MATH MAMMOTH

Grade 1-A

Complete Worktext

Focus is on...

- Addition concept & facts within 0-10
- Subtraction concept & facts
- Addition/ subtraction connection

By Maria Miller

www.MathMammoth.com

Contents

Chapter 2: Subtraction Within 0-10

Chapter 3: Addition and Subtraction Facts

Foreword

The Math Mammoth Grade 1-A and Grade 1-B worktexts comprise a complete math curriculum for the first grade mathematics studies.

The main topics during first grade are the concepts of addition and subtraction, addition and subtraction facts, and place value till 100. Other topics studied are clock to the half hour, measuring length in inches and centimeters, shapes, and coins.

When you use these books as your only or main mathematics curriculum, they can be like a "framework", but you still have a lot of liberty in planning your child's studies. While addition and subtraction topics are best studied in the order they are presented, feel free to go through the geometry, clock, and money sections in a different order.

This might even be advisable if your child is "stuck" on some concept, or is getting bored. Sometimes the brain "chews the cud" in the background, and the concept he/she was stuck on can become clear after a break.

This curriculum aims to concentrate on a few major topics at a time, and study them in depth. This is totally opposite to the continually spiraling step-by-step curricula, in which each lesson typically is about a different topic from the previous or next lesson, and includes a lot of review problems from past topics.

This does not mean that your child wouldn't need occasional review. However, when each major topic is presented in its own chapter, this gives you more freedom to plan the course of study *and* choose the review times yourself.

In fact, I totally encourage you to plan your mathematics school year as a set of certain topics, instead of a certain book or certain pages from a book.

For review, I have included an html page called Make_extra_worksheets_grade1.htm that you can use to make additional worksheets for computation or for number charts. You can also always simply reprint some already studied pages. Also, the third chapter that practices addition and subtraction facts contains a lot of pages with problems, so you can choose to "save" some of them for later review.

I wish you success in your math teaching!

Maria Miller, the author

Chapter 0: Kindergarten Math Revision

Introduction

This chapter is optional, and can be used to revision the most important concepts of kindergarten math:

- writing the numerals 0 to 9;
- counting up to 20;
- position words, colour words, and some shapes (circle, triangle, square)
- simple patterns

The Lessons in Chapter 0

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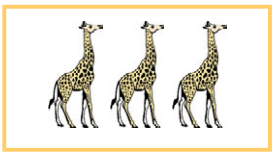
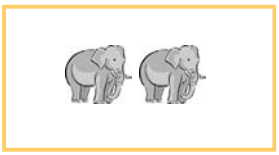
Counting

1. Count. Write the number in the box.

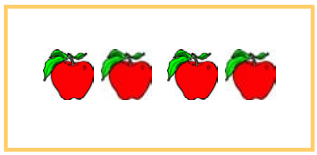


a. ☐



b. ☐

c. ☐

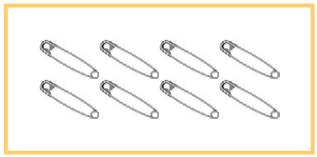


d. ☐

e. ☐

f. ☐

g. ☐



h. ☐

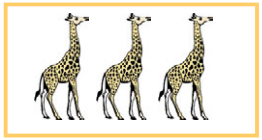
2. Count. Write the number. Then circle the number that is MORE.

a.

☐

☐

b.



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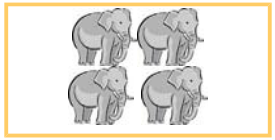

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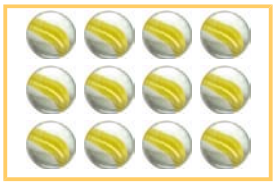
c.



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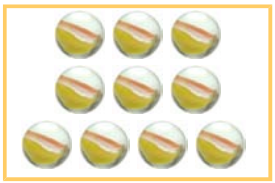

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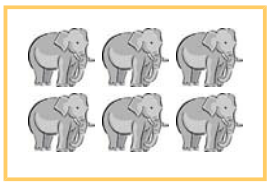
d.



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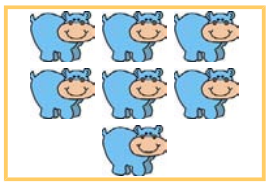

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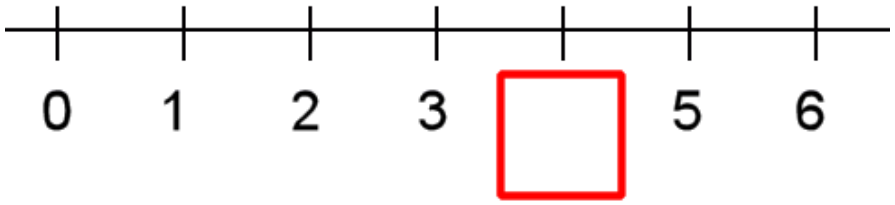
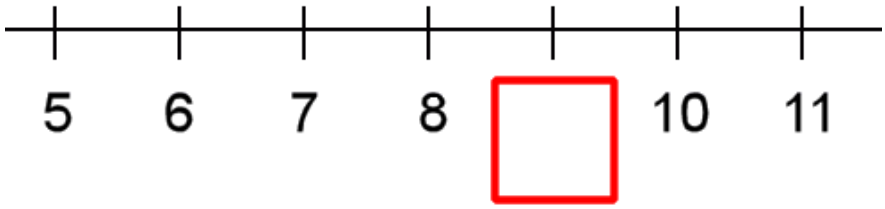
3. Write the missing number below the number line.

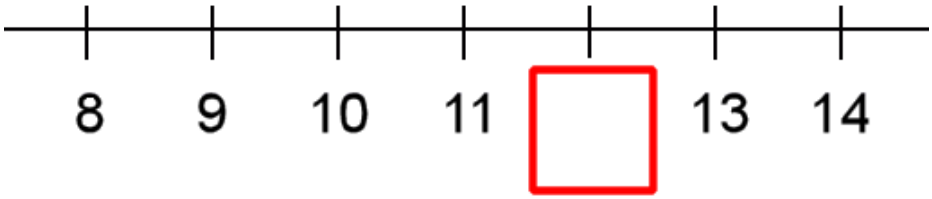
a.



b.

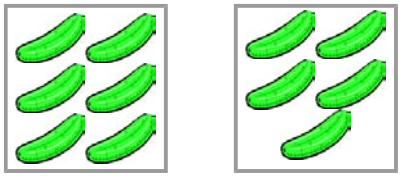


c.

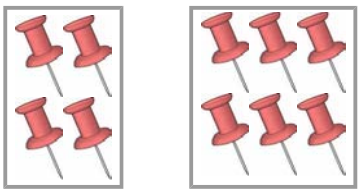


4. Circle the group that has more things. Then count ALL (both groups). Write the number in the box below.

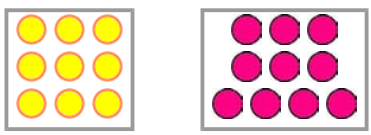
a. ☐



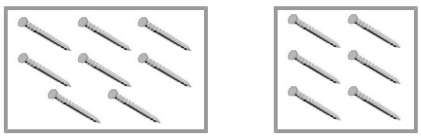
b. ☐



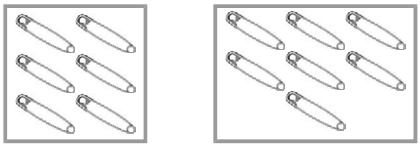
c. ☐



d. ☐



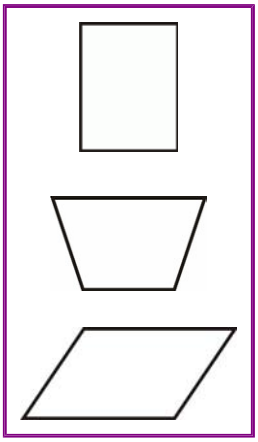
e. ☐



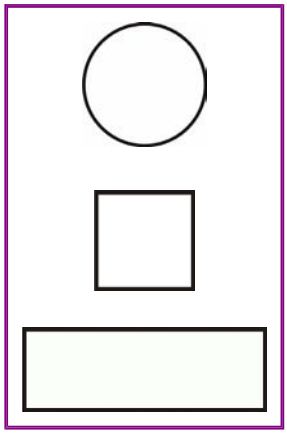
f. ☐

Position Words, Colors, and Shapes

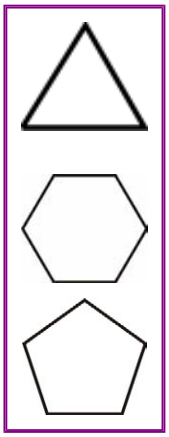
1. **a.** Color RED the top shape.



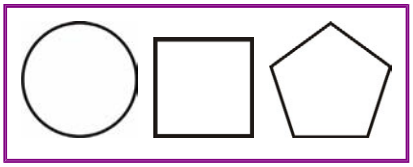
b. Color BLUE the bottom shape.



c. Color YELLOW the middle shape.

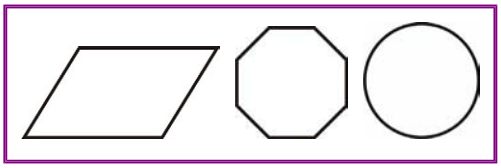


2. **a.** Color GREEN the shape on the right.

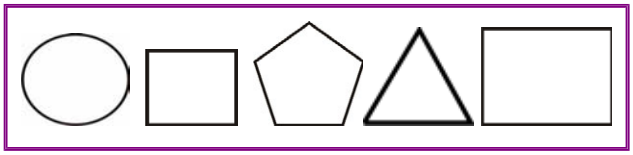


b. Color BLUE the shape in the middle.

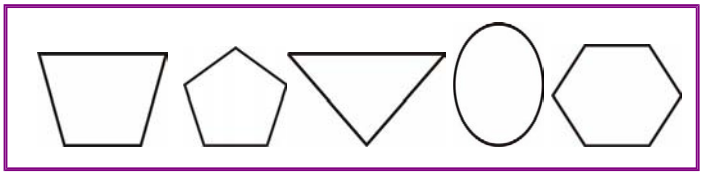
c. Color YELLOW the shape on the left.



d. Color ORANGE two shapes on the right.



e. Color PURPLE two shapes on the left.



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Chapter 1: Addition Within 0-10
Introduction

The first chapter of the *Math Mammoth Grade 1-A Complete Worktext* covers the concept of addition, and addition facts within 0-10.

The chapter starts out with very easy addition problems within 0-5, using pictures. If your child does not yet know the symbols " + " and " = ", you can introduce them *first orally*. In other words, use blocks or rocks and make addition problems where you use both kinds of wordings: "*Three blocks and four blocks makes seven blocks. Three blocks PLUS four blocks EQUALS seven blocks*." Play like that until the child can use the words PLUS and EQUALS in his/her own speech. This will make it easier for him/her to use the written symbols.

Soon the lessons start including "missing addend" problems. We first use pictures, and gradually get to the abstract 1 + __ = 5 with symbols only. Keep in mind that children *may* confuse this problem with 1 + 5 = __. You can word these problems like this: "1 and how many more makes 5?" You can MODEL them by drawing: First draw 1 ball. Tell the child that we need to have a total of 5 balls. He/she is to draw more until there are five balls. In the missing addition problem, however many balls the child has to draw, is the number that goes on the empty line. So, first there is one ball, then we need to add (draw) some more to make 5. How many more were drawn?

After that, the chapter contains many lessons called **Sums with**... whose goal is to help the child memorize addition facts.

My approach to memorization is many-fold:

1. Structured drill, such as you see in the lessons **Sums with 5**, **Sums with 6**, and so on. This is not random drills, because you will start by showing the pattern or the structure in the facts. This will help the student to tie the addition facts in with a context and help him/her understand the facts more on a conceptual level, instead of merely memorizing them at random. In **Sums with 5**, the child learns the number combinations that add up to 5: 0 and 5, 1 and 4, and 2 and 3. This understanding is the basis for the drills.
2. Using addition facts in games, in math problems, everyday life, or anywhere else. Games are especially useful because they help children like mathematics.
3. Random drilling may also be used as a tool among others.
4. Memory helps such as silly mnemonics or writing math facts on a poster and hanging it on the wall. These are not needed for all children.

