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# Foreword

Math Mammoth Grade 1 comprises a complete math curriculum for the first grade mathematics studies. The curriculum meets and exceeds the Common Core standards.

The main areas of study for first grade are:

1. The concepts of addition and subtraction, and strategies for addition and subtraction facts;
2. Developing understanding of place value up to 100;
3. Developing understanding and some basic strategies for two-digit addition and subtraction.

Additional topics we study in the first grade are telling time (whole and half hours), geometric shapes, measurement, and counting coins.

This book, 1-A, covers the concepts of addition and subtraction (chapters 1 and 2) and place value with two-digit numbers (chapter 3). The book 1-B covers strategies for addition and subtraction facts, clock, shapes and measuring, adding and subtracting two-digit numbers, and counting coins.

Some important points to keep in mind when using the curriculum:

- These two books (parts A and B) are 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 sections on shapes, measurement, clock, and money in any order you like.

This is especially advisable if your child is either “stuck” or is perhaps getting bored with some particular topic. Sometimes the concept the child was stuck on can become clear after a break from the topic.

- Math Mammoth is mastery-based, which means it concentrates on a few major topics at a time, in order to study them in depth. However, you can still use it in a *spiral* manner, if you prefer. Simply have your child study in 2-3 chapters simultaneously. This type of flexible use of the curriculum enables you to truly individualize the instruction for your child.
- Don’t automatically assign all the exercises. Use your judgment, trying to assign just enough for your child’s needs. You can use the skipped exercises later for review. For most children, I recommend to start out by assigning about half of the available exercises. Adjust as necessary.
- For review, the curriculum includes a worksheet maker (Internet access required), mixed review lessons, additional cumulative review lessons, and the word problems continually require usage of past concepts. Please see more information about review (and other topics) in the FAQ at <https://www.mathmammoth.com/faq-lightblue.php>

I heartily recommend that you view the full user guide for your grade level, available at <https://www.mathmammoth.com/userguides/>

And lastly, you can find free videos matched to the curriculum at <https://www.mathmammoth.com/videos/>

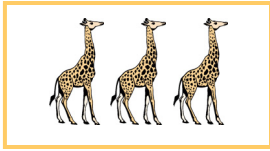
*I wish you success in teaching math!*

*Maria Miller, the author*

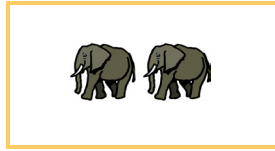
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# Counting

1. Count. Write the number in the box.



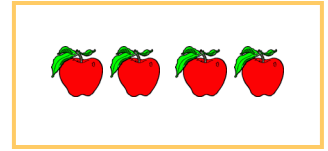
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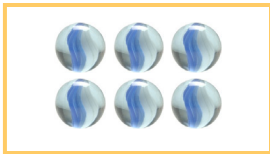
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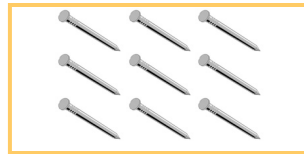
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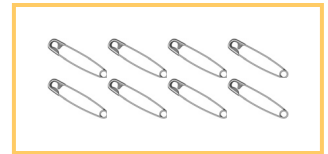
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g.

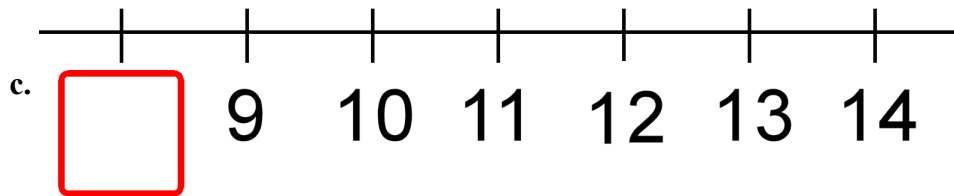
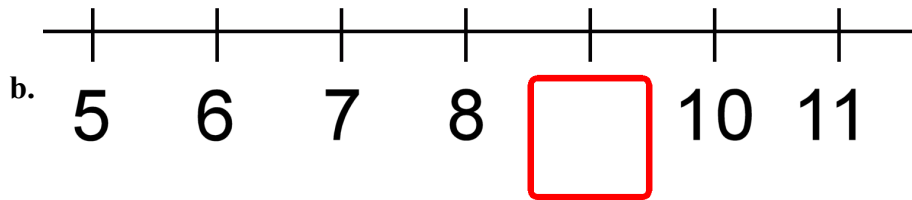
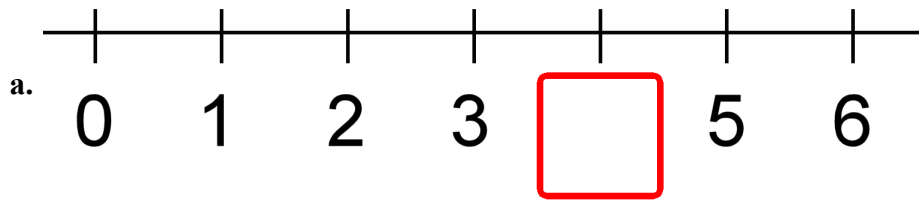


h.

