Recognition of Numbers

Materials needed: Hundreds Chart (see charts in the appendix section)

Just as the art of writing your alphabets has to be mastered, so does a child's ability to write their numbers correctly as well as legibly. A dry erase wipe off book is the best way to practice this skill over and over without a lot of papers and copying.

A dry erase wipe off book is provided in the optional kit.

Students must know that there are patterns with numbers. Allow your kindergartener to look at the hundreds chart provided for you. Talk about the numbers. Ask: "Are there any numbers that look alike?" Have the student point to the number 1. Have them to slide their finger down the 1st column. Ask: "Do all the boxes have a number 1 in them?" Have student point to the number 2. Have them slide their finger down the 2nd column. Ask: "Do all the boxes have a number 2 in them?" Repeat with each column until the number 10. Have student point to the number 10. Have them to slide their finger down the last or 10th column. Ask: "Do all the boxes have a zero in them?"

Now have student look at the first line across the chart, numbers 1-10. Now look at the second line across. It repeats all the numbers from the first line. Now look at the third line across. It repeats all the numbers from the first line. Repeat this until the 10th line. It repeats all the numbers from the first line. Explain if you know the first line of numbers, you can learn your numbers to 100.

Practice counting items with the student, while counting aloud.

Date introduced _____ Date mastered _____

Write this chart out on the dry erase board.
Fill in the missing numbers. Counting numbers

0, 1, ___, 3, ___, 5, ___, 7, ___,___, 10, ___, ___, 13, 14, ___, 16, ____, 18, ___, 20

21, __, __, 24, 25, 26, __, __, 29, ___, ___, 32, 33, ___, 35, 36, ___, ___, 39, ___, 41, 42, 43, ___, ___, ___, 47, 48, ___, 50

Backwards

20, ___, 18, ___, ____, ____, 14, ___, 12, ___, ____, 9, ____, ____, 6, ____, 4, ____, ____, ____, 0

Forward

51, ___, ___, ___, 55,56, ___, 58, ___, 60, ___, ___, 63, ___, 65, ___, ___, 68, ___, ___, 71, 72, 73, ___, 75, ___, ___, ___, 79, 80, ___, 82, ___, ___, ___, 86, 87, ___, 89, 90, ___, ___, ___, 94, 95, 96, ___, ___, ___, 100

20, ___, 18, 17, ___, ___, ___, 13, ___, 11, 10, ___, 8, ___, ___, 5, ___, 3, 2, ___

Practice this skill until mastered.

Date Introduced _____ Progress _____ Mastered _____

Writing Numbers

Whole numbers are the counting numbers and zero.

0, 1, 2, 3, 4, 5...

To write the names of whole numbers through 999 (nine hundred ninety- nine), we need to know the following words and how to put them together.

0 zero	10 ten	20 twenty
1 one	11 eleven	30 thirty
2 two	12 twelve	40 forty
3 three	13 thirteen	50 fifty
4 four	14 fourteen	60 sixty
5 five	15 fifteen	70 seventy
6 six	16 sixteen	80 eighty
7 seven	17 seventeen	90 ninety
8 eight	18 eighteen	100 one hundred
9 nine	19 nineteen	

Note: The names of two- digit numbers greater than 20 that do not end in zero are written with a hyphen.

Have students practice writing their whole numbers. Use the chart to complete the following problems.

Example: Use words to write the number 33. Be sure a hyphen is used between the two words thirty, and three: thirty-three

Use words to write the number 6.
Use words to write the number 8.
Use words to write the number 46.
Use words to write the number 63.
Use words to write the number 78.

Use words to write the number 4.
Use words to write the number 7.
Use words to write the number 84.
Use words to write the number 90.
Use words to write the number 29.

Use digits to write each number.

nineteen	thirty-eight	twenty-eight	seventy-five
fifty-four	sixty-two	Eleven	Fourteen
Ninety-one	seventeen	Eighty	ninety-three

Date Introduced _____ Progress _____ Mastered _____

Ordinal Numbers

Ordinal numbers are numbers that tell position or order.

first 1st	Sixth 6th	eleventh 11th	sixteenth 16th
second 2nd	seventh 7th	twelfth 12th	Seventeenth 17th
third 3rd	eighth 8th	thirteenth 13th	eighteenth 18th
fourth 4th	Ninth 9th	fourteenth 14th	nineteenth 19th
fifth 5th	tenth 10th	fifteenth 15th	twentieth 20th
			twenty-first 21st

Explain: First means that there is no one else in front of you.

If you are second, there is only one person in front or ahead of you.

If you are third, there are only two people in front or ahead of you.

If you are fourth, there are only three people in front or ahead of you.

If you are fifth, how many people are in front or ahead of you?

If you are sixth, how many people are in front or ahead of you?

If you are seventh, how many people are in front or ahead of you?

If you are eighth, how many people are in front or ahead of you?

Date Introduced _____ Progress _____ Mastered _____

Use Ordinal Numbers Chart from the previous exercise.

There are 9 people in line, you are fourth; how many people are behind you? How many people are in front or ahead of you?

There are 10 people in line, you are sixth; how many people are behind you? How many people are in front or ahead of you?

There are 11 people in line, you are eighth; how many people are behind you? How many people are in front or ahead of you?

There are 9 children in line, you are second; your best friend is ninth, how many people are between you and your best friend?

There are 12 children in line, you are fifth; your best friend is eleventh, how many people are between you and your best friend?

There are 10 children in line, you are fourth; your best friend is fifth, how many people are between you and your best friend?

If you are ninth in line, the person in front of you is what number; the person behind you is what number?

If you are twelfth in line, the person in front of you is what number; the person behind you is what number?

Date Introduced _____ Progress _____ Mastered _____

We use ordinal numbers throughout the day without realizing it. The table below lists the twelve months of the year in order. Copy on the board; let the student answer the questions below the table.

Order	Month	Days
First	January	31
Second	February	28-29
Third	March	31
Fourth	April	30
Fifth	May	31
Sixth	June	30
Seventh	July	31
Eighth	August	31
Ninth	September	30
Tenth	October	31
Eleventh	November	30
Twelfth	December	31

If you were born in the seventh month, what month would that be?

If you were born in the fifth month, what month would that be?

If you were born in the eleventh month, what month would that be?

March is what month of the year?

December is what month of the year?

April is what month of the year?

October is what month of the year?

Look at the date below.

7 – 8 -- 06

The "7" stands for the seventh month, which is July.

Write the following dates on the board. Have students to tell what month it is according to the ordinal table.

3 – 15 – 06 9 – 30 – 99 8 – 2 – 05 5 – 14 – 02 12 – 12—06

Date Introduced _____ Progress _____ Mastered _____

Addition

Starting out
Materials needed – 20 blocks, dry erase board

Explain: Zero adds nothing to another number.
Have student count all twenty blocks.
Tell student to make 1 group of 5 blocks. Count them.

Add 1 block to the group of 5. Ask: How many blocks do you have now? Count them. Use dry erase board to write the problem.
5 + 1 = 6

Add 1 block to the group of 6, how many blocks do you have now? Count them.
6 + 1 = 7

Add 1 block to the group of 7, how many blocks do you have now? Count them.
7 + 1 = 8

Add 1 block to the group of 8, how many blocks do you have now? Count them.
8 + 1 = 9

Add 1 block to the group of 9, how many blocks do you have now? Count them.
9 + 1 = 10

Adding 1 to any number makes the other increase by one.

Part II

Count out 10 blocks.

Add 1 more to the group of 10, how many blocks do you have now? Count them.
10 + 1 = 11

Add 1 more to the group of 11, how many blocks do you have now? Count them.
11 + 1 = 12

Add 1 more to the group of 12, how many blocks do you have now? Count them.
12 + 1 = 13

Add 1 more to the group of 13, how many blocks do you have now? Count them.
13 + 1 = 14

Add 1 more to the group of 14, how many blocks do you have now? Count them.
14 + 1 = 15

Add 1 more to the group of 15, how many blocks do you have now? Count them.
15 + 1 = 16

Add 1 more to the group of 16, how many blocks do you have now? Count them.
16 + 1 = 17

Add 1 more to the group of 17, how many blocks do you have now? Count them.
17 + 1 = 18

Add 1 more to the group of 18, how many blocks do you have now? Count them.
18 + 1 = 19

Add 1 more to the group of 19, how many blocks do you have now? Count them.
19 + 1 = 20

Review: Adding one to a number increases the other by 1.

Date Introduced _____ Progress _____ Mastered _____

Counting by 10's
Materials needed: Hundreds Chart and orange highlighter

Use your orange highlighter to color all the squares in the 10's column.
In doing this, the student is able to separate the tens from the other numbers.
Color the whole box of each number.

Have the student to place their finger on the number 10, and begin counting. …
10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Repeat this at least 5 more times.

Date Introduced _____ Progress _____ Mastered _____

Addition – Adding 2 to a Number
Materials needed: 20 blocks, dry erase board

Count twenty blocks.
Make a group of two blocks.