However, keep in mind that children will need LOTS of opportunities to add numbers to actually memorize the facts, so the memorization may not totally occur as your child works through this chapter. These same addition facts are further studied and used in the next chapters about subtraction, and in all later math work since they are constantly used. At the latest, your child should memorize addition facts during second grade, as recommended by the National Council of Teachers of Mathematics (NCTM).

Please see the following page for a few games that I recommend using while studying this chapter.

Games

10 Out (or *5 Out* or *6 Out etc.)*

You need: lots of number cards with numbers 1-10, such as regular playing cards without the picture cards, Uno cards without the special cards, etc.

Rules: Deal seven cards to each player. Place the rest in a stack in the middle, face down.

At his turn, each player *may* first take one card from the deck. Then, each player *may* ask for one card from the player on their right (like in 'Go Fish'), and the person has to give it if he has it. Then the player may discard any two cards in his hand that add up to 10, or the card 10 itself.

The player who first discards all cards from his hand, wins.

Adaptations:
* Deal more cards instead of seven.
* Deal fewer cards if there are very many players or the players are young.
* Allow players to discard three cards that add up to 10.
* Instead of ten, players discard cards that add up to 9, 8, 11, or some other number. Use the picture cards for 11, 12, and 13.

Some Went Hiding

You need: As many small objects as is the sum you're studying. For example, to study the sums with 5, you need 5 marbles, or 5 blocks, etc.

Rules: The first player shows the objects, and quickly hides SOME behind his/her back without showing how many. Then he/she shows the remaining objects to the next player, who has to tell how many went hiding. If the player gives the right answer, it is then his/her turn to hide some and ask the next player to answer. If he gives the wrong answer, he misses his turn. This game appeals best to young children.

Adaptations:
* Instead of getting a turn, the player may gain points or other rewards for the right answer.

Addition Battle

You need: A standard deck of playing cards from which you remove the picture cards, and perhaps also some of the other higher number cards such as tens, nines, and eights. Alternatively, a set of dominoes works well for children who don't yet know their numbers beyond 12.

Rules: In each round, each player is dealt two cards face up, and has to calculate the sum. The player with the highest sum gets all the cards from the other players. After enough rounds so that all of the cards are used, the player with the most cards wins.

If there is a tie, such as two players have the sum of 11, those players get an additional two cards and "battle" with those to resolve the tie.

Adaptations:
* This game is easily adapted for subtraction, multiplication, and fractions. You can also use dominoes instead of two playing cards.

Any ***board game*** where you move the piece by rolling two dice also works to practice addition.

The Lessons in Chapter 1

Helpful Resources on the Internet

Use these free online resources to supplement the "bookwork" as you see fit.

Addition Exercise from Dositey.com
Write how many worms are on two leaves, and how many together.
http://www.dositey.com/addsub/addex1.htm

Children Addition Quiz
A set of five interactive addition problems that you answer online.
http://www.thegreatmartinicompany.com/Math-Quick-Quiz/addition-kid-quiz.html

Number Bond Machines
Practice which two numbers add up to a given number.
http://www.amblesideprimary.com/ambleweb/mentalmaths/numberbond.html

Save the Whale
Find how much the given "pipe" length is missing from 10 and save the whale.
http://www.ictgames.com/save_the_whale_v4.html

Exuberant Eye Games
Practice your basic facts with these kid-appealing simple games.
http://www.games.exuberanteye.com/

Children' Compare Numbers from Mr. Martini's Classroom
Compare two numbers. Press the number below to choose the biggest number that will appear.
http://www.thegreatmartinicompany.com/Children-Math/compare-number.html

Addition and Subtraction Game from The Little Animals Activity Centre
Solve simple addition and subtraction problems by clicking on the ladybug with the right answer.
http://www.bbc.co.uk/schools/laac/numbers/chi.shtml

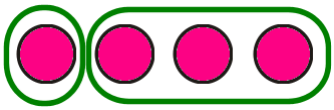
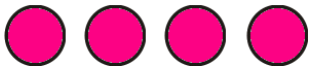
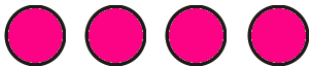
Number Line Arithmetic
Use this virtual manipulative to illustrate addition on a number line
http://nlvm.usu.edu/en/nav/frames_asid_156_g_1_t_1.html

Line Jumper
Addition questions on a number line.
http://www.funbrain.com/cgi-bin/nl.cgi?A1=s&A2=0

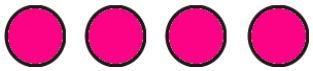
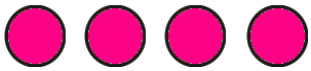
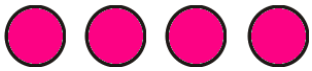
Sum Stacker
Drag dies from stack to stack until the sums of each stack equal the sums given.
http://www.carstensstudios.com/mathdoodles/sumsstacker.html

Two Groups and a Total

1. Make two groups.

a. 4  1 and 3	**b.** 4  2 and 2	**c.** 4  3 and 1
d. 5  3 and 2	**e.** 5  2 and 3	**f.** 5  1 and 4

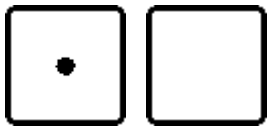
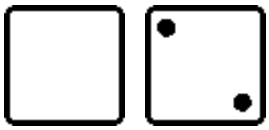
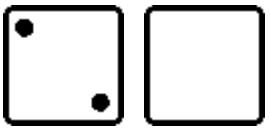
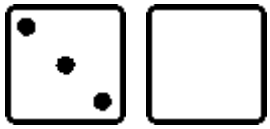
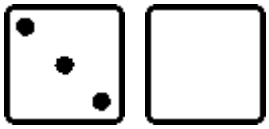
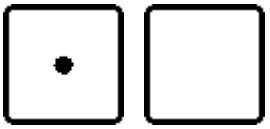
2. Make two groups. Write how many are in the second group.

a. 4  1 and _____	**b.** 4  2 and _____	**c.** 4  3 and _____
d. 5  4 and _____	**e.** 5  3 and _____	**f.** 5  2 and _____
g. 5  1 and _____	**h.** 5  5 and _____	**i.** 5  0 and _____

3. Draw as many dots as the number shows. Then make two groups however you like. Write how many are in each group.

a. 3 _____ and _____	**b.** 5 _____ and _____	**c.** 4 _____ and _____
d. 2 _____ and _____	**e.** 6 _____ and _____	**f.** 8 _____ and _____

4. The number at the top is the total. Draw the missing dots on the empty die face. Write on the lines how many dots are on each die face.

a. 3  _____ and _____	**b.** 6  _____ and _____	**c.** 5  _____ and _____
d. 4  _____ and _____	**e.** 6  _____ and _____	**f.** 5  _____ and _____

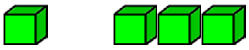
2 and 2 | 4

"Two and two makes four."

1 and 4 | 5

"One and four makes five."

5. Write how many are in each group. Write the total in the box.

a.  _____ and _____	**b.**  _____ and _____	**c.**  _____ and _____
d.  _____ and _____	**e.**  _____ and _____	**f.**  _____ and _____
g.  _____ and _____	**h.**  _____ and _____	**i.**  _____ and _____

6. Draw circles for each number. Write the total in the box.

a. 2 and 2	**b.** 3 and 1
c. 3 and 3	**d.** 1 and 4

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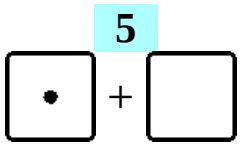
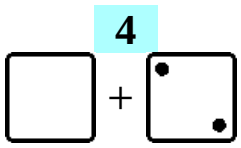
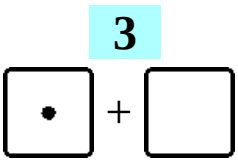
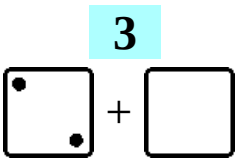
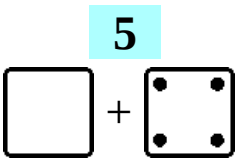
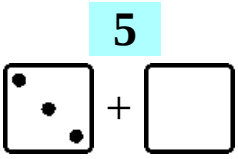
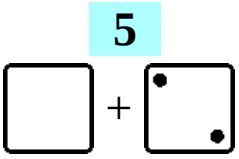
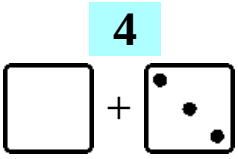
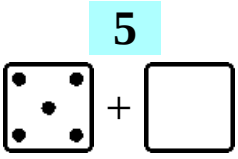
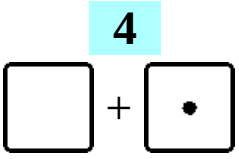
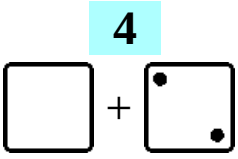
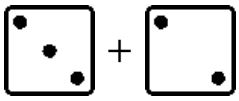
Missing Items

Something is missing from the addition. The TOTAL is not missing. The total is 5. How many are in the second group? That's what is missing! There should be a total of 5 dots. Draw 4 in the second die face.	 1 + _____
There should be a total of 4 dots. The second die face has two. There are none in the first die face, so you need to draw them. Read: "2 plus what number makes 4?" or, "2 and how many more makes 4?" or, "What number and 2 makes 4?"	 _____ + 2

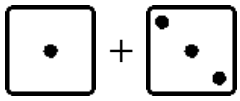
1. Draw more dots for the addition. Write the missing number. The total is on top.

 **a.** 1 + _____	 **b.** 2 + _____	 **c.** _____ + 4
 **d.** 3 + _____	 **e.** _____ + 2	 **f.** _____ + 3
 **g.** 5 + _____	 **h.** _____ + 1	 **i.** _____ + 2



3 + _____ = 5

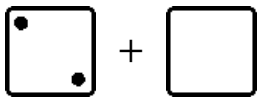
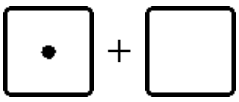
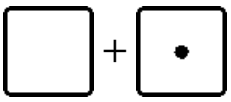
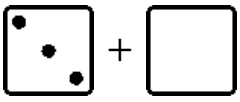
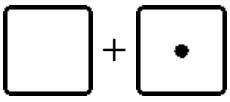
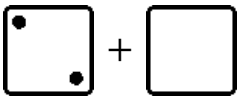
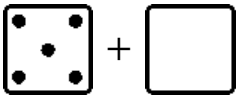
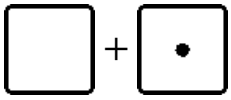
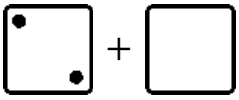
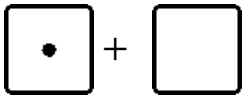
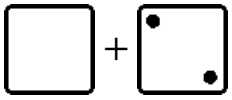
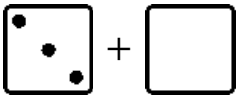
The TOTAL is now written after the equal sign " = ".
The answer is 3 + _2_ = 5



_____ + 3 = 4

See the TOTAL written after the equal sign " = ".
The answer is _1_ + 3 = 4

2. Draw more dots to show the missing number. Write the missing number.

a.  2 + _____ = 4	**b.**  1 + _____ = 1	**c.**  _____ + 1 = 5
d.  3 + _____ = 5	**e.**  _____ + 1 = 4	**f.**  2 + _____ = 3
g.  5 + _____ = 5	**h.**  _____ + 1 = 3	**i.**  2 + _____ = 5
j.  1 + _____ = 5	**k.**  _____ + 2 = 2	**l.**  3 + _____ = 4