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

<p>a.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid orange; padding: 5px;"> </div> <div style="border: 1px solid orange; padding: 5px;"> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <input style="width: 60px; height: 60px;" type="text"/> <input style="width: 60px; height: 60px;" type="text"/> </div>	<p>b.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid orange; padding: 5px;"> </div> <div style="border: 1px solid orange; padding: 5px;"> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <input style="width: 60px; height: 60px;" type="text"/> <input style="width: 60px; height: 60px;" type="text"/> </div>
<p>c.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid orange; padding: 5px;"> </div> <div style="border: 1px solid orange; padding: 5px;"> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <input style="width: 100px; height: 60px;" type="text"/> <input style="width: 100px; height: 60px;" type="text"/> </div>	<p>d.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid orange; padding: 5px;"> </div> <div style="border: 1px solid orange; padding: 5px;"> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <input style="width: 60px; height: 60px;" type="text"/> <input style="width: 60px; height: 60px;" type="text"/> </div>

3. Write the missing number below the number line.

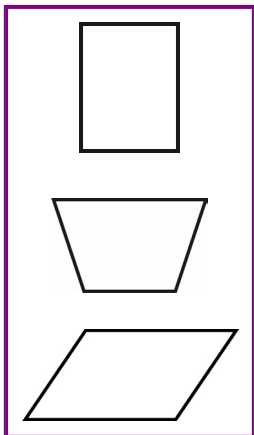


4. Circle the group that has more things. Then count ALL (both groups).  
Write the number in the box below.

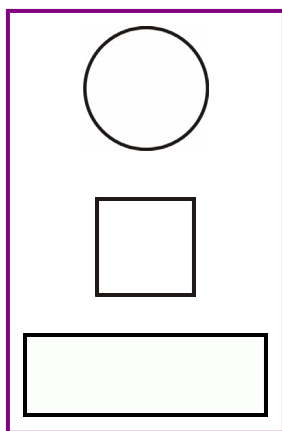
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<p>d.</p> <div style="border: 1px solid black; width: 60px; height: 60px; margin-left: 100px;"></div>	<p>e.</p> <div style="border: 1px solid black; width: 60px; height: 60px; margin-left: 100px;"></div>	<p>f.</p> <div style="border: 1px solid black; width: 60px; height: 60px; margin-left: 100px;"></div>

## Position Words, Colors, and Shapes

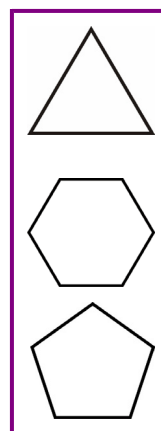
1. a. Color the top shape RED.



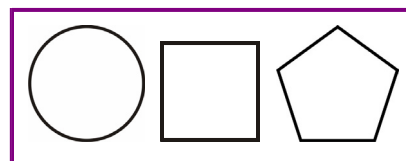
b. Color the bottom shape BLUE.



c. Color the middle shape YELLOW.



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



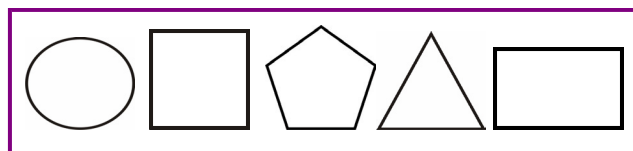
b. Color the shape in the middle BLUE.



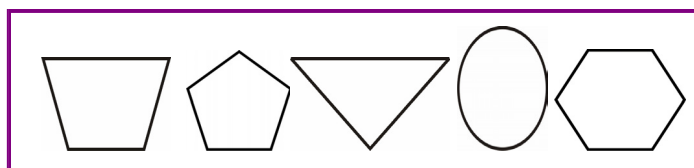
c. Color the shape on the left YELLOW.



d. Color the two shapes on the right ORANGE.



e. Color the two shapes on the left PURPLE.



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# Chapter 1: Addition Within 0-10

## Introduction

The first chapter of *Math Mammoth Grade 1-A* concentrates on the concept of addition and addition facts within 0-10.

Keep in mind that the specific lessons in the chapter can take several days to finish. They are not “daily lessons.” Instead, use the general guideline that first graders should finish 1-2 pages daily or 7-9 pages a week. Please see the user guide at <https://www.mathmammoth.com/userguides/> for more guidance on pacing the curriculum.