Add 2 more blocks to the group of 2, how many blocks do you have now? Count them.
2 + 2 = 4

Add 2 more blocks to the group of 4, how many blocks do you have now? Count them.
4 + 2 = 6

Add 2 more blocks to the group of 6, how many blocks do you have now? Count them.
6 + 2 = 8

Add 2 more blocks to the group of 8, how many blocks do you have now? Count them.
8 + 2 = 10

Add 2 more blocks to the group of 10, how many blocks do you have now? Count them.
10 + 2 = 12

Add 2 more blocks to the group of 12, how many blocks do you have now? Count them.
12 + 2 = 14

Add 2 more blocks to the group of 14, how many blocks do you have now? Count them.
14 + 2 = 16

Add 2 more blocks to the group of 16, how many blocks do you have now? Count them.
16 + 2 = 18

Add 2 more blocks to the group of 18, how many blocks do you have now? Count them.
18 + 2 = 20

Date Introduced _____ Progress _____ Mastered _____

Counting by 5's

Materials needed: Hundreds Chart and a green highlighter. [Do not use crayon]

Use your highlighter to color all the boxes when counting by fives. Make sure the whole square is colored in.
Explain: When counting by fives, every number will have either a 5 or a zero in the square.

Ask student to point to number 5. Since counting by 5's will have a 5 or a zero in the square, Ask: what number do you think is next. [Wait for reply] 10, because it has a zero.

What square do you think is next? [Wait for reply] 15, because it has a 5 in it. What number do you think is next? [Wait] 20, because it has a zero in it.

Repeat this process until you reach 100.
When the chart is completed, recite the numbers at least 5 times.

Date Introduced _____ Progress _____ Mastered _____

Subtraction

Repeat the same process.
Zero means you having nothing. Whatever number you subtract zero from, it will always be the other number that will be your answer.

5 - 0= __ 8 - 0= __ 1 - 0= __ 7 - 0= __

Math Vocabulary: Subtrahend minus minuend equals the difference (answer).

Date introduced _____ Date mastered _____

Subtraction – Subtracting 1
Materials needed: 20 blocks, dry erase board

Count twenty blocks. Have student to make a group of 10 blocks.
To subtract means to make less. If you keep subtracting you could end up with zero.
With the group of 10 blocks, subtract 1 block from the group. Count how many are remaining?
10 – 1 = 9

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
9 – 1 = 8

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
8 – 1 = 7
Subtract 1 block from the group; how many blocks are still left in the group? Count them.
7 – 1 = 6

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
6 – 1 = 5

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
5 – 1 = 4

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
4 – 1 = 3

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
3 – 1 = 2

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
2 – 1 = 1

Subtract 1 block from the group; how many blocks are still left in the group? Count them.
1 – 1 = 0

Date Introduced _____ Progress _____ Mastered _____

Odd and Even Numbers

Materials needed: Hundreds Chart and yellow highlighter [Do not use crayons]

The numbers used for counting by two's are also the even numbers. They will always have a 2, 4, 6, 8, 0 pattern. Let's look at our chart. Point to the number 2. Color it.

Following the 2,4,6,8, 0 pattern, what square should you color in next? [Wait for reply] 4. Color in the square with the 4.

Ask: Now what is next? [Wait for reply] 6. Color in the square with the 6. After six comes 8. Color in the square with the 8.

We have one more number to complete the pattern, what do you think it is? [Wait for reply] 10. This is where our zero comes in.

Tell student: We are now going to repeat the pattern on row 2. Point to the number 12. Color it. Twelve has a 2 in it so we begin our pattern 2,4,6,8, 0 again.

What do you think is next? [Wait for reply] 14. Color it. After 14 comes 16. Continue until you get to number 50.

Explain again that the numbers we use to count by 2's are also called even numbers.

Date Introduced _____ Progress _____ Mastered _____

Subtraction – Part 2: Subtracting 2from a number

Material needed: 20 blocks, a dry erase board

Review that subtraction means to become less.

Count twenty blocks.

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
20 – 2 = 18

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
18 – 2 = 16

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
16 – 2 = 14

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
14 – 2 = 12

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
12 – 2 = 10

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
10 – 2 = 8

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
8 – 2 = 6

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
6 – 2 = 4

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
4 – 2 = 2

Subtract 2 blocks from the group, how many blocks are still left in the group? Count them.
2 – 2 = 0

Date Introduced _____ Progress _____ Mastered _____

Odd and Even Numbers

Materials needed: Hundreds Chart and pink highlighter [Do Not use crayons]

Remember a few days ago, we discussed even numbers: 2, 4, 6, 8, 0 pattern. Today we are going to learn the odd numbers. What are odd numbers you might ask? Odd numbers are all the numbers that are left after counting by two's. The pattern is 1,3,5,7,9.

On your chart point to number 1. This is your first odd number. Color the square. What number is next on our 1,3,5,7, 9 pattern? [Wait] 3.
Color the square. What number is the next number? [Wait] 5.Color it.

What number will be next in our pattern? [Wait] 7. Color it. The last number in the pattern is 9. Color it. Now we start our pattern over. The next number is 11. Color it. Following the pattern, what is next? [Wait] 13. Continue this process until you get to 49.

Date Introduced _____ Progress _____ Mastered _____

Addition – Adding two and three more
Materials needed: 20 blocks

Review the adding one to a number rule.
Have student to use blocks to complete the following addition problems.

5 blocks and 2 more blocks are how many blocks?
[Wait for them to work it out]

4 blocks and 2 more blocks are how many blocks?
6 blocks and 2 more blocks are how many blocks?
2 blocks and 2 more blocks are how many blocks?
3 blocks and 2 more blocks are how many blocks?
7 blocks and 2 more blocks are how many blocks?
8 blocks and 2 more blocks are how many blocks?

7 blocks and 3 more blocks are how many blocks?
5 blocks and 3 more blocks are how many blocks?
4 blocks and 3 more blocks are how many blocks?
3 blocks and 3 more blocks are how many blocks?
6 blocks and 3 more blocks are how many blocks?
9 blocks and 3 more blocks are how many blocks?
10 blocks and 3 more blocks are how many blocks?
11 blocks and 3 more blocks are how many blocks?
12 blocks and 3 more blocks are how many blocks?

Date Introduced _____ Progress _____ Mastered _____

Odd and Even Numbers -- Part 2
Materials needed: Even number Hundreds Chart and yellow highlighter

Say: Let's review our chart, counting by two's. Put your finger on the 2. Ask: When counting by two's, what's the pattern? [Wait] 2,4,6,8, 0. Make sure student moves their finger along as you recite the even numbers up to 50. Begin.

Today you will finish your even number chart. Point to number 50. Ask: What do you think will be next? [Wait] 52. Color it. If we remember the 2,4,6,8,0 pattern, then we know that 54 is next. Continue this until you reach 100. Your hundreds chart now becomes a study sheet.

Date Introduced _____ Progress _____ Mastered _____

Subtraction – Subtracting two and three
Materials needed: 20 blocks

Have students to use the blocks to work out the following problems.

You have 8 blocks, if you remove 2 blocks, how many blocks are left?
You have 7 blocks, if you remove 2 blocks, how many blocks are left?
You have 9 blocks, if you remove 2 blocks, how many blocks are left?
You have 4 blocks, if you remove 2 blocks, how many blocks are left?
You have 6 blocks, if you remove 2 blocks, how many blocks are left?
You have 5 blocks, if you remove 2 blocks, how many blocks are left?

You have 13 blocks, if you remove 3 blocks, how many blocks are left?
You have 16 blocks, if you remove 3 blocks, how many blocks are left?
You have 15 blocks, if you remove 3 blocks, how many blocks are left?
You have 20 blocks, if you remove 3 blocks, how many blocks are left?

Date Introduced _____ Progress _____ Mastered _____

Odd and Even Numbers -- Part 2 Odd

Materials needed: Odd Number Hundreds Chart and pink highlighter.
[Do Not use crayon]

Use your Odd Number Hundreds Chart. Put your finger on the 1. Ask: When counting the odd numbers, what's the pattern? [Wait] 1,3,5,7,9. Make sure student moves their finger along as you recite the odd numbers up to 49. Begin.

Today you will finish your odd number chart. Point to number 49. Ask: What do you think will be next? [Wait] 51. Color it. If we remember the 1,3,5,7, 9 pattern, then we know that 53 will be next. Color it. Continue this until you get to 99. Your odd number hundreds chart now becomes a study sheet.

Date Introduced _____ Progress _____ Mastered _____

Before, After and Between

Materials needed: Hundreds Chart, red, blue and yellow colored pencils.

To Instructor: Student should now be very familiar with using the hundreds chart. Today you will use the hundreds chart to help the student grasp clearly the concept of Before, After and Between. In actually seeing and working with the numbers on the hundreds chart over and over, the child begins to have this photographed into their memory. This helps them to recall these skills later without having the chart.
The colored pencils are needed for the student to see the concept: Before means the same as in front of; After means the same as when it is over or at the end; and Between means the same as middle. The student will use the blue colored pencil for before, the yellow colored pencil for between, and the red colored pencil for after.

Explain to student: Today we are going to play a game with the hundreds chart. Ask: What does the word Before mean? [Wait] It means the same as in front of. What does the word After mean? [Wait] It means when it is over or at the end. What does the word Between mean? [Wait] It means the same as in the middle.

Today we are going to learn which when counting to 100 come in front of another, or behind another, and which numbers are in between. We will be able to see this by using our colored pencils. We will use the blue for the word before, yellow for the word between, and red for the word after.

