Thanks for requesting a sample of our new Common Core Teacher Editions. We welcome the opportunity to partner with you in building successful math students.

This booklet is a **sample Common Core Standards Teacher Edition for Grade 4** (Table of Contents and first 10 lessons). As other grade level samples become available, you will be able to download them from our website: [www.excelmath.com/downloads/state_stds.html](http://www.excelmath.com/downloads/state_stds.html)

Here are some highlights of our new Common Core Teacher Editions:

1. **The Table of Contents** will indicate Lessons that go further than Common Core (CCS) concepts. There is a star next to lessons that are “an accelerated Excel Math concept that goes beyond Common Core Standards for Grade 4 but may be required by some states.” With this information, teachers can choose to teach the concept or skip it.

2. **For each Lesson Plan (each day) we are changing the “Objective”** to “Common Core Objective” (see lesson #1). On days where lessons are not directly related to CCS, we will offer instruction for the teacher to alter what they do for the Lesson of the Day so they can still teach a Common Core concept. The Objective on those days will look like this (see Lesson #5):

   **Objective**
   Students will distinguish between combinations and probability and will interpret information given in pie graphs.

   **Common Core Alternative**
   Activity #12 Perimeter and Area (on page A24 in the back of this Teacher Edition) may be used instead of the lesson part of the Student Sheet. Have students complete the Guided Practice. There is no Homework on 5th day lessons.

   --

3. **Within Guided Practice** when a non CCS concept is one of the practice problems, we will indicate it with the star again. (See Answer Key for Lesson #5, Guided Practice Boxes C and D)

4. **On Test Days** (see Test #2) we indicate with a star non CCS concepts being assessed.

We are in the very early stages of creating these CCS Teacher Editions. When each one is released, we will have an announcement on our website. Our goal is to have as many grades ready by the fall 2013 as possible (focusing on grades 2-5 first, and then grades K-1 and 6). The student sheets are now ready to ship.

In the meantime, you can find updates plus additional downloads on our website (manipulatives, Mental Math, placement tests in English and Spanish, and lots more): [www.excelmath.com/tools.html](http://www.excelmath.com/tools.html)

Please give us a call at 1-866-866-7026 (between 8:30 - 4:00 Monday through Friday West Coast time) if you have questions about these new Excel Math Common Core Editions.

Cordially,

The Excel Math Team
# Grade 4 Lesson Concepts

## Lesson #   Pg      Lesson Concept

1   2   Recognizing thousands, hundreds, tens and ones places; solving multi-step story problems using addition and subtraction; adding 4 four-digit numbers with regrouping and subtracting two three-digit numbers

2   4   Subtracting two three-digit numbers with regrouping

3   6   Recognizing any number less than 1,000

4   8   Solving word problems using deductive reasoning

5   10   Calculating probability, interpreting pie graphs

12   Test 1 & Create a Problem 1 – The Walking Club

6   14   Filling in missing numbers in sequences counting by 1, 2, 3, 4, 5, or 10

7   16   Recognizing any number less than 10,000

8   18   Recognizing the symbols and terms < less than, > greater than; arranging 4 four-digit numbers in order from least to greatest and from greatest to least

9   20   Learning change equivalents up to $1.00 for dimes, nickels & pennies; recognizing coins

10   22   Determining if there is sufficient information to answer the question; determining what information is needed to answer a question

11   26   Recognizing the dollar symbol and decimal point; recognizing money number words; regrouping with money amounts when adding or subtracting

12   28   Learning the multiplication facts with products up through 20 and products with 5 (up to 45), 10 (up to 90), 11 (up to 99) or 12 (up to 48) as a factor; multiplying a one-digit times a two or three-digit number; multiplying money amounts

13   30   Recognizing addition and subtraction fact families; bridging 20 or 30 when adding

14   32   Filling in a missing number in an equation; determining the value of a letter that has been substituted for a number

15   34   Recognizing squares, circles, triangles and rectangles; recognizing numerator and denominator; determining the fractional part of a group of items when modeled or given in words, sometimes including extraneous information or the word “not”

16   38   Learning that the whole is the sum of its parts; learning change equivalents up to $1.00 for quarters and half-dollars

17   40   Computing half of a group; recognizing odd and even numbers less than 100

18   42   Telling time to the minute; recognizing quarter past or to the hour, half past the hour; calculating minutes before hour; learning 60 minutes = 1 hour; calculating elapsed time

19   44   Computing the date within one week; learning 7 days = 1 week; learning abbreviations for days and months

20   46   Interpreting bar graphs and picture graphs

48   Test 4 & Create a Problem 4 – The Day of the Family Picnic

21   50   Learning division facts with dividends up through 20 and dividends with 5 as a factor

22   52   Selecting the correct operation; recognizing numbers greater than 1,000

23   54   Filling in missing numbers in sequences counting by 6, 7, 8, or 9

24   56   Learning multiplication facts with products up to 30; recognizing multiplication and division fact families; learning the terminology for multiplication and division

25   58   Completing patterns in a chart

60   Test 5 & Create a Problem 5 – Planning a Walk-a-Thon

★ = This is an accelerated Excel Math concept that goes beyond Common Core Standards for Grade 4 but may be required by some states.
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☆ = This is an accelerated Excel Math concept that goes beyond Common Core Standards for Grade 4 but may be required by some states.
# Lesson Concepts

by lesson & page number

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4th Grade Lesson Plans and Answer Keys
Lesson 1

Common Core Objective
Students will write 4-digit numbers showing place value.

Students will add 4 four-digit numbers with regrouping.

Students will subtract three-digit numbers.

Students will solve multi-step word problems.

Preparation
No special preparation is required.