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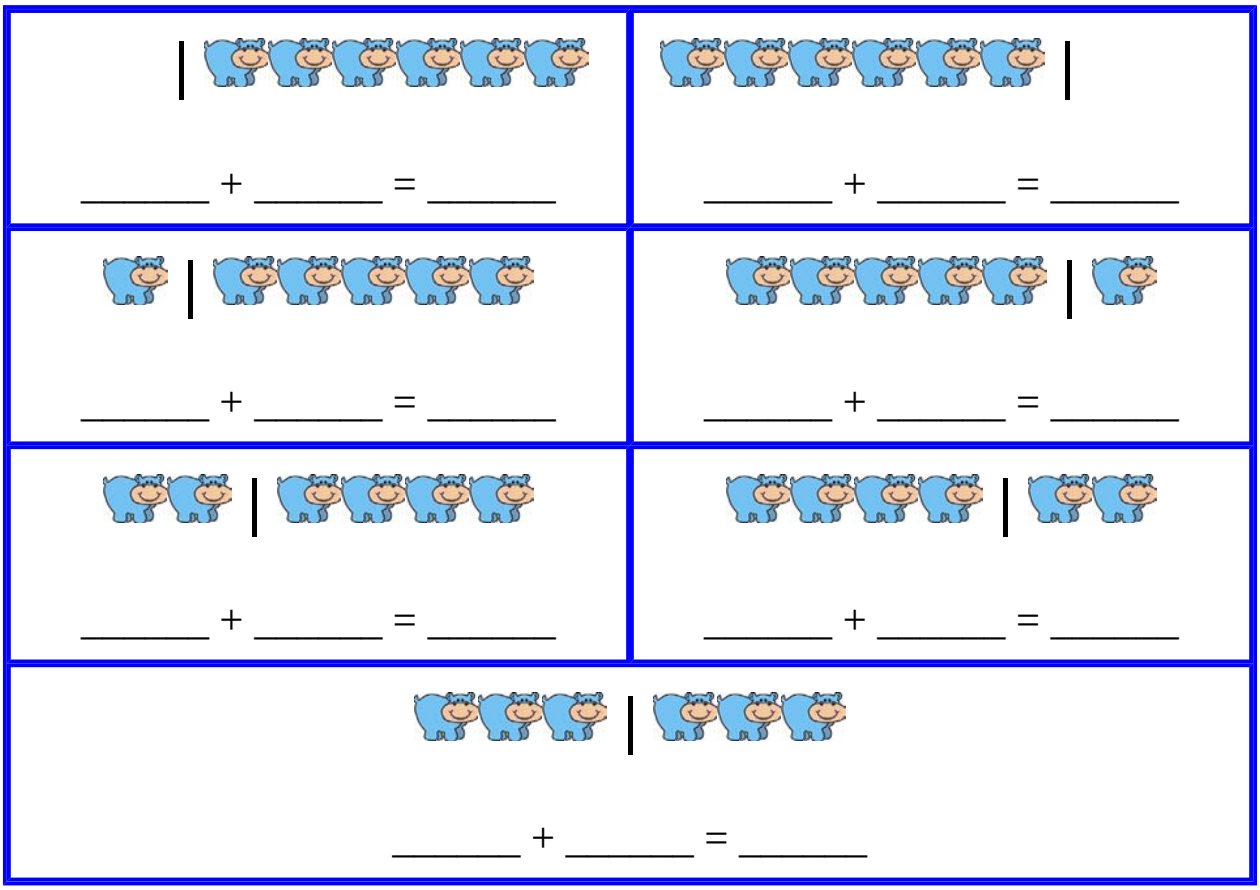
Sums with 6

1. Six hippos are grouped into two groups, in different ways. Write the addition sentences.



_____ + _____ = _____ | _____ + _____ = _____

_____ + _____ = _____ | _____ + _____ = _____

_____ + _____ = _____ | _____ + _____ = _____

_____ + _____ = _____

2. Play "6 Out" *and/or* "Some Went Hiding" with 6 objects (see the introduction).

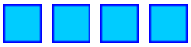
3. **Drill.** Don't write the answers but just think them in your head.

1 + ☐ = 6	4 + ☐ = 6	☐ + 2 = 6	☐ + 3 = 6
2 + ☐ = 6	3 + ☐ = 6	☐ + 0 = 6	☐ + 1 = 6
6 + ☐ = 6	5 + ☐ = 6	☐ + 4 = 6	☐ + 5 = 6

4. Add the numbers and write the total on the line.

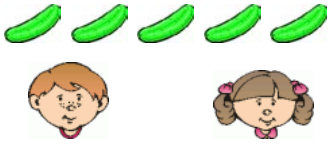
a. 1 + 5 = _____	**b.** 2 + 3 = _____	**c.** 4 + 2 = _____

5. Draw more boxes to illustrate the missing number and write it on the line.

a.  2 + _____ = 6	**b.**  2 + _____ = 5	**c.**  4 + _____ = 6
d.  3 + _____ = 6	**e.**  1 + _____ = 6	**f.**  5 + _____ = 6
g.  1 + _____ = 5	**h.** 0 + _____ = 6	**i.**  3 + _____ = 5

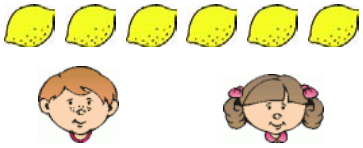
6. Jack and Jill share 5 cucumbers and 6 lemons in different ways. Find how many Jill gets. For the number shown, you can cover the cucumbers or lemons with your hand to see how many Jill gets.

a. 5



Jack gets:	Left for Jill:
2	
1	
5	
3	
0	
4	

b. 6



Jack gets:	Left for Jill:
1	
4	
5	
0	
2	
3	

7. Add.

2 + 3 = _____

4 + 1 = _____

3 + 3 = _____

4 + 2 = _____

1 + 3 = _____

1 + 5 = _____

2 + 2 = _____

2 + 4 = _____

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Chapter 2: Subtraction Within 0-10
Introduction

The second chapter of the *Math Mammoth Grade 1-A Complete Worktext* covers the concept of subtraction, its various meanings, and addition/subtraction connection.

The concept of subtraction

If your child does not yet know the word "minus", it is a good idea to introduce it *first orally*. Simply use blocks, rocks, or other concrete objects. For example, show the child eight blocks, and take away three blocks. Then use both kinds of wordings: "*Eight blocks, take away three blocks, leaves five blocks. Eight blocks **minus** three blocks **equals** five blocks.*"

Play with the blocks or other concrete objects until the child can use the words "minus" and "equals" in his/her own speech. This will make it much easier to introduce the actual written symbols.

In the first lessons, the child can figure out the subtraction problems by simply counting how many objects are left.

Subtraction vs. addition

So, how does the student learn how to subtract without actually counting concrete objects or pictures? As a transitional strategy, we will study **counting down**: the student solves $9 - 3$, for example, by counting down three steps from nine: eight, seven, six. So the answer is six.

However, the final goal is to learn to *use the addition facts* to find the answer to subtraction problems. For example, once the student knows that $5 + 5 = 10$, then this fact is used to solve $10 - 5 = 5$. For this purpose, the student must learn well the connection between addition and subtraction. This is why this book concentrates heavily on the connection between addition and subtraction with several lessons, ending up with the concept of fact families.

Other meanings of subtraction

Besides "taking away", subtraction is also used for these two situations:

- **Finding how much more one number is than another.** Note that no one "takes away" anything in this situation. For example, if you have 3 dollars and you need 6 dollars, how many more dollars do you need? The student is instructed to write a *"how many more"* addition problem for this, which looks like this: $3 + \_\_\_ = 6$. We also call these problems "missing addend" problems. It can be solved by remembering the addition fact $3 + 3 = 6$, or by subtracting $6 - 3 = 3$.

- **Two (or more) parts (of something) make up a whole.** If you know the whole and one of its parts, you can figure out the other part. For example, if there are 10 white and red flowers, and seven of them are white, how many are red? We know the "parts" (the red and white flowers) add up to 10, so we write an addition $7 + \_\_ = 10$. Again, this can be solved by subtracting, or simply by knowing the addition fact $7 + 3 = 10$.

These two situations are taught explicitly and can be found in the word problems throughout this chapter.

The Lessons in Chapter 2

Helpful Resources on the Internet

Use these free online resources to supplement the “bookwork” as you see fit.

Kids' Subtraction Quiz from Mr. Martini's Classroom
Five problems to solve online. You can choose the highest number used from the list of numbers below the quiz.
http://www.thegreatmartinicompany.com/Math-Quick-Quiz/subtraction-kid-quiz.html

Subtraction Mystery Picture
Find out the picture behind the tiles by solving subtraction questions within 0-10.
http://www.dositey.com/addsub/Mystery4.htm

Matching Pictures to Number Sentences
Find the correct number sentence to go along with the picture.
http://www.haelmedia.com/html/mc_m1_001.html

Match Pictures to Number Sentences
Match pictures to either addition or subtraction number sentences.
http://www.haelmedia.com/html/mc_m1_001.html

Addition and Subtraction Game from The Little Animals Activity Centre
Solve simple addition and subtraction problems by clicking on the ladybug with the right answer.
http://www.bbc.co.uk/schools/laac/numbers/chi.shtml

Subtraction Game from Count Us In
Subtract two numbers which bowls a ball down a bowling alley lane.
http://www.abc.net.au/countusin/games/game8.htm

Take It Away
Subtract and click on the correct answer.
http://www.primarygames.com/takeaway/start.htm

Subtraction Pinball
When the ball hits numbers, it defines a problem. Next you choose the correct answer.
http://www.playkidsgames.com/games/pinball/subtraction/defaultk1.htm

Simple Subtraction
Help the duck fly faster by clicking on the cloud with the correct answer.
http://www.toonuniversity.com/flash.asp?err=513&engine=12

Save the Apples!
Click on the correct basket to get the monkey to carry the apple basket. A crocodile is waiting!
http://www.playkidsgames.com/games/apples/savetheApples.htm

Busy Bees
Figure out how many of the 10 bees went inside the hive.
http://www.hbschool.com/activity/busy_bees/index.html

Soccer Subtraction
Click to make the players disappear until the subtraction sentence is true.
http://www.ictgames.com/soccer_subtraction.html

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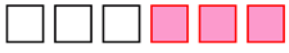
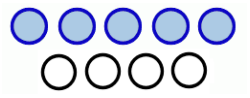
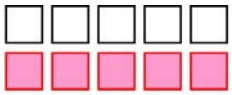
Subtraction and Addition in the Same Picture

How many colored circles? How many white ones?  __4__ + __6__ = 10	 __3__ + __4__ = 7
Cover the colored circles. Write a subtraction sentence.  10 – __4__ = __6__	Cover the colored circles.  7 – __3__ = __4__

1. Make an addition sentence and a subtraction sentence from the same picture.

a.  _____ + _____ = _____ 7 – _____ = _____	**b.**  _____ + _____ = _____ 6 – _____ = _____
c.  _____ + _____ = _____ 5 – _____ = _____	**d.**  _____ + _____ = _____ 6 – _____ = _____
e.  _____ + _____ = _____ 8 – _____ = _____	**f.**  _____ + _____ = _____ 6 – _____ = _____

2. Make an addition sentence and a subtraction sentence for the same picture.

a.  _____ + _____ = _____ _____ – _____ = _____	**b.**  _____ + _____ = _____ _____ – _____ = _____
c.  _____ + _____ = _____ _____ – _____ = _____	**d.**  _____ + _____ = _____ _____ – _____ = _____

3. In each problem, draw circles and then color some circles to fit the addition sentence. Then cover the **COLORED** circles and make a subtraction sentence.

a. 7 + 1 = _____ _____ – _____ = _____	**b.** 6 + 3 = _____ _____ – _____ = _____
c. 2 + 3 = _____ _____ – _____ = _____	**d.** 2 + 5 = _____ _____ – _____ = _____
e. 7 + 4 = _____ _____ – _____ = _____	**f.** 3 + 3 = _____ _____ – _____ = _____

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Two Parts — One Total

There are ten marbles. Some are blue and seven are white. How many are blue? You can write an addition sentence. You can ALSO write a subtraction sentence, even though nothing is taken away.	 _____ + 7 = 10 10 – 7 = _____ Cover part of the total (the white marbles), and you will see the other part (the blue marbles).
There are five blue marbles and some white marbles in a bag. There is a total of nine marbles. How many are white? Draw the marbles. Write an addition sentence AND a subtraction sentence.	_____ + _____ = _____ _____ – _____ = _____

1. Solve the word problems. Write an addition sentence AND a subtraction sentence.

a. Mom put some blue and red flowers in a vase. Jen counted 5 red flowers, and a total of 10 flowers. How many of the flowers are blue?	_____ + _____ = _____ _____ – _____ = _____
b. There are nine children on a team, and four of them are boys. How many are girls?	_____ + _____ = _____ _____ – _____ = _____

c. Jack has ten socks in his basket. Eight of them are white, and the rest are black.
How many are black?