Follow along.

Find the number 33; place your finger on it. Find the number 39; place a finger on it as well. Look between 33 and 39; what are the numbers? [Wait] 34, 35, 36, 37 and 38.
Now let's color this with our colored pencils. Color 33 blue; Color 34, 35, 36, 37 and 38 yellow; and color 39 red. Continue this with the other patterns provided for you.

What number is before 42, what number is after 49, what numbers are between?

What number is before 3, what number is after 5, what numbers are between?

What number is before 92, what number is after 93, what numbers are between?

What number is before 55, what number is after 58, what numbers are between?

What number is before 74, what number is after 76, what numbers are between?

What number is before 21, what number is after 26, what numbers are between?

Date Introduced _____ Progress _____ Mastered _____

Most and Fewest

Materials needed: Different colored blocks

To the Instructor: The purpose of this lesson is to familiarize the student with common mathematical terminology, as well as the concept of most and fewest. The way we will introduce this is by using colored blocks to allow students to make groups and determine which group has the most or the fewest. The student will also reinforce the ability to sort and recognize different quantities in grouping.

Let's begin.

Tell students: Today we are going to learn most and fewest. We are going to do this by putting our blocks in different groups. Most means to have more than anyone else. Fewest means to have less than everybody else.

Have student to separate their blocks into groups by different colors. Ask: Which group has the most blocks? Which group has the fewest blocks?

Put 9 blocks in one group, and 11 blocks in another group. Which group has the fewest?

Put 10 blocks in one group, and 8 blocks in another group. Which group has the most?

Put 12 blocks in one group, and 10 blocks in another group. Which group has the most?

Put all the red and blue blocks together and all the green and yellow blocks together. Which group has the fewest?

Put all the yellow and blue blocks together and all the green and red blocks together. Which group has the most?

Date Introduced _____ Progress _____ Mastered _____

Directions
Vertically, Horizontally, and Diagonally

Materials needed: Hundreds Chart and colored pencils, dry erase board.

To the Instructor: The purpose of this lesson is to learn direction words used much throughout math as well as life. Today's words are vertical, horizontal and diagonally. You will teach these words by having the student follow directions you have given them on the hundreds chart. The student will use their colored pencils to color in their directions.
Example: Find the number 31 on the chart; we will now travel vertically to 71. Color your route.

Note: Although vertical means up and down. Students will need to recognize for themselves if the numbers are increasing, they move down instead of up.

Let's begin.

Today we are going to play a new game with the hundreds chart. We are going to travel around the chart, listening to my directions. Here's the key. We can only move on the words vertically, horizontally, and diagonally.
Ask: What do you think the word vertical means? [Wait] It's another way of describing up and down. If the word vertical means up and down, what do you think horizontal means?

[Wait] It means to move across. What do you think the word diagonal mean? [Wait] It means to travel at an angle.

Note: You may need to show this concept on the board.

You are going to color each direction with a different pencil.

Put your pencil on number 6, move horizontally to number 9.
Color you route.
Put your pencil on number 42, move vertically to number 72.
Color you route.

Put your pencil on number 10, move diagonally to number 46.
Color you route.

Put your pencil on number 21, move horizontally to number 26.
Color you route.

Put your pencil on number 55, move vertically to number 95.
Color you route.

Put your pencil on number 50, move diagonally to number 86.
Color you route.

Put your pencil on number 34, move vertically to number 74.
Color you route.

Put your pencil on number 96, move horizontally to number 100.
Color you route.

Put your pencil on number 60, move vertically to number 90.
Color you route.

Put your pencil on number 81, move horizontally to number 84.
Color you route.

Date Introduced _____ Progress _____ Mastered _____

Place Values

Materials need: Place value chart, dry erase board

> To the instructor: When finishing this lesson, student should be able to demonstrate an understanding of whole number place value concepts to the millions. They will understand zero as a place holder. Student will need to master place values before regrouping.

Begin with student: When explaining place values tell student every number occupies a space. They are called places. Each place is worth something. The word for this is known as value. When determining the places you start on the right giving names to each number. The number all the way on the right is named the ones. The name of the number next to the ones is called tens; the name of the number next to the tens is called hundreds. The name of the number next to the hundreds is thousands; the name of the number next to thousands is ten thousands. The name of the number next to ten thousands is hundred thousands; the name of the number next to hundred thousands is millions.

Use the dry erase board to explain that order.

Millions hundred-thousands ten thousands thousands hundreds tens ones
(right)

Let's look at these two numbers on the board.

1. 32 2. 324

Which place value is the 2 in these numbers?

In the first number the 2 is in the ones place, the place all the way to the right.
In the second number the 2 is in the tens place, right next to ones.

Let's complete the following problems.

The digit 7 is in what place in 753? The digit 4 is in what place in 3478?
The digit 9 is in what place in 894? The digit 3 is in what place in 9634?
The digit 6 is in what place in 464? The digit 6 is in what place in 6320?
The digit 5 is in what place in 5678? The digit 8 is in what place in 3841?

The optional kit has a place value chart in it.

Date Introduced _____ Progress _____ Mastered _____

Digits

Materials needed: dry erase board

> To the Instructor: When writing numbers, we use digits. Digits are the numerals 0,1, 2, 3, 4, 5, 6, 7, 8, and 9.
> Student must understand that a digit is just the numbers 0-9.

Explain: Today we are going to learn about digits. Ask do you know what digits are? [Wait]

If you can count to 9, you already know all the digits.
That's because digits are the numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.
I will work different problems on the board, so you can locate the digits I tell you.

Let's begin.

The number 463 has three digits, and the last digit is 3.
The number 71,249 has five digits and the last digit is 4.
The number 846,392 has six digits and the last digit is 2.
The number 97,647 has five digits and the last digit is 7.
The number 436,985 has six digits and the last digit is 5.

How many digits are in each number?

18	36	6210	8,403,227
27	5281	364	9,647
37,432	5,934,286	961	453,000

The digit 6 is in what place in each of these numbers?

16 65 623

The digit 8 is in what place in each of these numbers?

5281 18 867

What is the last digit in each number?

19	5281	8,403,190
734	347	473

Which digit is in the tens place in each number?

3427	480	437,269
984	6632	848
4278	3004	6273

Which digit is in the thousands place in each number?

47,328	8,567,320	88,642
346,963	436,262	7,624,362
576,084	793,241	6324

Date Introduced _____ Progress _____ Mastered _____

Addition

To the Instructor: Explain that whenever we count to different groups that we combine into one. This is known as adding. The numbers that we are adding are called addends. The answer to an addition problem is called the sum.

Just as grammar has sentences, so does math.
The expression 3 + 7 = 10 is called a number sentence.
A number sentence is a complete sentence that uses numbers and symbols instead of words.
When we add two numbers either number may be first.
This is called the commutative property.

Regrouping

Re – means to do again
Group – means together

Regroup means to do again, keeping the same group together.

Example:
1
3 9 ← ones
1 4 ← ones
---
5 3

First, we add our ones, the number all the way on the right, we say 9 + 4 = 13.
This means we have 1 ten and 3 ones.
Since 13 ones is the same as 1 ten and 3 ones, we put just the 3 in the ones' place.
We will add the 1 ten to the other tens.
We now have 1 more 10, so we show this by putting our new ten over the 3 and 1 that is already in the tens' column. Now we have regrouped the problem.
There are now 5 tens.

Example:

```
   1
  3 6
+ 2 9
 -----
  6 5
```

First we add our ones, the numbers all the way on the right. We say 6 + 9 = 15. This means we have 1 ten and 5 ones. Since 15 ones is the same as 1 ten and 5 ones, we put just the 5 in the ones' place. We will add the 1 ten with the other tens. Now we have 1 more ten, so we show this by putting our new ten over the 3 and 2 that is already in the tens' column. Now we have regrouped the problem. Now we add
1+ 3 + 2 = 6. There are now 6 tens.

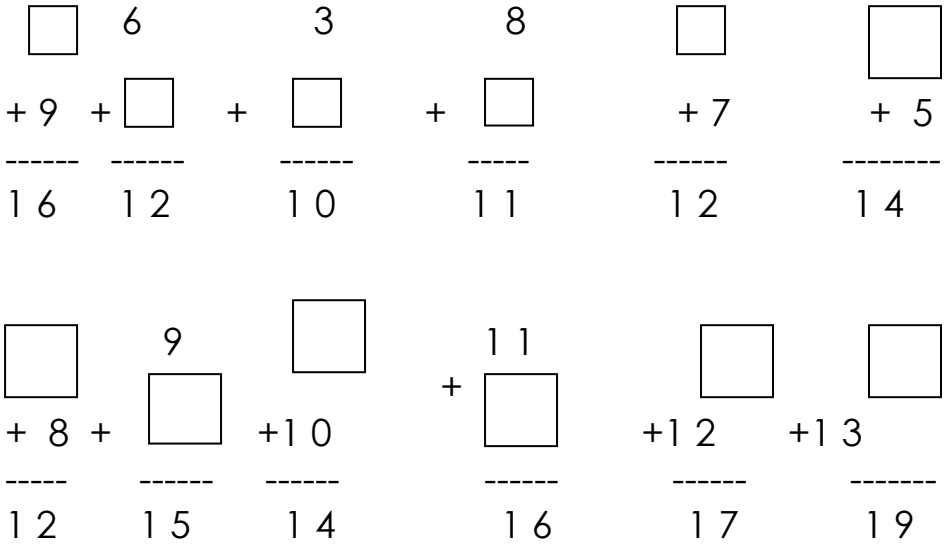
```
  1 1
  4 2 7
+ 2 8 9
 -------
  7 1 6
```

First we add our ones, the number all the way on the right. We say 7 + 9 =16. This means we have 1 ten and 6 ones. Since 16 ones is the same as 1 ten and 6 ones we put just the 6 in the ones' place. We will add the 1 ten with the other tens. Now we have 1 more ten, so we show this by putting our new ten over the 7 and 9 that is already in the ten's column. Now we have regrouped the problem. Now we add the
1 + 2+ 8 to get 11 tens.