This chapter starts out with very easy and visual addition problems within 0-5, where children can simply count the objects to add. You can easily adapt these early lessons to be done with manipulatives (concrete objects such as blocks, beads, *etc.*).

If the student does not know the symbols “+” and “=” yet, you can introduce them *orally* at first. Use blocks or other objects to make addition problems and say: “Three blocks and four blocks makes seven blocks. Three blocks *plus* four blocks *equals* seven blocks.” Then ask the child to make an addition with the objects, using those words. Play like that until the child can use the words “plus” and “equals” in his or her own speech. This will also make it easier to learn to use the written symbols.

In the lesson *Which Is More?*, the symbols “<” and “>” are introduced as being like a “hungry alligator’s mouth.” In this lesson, children only compare numbers, such as  $5 < 7$ . In later lessons, children will also learn to compare expressions, such as  $2 + 3 < 4 + 4$ .

Soon we introduce “missing addend” problems, or problems such as  $1 + \underline{\quad} = 5$ . First, we use pictures, and then gradually use only symbols. These problems are very important, as they lead the child to learn the connection between addition and subtraction.

Children might confuse the missing addend problem  $1 + \underline{\quad} = 5$  with  $1 + 5 = \underline{\quad}$ . To help the child see the difference, you can word these problems like this: “One and how many more make five?”

You can model missing addend problems by drawing. In our example problem ( $1 + \underline{\quad} = 5$ ), the teacher would first draw one ball and then tell the student, “We need a total of five balls. Draw more balls until there are five of them.” The number of balls that the child needs to draw in order to make five is the number that goes on the empty line. So you can say, “First there was one ball, then you needed to add (draw) some more to make 5. How many more did you draw?”

Then we come to the lesson *Sums with 5*. It practices the number combinations that add up to 5, which are 0 and 5, 1 and 4, and 2 and 3. After that we study sums with 6, sums with 7, and so on. The goal of these lessons is to help the child to memorize addition facts within 10. However, your child does not need to fully memorize them yet. All of these lessons are building toward that goal, but the final mastery of addition facts does not have to happen this early in first grade.

My approach to memorizing the basic addition facts within 10 is many-fold:

1. Structured drill, such as is used in the lessons *Sums with 5*, *Sums with 6*, and so on, are not random drills, because they use the pattern or the structure in the facts. This will connect the facts to a context, and help the child to better understand them on a conceptual level, instead of merely memorizing them at random. In each of these lessons, the child learns the number combinations that add up to the specific number. This understanding is the basis for the drills.

2. Using addition facts in games, in math problems, in every day life, or anywhere else are especially useful because most children like games a lot.
3. Random drilling may also be used, sparingly, as one tool among others.
4. Memory helpers, can be silly mnemonics or writing math facts on a poster and hanging it on the wall. Not all children need these, but feel free to use them if you like.

These same addition facts are studied again in the following chapter about subtraction. They are also used constantly in all later math work. I recommend that children become fluent with addition facts within 0-10 by the end of first grade (as is also mentioned in the Common Core Standards).

Another important thread running through the chapter is to develop children's understanding of the symbols  $+$ ,  $<$ , and  $>$ . Children need to get used to equations like  $9 = 5 + 4$  and inequalities like  $2 < 5 + 4$ . They need to understand the equation  $2 + \underline{\quad} = 6$  correctly as an unknown addend problem, and not as the addition problem  $2 + 6$ . We need to prevent the misconception of the equal sign being an "operator," as if it means that you need to add/subtract/multiply/divide, or "operate" on the numbers in the equation. A child with this misconception will treat the equation  $9 = \underline{\quad} + 4$  as an addition problem  $9 + 4$ .

The chapter involves a lesson about addition on a number line, which is an important way to model addition. Children also encounter addition tables, number patterns, word problems, and get used to a symbol for the unknown number (such as in  $\square + 5 = 10$ ). So, while it may look on the surface that all we do is add small numbers, actually a lot happens in this chapter!

Please also see the following page for a few games that I recommend while studying this chapter. Games are important at this level, as they help children practice the addition facts and also make math fun. And don't forget to check out the free videos matched to the curriculum at <https://www.mathmammoth.com/videos/>.