Lesson Plan
The first 20 or so lessons in each grade are primarily review from the previous grade. If your students have difficulty during these lessons, slow down. Teach the Lesson and do half of the Guided Practice. The next day, do the rest of Guided Practice.

Draw 4 horizontal lines on the board to represent the ones to thousands places. Put a comma between the hundreds and thousands place.

Distribute the Lesson Sheets. Go through problems #1 – #4. Have a student come forward to fill in the four places while another writes an addition problem as shown on the Lesson. On problems #3 - #4, point out the zero serves as a place holder. This lesson illustrates the concept of cardinal numbers.

Do problems #5 – #12 together with the class. As they do the word problems they should write the equation they used to find the answer. Answers should be labeled. Read through the word problems with them, following your time of teaching the concepts in the Lesson.

Write problems #13 and #14 on the board. Show the class how to rewrite each problem in vertical form.

Explain the CheckAnswer on the right side of the Lesson Sheet. If you have a Fourth Grade Projectable Lesson CD (see page i16) or an overhead projector or document camera, it will be easier to point out the CheckAnswer process.

We assume students can add and subtract with regrouping and understand the terms addend (a number added) and subtrahend (a number subtracted). Briefly review these concepts. Use the extra addition and subtraction problems on the right side of Lessons 2 and 3 if the class needs extra practice. If students have difficulty with regrouping or addition and subtraction basic facts, spend some time during the next few weeks working on these concepts.

Problems connected with the lesson are numbered, while Homework and Guided Practice sections have letters.

Stretch 1
Most lessons have a Stretch—a problem of the day that stretches thinking skills. Write the problem on the board in the morning. Reward students who find an answer before you reveal the solution at the end of the day. There may be multiple solutions.

Tim, Shari, Karen and Juan all got to school before 8:30 in the morning. Tim was not second or last. Shari arrived earlier than Juan. Karen was the first to get to school. What is the order that they arrived at school?

Answer: Karen, Shari, Tim, Juan
Lesson 1

Write the numbers that are represented. Check each one with addition.

1. Write 2,000 and 4 one thousand.
   \[ 2,000 + 4 = 2,004 \]
2. Write 1,000 and 4 hundreds.
   \[ 1,000 + 400 = 1,400 \]
3. Write 3 tens, 1 hundred, and 2 thousands.
   \[ 30 + 100 + 2,000 = 2,130 \]
4. Write 5 tens, 8 ones, and 1 thousand.
   \[ 50 + 8 + 1,000 = 1,058 \]
5. Write 2 one thousand, 3 tens, and 4 ones.
   \[ 2,000 + 30 + 4 = 2,034 \]
6. Write 6,767.
   \[ 6,767 \]
7. Write 1,230.
   \[ 1,230 \]
8. Write 3,029.
   \[ 3,029 \]
   \[ 4,132 \]
10. Write 7,676.
    \[ 7,676 \]
11. Write 9,685.
    \[ 9,685 \]
12. Write 13 pages.
    \[ 13 \]
13. Write 24 apples.
    \[ 24 \]

Guided Practice 1

Write the numbers that are represented. Check each one with addition.

1. Write 2,000 and 4 one thousand.
   \[ 2,000 + 4 = 2,004 \]
2. Write 1,000 and 4 hundreds.
   \[ 1,000 + 400 = 1,400 \]
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   \[ 3,029 \]
   \[ 4,132 \]
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    \[ 7,676 \]
11. Write 9,685.
    \[ 9,685 \]
12. Write 13 pages.
    \[ 13 \]
13. Write 24 apples.
    \[ 24 \]
Lesson 2

Common Core Objective
Students will subtract three-digit numbers with regrouping.

Preparation
For each student: Hundreds Exchange Board and Ones, Tens and Hundreds Pieces (masters on pages M14 - M16).

Lesson Plan
Start with Lesson problem #1. Ask students to represent each number several different ways on their exchange board. For example, 320 might be shown as:

3 hundreds + 2 tens = 320;
2 hundreds + 12 tens = 320;
2 hundred + 11 tens + 10 ones = 320

Write the following notation on the board for each representation.

\[
\begin{align*}
320 & = 3 \ 2 \ 0 \\
212 & = 2 \ 1 \ 2 \\
2110 & = 2 \ 1 \ 1 \ 0
\end{align*}
\]

Show with addition problems that all 3 of these representations are the same number.

Ask “If you want to subtract 146 from the number that has been represented, which choices would be the easiest to use? Why?” (The third choice because there are both tens and ones from which to subtract.)

Ask a student to come forward and write a problem on the board using regrouping notation. Show how they can confirm the answer by adding their answer (difference) to the number subtracted (subtrahend). The sum that they get will equal the original minuend if their answer is correct.

Problems #2 – #9 do not appear on the students’ Lesson Sheets. Please read these problems aloud, so your students get practice setting up problems themselves. We will ask you to do this about once every 10-15 lessons.

For each problem #2 – #9, give the students the minuend and have them display the number with their pieces on their exchange boards. Next, write the number on the board that they are to subtract from the minuend.

Without using pencil and paper, they are to regroup the pieces on their exchange boards so that they can subtract. Ask “Why it is important to start with the ones place?” (They may need to regroup more than once.)

Have them use their pieces to add the subtrahend back to their answer to see if their answer is correct. Ask a student to come forward and write the problem on the board showing regrouping notation.

Additional problems are provided on the right of the page if your students need more practice regrouping.

Stretch 2
Marie, Sue, Rhonda and Clara are different heights.
Sue is taller than Clara.
Rhonda is not taller than Sue.
Marie is not the tallest or the shortest.
Clara is not the shortest.

Arrange the names in order from tallest to shortest.

Answer: Sue, Marie, Clara, Rhonda
Lesson 3

Common Core Objective
Students will recognize any number word less than 1,000.