Since 11 tens is the same as 1 ten and 1 hundred, we put just the 1 in the tens' place. We add the 1 hundred with the other hundreds. Now we have 1 more hundred, so we show this by putting our new hundred over the 4 and 2 that is already in the hundreds' column. Now we have regrouped the problem. Now we add 4 + 2 + 1 = 7.
There are now 7 hundreds.

Addition – Missing Numbers

Materials needed: dry erase board



To the Instructor: Tell students one tip to figuring out these types of addition problems is to take the answer and subtract the one addend that has been give. This will give them the correct answer.

The other way to get the addend of the missing number is to determine how much are between the sum and the addend given number.

The question you ask yourself is 9 + what gives me 16. If you count up from 10 (the number following 9) until you get to 16, You will see there are 7 numbers between 9 and 16.

Other Addition tips: 2 + 3 + 4 + 8 + 7 + 9 = _____
How do you solve this problem quickly?
First you locate all the numbers that equal 10.
Let's look at the number sentence closely.

2 and 8 make 1 0
3 and 7 make 10
4 and 6 make 10
Only 9 is left.
If we count by 10s we get
30 + 9 = 39.
The sum is 39.

3 + 6 + 8 + 4 + 7 + 2 + 5 = _____
3 and 7 make 1 0
6 and 4 make 1 0.
8 and 2 make 1 0.
Only 5 is left.
If we count by 10's we get
30 + 5 = 35
The sum is 35.

Date Introduced _____ Progress _____ Mastered _____

Regrouping Practice

2 9 + 2 6	3 8 +1 4	4 6 + 2 7	6 6 + 1 6
3 6 4 + 2 5 8	2 8 7 +6 5 9	4 3 6 + 4 7 8	5 7 7 + 2 6 4

Have student explain the process of regrouping.

Subtraction

To the Instructor: Explain that sub means to go under; tract is a system that follows a path.

The numbers you subtract are called the subtrahend and the minuend. The answer to a subtraction problem is called the difference.

Example: subtrahend
- minuend
---
difference

Tell students when you subtract the numbers decrease.

Regrouping

Re – means to do again.
Group – means together

Regroup means to do again keeping the same group together. When we regroup in subtraction we borrow or exchange tens for ones.

Example:

$$\begin{array}{r} 4 \\ \not{5}\ 6 \\ -\ 2\ \ 9 \\ \hline 2\ \ 7 \end{array}$$

First we subtract our ones, the numbers all the way to the right. We say 6 -- 9 =. There are not enough ones to complete this transaction. We must regroup before we can subtract.
We must trade or exchange 1 ten from the 50 leaving 40 tens. We add that 1 ten to the 6 ones, and now we had 16 ones. We can see this happen by putting a

small line through the 5 in 50, and changing it to 40 tens, and placing a 4 above the 5. Then you place the 1 ten you borrowed next to the six. Now you have 16 ones, more than enough. We now subtract 16 – 9 = 7 ones.
Then we subtract 40tens – 20 tens = 20 tens.
The difference is 27.

Other subtraction tips:

5 6	Subtraction Down
-- w	We ask ourselves.
1 4	Six minus what number is one.
	Five minus what number is one?
	We find that the missing number is 42.

Note: Knowing how many numbers are between 6 and 4 is 2, and how many numbers are between 5 and 1 is 4 is usually harder to grasp for students.

	Adding up
N	We add up:
-- 56	Three plus six is nine.
23	Two plus five is seven.
	The missing number is 79.

In subtraction facts two numbers can be reversed. You can use this pattern to help us find missing numbers in subtraction problem.

Example:

12	12	15	15	23	23
- 5	-7	- 6	- 9	-11	-12
7	5	9	6	12	11

Subtraction

□	□	1 4	9	□
-- 3	-- 6	-- □	-- □	-- 8
6	6	8	5	9

□	18	10	15	□
-- 8	-- □	-- □	-- □	-- 7
6	9	4	7	9

3 6	4 1	5 0	1 7	6 2
-- G	-- P	-- Q	-- A	-- H

Regrouping

7 6	8 2	9 3	6 6	5 7
-- 2 7	-- 2 9	-- 4 7	-- 2 8	-- 1 8

7 2 4	8 7 6	7 4 3	9 4 7
-- 1 7 6	-- 2 8 7	-- 2 6 4	-- 3 5 8

Date Introduced _____ Progress _____ Mastered _____

Regrouping

Materials needed: dry erase board

More Practice with Regrouping

5 6 means
50 tens and 6 ones

4 9 means

9 8 means

6 3 means

7 4 means

1 8 means

Which combinations equal 48?

2 tens and 18 ones
4 tens and 8 ones

4 tens and 18 ones
2 tens and 28 ones

3 tens and 18 ones
3 tens and 8 ones

Which combinations equal 72?

7 tens and 12 ones
5 tens and 22 ones

7 tens and 2 ones
8 tens and 12 ones

3 tens and 42 ones
6 tens and 12 ones

What are the missing numbers?

3 6 = ___ tens and 16 ____
5 8 = ___ tens and 8 ____
2 8 = ___ tens and 8 ones
3 9 = ___ tens and 19 ones

4 5 = 3 tens and ____ ones
7 2 = 7 tens and ____ ones
5 2 = 5 tens and ____ ones
7 3 = 6 tens and ____ ones

Date Introduced _____ Progress _____ Mastered _____

Comparing Numbers
Greater Than / Less Than

Material needed: dry erase board

Instructor Explains:

When we compare two numbers, we decide whether one number is greater than, equal to, or less than another number.

Three is equal to three.
Three is less than four.
Four is greater than three.

The sentences above compare two numbers. We may use digits and symbols to write the same sentences. We use the equal sign to show that two numbers are equal.

3 = 3 is read: Three is equal to three.

We use the greater than / less than symbol to show the comparison of two numbers that are not equal.

- <

The pointed end points to the smaller number: We read from left to right.
If the pointed end comes first, we say "less than."

3 < 4 is read "Three is less than four."

If the open end comes first, we say "greater than."

4 > 3 is read "Four is greater than three."

Use dry erase board to write the following problems.

Use digits and a comparison symbol to write “42 is greater than 38.”

Compare the following numbers by replacing the circle with the proper comparison symbol.

9 7 ◯ 7 8

Which of these numbers is the greatest?

1 2 3 2 3 1 2 1 3

Arrange these numbers in order from the least to the greatest.

6 4 0 4 0 6 4 6 0

Write each statement using digits and a comparison symbol.

Thirteen is less than thirty.
Forty is greater than fourteen.

<u>True or False</u>

432 is less than 324.
212 is greater than 221.
316 is less than 316.
733 is greater than 732.
842 is less than 824.

Date Introduced _____ Progress _____ Mastered _____

Rounding to the Nearest 10 and 100

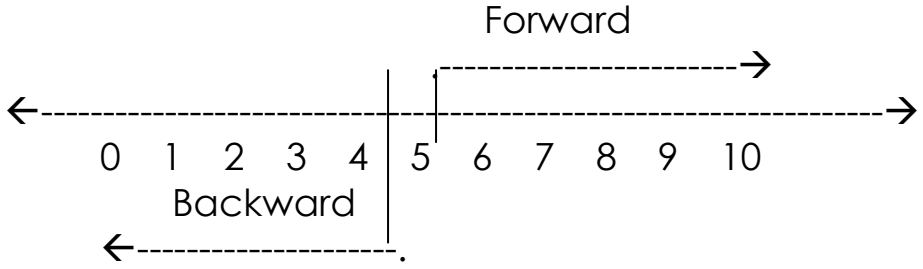
Materials needed: dry erase board

To the Instructor: Ask student what is the difference between an exact number and a rounded number?

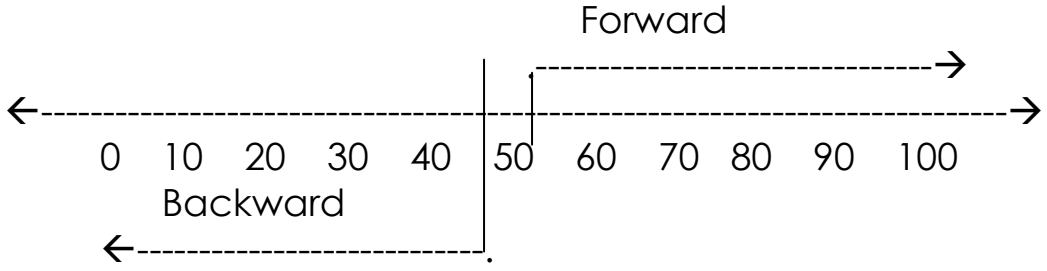
An exact number is accurate. It is what it is.