## The Lessons in Chapter 1

	page	span
Two Groups and a Total .....	19	3 pages
Learn the Symbols " $+$ " and " $=$ " .....	22	3 pages
Addition Practice 1 .....	25	2 pages
Which Is More? .....	27	2 pages
Missing Items .....	29	5 pages
Sums with 5 .....	34	2 pages
Sums with 6 .....	36	2 pages
Adding on a Number Line .....	38	4 pages
Sums with 7 .....	42	3 pages
Sums with 8 .....	45	3 pages
Adding Many Numbers .....	48	3 pages
Addition Practice 2 .....	51	2 pages
Sums with 9 .....	53	4 pages
Sums with 10 .....	57	4 pages
Comparisons .....	61	3 pages
Review of Addition Facts .....	64	4 pages

## Games for Addition and Subtraction Facts

### 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 face cards), or any other cards that have numbers on them.

**Rules:** Deal seven cards to each player. Place the rest face down in a pile in the middle of the table. On beginning his turn, each player may first take one card from the pile. Then that player may ask for one card from the player to his right (as in “Go Fish”), and the player on the right, if he has it, must give it to the player who asked. Then the player whose turn it is may discard the card 10 or any two cards in his hand that add up to 10. The player who first discards all the cards from his hand is the winner.

**Variations:**

- \* Deal more than seven cards.
- \* Deal fewer cards if there are a lot of players or the players are very 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 face cards Jack, Queen, and King for 11, 12, and 13 respectively.

### Some Went Hiding

**You need:** The same number of small objects as the sum you are studying. For example, to study the sums with 5, you need 5 objects (marbles, blocks, or whatever).

**Rules:** The first player shows the objects but quickly hides some of them behind his back without showing how many. Then he shows the remaining objects to the next player, who has to say how many “went hiding.” If the player gives the right answer, it is then his turn to hide some and ask the next player to answer. If he gives a wrong answer, he forfeits his turn. This game appeals best to young children.

**Variation:** Instead of getting a turn to hide objects, the player who answers correctly may gain points or other rewards for the right answer.

### Addition (or Subtraction) Challenge

**You need:** A standard deck of playing cards from which you remove the face cards and perhaps also some of the other higher-numbered cards, such as tens, nines, and eights. Alternatively, a set of dominoes works well for children who do not yet know their numbers beyond 12.

**Rules:** In each round, each player is dealt two cards face up, and has to calculate the sum or difference (add/subtract). The player with the highest sum or difference gets all the cards from the other players. After enough rounds have been played to use all of the cards, the player with the most cards wins.

If two or more players have the same sum, then those players get an additional two cards and use those to resolve the tie.

**Variations:**

- \* 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.

## Helpful Resources on the Internet

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

### Video Lessons - Addition Within 0-10

A set of videos by Maria that match the topics in this chapter.

[https://www.mathmammoth.com/videos/grade\\_1/1st-grade-math-videos.php#addition](https://www.mathmammoth.com/videos/grade_1/1st-grade-math-videos.php#addition)

### Children’s Addition Quiz

A set of five problems. Choose the maximum for the sum from the list of numbers below the quiz.

<http://www.thegreatmartinicompany.com/Math-Quick-Quiz/addition-kid-quiz.html>

### 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/Kids-Math/compare-number.html>

### Balloon Pop Math – Compare Numbers

Click on “is greater than”, “is equal to”, or “is less than” to compare the two given numbers.

<https://www.sheppardsoftware.com/mathgames/earlymath/BPGreatLessEqualWords.htm>

### Line Jumper

Solve addition problems on a number line.

<https://www.funbrain.com/games/line-jumper>

### Math Lines

Practice adding in this fun game. First, choose the number to practice. Then, shoot the numbered marble from the cannon into a numbered marble such that the numbers total the target number.

<http://www.mathnook.com/math/math-lines-6.html>

### Number Twins

First, click on the number that you want to practice. Then, match pairs of balls that add up to that number.

[http://www.sheppardsoftware.com/mathgames/numbertwins/numbertwins\\_add\\_10.htm](http://www.sheppardsoftware.com/mathgames/numbertwins/numbertwins_add_10.htm)

### Number Trails Addition

Create a trail of numbers that add up to the given sum. How many achievements can you collect? Double-click the last number to end each trail.

[http://www.mathplayground.com/number\\_trails\\_addition.html](http://www.mathplayground.com/number_trails_addition.html)

### Save the Whale

Find how much the given “pipe” length needs added to make it 10 long and save the whale.

<http://www.ictgames.com/saveTheWhale/index.html>

### Addition with Missing Numbers

Match the missing number to its correct value.

<http://www.sheppardsoftware.com/mathgames/matching/AdditionX.htm>

### Balloon Pop - Add

Pop the balloons in order: from the smallest sum to the largest sum.

[http://www.sheppardsoftware.com/mathgames/numberballoons/NumberBalloons\\_add\\_level1.htm](http://www.sheppardsoftware.com/mathgames/numberballoons/NumberBalloons_add_level1.htm)

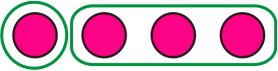

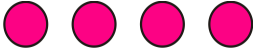



### Tux Math

A versatile free software for math facts with many options. Includes all operations.