Preparation
For each student: Hundreds Exchange Board and Ones, Tens and Hundreds Pieces (masters on pages M14 - M16).

Lesson Plan
Have the students represent 3 hundreds, 4 tens and 2 ones with their place value pieces on their exchange boards. Write the following problem:

\[
\begin{array}{c}
100 \\
100 \\
100 \\
10 \\
10 \\
10 \\
10 \\
1 \\
1 \\
+ 1
\end{array}
\]

This process will be a prelude to expanded notation. Add the numbers and write the answer. Explain that since you have 3 hundreds, 100 is written three times. 10 is written 4 times. 1 is written 2 times. Ask them what the number is. (342)

Next, tell them to represent 6 ones and 5 hundreds on their boards. Write the following problem:

\[
\begin{array}{c}
100 \\
100 \\
100 \\
100 \\
100 \\
1 \\
1 \\
1 \\
1 \\
1 \\
1 \\
+ 1
\end{array}
\]

Ask if the answer came out in the same order that it was given. (No.)

No matter what order the places are given, when the number is written or represented, the hundreds are on the left, the tens are in the center and the ones are on the right for a three-digit number. Ask them what the number is. (506.)

Show that these two examples can also be written:

\[
\begin{array}{c}
300 \\
40 \\
2 \\
6 \\
+ 500
\end{array}
\]

Ask if they agree and why. Go through #1 – #9 with the class. Have the students explain in their own words the importance of the zeros.

Stretch 3
Write an addition problem of single digit numbers that add to 23 without using a 1, 5 or 8.

Answer: 9 + 7 + 4 + 3 = 23
Write the words for each number.

- one hundred thirty
- five hundred eight
- two thousand forty-one
- three hundred five
- seven hundred

one hundred fifty 105  
two hundred eleven 211

Basic Fact Practice

+ 8 + 4 + 9 + 7 + 7 + 8 + 5
+ 9 + 8 + 5 + 4 + 6 + 7 + 4 + 5
+ 13 + 16 + 11 + 12 + 15 + 10 + 13
+ 10 + 15 + 12 + 9 + 11 + 13 + 16 + 14
+ 9 + 7 + 8 + 4 + 9 + 7 + 8 + 6
+ 1 + 8 + 4 + 5 + 2 + 6 + 8 + 8

Guided Practice 3

2 thousands, 3 hundreds and 5 tens
2,350

two tens and 1 thousand
1,020

two tens, 5 ones, 3 hundreds and 1 thousand
1,325

Roger has 12 stamps. Pete has 15 stamps. How many stamps do they have in all?

Lucy caught 6 frogs. Sophia caught 5 frogs. How many more frogs did Lucy catch than Sophia?

There are 27 children in Tony’s class. Today 4 of them are absent. How many children are present today?

Victoria had 12 blouses. She gave 5 of them away and purchased 3 new blouses. How many blouses does she have now?

Andrew tried to catch 20 waves when he went surfing. He fell 3 times and missed the wave twice. How many waves did he ride?

Grace's shelf was 34 inches long. She cut 3 inches off each end. How long is the shelf now?
Lesson 4

Common Core Objective
Students will use deductive reasoning to solve word problems.

Students will solve additive comparison and multiplicative comparison word problems.

Preparation
No special preparation is required.

Lesson Plan
Go through #1 and #2 with the class. For each of these problems there is a sentence that reveals the position of the students.

In the first problem, it is the second sentence. Since Haley finished between the other two, she must have been second. The third sentence states that Jared wasn’t first, so he must have been third.

In the second problem, the second sentence says Cameron is older than Alexander. Draw a vertical line above Cameron that is higher than one over Alexander.

In the third sentence we read that Thomas is younger than Alexander. Therefore, the line over Thomas should be shorter than the one over Alexander. Thomas’ line is the shortest, so Thomas is the youngest. Ask the students who the oldest is.

If you have time, let your students try an additive comparison (and a multiplicative comparison). Write this word problem on the board:

Diego has 3 apples and Karen has 5 apples. How many more apples does Karen have?

Let a volunteer explain the equation:

\[ 5 - 3 = 2 \]

Karen has two more apples than Diego.

Next write the following word problem on the board:

Karina can pick three times as many peaches in 20 minutes as her brother Tim. Karina can pick 42 peaches in 20 minutes. Altogether, how many peaches can they pick in 20 minutes?

Use a tape diagram to show how many peaches each person picked.

Karina = 42 peaches

\[ 42 = 3 \times \text{Tim} \]

Tim = 42 ÷ 3 = 12

42 (K) + 12 (Tim) = their total = 54

Multiplicative comparisons focus on comparing two quantities by showing that one quantity is a specified number of times larger or smaller than the other. A simple way to remember this is “How many times as much?”

The letter on the right side of the paper should be signed by each student’s parent or guardian.

Stretch 4

Draw the following squares on the board or form them with toothpicks, crayons, pencils, etc. Ask students to remove 1 line to form 3 squares. The “X” on the diagram indicates the line that needs to be removed.
Homework

Bill had 4 dogs. How many dogs does Robert have?

Sue sang longer than Erin. Who sang the least?

1. Haley, Jared and Aaron ran in a race. Haley finished between Jared and Aaron. Jared wasn't first. In what order did they finish the race?

2. Alexander, Cameron and Thomas are brothers. Cameron is older than Alexander. Thomas is younger than Alexander. Who is the youngest?

3. Tex had 9 comic books. How many comic books does he have left?

4. Cindy rowed 14 miles in a canoe. Sandra rowed 19 miles. How many more miles did Sandra row than Cindy?

5. Stephanie is 74 inches tall. Lois is 68 inches tall. How much taller is Stephanie than Lois?

6. Julian planted 40 new trees behind his house. Eight were oaks, 9 were elms and the rest were maples. How many maple trees did he plant?