A rounded number is done on a curve, they usually end with a zero. They are often used in place of an exact number, because they are easy to understand and easy to work with.

Let's look at the way rounding numbers to the nearest ten and hundred works.



If the number is between 0 and 4, it will be closer to <u>0</u>. If the number is between 5 and 10, it will be closer to 10. The number 5 is always in the middle of two 10's; 5 is automatically will go to the highest 10.



If the number is between 0 and 49, it will be closer to <u>0</u>. If the number is between 50 and 100, it will be closer to 100. The number 50 is in the middle of 0 and 100, 50 automatically will go to the highest <u>100.</u>

Round each number to the nearest ten. For each problem, draw a number line to show your work.

7 8	4 3	6 1	4 9
9 2	1 7	3 4	8 4

Round each number to the nearest hundred. For each problem draw a number line.

1 5 2	1 0 5	1 3 7	2 9 9
2 4 7	2 0 8	2 9 0	2 01

Date Introduced _____ Progress _____ Mastered _____

More Odd and Even Numbers

Materials needed: dry erase board

To the Instructor: Remember when we are using even numbers, we count by two's – 2, 4, 6, 8, or 0.

The list of even numbers goes on and on. We do not begin with zero when we count by two's. However, the number 0 is an even number.

Explain: You can tell if a number is even by looking at the last digit. A number is an even number if the last digit is even, which means it must end in 2, 4, 6, 8, or 0.

If a number is not an even number, then it is an odd number. An odd number must end in 1, 3, 5, 7, or 9.

Tips – An even number of objects can be separated into equal groups. You cannot separate an odd number into two equal groups. You will always have 1 left over.

When adding: 2 even numbers, the sum will be <u>even.</u>
An odd number and an even number, the sum will be <u>odd.</u>
Two odd numbers, the sum will be even.

<u>Time for practice</u>

Which one of these numbers is even number?

4 6 3 2 8 5 4 5 6 3 1 8 1 3 2

Which one of these numbers is an odd number?

3 4 3 4 2 9 3 1 8 7 5 2 8 6 1

There were the same number of boys and girls in the classroom which of the following numbers could be the number of children in the classroom?

2 5 2 6 2 7

List the five odd three- digit numbers that have a 7 in the hundreds' place and a 5 in the ten's place.

List the odd numbers between 740 and 750.

Use the digits 1, 2, and 3 once each to make an odd number greater than 300.

Will the answer to this problem be odd or even?

4 7 8 + 3 9 3 8 4 9 + 7 3 5 2 3 4 + 7 6 2

Sequences

Materials needed: dry erase board

To the Instructor: Explain. Today we are going to learn another way of counting.

Tell student: Counting is a math skill we learn early in life. Counting by ones, we say one, two, three, four, five, … {1, 2, 3, 4, 5, …}

These numbers are called ***counting numbers***. The counting numbers continue without end.

Ask: Who can tell me, some other ways we have already learned to count? [Wait] We have learned how to count by 10's, 5's, 2's or even numbers, we have also learned how to count by odd numbers, ordinal numbers and tallying.

Now we will learn how to count by sequencing.

You might wonder what sequence means; It means order, in this case, an order of numbers. For you to sequence or order numbers you must have three or more repetitions of the sequence. (Repetition means to repeat.)

When you count in sequence – you are using counting patterns. You must determine the pattern and continue it for at least 3 repetitions.

When counting in a sequence there is always three dots … at the end of your pattern. This means that the sequence continues without end.

Example: 2, 4, 6, 8, __, __, …

A counting sequence may count up or count down. We must study a sequence to discover a rule for the sequence.
It's only then that we can find more numbers in the sequence.

Let's try some sequence patterns on the board. Remember we must study first and then find the rule, so we can complete the order.

5, 10, 15, __, __, 30, …
Rule ___

88, 90, 92, __, 98, …
Rule ___

10, 20, __, __, 50, 60, …
Rule ___

60, 70, ___, ___, 100, …
Rule ___

45, 50, ___, 60, ___, …
Rule ____

15, 20, 25, ___, __, 40, …
Rule ____

10, 9, 8, 7, __, __, 4, …
Rule ___

1st, 2nd, 3rd, __, __, 6th, __, …
Rule ____

111, 1111, ~~1111~~, ____, ____, ~~1111~~ 111, _____, …
Rule ___

1, 3, 5, __, __, __, 13, …
Rule ___

8, __, 12, ___, ___, 18, …
Rule ___

1:00, 2:00, 3:00, ___, ___, 6:00, ___, …
Rule ___

Date Introduced _____ Progress _____ Mastered _____

Expanded Numerals

The number 365 means 3 hundreds and 6 tens and 5 ones.
We can write this as 300+60+5. This is the expanded form of 365.

The number 1,987 means 1 thousand, 9 hundreds, 8 tens, and 7 ones.
We can write this as 1000+900+80+7.

Use index cards as well on this concept. Reverse the problem.
Write: 8 thousand, 4 hundreds, 7 tens, 6 ones _____
Write the full number _____
Repeat until mastered.

Date introduced _____ Date mastered _____

Shapes

Triangle – 3 sided polygon, Rectangle and square – 4 sided polygons,
Pentagon – 5 sided polygon, Hexagon – 6 sided polygon,
Octagon – 8 sided polygon; trapezoid, cube, sphere, semi-circle,
oval

Information Bank
A polygon is a shape that is flat, closed and straight on all of its sides.

Date introduced _____ Date mastered _____

Patterns
Patterns are excellent ways to build your thinking, observing,
and discriminating skills. Have the child to finish the pattern.

AHAAH__ __ __ __ __ AHAAH BbdDBbdD__ ___ ___ ___ BbdD
CQOCC CQOCC ___ ___ ___ ___ ___
OO□ O□ __ __ __ __ __ □ □ □ O□ □ □ O □__ __ __ __
Make up some of your own.

Date introduced _____ Date mastered _____

Smallest to Largest

Materials needed: Dry erase board

To the Instructor: In this lesson we will use more math vocabulary: smallest and largest. We will do this using numbers. Use the dry erase board to write down a group of numbers, then ask student which number is the smallest or largest.
You will write a group of numbers down on the dry erase board. Ask: Which number is the smallest number? Which number is the largest? Then we will be ordering sets from smallest to largest.

Let's Begin

Explain: Today we learn how to put numbers in order from smallest to largest. I will write four different numbers on the board. You will tell me which is the smallest and which is the largest.

The first set of numbers are 30 12 8 14, -- which number is the smallest, the largest?

Note: If the skill is difficult depending on age group, you can use a hundreds sheet.

The next number set is 42, 13, 7, 19 – which number is the smallest, largest?
The next number set is 31, 16, 14, 48 – which number is the smallest, largest?
The next number set is 50, 60, 90, 18 – which number is the smallest, largest?
The next number set is 27, 17, 37, 73 – which number is the smallest, largest?
The next number set is 85, 92, 30, 11 – which number is the smallest, largest?

Put the following numbers in sets in order form smallest to largest.

79	84	82	78	____	____	____	_____
40	64	48	84	____	____	____	_____
13	22	8	98	____	____	____	_____
99	89	29	19	____	____	____	_____
15	75	55	65	____	____	____	_____

Date Introduced _____ Progress _____ Mastered _____

Sorting By Attribute

Materials needed: At least 12 different books or blocks of different colors and shapes or stuff animals

> To the Instructor: The sorting by attribute concept must be mastered by actually sorting items. Allowing the mind to be exercised in this manner teaches children discrimination and organization. Sorting teaches a child how to be a very detailed person. It prompts deeper thoughts which produce good thinking skills.

Tell student that attribute means belonging to a certain group or category by discriminating a particular characteristic about an item.

When sorting, you must have enough items to sort. Do only one category at a time, but do more than one category so student will develop more than one means of examining and observing items. My choices of items are only mere suggestions; you may choose other items if you like. Make sure what you choose has lots of variety.

Explain to student that when you sort items, you are looking for common reasons to link them together. Attribute is belonging in someway to a particular group.

Below are general questions and conclusions. Remember to explain whatever you sort; you had to have had reasons why you choose the groups you did and the conclusions as to why the item is comparable to another.

I have sorted the _____ into two groups. In this group are all _____ that have _____ and in this group are all the _____ that do not have _____.
I put all these in this group because they all have _____.
What's the same about all of these _____?
What is the same about all of the _____ that are not in this group?
Now sort the _____ in a different way, see if you can discover another way.
What are the same about all these _____?
What is the same about all of the other _____?

Tallying

Counting by 5's
Materials needed: At least 25 to 30 items to count. (Blocks, toys, books, candy) a dry erase board

To the Instructor: To really show this concept, again student will need to actually have items to tally. You can choose to use any of the suggestions I gave or choose your own. Tallying is the way people keep track of things they are counting. When we are using the tallying system for counting, you make marks for every item that looks like these 111.

Explain. Today we are going to learn another system for counting things or items, and keeping track of score in a game.

