students in our class, would it be the same as the sum of doubled girls and doubled boys?

Explain your thinking.

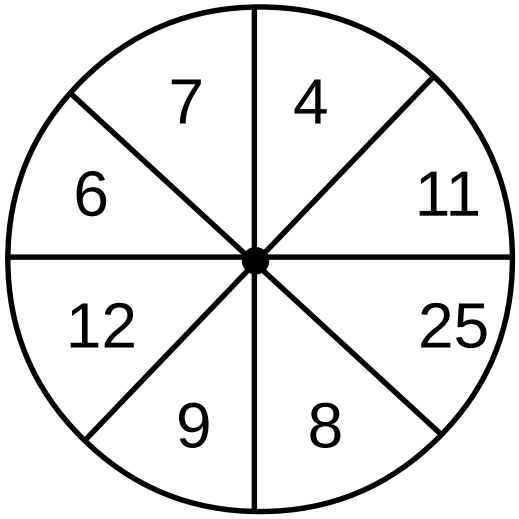
(1.04, 5.01)

Double Up !

Players: Two

Materials:
- Paper clip and pencil for spinner
- Eight markers per player

Directions:
- Spin and cover the double
- Winner is first player with three in a row
- If spinner lands on the line, spin again.



8	18	12	14	16
16	50	8	50	18
22	14	22	12	24
8	24	12	18	16
50	18	14	24	22

1.03a

Keeping Skills Sharp

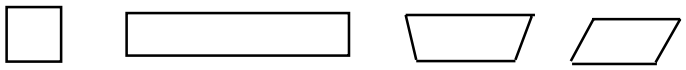
1. 2 + 6 2. 9 - 4 3. 25 + 8

4. How many nickels are equal to one quarter?

5. How much money is four quarters?

6. Fifty-two is ___ tens and ___ ones.

7. Which figure is a trapezoid?



a. b. c. d.

8. Twenty-four girls and eleven moms went on a trip. How many more girls were there than moms?

Solve this!

How long would it take to send a message among the students in your class, if you tell one person and each person who knows the message tells it to a new person every five minutes?

(1.03a)

To the Teacher

Grade 3
WEEK 1

Seeing Math:
Blackline for hundred boards is available.

Let's Find Out:
Doubling: Students need experience with the concept of doubling, multiplying by two or adding a number to itself. Give students opportunities to double numbers and sets of objects, and to describe what happens.

Let's Explore:
Calculators: Calculators should be an available tool for daily student use. Recognizing appropriate times to use calculators comes with students' experiences. Teachers must help students understand that calculators function because people push the correct buttons, not because the machines can think. Every problem requires a human decision.

Suggested Literature:
How Many Feet in the Bed? by D. Hamm
Two of Everything by Lily Toy Hong
The Crayon Counting Book - Ryan/Pallotta

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

5 + 5	3 + 1 + 2 - 3
number of legs on two dogs	seven tens and six ones
What comes next . . . 6, 8, 10, __?	10 more than 30
value of two dimes and one nickel	number in a dozen

Keeping Skills Sharp

8	$1.00
5	5 tens 2 ones
33	c
5	13

Fun with Multiplication

- Skip-count by fives beginning with five. Record in red on a hundred board.
- Skip-count by tens beginning with 10. Record in blue on a second hundred board.
- List the numbers that are colored in both red and blue.
- Explain why these numbers are colored twice.

(1.03a)

Writing About Math

- Make a list of things that come in tens in the world around you.
- Why are these grouped in tens?

(1.03a)

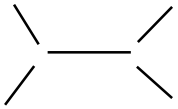
Let's Explore

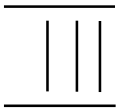
Search a newspaper. Cut out 10 different three-digit numbers. Arrange them in order from least to greatest.

(1.01c)

Seeing Math

Using five toothpicks, make some designs. Use numbers to tell how your design is built from the toothpicks. Show how to make 5's.



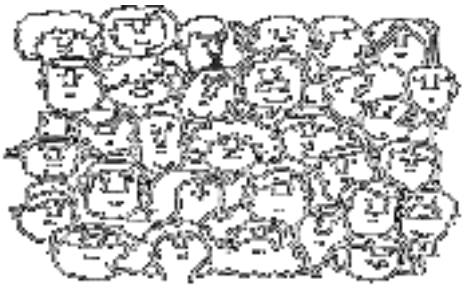


With 30 toothpicks how many five-toothpick designs can you make?