Dear Parents,

You can help your child by getting involved with homework. You may not always have time to help, but just showing an interest may really motivate your child.

The problems on the back of this lesson sheet were done in class. The children check their work by adding the answers of two or more problems then comparing the result to the CheckAnswer that we provide above and to the right of the problem.

Sometimes we find children will add the answers incorrectly rather than ask for help. If parents and teachers work together, we can help the child learn the value of asking for help now, rather than being satisfied with a wrong answer.

Homework is available four nights a week, and will be located on the lesson sheet where this letter appears starting with Lesson 6. Whenever you have the time, please check to see that the answers on your child’s homework are added correctly and the calculations are shown.

With your assistance, I look forward to a successful year in mathematics. Please contact me if you need any clarification of our math program.

Sincerely,

Parent’s signature

Alex

Have you left?

Thomas colored 10 pictures. How many pictures did they color in all?

Hans colored 12 pictures. How many pictures did they color in all?

I have read this letter and I will do my best to help at home.

Homework are added correctly and the calculations are shown.

You have the time, please check to see that the answers on your child’s lesson sheet where this letter appears starting with Lesson 6. Whenever

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Sincerely,

Parent’s signature

Alex

Have you left?
Lesson 5

Objective
Students will distinguish between combinations and probability and will interpret information given in pie graphs.

Common Core Alternative
Activity #12 Perimeter and Area (problems #1-3 on page A24 in the back of this Teacher Edition) may be used instead of the lesson part of the Student Sheet. Have students complete the Guided Practice. There is no Homework on 5th day lessons.

Preparation
For the entire class: A package of jellybeans

Lesson Plan
Combinations are the variety of ways that different objects can be placed into sets. Probability is the likelihood that a certain combination will appear under random conditions. Start by listing possible combinations. Don’t worry about the order of the items. As we teach combinations, we consider a scoop of vanilla ON TOP the same as a scoop ON THE BOTTOM.

Distribute the lesson sheets and do the first 5 problems together. Ask the class if they think there are any more possible combinations of what Caleb might wear. (No.) Are there more possible ways to combine 3 kinds of ice cream? (No.)

Once they understand combinations, move to probability. Probability is the number of times a particular set will randomly occur out of the total number of combinations. A pie graph visually shows how a quantity of items is related to other items, so it is useful when describing probability.

Pour your jellybeans onto a piece of paper.

Group identical colors together. Mark the center and draw a circle around the outside. Draw straight lines from the center to the circle, separating each color. Write down the color and number of jellybeans in each section.

Put all the jellybeans in a bag and ask, “If I close my eyes and take out a jellybean, which is the most likely color? Least likely?” Discuss probability. The “chances” of one color being chosen are compared to the “chances” for another color. The probability of choosing a red jellybean is described as the number of red jellybeans OUT OF the total number of jellybeans. (Later, we will show this as a fraction, such as 1/12.)

Write the numbers for each of the colors your jellybeans on the board. The color with the most beans has the highest probability of being chosen. The one with the fewest has the lowest probability. Even the highest probability does not mean that an item will definitely be chosen.

Go to the pie chart on the Lesson Sheet. The probability that Olivia would take out ANY jellybean is 10 out of 10 (certain). A yellow jellybean has the highest probability with 4 out of 10 chances. The probability of getting a purple jellybean is 0 out of 10 (impossible) because there are no purple jellybeans. Finish the problems together.

Stretch 5
Ann and Jerry have 12 dogs. Ann has 6 more dogs than Jerry. How many dogs do they each have?

Answer: Find 2 numbers with sum of 12 (1st clue) and difference of 6 (2nd clue). Ann has 9 dogs. Jerry has 3 dogs.

★ = This is an accelerated Excel Math concept that goes beyond Common Core Standards for Grade 4 but may be required by some states.
Calculating combinations and probability; information given in circle (pie) graphs

Caleb can wear a green or white shirt, and white or black shorts. How many different combinations can he make?

If he chooses to wear a white shirt and black shorts, that is one of the combinations. Combinations include white shorts.

Melanie wants an ice cream cone with two scoops. She can choose chocolate, strawberry and vanilla ice cream. What different combinations can be made?

In this example, we do not care which flavor is on the top or bottom.

We use the word probability to describe how likely it is that a person will choose one combination instead of another. The choice must be random, or made by accident, like pulling from a bag without looking or putting on your socks in the dark.

Olivia had a bag of red, green, black and yellow jellybeans. She poured them out on a piece of paper, arranged them by color in a circle, and drew lines between the colors. She could tell she had more yellow jellybeans without even counting.

Combinations include white shorts.

If she randomly (without looking) takes one out, the probability of choosing a black or green jellybean compared to choosing a red or yellow is equally likely.

For example, the probability of choosing a black or green jellybean is 5 out of 10, so it is equally likely.

For example, what is the probability of choosing a black or green jellybean?

Use the scale above to determine what possibilities could fit in each category. For example, What is the probability of choosing a black or green jellybean? In this example, we do not care which flavor is on the top or bottom.

Chocolate, strawberry, vanilla

Olivia had a bag of red, green, black and yellow jellybeans. She poured them out on a piece of paper, arranged them by color in a circle, and drew lines between the colors. She could tell she had more yellow jellybeans without even counting.

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Use the scale above to determine what possibilities could fit in each category. For example, What is the probability of choosing a black or green jellybean? In this example, we do not care which flavor is on the top or bottom.
Test 1 & Create A Problem 1

Test 1
This test covers concepts that have been introduced on Lessons 1 – 3. You can use Score Distribution and Error Analysis charts provided on pages i20-i22 in the front of this book and on our website to track student results:
www.excelmath.com/downloads.html

Record students’ identification numbers and the number of problems missed. Use tally marks to record how many students missed a particular question. This will help you review problems missed by a number of students.