It is called Tallying. Here's how we're going to do this. I have a box of books. There are six different categories for the types of book in my box.

hardback	softback	colored pictures	no pictures	plays music	coloring books
111	111	1~~1111~~	11	~~1111~~	~~1111~~

I need to know how many books I have of each different category. Can you help me? I will keep track with this chart I wrote on the board, when you tell me which category to put my mark. I will make a mark under the right group that looks like this 1.

There is one more rule. So that we don't get a whole lot of little marks that would be hard to count; every time we get 4 tally marks, we can cross it out on number 5.
This is how it looks~~1111~~.

When it is time to count up the books all we have to do is count by 5's and add any extras.

Here we go.

My first book has colored pictures, under which category would I put my tally mark?
Let student reply.

My next book has a hardback cover, under which category would I put my tally mark? [Wait]

My next book plays a musical tune, under which category would I put my tally mark? [Wait]

My next book is a coloring book, under which category would I put my tally mark? [Wait]

My next book is a softback book, under which category would I put my tally mark? [Wait]

My next book is a coloring book, under which category would I put my tally mark? [Wait]

My next book plays a musical tune, under which category would I put my tally mark? [Wait]

My next book has colored pictures, under which category would I put my tally mark? [Wait]

My next book is a coloring book, under which category would I put my tally mark? [Wait]

My next book is a softback book, under which category would I put my tally mark? [Wait]

My next book plays a musical tune, under which category would I put my tally mark? [Wait]

My next book has no pictures, under which category would I put my tally mark? [Wait]

My next book is a coloring book, under which category would I put my tally mark? [Wait]

My next book is a hardback book, under which category would I put my tally mark? [Wait]

My next book plays a musical tune, under which category would I put my tally mark? [Wait]

My next book has colored pictures, under which category would I put my tally mark? [Wait]

My next book is a coloring book, under which category would I put my tally mark? [Wait]

My next book has no pictures, under which category would I put my tally mark? [Wait]

My next book plays a musical tune, under which category would I put my tally mark? [Wait]

My next book has colored pictures, under which category would I put my tally mark? [Wait]

My next book is a softback book, under which category would I put my tally mark? [Wait]

My next book has a hardback cover, under which category would I put my tally mark? [Wait]

My next book has colored pictures, under which category would I put my tally mark? [Wait]

Explain: Now that we are finished tallying all of our books, let's count them. We will first count by fives, then add on the single marks. Which Categories have five tally marks. Those we count first. There are 15 marks when we count the 3 categories with five. Now we add on the rest. There are 23 tally marks.

In order for student under stand the tally mark system, you have to do enough examples to get at 3 categories with five tally marks.
Now play a game, keep score with tally marks?

Date Introduced _____ Progress _____ Mastered _____

Measuring

Distance
12 inches (in) =1 foot (ft) 3 feet=1 yard (yd) 5,280 feet=1 mile (mi)
10 millimeters (mm) =1 centimeter (cm) 100 centimeters =1 meter (m)
1000 meters=1 kilometer

Weight
16 ounces (oz) =1 pound (lb) 2000 pounds =1 ton
1000 grams (g) =1 kilogram (kg)

Liquids measurements
8 ounces (oz) = 1 cup(c) 2 cups = 1 pint (pt) 2 pints = 1 quart (qt) 2 quarts = 1 half gallon 4 quarts = 1 gallon (gal)

Date introduced _____ Date mastered _____

Money

1 penny=1 cent 1 nickel=5 cents 1 dime=10 cents
1 quarter=25cents 1 half-dollar = 50 cents 1 dollar = 100 cents

This is a dollar sign $. This sign means c. You must always have a sign for any amount of money. This is a decimal point (.). We always use a decimal point after the dollars: $2.00, $3.00, $7.00
5 c, 10 c, 95c
The optional kit has a basic money pack in it.

Today there are only nickels and pennies in the coin cup.
How many nickels are there?
How many pennies are there?
When we count money, we begin with the coin that is worth the most. Change the cup every day.
Note: Counting dimes is like counting by 10's. Counting nickels is like counting by 5's.

Date introduced _____ Date mastered _____

Wholes and halves

If you have all of a candy bar, you have the whole thing. If you share your candy bar with one person, then you now have half of the candy.

Date introduced _____ Date mastered _____

Math Vocabulary

Congruent – meaning exactly the same size and shape
Commutative Property – to change the order of the numbers
Vertical – to move up and down
Horizontal – to move across --------
Dozen – a pack or a number of 12
Digits – the numerals 0, 1, 2,3,4,5,6,7,8, and 9.
Equivalent-fractions – to name the same amount

Math Applications

Time
Clock Study

Materials needed: Analog clock and a Digital clock

> Note: The study on time is sequenced by levels of difficulty. Each section builds on preceding concepts. This is a continuing study.

The analog clock is the face clock. It has two hands and the numbers 1-12 going around it clockwise [to the right].

A digital clock, instead of having hands, you have a colon. A colon is two small dots on top of each other. The colon's purpose is to separate the hour from the minutes. On the digital clock, you read the numbers from left to right.

Getting to Know Your Clock

The long hand on the clock shows minutes. [There are 60 minutes in one hour]
The short hand shows the hours. [The hour hand goes around the clock twice in one day. There are 24 hours in a day.]

> Advance: Sometimes on clocks or watches, there is another hand which goes around the face very quickly; it is called the second hand.

Let's set our clocks

On your analog clock, let's put our long hand on the number 12.
Now put your short hand on the number 4.
This is 4 o'clock.

On your digital clock, locate your 4: on the digital clock, the o'clock is represented by the two zeroes. Find your two zeroes.
This is 4 o'clock.

Let's try again.

On your analog clock, let's put the long hand on the number 12.
Now put your short hand on the number 12 also.
This is 12 o'clock.

On your digital clock, you will need to make the number 12.
In your first column of numbers locate your number 1. In your second column of numbers locate 2. Now you have the number 12:, locate your zeroes for o'clock.
This is 12 o'clock.

Repeat with all other hours.

Date Introduced _____ Progress _____ Mastered _____

Getting to Know Your Clock

Ask students: How long is a minute? [Wait for reply]
Explain: If you blink your eyes 60 times, that is as long as a minute.
There are 60 seconds in a minute. Seconds are very quick.
Have students to blink their eyes 60 times.

Ask student: How long is 60 minutes? [Wait for reply]
Explain: You can eat your evening dinner and take your in 60 minutes. 60 minutes is an hour.

Write the following problems on the board.

John wakes up at 6:00. Show six o'clock on your clocks. [Analog and Digital]
John eats breakfast at 7:00. Show seven o'clock on your clocks.
John takes the school bus at 8:00. Show eight o'clock on your clocks.
John leaves school at 12:00. Show twelve o'clock on your clocks.

Mia gets out of school at 2:00. Show two o'clock on your clocks.
Mia takes piano lessons at 3:00. Show three o'clock on your clocks.
Mia's mother picks her up at 4:00. Show four o'clock on your clocks.
Mia eats dinner at 5:00. Show five o'clock on your clocks.

Mark's dad gets home at 6:00. Show six o'clock on your clocks.
Mark takes a bath at 7:00. Show seven o'clock on your clocks.
Mark's dad reads him story at 8:00. Show eight o'clock on your clocks.
Mark went to bed at 9:00. Show nine o'clock on your clocks.

Date Introduced _____ Progress _____ Mastered _____

A Trip around the Day
Use a dry-easel board as well as your teacher's clock.

There are 24 hours in a day. The hours 12 midnight to 12 noon are called a.m. [before noon].
The hours from noon to midnight are called p.m. [after noon].

12:00 midnight begins a new day. It's written like this 12:00 a.m.
Student starts their clock at 12:00 a.m. Even though it is still dark it is called morning.

The next hour will be 1:00 a.m. in the morning [move your clock].
The next hour will be 2:00 a.m. in the morning.

Continue until you get to 5:00 a.m.

When you get to 6:00 a.m. in the morning, it is now beginning to look like morning. The sun is rising.
The next hour will be 7:00 a.m. in the morning. [Students should still be moving their clocks]
The next hour will be 8:00 a.m in the morning.

Continue until get to 11:00 a.m. in the morning.
When you get to 12:00 noon, it is now afternoon. We now write p.m.

Twelve hours or half of the day has past.

Let's start all over on the second part of the same day.
The next hour will be 1:00 o.m. in the afternoon. [Students should be moving their clock.]
The next hour will be 2:00 p.m. in the afternoon.

Continue until you get to 5:00 p.m. in the afternoon.

When you get to 6:00 p.m., it's now in the evening [the day almost over].
The next hour will be 7:00 p.m. in the evening.
The next hour will be 8:00 p.m. in the evening. It is now beginning to look like night. The sun is setting.
Continue until you get to 11:00 p.m. at night.
When you get to 12:00 midnight, it is now morning again. This is a brand new day, another 12 hours has past. Your trip has ended.

Date Introduced _____ Progress _____ Mastered _____

<u>Clockwise:</u> Review prior concepts first.

It takes 60 minutes or 1 hour, for the hour hand to move from one number on the clock to the next.

The hands on a clock move in the direction of increasing numbers, to the right from the 12. This is called the clockwise direction.