(1.03c)

Let's Find Out

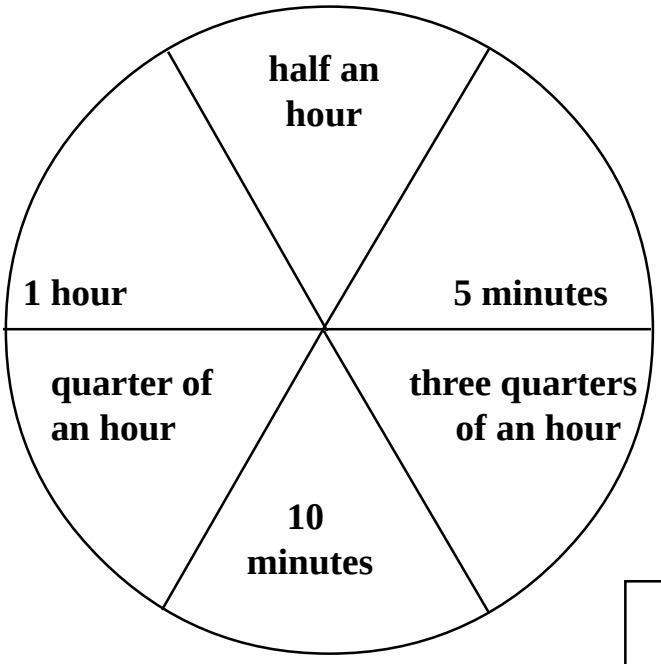
Ask students if they would rather be younger than a third grader, older than a third grader, or the same age as a third grader. Graph the results. Be sure to label and title your graph.



(4.01)

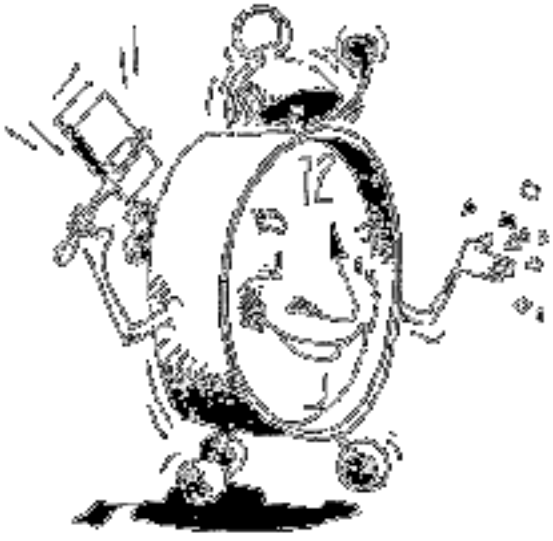
RACE TO MIDNIGHT

Number of Players: Two or three
Materials: Clock with moveable hands per player, gameboard with spinner, pencil and paper, clip for spinner, scrap paper to record.
Directions: Each player sets a clock at 8:00 p.m. and records 8:00 on his scrap paper. In turn players spin and move the hands of their clocks to show the time that passes. They record each spin on their paper and the new time the clock shows. The winner is the first player to reach 12:00 midnight.



Sample Recording Sheet

8:00
+ 10 minutes
8:10
+ half an hour
8:40



(2..01a)

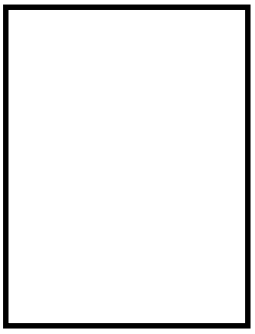
Keeping Skills Sharp

1. 8 + 3
2. 13 - 5
3. 45 + 7

4. How much money is this?
   2 dimes, 2 nickels, 1 penny

5. How many months in one year?

6. If this diagram shows three-fourths of a garden, what could the whole garden look like?



7. Write the numeral: Six tens, two hundreds, and four ones.

8. Jan has 24 books. How many books will she have if she gets 17 more?

Solve this!

If you made a line with $10 worth of pennies, how long would the line be?

How many pennies would this be?

How many pennies in $100?

To the Teacher

Grade 3
WEEK 2

Fun with Multiplication:
Blackline for hundred boards is available.