_____ + _____ = _____

_____ – _____ = _____

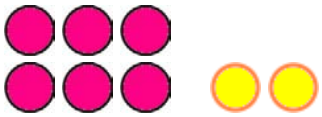
d. Mary saw eight chairs on the lawn, and two had blown over.
How many were still sitting upright?

_____ + _____ = _____

_____ – _____ = _____

2. For each picture, make a word problem that is solved by subtraction.

a.



b.

3. Write an addition sentence for the pictures.

a. _____ + _____ + _____ = _____

b. _____ + _____ + _____ = _____

c. _____ + _____ + _____ = _____

d. _____ + _____ + _____ = _____

4. Draw the missing marbles to match the addition sentence.

a. 3 + 2 + _____ = 8

b. 1 + 5 + _____ = 10

5. Draw a picture to solve these problems.

a. Jane had some red, blue, and yellow roses in a vase. Two roses were blue, and two were red. If she had a total of 10 roses, how many of them were yellow?

b. Seven birds sat in a tree. One of them was black, two were blue, and the rest were brown. How many were brown?

c. Mary has two long pencils, two medium-size pencils, and the rest of her pencils are short. If she owns 9 pencils, how many of her pencils are short?

Fact Families

Two addition facts and two subtraction facts form a fact family if they use the same three numbers.

For example, with 5, 3, and 2 we get a fact family on the right:

5

2 + 3 = 5 5 – 3 = 2

3 + 2 = 5 5 – 2 = 3

1. Write the fact families to match the pictures.

a. 6

1 + 5 = 6

5 + 1 = 6

6 – _____ = _____

6 – _____ = _____

b. 8

_____ + _____ = _____

_____ + _____ = _____

_____ – _____ = _____

_____ – _____ = _____

c. 9

_____ + _____ = _____

_____ + _____ = _____

_____ – _____ = _____

_____ – _____ = _____

d. 10

_____ + _____ = _____

_____ + _____ = _____

_____ – _____ = _____

_____ – _____ = _____

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Chapter 3: Addition and Subtraction Facts
Introduction

The third chapter of the *Math Mammoth Grade 1-A Complete Worktext* provides lots of practice for learning and memorizing the basic addition and subtraction facts within 0-10.

Memorizing the facts

The lessons named, **Addition and Subtraction Facts With ...**, aim at helping your child to memorize the basic facts within 0-10. We approach it from the concept of "fact families", which makes the process to be logical and structured. These lessons have a lot of repetition and practice for both subtraction and addition facts.

Some children may not need all of the practice. Use your judgment and skip some pages in this section if you feel it is necessary. You can also "save" some of the pages to be completed later, as a review.

Alongside this book, you can also use math games or flashcards to reinforce these facts. You will find a list of some free online games at http://www.homeschoolmath.net/online/addition_subtraction.php

The National Council of Teachers of Mathematics (NCTM) recommends in their Grade 2 Curriculum Focal Points that children "*...develop quick recall of basic addition facts and related subtraction facts*".

This suggests that memorizing the addition and subtraction facts is not yet completely essential in first grade. It is advisable though to learn these facts fairly well at this point, because children will soon start learning to add those single-digit numbers where the sum is more than ten.

Mathematics builds upon previously learned concepts and facts. Learning addition and subtraction facts is essential for later study. If your child does not memorize these facts yet, don't worry. Go on with your curriculum, but keep practicing the facts with games, worksheets, drill, etc. on the side until they get there.

The Lessons in Chapter 3

Helpful Resources on the Internet

Use these free online resources to supplement the "bookwork" as you see fit.

Exuberant Eye Games
Practice your basic facts with these kid-appealing simple games.
http://www.games.exuberanteye.com/

Mental Maths Practice
Online practice of sets of 10 addition and subtraction questions; timed
http://www.teachingtreasures.com.au/maths/mental-maths/yr1-maths-pg1.htm

Math Facts Practice at playKidsgames.com
Timed practice with various skill levels.
http://www.playkidsgames.com/games/mathfact/default.htm

Number Bond Machines
Practice which two numbers add up to a given number.
http://www.amblesideprimary.com/ambleweb/mentalmaths/numberbond.html

Online Subtraction Flash Cards
http://www.thegreatmartinicompany.com/WebMozilla/subtractionm.html
and
http://www.thegreatmartinicompany.com/WebMozilla/subtractionmfill.html

Number Line Bounce
Arrange the given bounce arrows on a number line using addition and subtraction until you reach the target number. Since it uses several operations, it *is challenging* for first graders, but give it a try.
http://nlvm.usu.edu/en/nav/frames_asid_107_g_1_t_1.html

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Addition and Subtraction Facts with 8

1. Write the fact families in which the sum is eight.

8, ____, 8	_____, _____, 8	_____, _____, 8
		
8 + 0 = 8 ____ + ____ = 8 8 – ____ = ____ ____ – ____ = ____	7 + ____ = 8 ____ + ____ = 8 8 – ____ = _____ ____ – ____ = _____	____ + ____ = _____ ____ + ____ = _____ ____ – ____ = _____ ____ – ____ = _____

_____, _____, 8	_____, _____, 8
	
____ + ____ = 8 ____ + ____ = 8 ____ – ____ = ____ ____ – ____ = ____	____ + ____ = 8 ____ – ____ = ____

2. Play the “8 Out” card game.

3. Write the addition facts with 8 and memorize them!

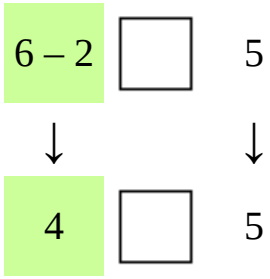
0 + _____ = 8	or	_____ + 0 = 8	
1 + _____ = 8	or	_____ + 1 = 8	
2 + _____ = 8	or	_____ + _____ = 8	4 + _____ = 8
3 + _____ = 8	or	_____ + _____ = 8	

4. Find the missing numbers.

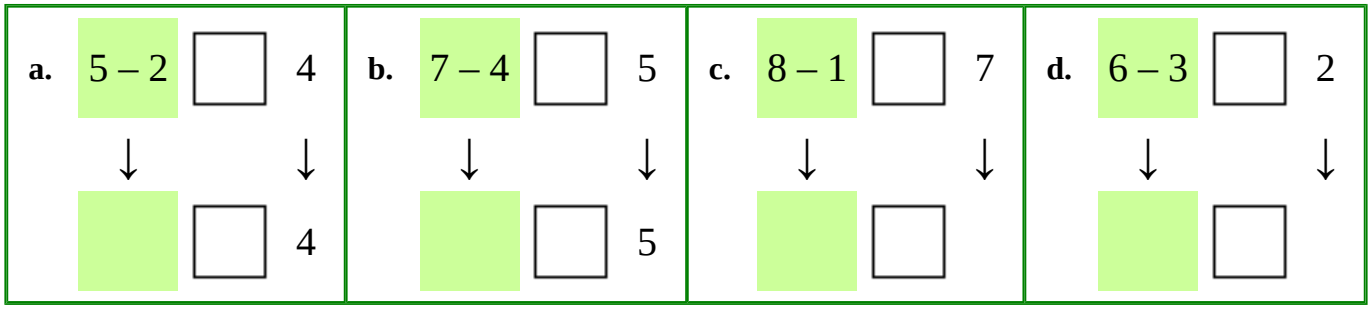
a.	b.	c.	d.
8 – 3 = _____	5 + _____ = 8	4 + _____ = 8	8 – 7 = _____
8 – 1 = _____	1 + _____ = 8	6 + _____ = 8	8 – 0 = _____
8 – 2 = _____	2 + _____ = 8	7 + _____ = 8	8 – 4 = _____

First subtract 6 – 2. It is 4.
Do not write 4 in the box!

Then compare 4 and 5.
Five is greater. Draw < .

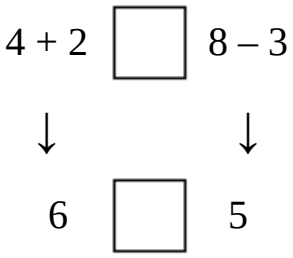


5. First Subtract. Write the answer below (not in the box!). Then write < or > or = .



First do 4 + 2 (on left side) and 8 – 3 (on the right side).
Do not write the answers in the box!

You can write the answers below. Then compare.
Six is greater. Draw > .



6. First add and subtract. Write the answers below (not in the box!). Then compare, and write < or > or = .

a. 5 – 2 ☐ 4 – 2	**b.** 8 – 1 ☐ 7 – 1	**c.** 8 – 6 ☐ 8 – 5
e. 6 + 2 ☐ 7 + 2	**f.** 7 – 1 ☐ 7 – 2	**g.** 4 + 4 ☐ 7 – 5
h. 1 – 1 ☐ 3 – 2	**i.** 3 + 10 ☐ 10	**j.** 7 ☐ 4 + 2
k. 8 – 1 ☐ 4 – 2	**l.** 7 – 2 ☐ 6 – 1	**m.** 9 – 0 ☐ 7 + 2

7. Fill in the missing numbers. Then draw a line between the facts that are from the same fact family.

6 + _____ = 8	8 – 4 = _____	_____ + 5 = 8
8 – 0 = _____	8 – _____ = 3	8 – _____ = 6
8 – 3 = _____	7 + _____ = 8	_____ + 4 = 8
_____ + 1 = 8	8 – 2 = _____	8 – _____ = 8
4 + _____ = 8	0 + _____ = 8	8 – 1 = _____

8. Solve the word problems. Drawing can help you solve these.

a. Jack has 10 cars, Bill has 7, and Ed has 4.

How many more cars than Ed does Bill have?

How many more cars than Ed does Jack have?

How many more cars than Bill does Jack have?

b. Mary has saved 7 dollars. She'd like to buy a puzzle for 5 dollars and a game for 3 dollars.
Can she buy both things?

If she can, how much money does she have left over?

If she can't, how much more money would she need to save?

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MATH MAMMOTH

Grade 1-B

Complete Worktext

- Place value (tens and ones)
- Clock
- Shapes and measuring
- Adding & subtracting within 0-100
- Counting coins

By Maria Miller

www.MathMammoth.com

Contents

Chapter 4: Place Value Within 0-100

Chapter 5: Clock

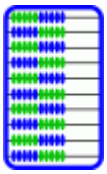
Chapter 6: Shapes and Measuring

Chapter 7: Adding and Subtracting Within 0-100

Chapter 8: Coins

Chapter 4: Place Value Within 0-100
Introduction

The fourth chapter of the *Math Mammoth Grade 1-B Complete Worktext* teaches students two-digit numbers, or place value with tens and ones.



The initial lessons that introduce tens and ones use a 100-bead abacus extensively. A 100-bead abacus or school abacus simply contains 10 beads on 10 rods with a total of 100. It is *not* a special abacus as used by the Chinese or the Russians. In the school abacus, each bead simply represents one. It can look for example, like the picture on the right. The 100-bead abacus lets children both "see" the numbers and use their touch while making them.