Getting to Know Your Clock

On you analog clock, set your clock at 2:00. [Set your digital clock as well.]
Move your minute hand starting at 12 all the way around the clock, clockwise. When you get back around to the 12, one hour has past. It is now 3:00. Set your clocks to the new hour.

Let's try this again.
On your analog clock, set your clock at 3:00. [Set your digital clock as well.]
Move your minute hand starting at 12 all the way around the clock, clockwise. When you get back around to the 12, one hour has past. It is now 4:00. Set your clocks to the new hour.

On your analog clock, set your clock at 4:00. [Set your digital clock as well.]
Make your minute hand starting at 12 all the way around the clock, clockwise. When you get back around to the 12, one hour has past. It is now 5:00. Set your clocks to the new hour.

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Round the Clock

Set your clocks to 12:00 in the morning.
What time will it be in two hours?
Show this new time on your clocks.
Is it 2:00 a.m. or p.m.?

Set your clocks to 6:00 in the evening.
What time was it one hour ago?
Show this new time on your clocks.
Is it 5:00 a.m. or p.m.?

Set your clocks to 4:00 in the afternoon.
What time will it be in two hours?

Show this new time on your clocks.
Is it 6:00 a.m. or p.m.?

Set your clocks to 9:00 in the morning.
What time was it two hours ago?
Show this new time on your clocks.
Is it 7:00 a.m. or p.m.?

Set your clocks to 8:00 in the morning.
What time will it be in three hours?
Show this new time on your clocks.
Is it 11:00 a.m. or p.m.?

Set your clocks to 5:00 in the afternoon.
What time was it three hours ago?
Show this new time on your clocks.
Is it 2:00 a.m. or p.m.?

Set your clocks to 11:00 at night.
What time will it be in four hours?
Show this new time on your clocks.
Is it 3:00 a.m. or p.m.?
[Note: This is tricky; a new day has come.
It is now 3:00 in the morning.]

Set your clocks to 10:00 in the morning.
What time was it four hours ago?
Show this new time on your clocks.
Is it 6:00 a.m. or p.m.?

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<u>Half way around a Day</u>

Explain: It takes 30 minutes or half an hour, for the minute hand starting at the 12 to move halfway around the clock to the number directly under it, the 6.

On your analog clock the 12 is at the top of the clock. Set your minute hand on the 12. If we vertically spit the clock in half, what number is directly under the 12? The number 6. This is known as half past the hour. This means 30 minutes has past.

Set your clocks at 3:00 p.m.
On your analog clock, move your minute hand (the long hand), halfway around the clock.
What time is it now? 3:30 p.m.
Show this new time on your clocks.

Set your clocks at 2:00 a.m.
On your analog clock, move your minute hand halfway around the clock.
What time is it now? 2:30 a.m.
Show this new time on your clocks.

Set your clocks at 5:00 p.m.
On your analog clock, move your minute hand halfway around the clock.
What time is it now? 5:30 p.m.
Show this new time on your clocks.

Set your clocks at 7:00 p.m.
On your analog clock, move your minute hand halfway around the clock.
What time is it now? 7:30 p.m.
Show this new time on your clocks.

Set your clocks at 9:00 a.m.
On your analog clock, move your minute hand halfway around the clock.
What time is it now? 9:30 a.m.
Show this new time on your clocks.

Set your clocks at 12:00 p.m.
On your analog clock, move your minute hand
halfway around the clock.
What time is it now? 12:30 p.m.
Show this new time on your clocks.

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Colored Clock

By the Quarter
Materials needed: blue, pink, yellow, and green colored pencils

Let's look at our clock. It has been divided into four triangles. We are going to color each triangle a different color. Every triangle is called a 4^{th}.

Use your colored pencils to color the first 4^{th} blue.
Color the second 4th pink.
Color the third 4^{th} yellow.
Color the fourth 4^{th} green.

This is to allow the student to see the clock as fourths.
To complete our quarter time study we will use this clock along with our analog and digital clocks.

Explain quarter means four. Explain whatever the amount the whole big piece is, if you divide it into 4 equal pieces, you have 4 quarters.

Ask students: How many quarters are in a dollar? [Wait for reply] 4. All 4 quarters together equal the whole $1.00. Ask how many quarts in a gallon? [Wait for reply] 4. All 4 quarts together equal the whole gallon, 128 oz. Ask how many quarters did we divide our colored clocks into? [Wait for reply] 4. All 4 quarters together equal the whole 60 minutes.

Why you might ask is the whole all different amounts, yet they all are broken up into quarters? The quantities of the quarters are all different amounts based on the whole, the larger the whole, the larger the quarter.

In money a quarter is worth 25c. In liquids a quarter is 32oz. In time a quarter is worth 15 minutes. Your 4ths must be divided equally.

Let's look at the quarter pieces on our colored clock.

The first quarter which is colored in blue has the numbers 1-2-3. Remember the partners when we're counting by 5's are 5,10, and 15.
Let's fill in the numbers in our first quarter. Right on the outside of the circle, we are going to put a small 5, 10, and 15 going clockwise, by their partners. This completes our first quarter. How much is this quarter worth? [Wait for reply] 15 minutes.

Ask: How much do you think the second quarter is worth? [Wait for reply] 15 minutes. What numbers will go into our second quarter. Fill them in and put their partners next to them on the outside of the circle. This completes the second quarter. How much is the second quarter worth? [Wait for reply] 15 minutes.

What numbers are in the third quarter? [Wait for reply] 7-8-9. Fill in the third quarter; make sure you fill in their partners as well. This completes our third quarter. What numbers are in the fourth and last quarter? Fill in your 4th quarter and its partners. This completes the four quarters. How much is each one of the four 4ths worth?

When using an analog clock, a quarter to the next hour means that the long hand or minute hand will be on the nine.
This means we are only fifteen minutes away from the next hour, therefore, the hour hand may actually be very close to the next hour.

This means if it is 4:45, the hour hand will be close to the 5, even though it is still in the hour of 4.

A quarter after the hour means that the long hand or minute hand will be on the 3, meaning we have just begun a new hour.

Complete the following clocks problems with student.

Brenda eats lunch at 11:45.
Look at your colored clock, point to the number that's partner with 45 (9).
Show 11:45 on your analog clock.
This is a quarter to 12.

Vedia starts school at 9:15.
Look at your colored clock, point to the number that's partner with 15 (3).
Show 9:15 on your analog clock.
This is a quarter after 9.

clocks.

David's appointment is at 8:45.
Look at your colored clock, point to the number that's partner with 45 (9).
Show 8:45 on your analog clock.
This is a quarter to 9.

The movie starts at 2:15.
Look at your colored clock, point to the number that's partner with 15 (3).
Show 2:15 on your analog clock.
This is a quarter after 2.
What time was it 15 minutes ago?

It is 15 minutes after 1.
Show this time on your clocks.

It is a quarter past 5 o'clock.
Show this time on your clocks.

The minute hand is on the 3.
The hour hand is just past the 6.
Show this time on your clocks.

It is a quarter to 7:00.
Show this time on your

It is four o'clock.
What time will it be in 15 minutes?

It is a quarter past 8:00.
What time will it be in 15 minutes?

It is half past seven.
What time will it be in 15 minutes?

It is 2:30.

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5 Around

Ask: How long is 5 minutes? [Wait for reply]
Explain. In 5 minutes you can brush your teeth.
Five minutes is not a very long time.
Ask: Who can count by 5's.
Count by 5's until you reach 60.

Say. Let's begin.
Now look at your analog clock, every number has a partner. If we count by 5's, we will know all the numbers' partners.
Let's start at number 1 and go all the way around the clock counting by 5's until we reach the number 12.

Ask: Who is number 1's partner? [Wait for reply] 5
Who is number 2's partner? [Wait for reply] 10
Who is number 3's partner? [Wait for reply] 15
Who is number 4's partner? [Wait for reply] 20

Continue this until you have done all the numbers.

Now let's move our clocks around the 5 minute trail.
Set your clocks for 12:00 a.m. Move your long hand from 12 to1, 5 minutes have past. It is now 12:05. Show this on your clocks.

Move your long hand from 1 to 2, another 5 minutes have past. It is now 12:10. Show this on your clocks.

Move your long hand from 2 to 3, another 5 minutes have past. It is now 12:15. Show this on your clocks.

Move your long hand from 3 to 4, another 5 minutes have past. It is now 12:20. Show this on your clocks.

Continue this process until you reach 1:00 a.m.

More Practice moving by 5's

Have student to:
Set your analog clock to 5:25 in the morning.
Set your digital clock to 5:35, in the morning.
Between the two clocks, how much time has past?
10 minutes have past. Is it a.m. or p.m.?
Show this time on your clocks.

Set your analog clock to 6:05 in the morning.
Set your digital clock to 6:40, in the morning.
Between the two clocks, how much time has past?
30 minutes have past. Is it a.m. or p.m.?
Show this time on your clocks.

Set your analog clock to 1:25 in the afternoon.
Set your digital clock to1:40, in the afternoon.
Between the two clocks, how much time has past?
15 minutes have past. Is it a.m. or p.m.?
Show this time on your clocks.

Set your analog clock to 3:45 in the afternoon.
Set your digital clock to 4:30, in the afternoon.
Between the two clocks, how much time has past?
45 minutes have past. Is it a.m. or p.m.?
Show this time on your clocks.