This table shows which test question covers which concept and where it was first taught.

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<th>Lesson</th>
<th>Concept</th>
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<td>1</td>
<td>Add 4-digit numbers</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Add 4-digit numbers</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Add 3-digit numbers</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>Add 2-digit numbers</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>Add 4-digit numbers</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
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<td>16</td>
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<td>1-step story problem, add or subtract</td>
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<td>17</td>
<td>3</td>
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</table>

Create A Problem Introduction
Our back-of-test problems help students integrate math and writing skills. The stories are designed so your students can observe, analyze and participate in the stories. Several consecutive stories may be related, so they might occasionally need to think back to what they did a week ago.

This page may be used as a continuation of the test if your students are comfortable with reading and solving word problems.

If you think students might need some assistance in working with a large block of text and finding many numbers to extract, do this as a separate activity.

Create A Problem 1
Numerical values in the stories are shown in bold type. Students should review the story, filling in the numbers in the blanks at the bottom of the story before answering the questions.

Encourage students to show their work for the word problems. Let them share how they solved each problem so they can begin to understand that there may be different ways to correctly solve some problems.

The question(s) they write should be about the people in the story who are walking together – not about walking in general.

Sample problems are provided for most stories so you can give the students an indication of the kind of things they might ask.

The questions and problems will become more difficult as the year progresses.
The Walking Club

Alissa decided to join a walking club. She and seven friends went walking every day after school for exercise. Each week they took a different route so they could see a variety of areas in their city.

The first week they walked two miles each day. The club leader chose a path that connected three different parks. They crossed five small bridges and took a rest break under a fifty-foot high oak tree. There were many things for them to see and talk about.

One day Susan brought her two dogs. At the first park there were four other dogs. At the second park there were three dogs. In the third park there were eight dogs plus three puppies. It was hard for the walkers to keep up their pace because Susan’s dogs wanted to play with the puppies. The club leader asked Susan to leave her dogs at home next time.

When they had finished walking, Alissa and two friends went into her backyard. They drank ice water and rested under a forty-foot high maple tree.

Write a story problem from the information in the story and answer your question.

How much taller is the oak tree in the park than the maple tree in Alissa’s yard? 10 feet taller
How many bridges did they walk over each day? 5 bridges
How many people went walking? 8 people

How many dogs were in the second park once Susan arrived with her two dogs? 4 dogs
How many dogs and puppies did they meet in the parks? 4 + 3 = 7 dogs
How many parks did they walk through? 3 parks

Write a story problem from the information in the story and answer your question.

How many dogs did Susan see? 4 + 3 + 8 = 15 dogs
Lesson 6

Common Core Objective
Students will complete number sequences when counting by 1, 2, 3, 4, 5 or 10.

Preparation
For the entire class: Number Chart (master on page M10)

Lesson Plan
Before distributing the Lesson Sheets, read aloud the 4 numbers in problem #1. Ask the class if you are counting in a decreasing or increasing direction. Draw an arrow pointing down.

Read the numbers again and have the students put a counter on each number on their number charts. Ask them by what number they are counting.

Write on the board counting by 10. Next, have the class count by ten to identify the next number in the sequence.

For problem #2, after they have chosen arrow up or down, have the students move their 4 counters so that they are on the new numbers. Then ask if the set is counting by 10 again. (No.)

Write on the board, counting by ___. Have the class tell you the missing number. (5)

Distribute the Lesson Sheets and go through #3 – #6 with the class. Ask students to discover the differences between the numbers in each sequence.

Ask if the differences are the same in each sequence. What will be the next two numbers in the sequence?

For Guided Practice I, ask the students to print the number on the line that indicates the fruit in the largest section, if you have not taught probability. Do the same for Guided Practice J. Then ask the students to count how many sections on the spinner have G for the first blank and how many total sections are on the spinner for the second.

Use the Guided Practice portion of your math lesson to ask students to “explain their thinking.” Adapt your lesson to the needs of your class. If your students are having difficulty with a concept, take time to practice that concept or reteach it the next day before moving on to the next lesson.

For additional practice with addition, subtraction, multiplication and division (or a combination of all four), refer students to our Online Timed Basic Fact Practice: www.excelmath.com/practice.html

Stretch 6
Using the digits 1 - 9 only once, make up three addition problems, each made up of 3 one-digit numbers with equal sums.

Answer:
1 + 5 + 9 = 15
2 + 7 + 6 = 15
3 + 4 + 8 = 15
Homework

For each number sequence, indicate by what number the sequence is counting and then fill in the missing numbers.

1. (86, 87, 88, 89, 90) counting by 10 up
2. (60, 65, 70, 75, 80, 85) counting up by 5
3. (67, 65, 63, 61, 59) counting down by 2
4. (36, 37, 38, 39, 40) counting down by 1

Basic Fact Practice

1 + 2 = 3, 2 + 3 = 5, 3 + 4 = 7, 4 + 5 = 9, 5 + 6 = 11, 6 + 7 = 13
- 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13
- 14 - 15 - 16 - 17 - 18 - 19 - 20

Guided Practice 6

1 thousand, 2 ones, 3 hundreds and 4 tens = 1,342
3 hundreds and 5 ones = 305
2 hundreds, 5 ones = 205

<table>
<thead>
<tr>
<th>Name</th>
<th>Lesson 6</th>
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<td>18 kids</td>
<td>Amy</td>
<td>52 jumping-jacks</td>
<td>Philip</td>
<td>7 tools</td>
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</tbody>
</table>

Bob rode his bike 53 miles. Paula rode her bike for 104 miles. How far did they ride in all?

Lisa jumped 65 times on the trampoline. Reggie jumped 77 times. How many more times did Reggie jump than Lisa?