Amazon has many abaci, for example this Melissa & Doug Classic Wooden Abacus:
http://www.amazon.com/exec/obidos/ASIN/B00005BVRQ/?tag=homeschoolmath-20

Other stores carry abaci as well. If you cannot obtain a real abacus, you can probably use this virtual abacus:
http://illuminations.nctm.org/ActivityDetail.aspx?ID=8

The abacus is not the only model used in the chapter. We also use a visual model of blocks where ten of them "snap" together to form a stick. If you already have so-called base-ten blocks, you can use them along with the visual exercises, if you want to.

Then, we also use the 100-chart and number lines. Number lines help visualize how the numbers continue indefinitely and also connect with the concept of measuring. The 100-chart helps the child to be familiar with the numbers below 100 and find patterns in the number system.

When children count, they basically just learn numbers as some kind of continuum that continues and continues. With simple counting, your child might not catch on to the inherent structure and how it goes into groups of tens and hundreds and thousands.

For children to understand place value, they first need to know their numbers up to 10, do simple addition with small numbers, and understand about counting in groups. Our whole number system is based on the idea that if you have lots and lots of objects, the efficient way is to count them in groups of tens, hundreds, and thousands - not individually.

The crucial point in understanding the concept of place value is that a **certain position** *represents* a **certain size group**. Then the digit in that position tells you how many of that size group there are. For example, in the number 2,381, we adults already know that 8 represents eight tens, and not just "8". The number 3 represents three hundreds, and not just "3". The placing or positioning of the digit tells us what size the group is that we mean, and the digit itself tells how many of those groups.

In this chapter, children learn this idea for just two digits, or two place values.

For that matter, we could start a different system of writing numbers where font size tells you the place value: for example 7^{8}_{2} would be 7 tens, 8 hundreds, and 2 ones = 872. Please note that this idea is NOT developed here. It is just an example to let *you* see that the place value concept is about something abstract (certain positioning) representing a certain size group.

The Lessons

Helpful Resources on the Internet

Use these free online resources to supplement the “bookwork” as you see fit.

Base Blocks from National Library of Virtual Manipulatives
Place enough ten-sticks and one-blocks into the work area to show given numbers. Choose “Columns = 2” to restrict the program to two-digit numbers.
http://nlvm.usu.edu/en/nav/frames_asid_152_g_1_t_1.html?from=category_g_1_t_1.html

Electronic Abacus
Use this to illustrate two-digit numbers. It shows the amount of beads with a number and with a format “2-ten 5”.
http://illuminations.nctm.org/ActivityDetail.aspx?ID=8

Tens and Ones Exercise
Enter the two-digit number displayed by the ten-bags and one-counters
http://www.dositey.com/addsub/tenoneex.htm

Shark Pool Place Value
Click on the number shown by the ten-stacks and individual blocks.
http://www.ictgames.com/sharknumbers.html

Count to 99!
Enter the number shown by the colored blocks of a hundred chart.
http://www.thegreatmartinicompany.com/Kids-Math/kids-count-99.html

Give the Dog a Bone
Find the hidden bones on a 100-chart.
http://www.oswego.org/ocsd-web/games/DogBone/gamebone.html

Number Charts
Create different kinds of printable number charts.
http://www.homeschoolmath.net/worksheets/number-charts.php

Base 10
Build the given number using ten-sticks and blocks.
http://www.learningbox.com/Base10/BaseTen.html

Two-Digit Numbers in English
Draw the number name to the correct number.
http://www.crickweb.co.uk/numbers2-english.html

Number Track
Place the number tiles in the correct order in the track.
http://www.crickweb.co.uk/assets/resources/flash.php?&file=ntrack

Number Comparison at Mr. Martini's Classroom
Click on the < , > , or = sign to be put in between two numbers.
http://www.thegreatmartinicompany.com/inequalities/number-comparison.html

Techno Tortoise
Move the tortoise in steps of 10s, 5s, and 1s on the number line to the target number.
http://www.ictgames.com/technowithflock.html

Number Line
Useful for illustrating two-digit numbers. Draw leaps and click on the line to reveal number tags. Change lines to get to two-digit numbers and more.
http://www.ictgames.com/numberLine.html

Connect the Dots
Connect the dots by counting by twos.
http://www.abcya.com/connect_the_dots_bear_2s.htm

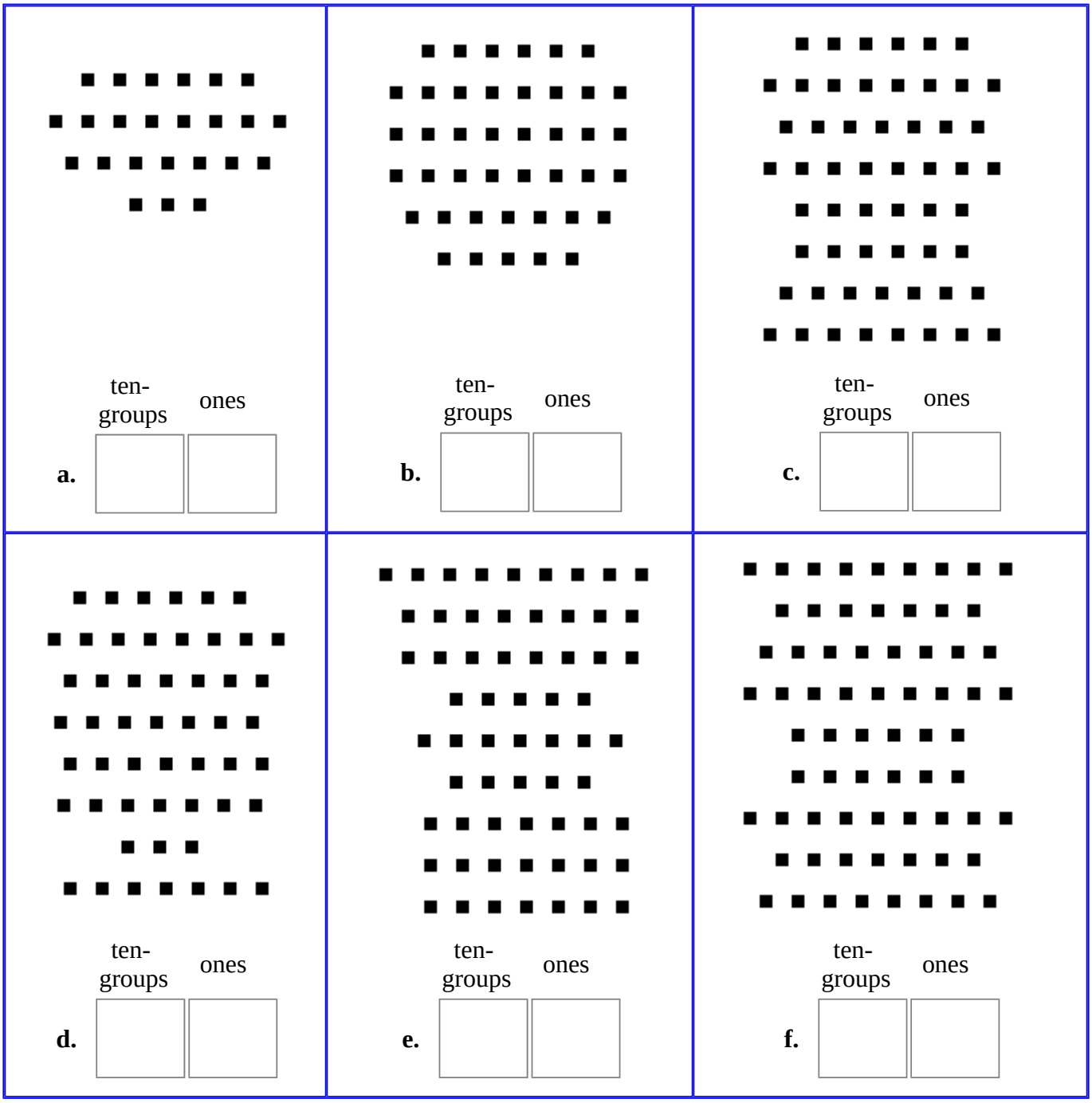
Octopus Game
Find the shell that contains a number 10 more than the given number.
http://www.ictgames.com/octopus.html

Froggy Hop
Find 10 more or 1 more of a given number.
http://www.ictgames.com/frog.html

Football
Click the ball that shows the number 10 less than the shirt;
http://www.ictgames.com/football2.html

Counting in Groups of 10

1. Count in groups of TEN. Count ten dots, and circle them.
   Write how many “ten-groups” that you get. Write how many ones are left over.



2. **Counting game 1.** (Optional - to give more practice for making groups of ten.) Put some beans or other objects onto a table. Ask the child to make groups of ten. Then ask the child to count the groups of ten and the individual ones, using “four-tens and six” or “seven-tens and one”, etc. Repeat as necessary with a different amount of objects, taking turns.

3. **Counting game 2.** <u>You need:</u> Counting items, such as sticks, beads, or beans. Small bags or bowls, OR rubber bands if using sticks.

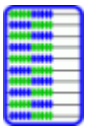
<u>Before the game:</u> Place 10 of the items in the middle, and the rest in a pile on the side.

<u>Play:</u> At his turn, each player adds one more item to the middle pile on the table, and names the number that is formed. Whenever a whole ten is fulfilled, those ten items are grouped together with a rubber band or by placing them in a small bag or bowl.

ONLY use words one to ten when counting in this game. Words like eleven, thirteen, twenty, fifty etc. are not allowed. For example, eleven is said as "ten and one", twelve is "ten and two", twenty is "two tens", twenty-five is "two tens and five", etc.

<u>Variation:</u> Each player adds *two* (or some other quantity) matches to the pile instead of one.

4. Introduce the 100-bead abacus to the student.
Make these numbers with the 100-bead abacus.



a. 6 tens, 5 ones

b. 2 tens, 7 ones

c. 7 tens

d. 1 ten, 5 ones

e. 2 tens, 1 one

f. 8 tens, 9 ones

g. 9 tens, 3 ones

h. 1 ten, 1 one

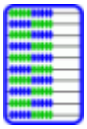
i. 4 tens, 6 ones

j. 6 tens

k. 7 tens, 1 one

l. 1 ten, 8 ones

5. Take turns telling each other what number to make on the abacus, such as "7 tens and 9" or "1 ten and 7". **Do not** proceed further until the student has mastered this! This is crucial.

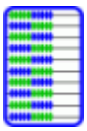


The names of the numbers with whole tens are:

ten	= ten	four tens	= forty	seven tens	= seventy
two tens	= twenty	five tens	= fifty	eight tens	= eighty
three tens	= thirty	six tens	= sixty	nine tens	= ninety

ten tens = hundred

6. Say the number names from ten to hundred aloud a few times, while also making them with the 100-bead abacus. It almost sounds like a rhyme!