Writing About Math:
Students might think of pennies in a nickel, school days in a week, fingers on one hand,, toes on a foot, tallies, sides on a pentagon. For ten: pennies in a dime, years in a decade, number of fingers (or toes) on a person, sides on a decagon. Begin a class chart: **Things That Come in Groups** . Students can continue to add to the chart with words and pictures.

Let's Find Out:
A line plot, tallies, and a circle graph would be appropriate. Students could display the data in each form in order to compare.

Keeping Skills Sharp:
The students are asked to write the number in standard form. For example: eight tens, three hundreds, and two ones would be written as 382.

Problem Solver Special:
Discuss how to make a row of pennies (side by side with no space between them). Have students brainstorm a logical way to solve the problem. Students might suggest the number of pennies needed to equal one foot.

Suggested Literature:
Two Ways To Count to Ten by R. Dee
Arctic Fives Arrive by E. Pinczes

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

8 + 8	4 - 2 + 1 + 2
number of wheels on two tricycles	two tens and five ones
What comes next . . .35, 40, 45,__?	10 more than 46
value of four nickels and six pennies	number of nickels in a dime

Keeping Skills Sharp

11	12
8	answers will vary
52	264
31¢	41

Fun with Multiplication

Triangles	Sides
△	3
△△	____
△△△	____
△△△△	____

Fill in the missing numbers. Draw the next row of triangles and fill in the number of sides. How many sides would a row of ten triangles have? (1.03a, 5.01)

Writing About Math

5 x 2 = 10

Write a math story to illustrate this equation. Share your story with a friend.

(1.03a)

Let's Explore

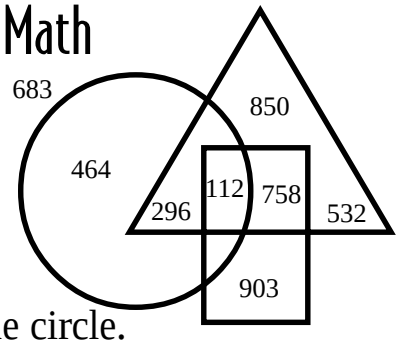
(5.01)

Use counters to explore:

odd number + even number
odd number + odd number
even number + even number

Make a chart to record the sums. Discuss what you discovered.

Seeing Math



Who am I?
I am outside the circle.
I am inside the rectangle.
I am inside the triangle.
What number am I?

Write a riddle of your own for one of the other numbers. Can your friend solve your riddle?

(3.01)

Let's Find Out

Interview people of different age levels. Ask each person to name their favorite single-digit number. Keep a tally. Create a line plot for the results. What statements can you make about the data?

(4.01)

Place 12 markers on the gameboard; take turns rolling a pair of number cubes and using any operation to remove a marker. Winner is first to clear the board.

1	2	3	4	5	6
7	8	9	10	11	12

WIPE OUT!

WIPE OUT!

7	8	9	10	11	12
1	2	3	4	5	6

(1.03a)

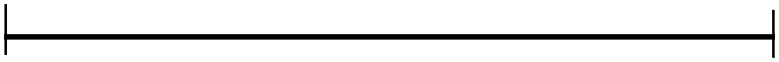
Keeping Skills Sharp

1. 6 + 7
2. 11 - 6
3. 48 + 25

4. One quarter and three dimes is how much money?

5. $52 + $9

6. Measure this line in inches



7. Write this number in words: 65

8. Twelve girls and eight boys are in Mr. Horn's class. How many groups of five can he have?

Solve this!

Use a hundred board.
How many numbers, between 1 and 100, can you find that fit both these clues?

Clue #1: The number is odd.

Clue # 2: The sum of the digits is nine.

(5.01)

To the Teacher

Grade 3
WEEK 3

Seeing Math: 758

Writing About Math:
One important way to increase students' abilities to visualize and solve problems is to have them create problems. You might begin by writing an equation on the board and having several children make up stories for an oral lesson. During the year have students create books with the stories they write. Start a library of word problems for other classes to read.

Let's Find Out:
Students have the opportunity to collect and display data on their own.

Keeping Skills Sharp:
In number six students will need access to rulers.

Let's Explore:
Some possible charts:

odd	odd	sum

odd	even	sum

even	even	sum

Suggested Literature:
Even Stephen and Odd Todd by K. Cristaldi

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

6 + 7	value of one dime, one nickel and 4 pennies
number of wheels on four four bicycles	eight tens and three ones
What comes next .. 46, 45, 44, ___?	10 more than 43
5 + 2 + 2 + 1 - 5	number of days in two weeks

Keeping Skills Sharp

13	$61
5	four inches
73	sixty-five
55¢	four groups

Fun with Multiplication

How many different things can you tell about this pattern?