Bob rode his bike 53 miles. Paula rode her bike for 104 miles. How far did they ride in all?

Lisa jumped 65 times on the trampoline. Reggie jumped 77 times. How many more times did Reggie jump than Lisa?

What fruit will the arrow most likely stop on?

The probability of choosing a green crayon is 3 out of 13.

This is an accelerated Excel Math concept that goes beyond Common Core Standards for Grade 4 but may be required by some states.
Lesson 7

Common Core Objective
Students will recognize any number word less than 10,000 and will apply their understanding of place value.

Preparation
For each student: a lined piece of paper

Lesson Plan
Before distributing the Lesson Sheets, tell the students that you are going to write a number on the board but do not say the number out loud. Use problems #1 – #8 as your examples.

Students should rewrite the number on their papers, then write the number in terms of place value and then write the number words. For example,

2,005

and

2 thousands and 5 ones

and

two thousand, five

When most have finished, have one student who has done the problem correctly write the answer on the board. When the students are finished, let them do #2 – #8 on their own.

For Guided Practice G, ask the students to print the number on the line that is in the largest section on the spinner, if you have not taught probability.

Stretch 7
Draw the grid shown below on the board, without the numbers. Tell the students that they are to use the digits 0 – 9, but they can only use a digit once.

They should arrange the digits so that the sums of the rows and the columns all add to 14.

\[
\begin{array}{ccc}
9 & 0 & 5 \\
1 & 7 \\
4 & 8 & 2 \\
\end{array}
\]

There may be more than one solution. Before they start, ask them if they will be able to use all ten digits? (No, because there are 10 digits but places only for 8.)
Homework

When writing numbers, always remember the importance of zero. Also, the comma separates the thousands place from the hundreds place.

| two thousand, five | one thousand, four hundred six |
| one thousand, forty | six thousand, fifteen |

Write the words for each number.

| five thousand, ten |
| four thousand, three hundred |
| three thousand, two |
| one thousand, six hundred four |

Write the words for each number.

| two thousand, seven |
| one thousand, eleven |

Basic Fact Practice

| 3 | 1 | 7 | 5 |
| (94, 91, 88, 85) | (47, 57, 67, 77) |
| 2 thousands | 2,000 |

Guided Practice 7

| 1,411 | 1,411 | 1,052 | 2,007 |
| 3,207 | +203 | 2,045 |
| 5,670 | -134 | +1,230 |

Juan has 24 shirts. Ten of them are green. How many green shirts does he have?

| 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 |

Ben sold 12 magazine subscriptions and Sally sold 18. How many more subscriptions did Sally sell?

| 18 | 15 | 10 |
| 12 | 5 | 6 |

6 more subscriptions | 10 children

| 84 kilograms | 4 candy bars |

| 2,311 |

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Lesson 8

Common Core Objective
Students will use the symbols “<” and “>”.

Students will arrange 4 four-digit numbers in order.

Preparation
No special preparation is required.

Lesson Plan
Before distributing the Lesson Sheets, write 2,801 and 2,534 on the board. Ask a student to come forward and put notations between the numbers—two dots next to the larger number and one dot next to the smaller number.

\[ 2,801 \cdot 2,534 \]

Next, connect the one dot to each of the two dots.

\[ 2,801 \cdot 2,534 \quad 2,801 \geq 2,534 \]

What you have now is a sideways “V.” The point of the “V” points to the smaller (in value) of the two numbers.

The number sentence is read “2,801 is greater than 2,534.”

Repeat the above process with 7 or 8 pairs of numbers. If they are having trouble with the symbols, have them repeat the process with the dots.

Have one of the students give you 3 four-digit numbers that are less than 10,000.

Write them on the board but not in order from least to greatest. Ask a student to come forward and rewrite the numbers in order from least to greatest.

Have the students explain how they know the order is correct. (The values in the thousands place are looked at first and compared, then the hundreds and so on down to the ones.) Do this 3 or 4 times.

Next, give 3 or 4 more examples, but this time they are to put the numbers in order from greatest to least.

Explain that this Lesson Sheet’s questions will ask, for example, which number is second. They are to select the number that is second in the correct order, not second in the original set.

Go through #1 – #7 with the class.

Stretch 8
Three consecutive numbers that add to 6 are 1, 2 and 3 (1 + 2 + 3 = 6). What three consecutive numbers add to 141?

Answer: 46, 47 and 48 (46 + 47 + 48 = 141)
Homework

1. One and 2 thousands and 1 one.

2. Which car finished first?
   - The white car finished behind the red car.
   - The first three places in a race were taken by white, red, and green cars.
   - Andy read for two hours, played on the computer for an hour and then read for three hours before he went to bed. How many more hours did he read than play on the computer?

Lesson 8

Name

Guided Practice 8

3. Select the number from the given set to fill in the blank.

Which number is first?

Basic Fact Practice

Put the numbers in order from least to greatest.

Put each set of numbers in order from least to greatest.

Put each set of numbers in order from greatest to least.

Kate baby-sat 6 kids on Monday, 4 kids on Tuesday and 7 kids on Wednesday. How many kids did she babysit in all?

Mr. Wells had 210 model trains. He sold 23 trains in one year and bought 8 trains over two years. How many trains does he have now?

Excel Math

Put the numbers in order from least to greatest.

Eve has 3 shirts. They are white, pink and blue. She has a blue skirt and a white skirt. If she chooses a pink shirt and a blue skirt, that is

Martha bought 15 liters of gas. Al bought 28 liters of gas. How many more liters did Al buy than Martha?

The first three places in a race were taken by white, red, and green cars. Which car finished first?

Andy read for two hours, played on the computer for an hour and then read for three hours before he went to bed. How many more hours did he read than play on the computer?