<http://sourceforge.net/projects/tuxmath>

## Two Groups and a Total

1. Make two groups.

<p>a. 4</p>  <p>1 and 3</p>	<p>b. 4</p>  <p>2 and 2</p>	<p>c. 4</p>  <p>3 and 1</p>
<p>d. 5</p>  <p>3 and 2</p>	<p>e. 5</p>  <p>2 and 3</p>	<p>f. 5</p>  <p>1 and 4</p>

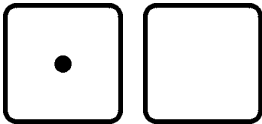
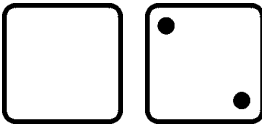
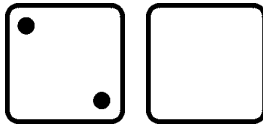
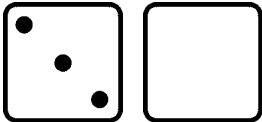
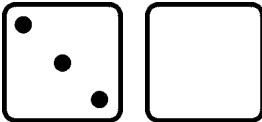
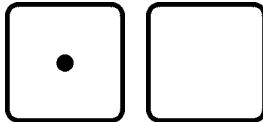
2. Make two groups. Write how many are in the second group.


<p>a. 4</p>  <p>1 and _____</p>	<p>b. 4</p>  <p>2 and _____</p>	<p>c. 4</p>  <p>3 and _____</p>
<p>d. 5</p>  <p>4 and _____</p>	<p>e. 5</p>  <p>3 and _____</p>	<p>f. 5</p>  <p>2 and _____</p>
<p>g. 5</p>  <p>1 and _____</p>	<p>h. 5</p>  <p>5 and _____</p>	<p>i. 5</p>  <p>0 and _____</p>

3. Draw as many dots as the number shows. Then divide them into two groups.  
(There are many ways to do this.) Write how many are in each group.

<p>a. 3</p> <p>_____ and _____</p>	<p>b. 5</p> <p>_____ and _____</p>	<p>c. 4</p> <p>_____ and _____</p>
<p>d. 2</p> <p>_____ and _____</p>	<p>e. 6</p> <p>_____ and _____</p>	<p>f. 8</p> <p>_____ and _____</p>


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

<p>a. 3</p>  <p>_____ and _____</p>	<p>b. 6</p>  <p>_____ and _____</p>	<p>c. 5</p>  <p>_____ and _____</p>
<p>d. 4</p>  <p>_____ and _____</p>	<p>e. 6</p>  <p>_____ and _____</p>	<p>f. 5</p>  <p>_____ and _____</p>



2 and 2 4





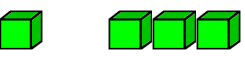




“Two and two makes four.”



1 and 4 5

“One and four makes five.”

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

<p>a. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>	<p>b. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>	<p>c. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>
<p>d. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>	<p>e. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>	<p>f. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>
<p>g. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>	<p>h. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>	<p>i. </p> <p>_____ and _____ <span style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; vertical-align: middle;"></span></p>

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

<p>a. 2 and 2 <span style="border: 1px solid black; display: inline-block; width: 60px; height: 40px; vertical-align: middle;"></span></p>	<p>b. 3 and 1 <span style="border: 1px solid black; display: inline-block; width: 60px; height: 40px; vertical-align: middle;"></span></p>
<p>c. 3 and 3 <span style="border: 1px solid black; display: inline-block; width: 60px; height: 40px; vertical-align: middle;"></span></p>	<p>d. 1 and 4 <span style="border: 1px solid black; display: inline-block; width: 60px; height: 40px; vertical-align: middle;"></span></p>

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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 is what is missing!

There should be a total of 5 dots. Draw 4 in the face of the second dice.

$$\begin{array}{c} 5 \\ \boxed{1} + \boxed{\phantom{00}} \\ 1 + \underline{\phantom{00}} \end{array}$$

There should be a total of 4 dots. The face of the second dice has two. There are none on the face of the first dice, 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?"

$$\begin{array}{c} 4 \\ \boxed{\phantom{00}} + \boxed{2} \\ \underline{\phantom{00}} + 2 \end{array}$$