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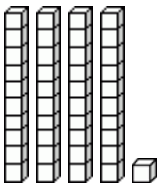
Building Numbers 41-100

1. Fill in the table.

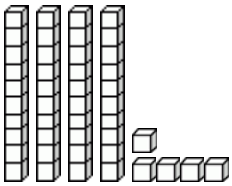
a. Forty-one



_____ + _____

tens ones

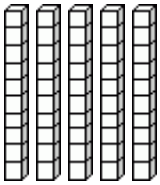
b. _____



_____ + _____

tens ones

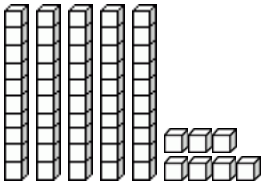
c. _____



_____ + _____

tens ones

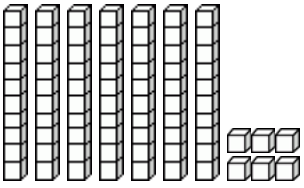
d. _____



_____ + _____

tens ones

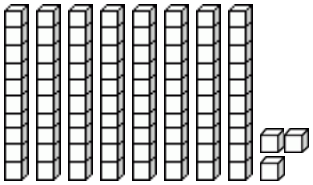
e. _____



_____ + _____

tens ones

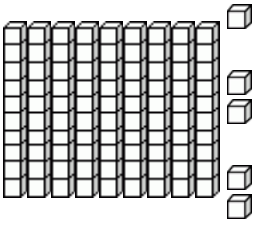
f. _____



_____ + _____

tens ones

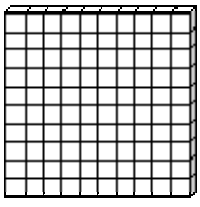
g. _____



_____ + _____

tens ones

h. _____



100 + 0 + 0

hundreds tens ones

1	0	0

2. Match the number to its name.

46	forty-two
64	forty-six
55	fifty-five
70	fifty-seven
69	fifty-nine
59	sixty-four
42	seventy
57	sixty-nine

99	seventy-six
81	eighty-one
90	ninety-one
91	eighty-three
79	ninety
76	seventy-nine
100	ninety-nine
83	hundred

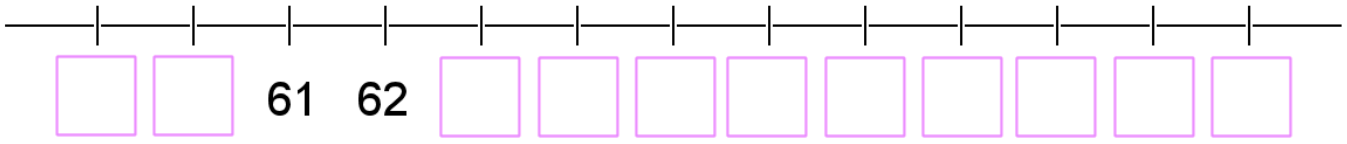
3. Break the numbers into tens and ones.

a. 73 = 70 + 3	**b.** 45 = _____ + _____	**c.** 98 = _____ + _____
d. 91 = _____ + _____	**e.** 83 = _____ + _____	**f.** 64 = _____ + _____

4. Do the same the other way around! Add.

a.	**b.**	**c.**	**d.**
60 + 7 = _____	4 + 50 = _____	6 + 80 = _____	90 + 9 = _____
90 + 7 = _____	8 + 80 = _____	50 + 5 = _____	80 + 2 = _____
80 + 0 = _____	9 + 50 = _____	0 + 40 = _____	1 + 60 = _____

5. Fill in the numbers on the number line.



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Chapter 5: Clock
Introduction

The fifth chapter of *Math Mammoth Grade 1-B Complete Worktext* covers reading the clock (whole hours and half hours) and some basics of time and calendar.

Reading the clock - whole and half hours

The main goal of this chapter is to learn the whole and half hours on the clock.

In the first lesson we use an analog clock without the minute hand. The child learns whole and half hours with this special clock, and also practices what time it is one hour or a half-hour later than a given time.

The next lesson talks about the minutes. While it does have some clock reading to the nearest five minutes, the main focus in this lesson is to learn that one hour is 60 minutes, a half-hour is 30 minutes, and how the phrases “o'clock” and “half past” relate to the hours and minutes.

For example, the child is to learn that half past eight is written 8:30, and that the “30” part means minutes, and that half an hour IS 30 minutes.

The book has a few exercises about reading the clock to the five-minute intervals; however this can be skipped. The second grade book has much more practice on reading the clock to the nearest five minutes.

I have included one lesson about time order. The topics in this lesson are hopefully already familiar to the student. The next lesson deals with morning and afternoon hours: AM and PM. The goal is to understand that at midnight, the clock starts at 12 hours, and goes through all the hours from 1 to 12, and then it is noon, and after that the hours again go from 1 to 12 until it is midnight again.

We will also briefly look at the calendar, and practice the names of the months.

Reading the clock is a skill that can and should be practiced in everyday situations from now on so that children can learn by experience and not just by filling in math book pages.

The Lessons

Helpful Resources on the Internet

Use these free online resources to supplement the "bookwork" as you see fit.

Flashcard Clock
Read the analog and type in the time in digital. Very clear clock and good fast response!
http://www.teachingtreasures.com.au/maths/FlashcardClock/flashcard_clock.htm

Teaching Time
Analogue/digital clock games and worksheets. Also an interactive "class clock" to demonstrate time.
http://www.teachingtime.co.uk/

A Matter of Time
Lesson plans for telling time, interactive activities, and some materials to print.
http://www.fi.edu/time/Journey/JustInTime/contents.html

Clockwise
Plug in a time, and the clock runs till it reaches it, or the clock runs to a time and you type it in.
http://www.shodor.org/interactivate/activities/clock2/index.html

Clock
(The words, "Evaluation version" are across the screen)
Use the buttons to advance the clock in 5, 10, 15, 30 minute increments or drag the hands. Shows digital time also. For illustrations only; it does not have any quiz or questions.
http://www.interactive-resources.co.uk/mathspack1/clock/clock.html

The Right Time
A couple of interactive exercises about reading the clock.
http://www.pitara.com/activities/math/time/time.asp?QNum=3

What Time Is It?
Look at the analog clock and pick the digital clock that shows the same time.
http://www.primarygames.com/time/start.htm

Time-for-Time
Resource site to learn about time: worksheets, games, quizzes, time zones.
http://www.time-for-time.com/default.htm

That Quiz: Time
Online quizzes for all time-related topics: reading the clock, time passed, adding/subtracting with time, conversion of time units, and time zones practice. The quizzes have many levels, can be timed or not, and include lots of options for customization. Easy to use and set up.
www.thatquiz.org/tq-g/math/time

Whole and Half Hours

In this lesson, the clock only has one hand - the HOUR hand.

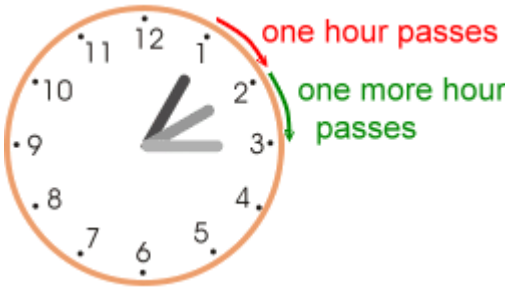
The hour hand points to four -
it is four o'clock, or “four hours”.

The hour hand points to eleven -
it is eleven o'clock, or “eleven hours”.

The hour hand slowly moves around the clock face: from 1 to 2 to 3, and so on.

When the hour hand moves from 1 to 2, exactly one hour of time has passed.

The same is true when the hour hand moves from 2 to 3. It takes the hour-hand one hour to do that.



On this clock, the hour hand has first pointed to 5 - it was five o'clock.

Then it has moved **halfway** between 5 and 6.
We say it is **half past five**.

It takes the hour hand one-half hour to move from five to halfway between five and six.

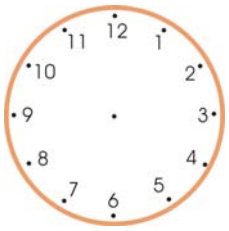
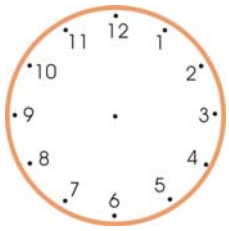
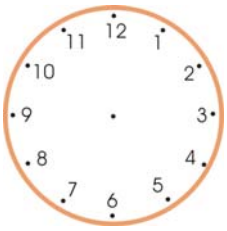
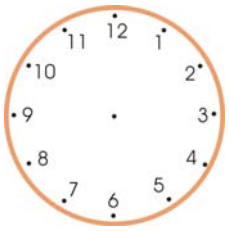
The hour hand has moved past eight o'clock, and is halfway between 8 and 9. We say it is half past eight.

In half an hour. it will be nine o'clock.

1. Write the time under each clock face.

			
a. _____ o'clock	**b.** _____ o'clock	**c.** _____ o'clock	**d.** _____ o'clock

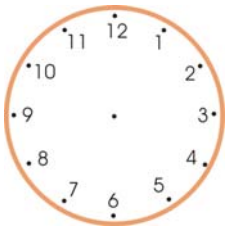
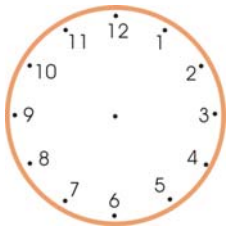
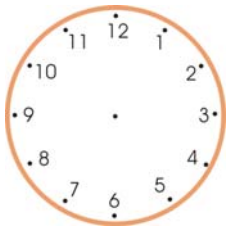
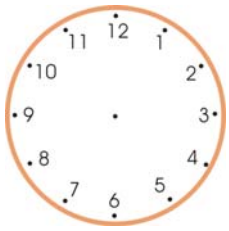
2. Draw the hour hand.

			
a. five o'clock	**b.** eight o'clock	**c.** twelve o'clock	**d.** seven o'clock

3. Write the time.

			
a. half past _____	**b.** half past _____	**c.** half past _____	**d.** half past _____

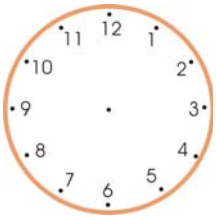
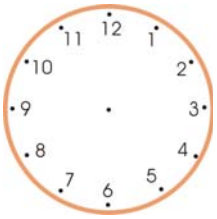
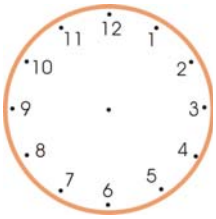
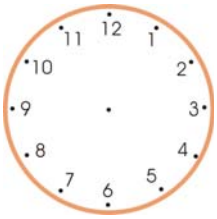
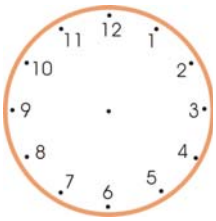
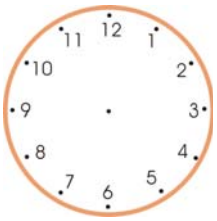
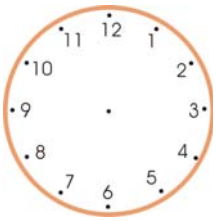
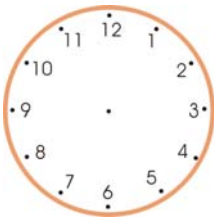
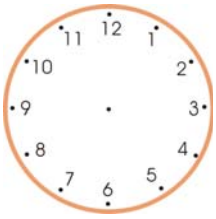
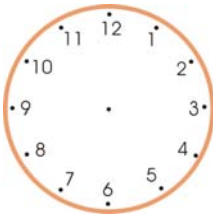
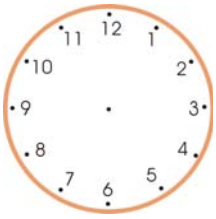
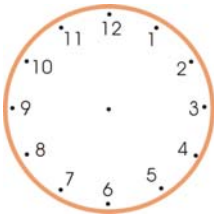
4. Draw the hour hand.

			
a. half past six	**b.** half past three	**c.** half past two	**d.** half past four

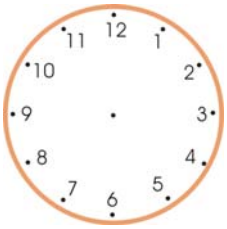
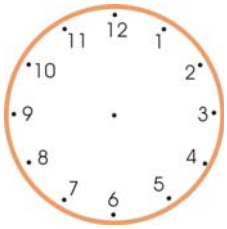
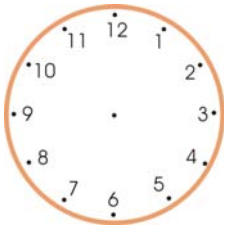
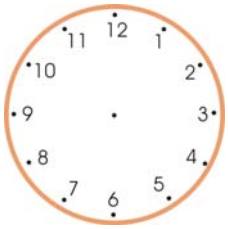
5. Write the time yourself!

 **a.** _____ _____	 **b.** _____ _____	 **c.** _____ _____	 **d.** _____ _____
 **e.** _____ _____	 **f.** _____ _____	 **g.** _____ _____	 **h.** _____ _____

6. Draw the hour hands on the clocks. On the second row, show the time a half-hour later. On the third row, show the time another half-hour later (compared to the second row).