There were 19 bees in a hive. Nine of them flew away. How many bees did not fly away?
Lesson 9

Common Core Objective
Students will learn change equivalents up to $1.00 for dimes, nickels and pennies.

Students will recognize coins.

Preparation
For each student: Coins (master on page M5)

Lesson Plan
Go through problems #1 – #8 with the students and have them count by fives or tens to discover how many nickels or dimes there are in each amount.

Next do problems #9 – #11 together.

For problems #12 and #13, the students are to identify the coins that will add to the given amount and then write an addition problem to verify their choices.

For Guided Practice I, ask the students to circle the color of the fewest type of balls in the bag, if you have not taught probability.

For Homework A, ask the students to print the number on the line that is in the largest section on the spinner.

Stretch 9
Write on the board:

\[ KA + B = KC \]

and

\[ C - A = B \]

Tell the students that each of these number statements have been written in code.

Each letter represents a digit, 0 - 9.

What are the two number statements in numerical form? Is there more than one answer?

Answer: \( 13 + 2 = 15 \) and \( 5 - 3 = 2 \)

There is more than one answer.
Homework

On which area will the spinner most likely land?

A. 612
B. 4
C. 304
D. 920

Kim caught 48 bugs.

1. 1 1
2. 20
3. 418
4. 4,649
5. 5,087

Hannah, Kaya and Faith braided each other's hair. Hannah took longer than Kaya. Faith took longer than Hannah.

Who took the least time?

H
F
K

1. 4,207
2. 4,207
3. 3,032
4. 2,134
5. 1,020

Jason had 42 stickers. He gave 4 to each of his 2 brothers and some to his sister. He now has 29 stickers.

How many stickers did he give his sister?

1. 34
2. 14
3. 4,316
4. 4,316
5. 4,316

Guided Practice 9

(49, 52, 55, 58)

(91, 87, 85, 79)

(44, 46, 48, 50)

counting up by 3

counting down by 4

counting up by 2

Put the numbers in order from greatest to least.

(3,134; 3,134; 3,123; 3,123)

Select the number from the given set to fill in the blank.

1,000, two hundred

4,000, eight

two thousand, one hundred thirty-four

one thousand, twenty

four thousand, eight

two thousand, one hundred thirty-four

three hundred, two hundreds, and 1 hundred

1,204

1,204

1,204

four hundred eighty

three tens, two ones, and four hundreds

1,232

1,232

894

A toy cost 15¢. Toby gave the clerk a quarter. How much was his change?

1. 45¢
2. 10¢
3. 10¢
4. 10¢
5. 10¢

Luís has 10 balls in a bag. Three are green, 2 are blue, 1 is white and 4 are red. If he randomly takes a ball out of the bag, which color is he least likely to pick?

1. white
2. blue
3. red
4. green

Cross off the coins that add to 45¢.

1. 10¢
2. 10¢
3. 10¢
4. 10¢
5. 10¢

Select the number from the given set to fill in the blank.

1,000, four ones, and two hundreds

1,204

4,008

2,134

1,020

1,020

1,020

four hundred eighty

three tens, two ones, and four hundreds

1,232

1,232

894

A toy cost 15¢. Toby gave the clerk a quarter. How much was his change?

1. 45¢
2. 10¢
3. 10¢
4. 10¢
5. 10¢
Lesson 10

Common Core Objective
Students will evaluate information given in a word problem.
Students will identify what information is needed to complete a word problem.

Preparation
No special preparation is required.

Lesson Plan
Distribute the Lesson Sheets. Do #1–#3 together. Read each problem with them and ask what information they need in order to answer the question.

If there is not enough information have them select “not enough information.” Ask the students what information they need to answer the question.

For the example, they need to know how many brothers Isabel and Fred have. That information was not given for Isabel.

If there is enough information, they should select “enough information” and if possible write an equation with the solution.

Go through #1–#3 with the class. On their worksheets, a number will be provided next to the choices to be used to add the CheckAnswer.

For #4–#7, read each problem and then have them evaluate each choice to see if it will provide the information that is needed to answer the question.

For example, on problem #4:

a. how long he sailed will not help with trying to determine how far he sailed.
b. how far he sailed will help determine the answer.
c. when he started to sail will not help with trying to determine how far he sailed.

The correct choice is b. Show students the equation that solves the problem.

When these problems appear on their Lesson Sheets, they should try to write the equation that would be used to answer the question. This demonstrates that they understand the concept. Writing the equation may be very difficult for some of your students. Each time the problems appear, you might want to do the writing of the equation portion together.

Stretch 10
Draw the chart below across the top of the board.

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<td>30</td>
<td>31</td>
<td>30</td>
<td>31</td>
</tr>
</tbody>
</table>

Explain that the numbers under each month are the days in the months that year. Bill’s birthday is the 95th day of the year. What is the date of his birthday?

Answer:
95 - 31(Jan) - 28(Feb) - 31(Mar) = 5, April 5
Lesson 10

Evaluating information to see if it is sufficient to answer the question; Identifying what information is needed to answer the question in a story problem.

For each of the problems below, determine if you have enough information to answer the question.

Fred has 2 sisters and a brother. Isabel has sisters and brothers. How many more brothers does Isabel have than Fred?
A. enough information  B. not enough information

The answer is B, because the problem does not state how many brothers Isabel has.

Maya drank 4 glasses of water after her workout. Ryan drank 2 glasses. How many more glasses of water does Ryan need to drink to catch up with Maya?
A. enough information  B. not enough information

The answer is A because we are told how many glasses they each drank.

Patrick rode his bike to school. It took him 13 minutes to get there. Amber also rode her bike to school. How many more minutes did it take Amber to ride her bike to school?
A. enough information  B. not enough information

The answer is B because we are not told how long it took Amber to ride her bike to school.