1. Complete the addition. Draw the missing dots. The total is on top.

$$\begin{array}{c} 3 \\ \boxed{1} + \boxed{\phantom{00}} \end{array}$$

a.  $1 + \underline{\phantom{00}}$

$$\begin{array}{c} 3 \\ \boxed{2} + \boxed{\phantom{00}} \end{array}$$

b.  $2 + \underline{\phantom{00}}$

$$\begin{array}{c} 5 \\ \boxed{\phantom{00}} + \boxed{4} \end{array}$$

c.  $\underline{\phantom{00}} + 4$

$$\begin{array}{c} 5 \\ \boxed{3} + \boxed{\phantom{00}} \end{array}$$

d.  $3 + \underline{\phantom{00}}$

$$\begin{array}{c} 5 \\ \boxed{\phantom{00}} + \boxed{2} \end{array}$$

e.  $\underline{\phantom{00}} + 2$

$$\begin{array}{c} 4 \\ \boxed{\phantom{00}} + \boxed{3} \end{array}$$

f.  $\underline{\phantom{00}} + 3$

$$\begin{array}{c} 5 \\ \boxed{5} + \boxed{\phantom{00}} \end{array}$$

g.  $5 + \underline{\phantom{00}}$

$$\begin{array}{c} 4 \\ \boxed{\phantom{00}} + \boxed{1} \end{array}$$

h.  $\underline{\phantom{00}} + 1$

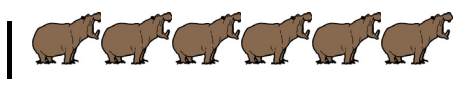
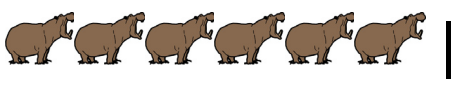
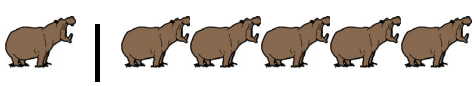
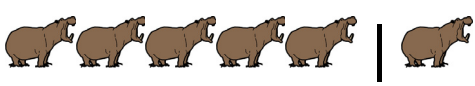
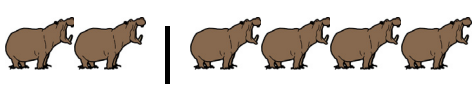


$$\begin{array}{c} 4 \\ \boxed{\phantom{00}} + \boxed{2} \end{array}$$

i.  $\underline{\phantom{00}} + 2$

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## Sums with 6

1. Here are some different ways to group six hippos into two groups.  
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 solve them in your head.

$1 + \square = 6$

$4 + \square = 6$

$\square + 2 = 6$

$\square + 3 = 6$

$2 + \square = 6$

$3 + \square = 6$

$\square + 0 = 6$

$\square + 1 = 6$

$6 + \square = 6$

$5 + \square = 6$

$\square + 4 = 6$

$\square + 5 = 6$



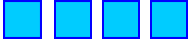





4. Add the numbers and write the total on the line.

a.  $1 + 5 =$  \_\_\_\_\_

b.  $2 + 3 =$  \_\_\_\_\_



c.  $4 + 2 =$  \_\_\_\_\_

5. Draw more little boxes to illustrate the missing number.

<p>a. </p> <p><math>2 + \boxed{\phantom{00}} = 6</math></p>	<p>b. </p> <p><math>2 + \boxed{\phantom{00}} = 5</math></p>	<p>c. </p> <p><math>4 + \boxed{\phantom{00}} = 6</math></p>
<p>d. </p> <p><math>3 + \boxed{\phantom{00}} = 6</math></p>	<p>e. </p> <p><math>1 + \boxed{\phantom{00}} = 6</math></p>	<p>f. </p> <p><math>5 + \boxed{\phantom{00}} = 6</math></p>
<p>g. </p> <p><math>1 + \boxed{\phantom{00}} = 5</math></p>	<p>h.</p> <p><math>0 + \boxed{\phantom{00}} = 6</math></p>	<p>i. </p> <p><math>3 + \boxed{\phantom{00}} = 5</math></p>



6. Jack and Jill share 5 cucumbers and 6 lemons in different ways. Find how many Jill gets. You can cover the cucumbers or lemons with your hand to help.

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.

$2 + 3 = \underline{\quad}$

$4 + 1 = \underline{\quad}$

$3 + 3 = \underline{\quad}$

$4 + 2 = \underline{\quad}$

$1 + 3 = \underline{\quad}$

$1 + 5 = \underline{\quad}$

$2 + 2 = \underline{\quad}$

$2 + 4 = \underline{\quad}$

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## Chapter 2: Subtraction Within 0-10

### Introduction

The second chapter of *Math Mammoth Grade 1-A* covers the concept of subtraction, the relationship between addition and subtraction, and the various meanings of subtraction. Keep in mind that the specific lessons in the chapter can take several days to finish. They are not “daily lessons.”

In the first lesson, *Subtraction Is Taking Away*, the child learns the basic meaning of subtraction as taking away objects, and learns to write subtractions from an illustration where some objects are crossed out. The child can figure out the answers by simply counting how many objects are left.

If the child does not yet know the word “minus,” it is a good idea to introduce it first orally. Use blocks 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.” Then let the child do the same. Play with concrete objects until the child can use the words “minus” and “equals” in his or her own speech.