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Minute to Minute: Tick Tocks

Have student to look at their analog clocks.

Explain to them there are small little lines between every number on the clock. If we count all these ticks, how many ticks do you think we have? [Wait for reply]
Let's count these ticks together. There are 60 ticks.

Let's look more closely at the ticks on the clock face. Do all the ticks look the same? [Wait for reply] NO. Explain: Every whole number has a slightly larger tick than all the other ticks. That slightly larger tick always means you're on the fifth tick between numbers.

Now let's count how many ticks are between the numbers 12 and 1. [Wait for reply] 5. Let's count how many ticks are between the numbers 1 and 2? [Wait for reply] 5. Let's count how many ticks are between 2 and 3? [Wait for reply] 5. Let's count how many ticks are between 3 and 4? [Wait for reply] 5. Continue this process until number 12.

Explain: Each tick is one second long. Remember if you blink your eyes, this is how long a second takes. Ask: Can you really get anything done in a second. [Wait for reply] NO!

Now we will learn how the tick mark works. Remember when we counted all the tick marks; we started at the number 1 and stopped at the number 60. Well, that's the same names the ticks have when telling time. We start at number one and keep counting to 60.

[Have students follow you on their analog clocks]
This means the first tick after 12 is tick one. The second tick after 12 is tick two. The third tick after 12 is tick three. The fourth tick after 12 is tick four. The fifth tick after 12 is tick five. The sixth tick after 12 is tick six. [Note: When the student gets to tick 5, that the very next tick is tick six, not tick one. You don't start over at every number. This is a common mistake.]

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Minute to Minute Tick Tock

Complete the following questions. Students will use their analog and digital clocks.

Have students to set their clocks at 1:04.
If you move the minute hand from the 4 to the10, how many minutes have passed? [Wait for reply] 6 minutes.
Set your clocks. It is now 1:10.

Have students to set their clocks at 2:08.
If you move the minute hand from the 8 to the11, how many minutes have passed? [Wait for reply] 3 minutes.
Set your clocks. It is now 2:11.

Have students to set their clocks at 5:06.
If you move the minute hand from the 6 to the14, how many minutes have passed? [Wait for reply] 8 minutes.
Set your clocks. It is now 5:14.

Have students to set their clocks at 11:16.
If you move the minute hand from the 16 to the 25, how many minutes have passed? [Wait for reply] 9 minutes.
Set your clocks. It is now 11:25.

Set your clocks to each time listed below.
Start at the "o'clock," then move the minute hand to the time shown.

1:17	3:09	6:19
4:32	2:49	5:24
8:27 `	7:38	11:57

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Adding Up to 24

Remember the analog clock is a twelve hour clock. The time from 12 midnight to 12 noon is called a.m., from noon to midnight is called p.m.

At 12 noon, the 12 hour clocks start to go around again.

Ask: Do you know what a 24 clock is? [Wait for reply]
Explain: On a 24 hour clock, we count the hours all the way up to 24.
The hours from 1:00 to 12:00 are the same as the 12 hour clock.

At 1:00 in the afternoon, it is 13:00 on the 24 hour clock.
At 2:00 in the afternoon, it is 14:00 on the 24 hour clock.
At 3:00 in the afternoon, it is 15:00 on the 24 hour clock.
At 4:00 in the afternoon, it is 16:00 on the 24 hour clock.
At 5:00 in the afternoon, it is 17:00 on the 24 hour clock.
At 6:00 in the evening, it is 18:00 on the 24 hour clock.
At 7:00 in the evening, it is 19:00 on the 24 hour clock.
At 8:00 in the evening, it is 20:00 on the 24 hour clock.
At 9:00 in the evening, it is 21:00 on the 24 hour clock.
At 10:00 in the evening, it is 22:00 on the 24 hour clock.
At 11:00 in the evening, it is 23:00 on the 24 hour clock.
At 12:00 in the evening, it is 24:00 on the 24 hundred hours [A new day begins]

The 24 hour clock now starts over.

Materials needed: Checkbooks , large envelopes, play money, dry erase board

To the Instructor: This is a small unit on checking accounts and banking. This unit was designed to give students an insight into what it means and entails to control their own finances including earning money, spending money and saving money.

In this short study you become a banker.
Your objective is to give an early insight on how to manage a checking account.
How to Start

Explain: A checking account is a special account at the bank where you keep your money. With a checking account you can write checks. Checks are a written order giving your bank permission to give your money to someone else.

Ask: Do you know what a checkbook looks like?

Open your checkbook. A check tells the banker who to pay and how much money to pay from your account.

Ask: Can you think of some ways why writing a check to pay for something is better than paying with cash? [Wait]

There are 4 good reasons to use a checking account.

- You don't have to carry around cash
- If you lose your checks, you haven't lost your money
- Your money stays in a safe place
- You have a record of where you spent your money

Let's pretend to go to the bank and open up an account.

There are 6 steps to do this:

Step 1: Choose a Bank

Step 2: Consult with your Banker
You and your banker need to discuss and agree upon the guidelines for the use of your account.

Step 3: Make your first Deposit

To open your account you must deposit money because you need to have enough money in your account to cover every check you write.

Step 4: Enter the Deposit in your Check Register

Every time you make a deposit to your account (add money) or write a check (spend money) you need to enter it in your check register.

Now you are ready to use your checking account.

Step 5: Write your first Check

After you have written a check to someone they will cash it through your banker and that amount of money will no longer be in your account.

Step 6: Enter the Check in your Check Register

This is where you keep track of your account balance – how much money you have in your account.

Explain: Checks are used in place of money. It is important to always fill them out carefully and correctly so that your banker will pay the right person the correct amount of money.

Use a dry erase board to draw sample checks.

Checks

Your name and address go at the very top. Print your name and address on the lines unless your checks are personalized.

Each time you write a check fill in the date.

Deposits

Explain: Deposit slips are used to list the money deposited in your account. When making a deposit, fill out a deposit slip and give it to your banker along with the cash or checks you are depositing.

1. Your Name and Address go at the top of the slip.
2. Write the Date of deposit in the box.
3. Write the amount you are depositing in the boxes for each type of money (cash, checks,)
4. After you have written all the deposits you are putting on this deposit slip, add the amounts up and write the total in the Total Deposit Box.
5. Your banker will count the money you are depositing and agree to take the deposit and place it into your account.
6. Your banker will then write the date, amount of your deposit. He will then give up a receipt for the money you deposited.

Tips
When cashing or depositing a check that has been written toyou sign your name on the back of the check. This is called ***endorsing*** a check.

- Never endorse a check until you cash it or deposit it.
- Checks should be deposited or cashed as soon as possible.
- Make sure your banker records the correct amount in your deposit register.

Endorse means to sign the back of a check showing that you are receiving the value of the amount written on the front of the check.

Explain: Your check register is the place where you keep a record of the money in your account. Whenever you make a

deposit or write a check you will write down the information here and figure out your new balance.

1. When recording a check put the number of the check in this space. When entering a deposit draw a line through the space or just leave it blank.
2. Put the Date you write the check or make the deposit here.
3. A description of the check written or the deposit made goes here.
4. When you enter a check … Circle the ck - When you enter a deposit … Circe the dep +. This will help you as you figure your balance.
5. Write the Amount of the check or deposit in the space. Be careful to line up your numbers so that it will be easy to add or subtract to find your new balance.

The words Pay to the Order Of are instructions to your banker to pay this person the money from your account.

The Dollar Amount is written two times on your check. In the Box you write the amount in numerals (1, 2, 3, 4 …) on the line you write it in words (one, two, three, four …)

The Memo line is where you write what you paid for.

The very last thing you write on your checks is your signature. Your check can't be cashed unless you sign it. No one else can use your checks or sign your checks for you.

Each check has a different check number (125, 126, …) for keeping them in order. This makes it easier to keep track of the check you have written.

Tips: To keep your checks from being changed

- Write checks in pen
- Don't leave blank space on the amount line

- Never sign a blank check

If you make a mistake, either:

- Fix the mistake, clearly and write your initials next to the correction, or
- Write "VOID" in big letters over your signature and write a new check.

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6. Figure out your new balance by adding a Deposit or subtracting a check from the balance on the line above. When you start a new page be sure to write the ending balance from the last page at the top of the new page.

<u>Tips</u>

- Record each check in your register before your write it.
- Fill out your register using pencil.
- Record all deposit as you make them.
- Figure your new balance after every item.
- Record and save all void checks.

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To the Instructor: You are now going to explain money management. Explain: There are two important strategies to money management: earning and spending.
To earn money you must have a plan. You plan your spending based on what you earn.

Ways to Earn Money

I. Allowance – Chores around the house
   a. Daily or weekly duties
II. Extra jobs – Family and friends
   a. Wash cars
   b. Washing windows
   c. Yard work
III. Outside Business
   a. Lawn care
   b. Pet care
   c. Babysitting

Explain: Spending is planning how to get the most out of the money you have earned. Spending money should be divided into categories.

I. Small stuff – needs you like to purchase right away.
   a. snacks
   b. movies
II. Future stuff – important or expensive items you save for.
   a. bike
   b. play station
III. Savings account – money put away that can't be touched unless planned. Long term saving
   a. college fund
   b. car
   c. house

Continue to keep up your bank beyond this study.

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