■ ■ ❍ ▲ ■ ■ ❍ ▲ ■ ■ ❍ ▲

What will be the twentieth shape?

(5.01)

Writing About Math

If you know multiplication facts for five, how does this information help you to tell time?

Are there other facts that help in telling time?

Explain.

(2.01a, 5.01)

Let's Explore

Make a collection of 100.

Your collection can be anything -

pictures, toothpicks, pebbles, and so on.

How will you know you have exactly 100?

(1.01a)

Seeing Math

How many ways can you have coins that total 42 cents?

What is the largest number of coins?

the smallest?

Suppose you have eight coins.

What amounts of money could you have?

(1.06)

Let's Find Out

How many paces?

Walk from your classroom to four different locations in your school. Count your paces to each location.

Suggestions: Cafeteria, water fountain, media center, office, front door. Each student will use their own data to construct a pictograph or graph in which symbols of scales represent multiple units. Label each part of the graph. Write three statements to describe your data.

(4.01)

The Big "Z"

Directions:
Each student needs a gameboard, one die and one marker. In turn each player puts a marker on any number on the board and then rolls a die. A player can move one space in any direction (vertically, horizontally, or diagonally) to a space that contains the number on the die. Points are determined by the place value of that number. For example: If a player's marker is on 542 and he or she rolls a "6", the player may move to 461. The score would be 60 points, since the "6" is in the ten's place. If the move is to 625, the score is 600 points. Players take turns until each player has five turns. Students total their scores at the end of the game. High score wins.

342	423	364	132	453	361	534
234	536	425	241	421	613	362
625	461	653	423	362	425	241
542	124	315	532	641	253	364
		453	265	154	635	126
		241	643	435	514	243
		532	356	643	351	436

324	413	534	165	513	234	652
143	365	413	243	351	146	425
651	543	564	136	562	251	536
425	264	132	653	351	413	624

(1..01b)

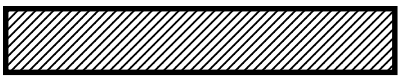
Keeping Skills Sharp

1. 6 + 9
2. 13 - 7
3. 56 - 4

4. What coins could I use to make 37¢ ?
   Is there more than one answer?

5. How many inches are in one foot?

6. This is two-thirds of a cake. What did the whole cake look like?



7. Write the numeral for three hundred eighty-five.

8. Nu had 29 marbles. He got 18 more for his birthday.
   How many does he have now?

Solve this!

There is a tree with five branches.

On each branch there are three nests.

In each nest there are four eggs.

How many eggs are there in all?

(1.06, 1.03a)

To the Teacher

Grade 3
WEEK 4

Fun with Multiplication:
There are many who define mathematics as the study of patterns. If students have not had opportunities to explore patterns with a variety of manipulative materials, time should be devoted to "hands-on" experiences. The ability to identify patterns in place value, in multiplication, in geometry, and in other content areas is a useful tool for all students. Patterns should have at least three repetitions for students to be able to recognize the pattern unit (the part that is repeated).

Writing about Math:
Students need to understand the properties or attributes of shapes, and not just memorize names. Use a shape other than a square or rectangle to illustrate before posing this question.

Let's Explore:
Students bring in individual collections of 100 objects. It is important that they share how they know they have exactly 100. This could include their strategy for counting (grouping, skip-counting). One hundred is a landmark number. These collections could become part of the class math materials to help students model and develop the concept of large numbers. Let's Find Out: Blackline for a graphing template is available. Students should eventually be able to create and label on their own.

Suggested Literature:
The King's Commissioners A. Friedman; Circles and Squares Everywhere, M. Grover; When A Line Bends, A Shape Begins, R. Greene

Keeping Skills Sharp:
#4 Model how to use coins to make another solution. (ex. make 16¢ = 10¢ + 5¢ + 1¢, three nickels + one penny, 16 pennies).

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

10 - 6	8 - 2 + 1 + 3 - 1
number of fingers on three children	number of sides on a hexagon, plus number of sides on a triangle
What comes next . . . 25, 50, 75,__?	10 less than 67
value of one quarter and four dimes	number of days in a year

Keeping Skills Sharp

15	12
6	answers will vary
52	385
answers will vary; yes	47