In the next lesson, the child counts down to subtract, which ties in subtraction with the number line. This is a transitional strategy to solve subtraction problems, because later students will learn more efficient ways to subtract, but it is important conceptually. For now, the student can solve  $9 - 3$  by counting down three steps from nine: eight, seven, six. So the answer is six.

The following lesson, *Subtraction and Addition in the Same Picture*, begins the study of the relationship between addition and subtraction. This concept will span several lessons. This first lesson presents two sets of objects, such as blue and white balls, and the student writes both an addition sentence and a subtraction sentence from this illustration.

The lesson *When Can You Subtract?* concentrates on the idea that some subtractions, such as  $4 - 5$ , are meaningless when you think of taking away. The child also makes subtraction patterns in this lesson.

Then we continue studying the connection between addition and subtraction in the lesson *Two Subtractions from One Addition*. As an example, the child writes both  $8 - 3 = 5$  and  $8 - 5 = 3$  from the addition  $3 + 5 = 8$ . This idea ties in with fact families, a concept that is coming up soon.

In the lesson *Two Parts—One Total*, we study word problems that do not involve the idea of taking away but have two parts making up a total. For example, if there are 10 flowers of which some are white and some are red, 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 can write a missing addend sentence  $7 + \underline{\quad} = 10$ . This can be solved by subtracting  $10 - 7$  or by knowing the addition fact  $7 + 3 = 10$ .

Then we study fact families. This means writing two additions and two subtractions using the same three numbers. Fact families will be used extensively in the next chapter.

In the lesson *How Many More?* students find how many more or how many fewer objects one person has than the other by drawing the objects. This lesson can easily be done with manipulatives if desired.

In the very next lesson, *“How Many More” Problems and Differences*, we continue the theme, this time writing a missing addend addition for problems that ask “how many more.” For example, Veronica has 4 marbles and Ann has 6. We write the missing addend sentence  $4 + \underline{\quad} = 6$  to find how many more Ann has. In the next lesson the child then learns to write subtraction sentences for such problems.

## The Lessons in Chapter 2

	page	span
Subtraction Is “Taking Away” .....	71	3 pages
Count Down to Subtract .....	74	4 pages
Subtraction and Addition in the Same Picture .....	78	4 pages
When Can You Subtract? .....	82	4 pages
Two Subtractions from One Addition .....	86	3 pages
Two Parts — One Total .....	89	3 pages
Fact Families .....	92	4 pages
How Many More .....	96	3 pages
“How Many More” Problems and Differences .....	99	4 pages
“How Many More” Problems and Subtraction .....	103	4 pages
Review Chapter 2 .....	107	1 page

## 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

A five-question quiz. Choose the maximum number used from the list of numbers below the quiz.

<http://www.thegreatmartinicompany.com/Math-Quick-Quiz/subtraction-kid-quiz.html>

### Subtraction Harvest

Choose the correct answers for the subtraction problems to harvest the apples.

<http://www.sheppardsoftware.com/mathgames/earlymath/subHarvest.htm>

### Butterfly Ten Frames Game

Practice subtracting from 10 with this interactive online activity.

[http://coolsciencelab.com/butterfly\\_ten\\_frames.html](http://coolsciencelab.com/butterfly_ten_frames.html)

### 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>

### 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](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](http://www.ictgames.com/soccer_subtraction.html)

### **Pearl Search**

Click on the clam that contains the correct answer to the subtraction problem, and collect a pearl for each correct answer. The sooner you get the pearls, the higher your score!

[http://www.sheppardsoftware.com/mathgames/popup/popup\\_subtraction.htm](http://www.sheppardsoftware.com/mathgames/popup/popup_subtraction.htm)

### **Fruit Shoot Number Line Subtraction**

Click on the subtraction sentence on the fruit that matches the number line. Choose level 3 for this game.

[http://www.sheppardsoftware.com/mathgames/earlymath/FS\\_NumberLine\\_minus.htm](http://www.sheppardsoftware.com/mathgames/earlymath/FS_NumberLine_minus.htm)

### **Mathemorphosis Subtraction Game**

Solve simple subtraction problems to help the caterpillar transform into a butterfly.

<http://mrnussbaum.com/mathemorphosis-2/>

### **Subtraction Sense—Make Subtraction Sentences**

Drag and drop the number cards to make 'sum' sense. Try to answer 8 questions in 2 minutes!

[http://coolsciencelab.com/sum\\_sense\\_subtraction.html](http://coolsciencelab.com/sum_sense_subtraction.html)

### **Sea Life Subtraction**

Solve subtraction problems while creating your own beautiful underwater scene.

<http://www.free-training-tutorial.com/subtraction/sealife/sl-subtraction.html>

### **Snowy's Friends**

Practice subtraction facts while helping Snowy through many different levels, and gather pieces to help make a new snowman friend.