Draw the hour hand.	 **a.** Five o'clock	 **b.** One o'clock	 **c.** Half-past six	 **d.** Half-past three
A half-hour later →				
Another half-hour later →				

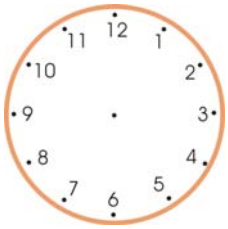
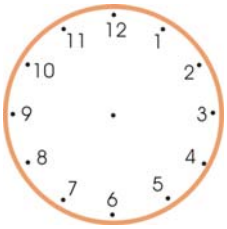
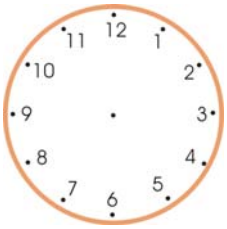
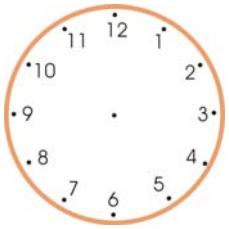
7. Draw the hour hand on the clocks. Then write the time that the clock shows a half-hour later.

	 **a.** three o'clock	 **b.** eleven o'clock	 **c.** half-past five	 **d.** half-past eleven
1/2 hour later →	half past _____	half past _____	_____ o'clock	_____ o'clock

8. Write the time that the clock shows. Then write the time an hour later.

	 **a.** _____ o'clock	 **b.** _____ o'clock	 **c.** half past ____	 **d.** half past ____
An hour later →	_____ _____	_____ _____	_____ _____	_____ _____

9. Draw the hour hand on the clock face. Write what time it would be an hour later.

	 **a.** three o'clock	 **b.** eleven o'clock	 **c.** half-past five	 **d.** half-past eleven
An hour later →	_____ _____	_____ _____	_____ _____	_____ _____

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Chapter 6: Shapes and Measuring
Introduction

The sixth chapter of the *Math Mammoth Grade 1-B Complete Worktext* covers basic shapes and measuring in inches and centimeters.

The goals of this section are:

- The student can identify common shapes, such as triangles, squares, rectangles, circles, and quadrilaterals.
- The student can draw lines with a ruler.
- The student can measure objects and lines in whole inches or centimeters.

These are fairly simple goals, and the lessons in this chapter can be quite easy, but they are laying a foundation for later studies. We will also study three-dimensional shapes a little bit.

For example, the problems where the child divides a shape into parts help build an understanding of part-whole relationships as well as the properties of the original shape and of the parts. They may seem easy to us (and even to your child), but are needful to lay a proper foundation for geometric understanding.

For additional practice, you can let the child draw lines and other shapes however he/she is able to, divide them to other shapes, and let him/her draw patterns on grid paper. A tangram or block shapes are also excellent aids.

The Lessons

Helpful Resources on the Internet

Use these free online resources to supplement the "bookwork" as you see fit.

Buzzing with Shapes
Tic tac toe with shapes; drag the counter to the shape that has that amount of sides.
http://www.harcourtschool.com/activity/buzz/buzz.html

Patch Tool
An online activity where the student designs a pattern using geometric shapes.
http://illuminations.nctm.org/ActivityDetail.aspx?ID=27

Shifting Shapes
Figure out what shape it is when viewing through a small opening! Click on the "eye" button to see it in its entirety.
http://www.ictgames.com/YRshape.html

Interactive Tangram Puzzle
Place the tangram pieces so they form the given shape.
http://nlvm.usu.edu/en/nav/frames_asid_112_g_2_t_1.html

Pattern Blocks
This program is designed to help with fractions, but children will enjoy just playing with the polygon shapes.
http://www.arcytech.org/java/patterns/patterns_j.shtml

Polygon Playground
Drag various colorful polygons to the work area to make your own creations!
http://mathcats.com/explore/polygons.html

Make Your Own Mandala
A mandala is a circular symmetrical design based on eights. Make your own and experiment with symmetry.
http://www.girlsgotech.org/world_around_us.html

Measure It!
Click on the ruler to measure a red bar.
http://www.funbrain.com/measure/index.html

Measure Lines
Move the ruler to measure the line in centimeters
http://www.freewebtown.com/weddell/mw/ruler/ruler_cm.swf

Elementary Teddy Bear Measurement Game
Measure the teddy bear with the ruler.
http://www.apples4theteacher.com/measure.html

Inchy Picnic Game
Measure with a ruler to find how many inches Andy Ant needs to go.
www.fuelthebrain.com/strands.php?str=Measurement

Shapes Identification Quiz from ThatQuiz.org
An online quiz in a multiple-choice format, asking to identify common two-dimensional shapes. You can modify the quiz parameters to your liking.
www.thatquiz.org/tq-f/math/shapes/

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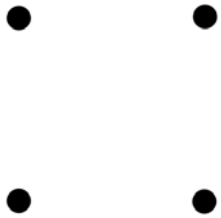
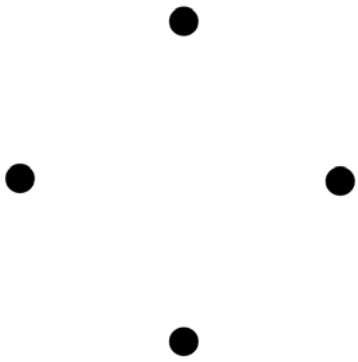
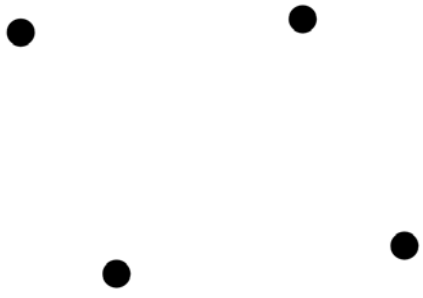
Drawing Basic Shapes

1. Use a ruler to join the dots carefully with straight lines. What shape do you get?

 I got a triangle / square / rectangle / other four-sided shape	 I got a triangle / square / rectangle / other four-sided shape.
 It is a triangle / square / rectangle / other four-sided shape.	 It is a triangle / square / rectangle / other four-sided shape.
 It is a triangle / square / rectangle / other four-sided shape.	 It is a triangle / square / rectangle / other four-sided shape.

2. **a.** Draw four dots anywhere in this space.

Join the dots with lines. Use a ruler!

What shape did you get? A square, a rectangle, or just a four-sided shape?

b. This time try to draw four dots in this space so that you would get a rectangle.

c. Draw a rectangle. This time, use a BOOK to draw straight corners.

3. The shapes (a), (b), (c), and (d) below are four-sided shapes (quadrilaterals).
In each shape, draw a line from one corner to the opposite corner.

What kind of shapes do you get now? _____

Now draw another line from corner to corner in each shape,
using the two other corners you didn't yet use.

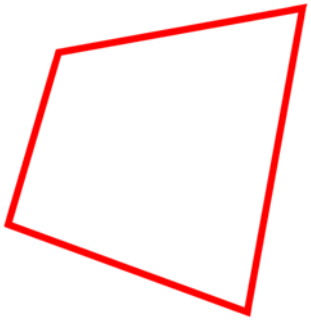
How many parts does each four-sided shape have now? _____

What kind of shapes are these parts? _____

a.

b.

c.



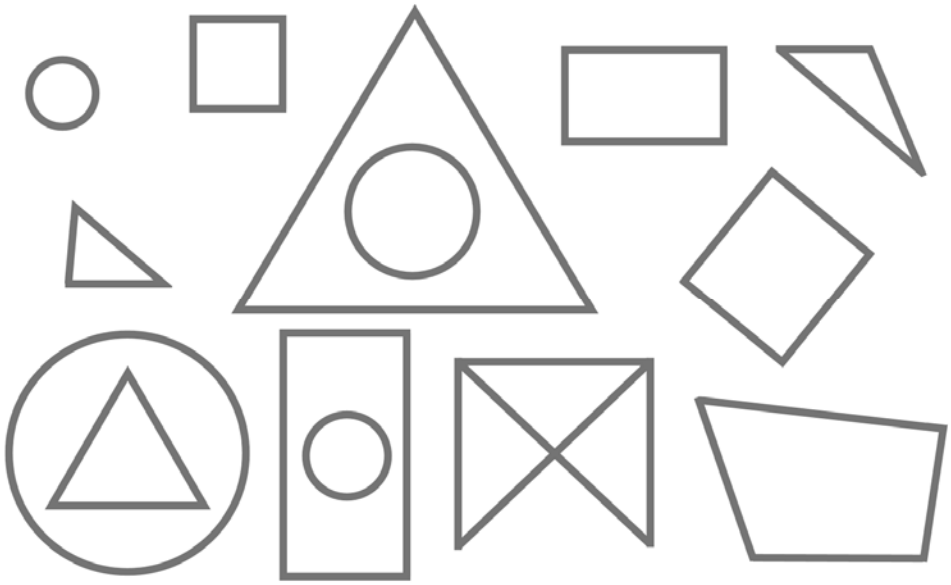
d.

4. Choose a color for each shape, and color!

Triangles are _____. Circles are _____.

Squares are _____. Rectangles are _____.

Other four-sided shapes are _____.



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Chapter 7: Adding and Subtracting Within 0-100

Introduction

The seventh chapter of the *Math Mammoth Grade 1-B Complete Worktext* deals mostly with easy addition and subtraction problems within 0-100.

Topics studied include

- Adding a two-digit number and a single-digit number without completing the next ten: For example, 23 + 4 or 56 + 3.
- Adding and subtracting whole tens; for example 20 + 40 or 90 − 20.
- The concept of difference.
- Adding and subtracting two-digit numbers in columns without carrying or borrowing.

The chapter also introduces children to the concepts of completing the ten and going over to the next ten. Completing the ten means finding a number in an addition problem so that a whole ten is filled. For example, 8 + __ = 10 and 23 + ___ = 30. This is a precursor for studying sums that go over to the next whole ten, such as 8 + 8 or 28 + 5.

These two ideas are studied more in second grade, and the child will then memorize the basic addition facts where the sum is between 10 and 18.

The lesson **Subtract to Ten** employs a similar idea but with subtraction: A problem such as 12 − 7 is done by first subtracting 2, then 5, because 12 − 2 = 10. This is just an introductory lesson, and these subtractions are studied more in second grade as well.

The Lessons

Helpful Resources on the Internet

Use these free online resources to supplement the "bookwork" as you see fit.

Add 'em Up
A game where you choose the correct answer to addition problems.
http://www.primarygames.com/add_up/2a.htm

Math Games from AplusMath
Practice two-digit addition and subtraction with Matho, Hidden Picture, and Concentration.
http://www.aplusmath.com/games/

Speed Grid Addition
Find numbers on the grid that add up to the given number.
http://www.oswego.org/ocsd-web/games/SpeedGrid/Addition/urikares.html

Double Digit Addition
Match the addition problem with the correct sum. Enjoy!
http://www.quia.com/mc/818288.html

Addition Level 2
A matching game where you add a one-digit number and a two-digit number.
http://www.quia.com/mc/65798.html

Space Jumps
Adding two single-digit numbers, first jump to ten, then the rest to the spaceship. Practices addition that goes over ten.
http://www.ictgames.com/spacejumps.html

Bridging Shuttle
Bridging Through Ten means the same as adding to ten first, then the rest. Get a "flight plan", then first add to ten by typing the number needed into the oval, and press the red button. Then type the rest that the shuttle needs to go into the other oval, and press the red button.
http://www.ictgames.com/bridging.html

Froggy Hop
Find 10 more or 1 more of a given number.
http://www.ictgames.com/frog.html

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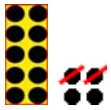
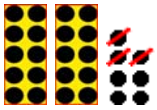
Subtracting Within the Same Ten

 **14 – 2 = 12** "I can subtract 4 – 2 = 2; the 10 stays the same."	 **27 – 3 = 24** "I can subtract 7 – 3 = 4; the 20 stays the same."	Think of the *ones digits* only. The tens do not change, because we don't have to subtract from the tens.