Seth and Matt were playing baseball. Seth had five hits. Matt had four more hits than Seth. How many hits did Matt have?
A. enough information  B. not enough information

The answer is A because we are told how many hits Seth had and from that number we can determine the answer.

Guided Practice 10

Select the number from the given set to fill in the blank.

(2,136; 3,216; 1,231; 2,333)

We are not told how many cherries he ate.

We are not told how many cherries he ate.

Put the numbers in order from least to greatest.

3,983
2,983
1,983
689

Savannah plays soccer. She usually scores two goals for every game she plays. What information do you need to estimate how many goals she scored last season?

(number of games) x 2 = total goals

Pato scored 5 more points than her friend on a spelling test. What information is needed to find out the points her friend received?

(Morgan’s points) - 5 = the points her friend received

Ed sailed on his boat every day for a week. What information is needed to find out how far he sailed in all?

a. how long he sailed  b. how far he sailed  c. when he started to sail

The correct choice is b.

Brad has two boxes of movies. In one box he has 24 movies. What information is needed to find out how many movies are in the other box?

a. how many movies are in the other box  b. the number of movies in the box  c. how many movies are cartoons

The correct choice is b.

Antonio bought a box of animal crackers for 63¢ and a juice box for 80¢. What information is needed to find out how much change he will get back?

(63¢ + 80¢) = $1.43

a. how much he paid  b. the difference in price between the crackers and the juice box  c. the amount of money he gave the clerk

The correct choice is c.

Morgan scored 5 more points than her friend on a spelling test. What information is needed to find out the points her friend received?

(Morgan’s points) - 5 = the points her friend received

The correct choice is b.

Danny rides his bike 7 miles through town, 13 miles on the dirt road and 10 miles through the forest. If he has a flat tire during his trip, in which location is he most likely to get it?

a. how far he sailed each day  b. how far he sailed  c. when he started to sail

The correct choice is a.

Seth and Matt were playing baseball. Seth had five hits. Matt had four more hits than Seth. How many hits did Matt have?

A. enough information  B. not enough information

The answer is A because we are told how many hits Seth had and from that number we can determine the answer.

Put the numbers in order from greatest to least.

3,883
3,883
3,383
289

Put the numbers in order from greatest to least.

Seth and Matt were playing baseball. Seth had five hits. Matt had four more hits than Seth. How many hits did Matt have?

A. enough information  B. not enough information

The answer is A because we are told how many hits Seth had and from that number we can determine the answer.

Put the numbers in order from greatest to least.

3,883
3,883
3,383
289

Put the numbers in order from greatest to least.

Seth and Matt were playing baseball. Seth had five hits. Matt had four more hits than Seth. How many hits did Matt have?

A. enough information  B. not enough information

The answer is A because we are told how many hits Seth had and from that number we can determine the answer.

Put the numbers in order from greatest to least.

3,883
3,883
3,383
289
Test 2
This test covers concepts that have been introduced on Lessons 1 – 5. You can use Score Distribution and Error Analysis charts provided on pages i20-i22 and on our website to track student results: www.excelmath.com/downloads.html

This table shows which test question covers which concept and where it was first taught.

<table>
<thead>
<tr>
<th>Q#</th>
<th>Lesson</th>
<th>Concept</th>
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<td>Add 2-digit numbers</td>
</tr>
<tr>
<td>4</td>
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<tr>
<td>5</td>
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<td>2-step story problem, add or subtract</td>
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<td>5</td>
<td>Probability</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>Story problem - deductive reasoning</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>1-step story problem, add or subtract</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>2-step story problem, add or subtract</td>
</tr>
</tbody>
</table>

For Problem 15, if your students have not yet been taught probability, have them circle the letter in the smallest space on the spinner. Then for problem 17, have them print the number of birds on the first blank line and the total number of pets on the second blank line.

Record students’ identification numbers, and the number of problems missed. Use tally marks to record how many students missed a particular question. This will help you review problems missed by a number of students.

Create A Problem 2
Our back-of-test problems help students integrate math and writing skills. The stories are designed so your students can observe, analyze and participate in the stories. Several consecutive stories may be related, so they might occasionally need to think back to what they did a week ago.

This page may be used as a continuation of the test if your students are comfortable with reading and solving word problems.

If you think they might need some assistance in working with a large block of text and finding many numbers to extract, do this as a separate activity.

In this story, the question they write should be about the people who are in the walking club, and not walking or cousins in general.

= This is an accelerated Excel Math concept that goes beyond Common Core Standards for Grade 4 but may be required by some states.
Create a Problem 2

Getting to Know Each Other

Alissa’s walking club went three miles per day on their second week, four miles per day the third week and five miles per day the fourth week. Besides getting good exercise, they talked a lot and learned about each other.

Alissa told Marianne about her seven cousins. Two of them are boys. Her cousin Ken is on a swim team. Alissa saw Ken compete fourteen times last year. At the last swim meet, he won two races. In the final race Ken came in second. The boy who finished ahead of him was only two seconds faster.

Marianne said she and her brother Will have eleven cousins. Five of the cousins are girls and six are boys. They all live in the same town.

Nancy Jane is Marianne’s oldest cousin. She has been playing piano for three years. She practices forty-five minutes every day, after her walking exercise. Last month she practiced in four different recitals. She gives Will piano lessons for thirty minutes a day.

If the club keeps the same pattern, how many miles will they walk each day during the sixth week?

How many cousins does Marianne have?

How many of Will’s cousins are boys?

How many more minutes each day does Nancy Jane practice the piano than give piano lessons?

If Alissa gets a call from one of her cousins, the probability that it is from a girl is

If Ken competed in 25 meets last year, how many of them did Alissa miss?

Write a story problem from the information in the story and answer your question.