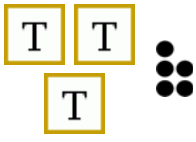
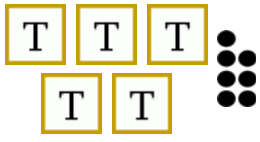
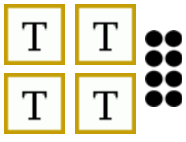
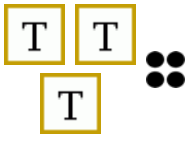
1. Subtract and compare. The top problem helps you solve the bottom one!

a. 8 – 2 = *6* 28 – 2 = *26*	**b.** 7 – 6 = _____ 17 – 6 = _____	**c.** 7 – 7 = _____ 67 – 7 = _____
d. 6 – 6 = _____ 56 – 6 = _____	**e.** 9 – 8 = _____ 49 – 8 = _____	**f.** 5 – 2 = _____ 95 – 2 = _____

2. Subtract and compare. Write the "helping problem" that only uses the ones' digits.

a. 54 – 2 = _____ 4 – 2 = _____	**b.** 76 – 2 = _____ ____ – ____ = _____	**c.** 88 – 4 = _____ _____ – ____ = _____

3. Subtract. Cross out dots. The box with "T" is a ten.

a.  35 – 4 = _____ 35 – 3 = _____ 35 – 2 = _____	**b.**  57 – 7 = _____ 57 – 5 = _____ 57 – 3 = _____	**c.**  48 – 2 = _____ 48 – 4 = _____ 48 – 6 = _____	**d.**  34 – 1 = _____ 34 – 2 = _____ 34 – 4 = _____

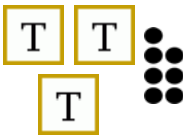
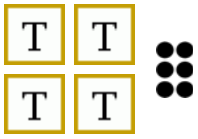
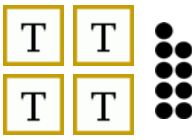
4. Subtract.

a.	b.	c.	d.
77 – 6 = _____	47 – 2 = _____	57 – 4 = _____	15 – 3 = _____
22 – 1 = _____	75 – 1 = _____	86 – 2 = _____	98 – 4 = _____
e.	**f.**	**g.**	**h.**
99 – 4 = _____	18 – 7 = _____	44 – 2 = _____	64 – 4 = _____
96 – 0 = _____	38 – 4 = _____	59 – 5 = _____	29 – 2 = _____

5. Find the missing addend.

a. 10 + _____ = 15	**b.** 21 + _____ = 22	**c.** 65 + _____ = 69
32 + _____ = 38	94 + _____ = 95	33 + _____ = 36
72 + _____ = 79	44 + _____ = 48	91 + _____ = 98

6. Take away the ones (the dots) so that what is left is just whole tens.

a.  37 – _____ = 30	**b.**  46 – _____ = 40	**c.**  28 – _____ = 20
d.  27 – _____ = _____	**e.**  35 – _____ = _____	**f.**  49 – _____ = _____

7. Take away the ones so that what is left is just whole tens.

a. 27 – _____ = *20*	**b.** 83 – _____ = _____	**c.** 46 – _____ = _____
d. 14 – _____ = _____	**e.** 59 – _____ = _____	**f.** 77 – _____ = _____

8. Continue the patterns.

a.	**b.**	**c.**
88 – 0 = _____	95 – 2 = _____	48 – 1 = _____
88 – 1 = _____	85 – 2 = _____	46 – 1 = _____
88 – 2 = _____	75 – 2 = _____	44 – 1 = _____
88 – _____ = _____	____ – _____ = _____	____ – 1 = _____
88 – _____ = _____	____ – _____ = _____	____ – _____ = _____
____ – _____ = _____	____ – _____ = _____	____ – _____ = _____
____ – _____ = _____	____ – _____ = _____	____ – _____ = _____
____ – _____ = _____	____ – _____ = _____	____ – _____ = _____

Puzzle Corner Find what was subtracted!

a.

	4	5
–		
	2	2

b.

	7	9
–		
	1	5

c.

	3	6
–		
	3	2

d.

	5	7
–		
	4	0

e.

	6	7
–		
	5	2

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Difference

The **difference** of two numbers means how different or how much apart they are from each other, or how many more one is than the other.

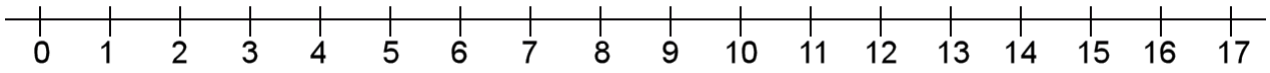
We can find the difference of 8 and 5 in many ways.

1. Subtract: 8 – 5 = _____.

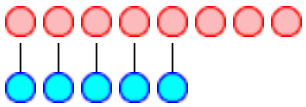
2. Write a "*how many more*" addition and solve it:

   5 + _____ = 8. *"5 and how many more makes 8?"*

3. Use the number line. Start at 5, and count the steps up to 8.



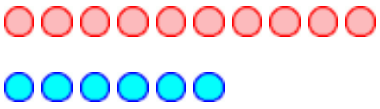
4. Draw balls or other things, and count how many more 8 balls is than 5 balls.



1. Find the differences.

a. Difference of 9 and 3

is _____.



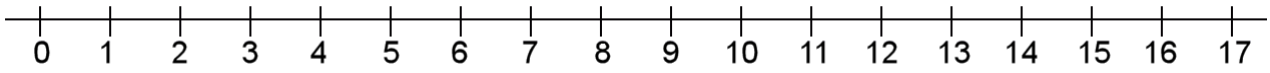
b. Difference of 10 and 6

is _____.

c. Difference of 11 and 4

is _____.

2. Find the differences by counting the jumps on the number line.



a. Difference of 14 and 6 is _____	**b.** Difference of 17 and 11 is _____	**c.** Difference of 15 and 9 is _____
d. Difference of 11 and 5 is _____	**e.** Difference of 16 and 7 is _____	**f.** Difference of 14 and 8 is _____

3. Write a subtraction and a "*how many more*" addition to solve the differences.

a. Difference of 10 and 50: 10 + _____ = 50 50 – 10 = _____	**b.** Difference of 20 and 70: 20 + _____ = 70 70 – 20 = _____	**c.** How many more is 14 than 10? 10 + _____ = _____ 14 – _____ = _____
d. How many more is 80 than 40? 40 + _____ = _____ 80 – _____ = _____	**e.** How many more is 100 than 99? 99 + _____ = _____ 100 – _____ = _____	**f.** Difference of 50 and 48: 48 + _____ = _____ 50 – _____ = _____

4. Solve the problems.

a. Jane had 20 strawberries and Jonathan had 11.

How many more did Jane have?

Jane had 9 more.

11 + *9* = 20

20 – 11 = *9*

b. Emily is 10 years old, and Hannah is 4 years old.
How many years older is Emily than Hannah?

c. Ann had five toy cars, and Judith had 10. Then Ann got two more cars.

Now who has more cars?

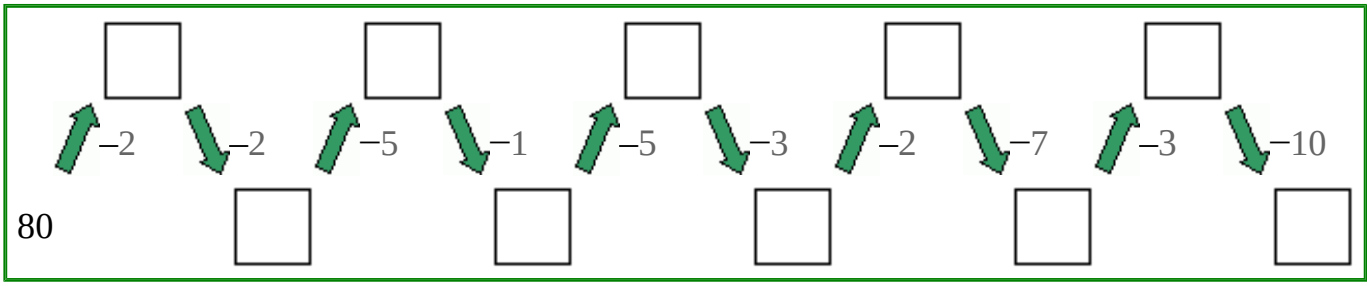
How many more?

d. Jake had 6 dollars and Jim had 12. Then, Jake got 10 more dollars.

Now who has more money?

How many dollars more?

5. Fill in the missing numbers for this subtraction “journey”.



6. Solve the problems. Try to write an addition or subtraction sentence for each problem.

a. Louis had 6 crayons. One night Dad came home with 24 new crayons.
How many does Louis have now?

b. Katie has 25 books, Marie has 29 books.

How many more books does Marie have than Katie?

c. Brenda needs 44 pins for her sewing work. She only has 41.
How many more does she need?

d. Jim has 20 puzzle pieces in one box and 8 pieces in another box.
It is a 30-piece puzzle. Does he have all of the pieces?

e. Alfonso is on page 14 of his book. The book has 20 pages.
How many pages does he have left?

f. Ellie knows she has 16 dolls. On cleaning day, she only found 12.
How many are missing?

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Chapter 8: Coins
Introduction

The goals of the eighth chapter are:

- The student is able to identify pennies, nickels, dimes and quarters.
- The student is able to count the money in coins when the cent sum is at most 100 cents.

While the book has pictures for the coins, practicing with real coins is of course advisable.

The student also practices making given money amounts with coins, and using coins in shopping.

If your book is printed in black and white, you can color the pennies dark orange before doing the exercises.

The Lessons

Helpful Resources on the Internet

Use these free online resources to supplement the "bookwork" as you see fit.

Counting coins worksheets
Create free worksheets for counting all U.S. coins and some bills. You can choose the number of coins, the maximum total amount, and the number of problems.
http://www.homeschoolmath.net/worksheets/money.php

Counting Money Activity from Harcourt
Count the coin value and type it into the box and click 'Check'.
http://www.hbschool.com/activity/counting_money/

Piggy bank
When coins fall from the top of the screen, choose those that add up to the given amount, and the piggy bank fills.
http://fen.com/studentactivities/Piggybank/piggybank.html

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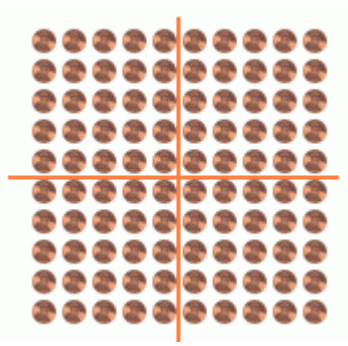
Quarters

One **quarter** is 25 cents.

The word “quarter” means one-fourth. A quarter coin is one-fourth part of a **dollar**.

One dollar is 100 cents, and is written $1.



4 quarters = 100¢
1 dollar = 1 dollar = $1

Two quarters = 50¢.

Three quarters = 75¢

25¢

35, 45, 55
(count dimes by tens)

56, 57¢

Count the quarters first since they have the biggest cent-value.

1. Quarters and dimes. Write the total amount in cents.

a. 

b. 

c. 

d. 

e. 

f. 

g. 

h. 

i. 

2. Quarters and nickels. Write the total amount in cents.

a. 	**b.** 	**c.** 

3. How much money? Write down the amount in cents.

a. 	**b.** 
c. 	**d.** 
e. 	**f.** 
g. 	**h.** 
i. 	**j.** 
k. 	**l.** 

4. How much is the total if you have:

a. two dimes and a quarter

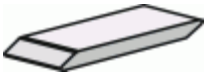
b. two dimes, four nickels

c. a dime, a nickel, six pennies

d. two quarters, three dimes, seven pennies

5. Cross out the coins you need to buy the item. Write how many cents you have left.

a.



39¢

Left _____¢

b.

88¢

Left _____¢

c.

54¢

Left _____¢

d.

61¢

Left _____¢

e.

97¢

Left _____¢

f.

81¢

Left _____¢

g.

73¢

Left _____¢

h.

45¢

Left _____¢

i.

26¢

Left _____¢