<http://www.multiplication.com/games/play/snowys-friend-subtraction>

### **Word Problems—Add and Subtract within 10**

Solve simple word problems by clicking on the correct answer.

[http://www.abcya.com/kindergarten\\_word\\_problems\\_add\\_subtract.htm](http://www.abcya.com/kindergarten_word_problems_add_subtract.htm)

### **Block Buster**

Click on blocks with numbers that form fact families. The blocks must be touching each other.

<http://www.roomrecess.com/pages/BlockBuster.html>

### **Basic Fact Families**

Find the missing equation in each fact family.

<http://mrnussbaum.com/12grade1/>

### **Space Shuttle Launch**

Before playing, choose which operation to practice, and the level of difficulty. Answer the questions correctly, and the space shuttle will be launched successfully.

<http://www.playkidsgames.com/games/shuttleLaunch/default.htm>

### **Balancing Calculations**

Answer as many questions as you can in this timed online quiz.

<http://www.snappymaths.com/mixed/addsubrelate/interactive/addsubbalancew10/addsubbalancew10.htm>

### **Tux Math**





A versatile free software for math facts with many options. Includes all operations.

<http://sourceforge.net/projects/tuxmath>






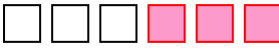


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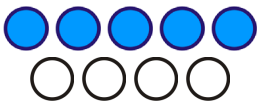

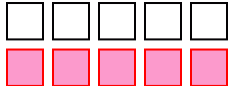

## Subtraction and Addition in the Same Picture

<p>How many colored circles? How many white ones?</p>  <p><u>4</u> + <u>6</u> = 10</p>	 <p><u>3</u> + <u>4</u> = 7</p>
<p>Cover the colored circles. Write a subtraction sentence.</p>  <p>10 - <u>4</u> = <u>6</u></p>	<p>Cover the colored circles.</p>  <p>7 - <u>3</u> = <u>4</u></p>

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

<p>a. </p> <p>_____ + _____ = _____</p> <p>7 - _____ = _____</p>	<p>b. </p> <p>_____ + _____ = _____</p> <p>6 - _____ = _____</p>
<p>c. </p> <p>_____ + _____ = _____</p> <p>5 - _____ = _____</p>	<p>d. </p> <p>_____ + _____ = _____</p> <p>6 - _____ = _____</p>
<p>e. </p> <p>_____ + _____ = _____</p> <p>8 - _____ = _____</p>	<p>f. </p> <p>_____ + _____ = _____</p> <p>6 - _____ = _____</p>

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


<p>a.</p>  $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$	<p>b.</p>  $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
<p>c.</p>  $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$	<p>d.</p>  $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

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

<p>a. <math>7 + 1 = \underline{\hspace{1cm}}</math></p> $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$	<p>b. <math>6 + 3 = \underline{\hspace{1cm}}</math></p> $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
<p>c. <math>2 + 3 = \underline{\hspace{1cm}}</math></p> $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$	<p>d. <math>2 + 5 = \underline{\hspace{1cm}}</math></p> $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
<p>e. <math>7 + 4 = \underline{\hspace{1cm}}</math></p> $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$	<p>f. <math>3 + 3 = \underline{\hspace{1cm}}</math></p> $\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

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## Two Parts — One Total

<p>There are ten marbles. Some of them are blue and seven are yellow. How many are blue?</p> <p>You can write an addition sentence. You can ALSO write a subtraction sentence, even though nothing is taken away.</p>	 $\underline{\quad\quad} + 7 = 10$ $10 - 7 = \underline{\quad\quad}$ <p>Cover part of the total (the yellow marbles), and you will see the other part (the blue marbles).</p>
<p>There are five blue marbles and some white marbles in a bag. There is a total of nine marbles. How many are white?</p> <p>Draw the marbles. Write an addition sentence AND a subtraction sentence.</p>	$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$ $\underline{\quad\quad} - \underline{\quad\quad} = \underline{\quad\quad}$

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

<p>a. Mother put some blue and some red flowers in a vase. Jen counted five red ones and a total of ten. How many of the flowers are blue?</p>	$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$ $\underline{\quad\quad} - \underline{\quad\quad} = \underline{\quad\quad}$
<p>b. There are nine children on a team, and four of them are boys. How many are girls?</p>	$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$ $\underline{\quad\quad} - \underline{\quad\quad} = \underline{\quad\quad}$

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

$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$

$$\underline{\quad\quad} - \underline{\quad\quad} = \underline{\quad\quad}$$

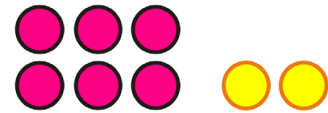
- d. Mary saw eight chairs on the lawn, and two had blown over.  
How many were still standing upright?

$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$

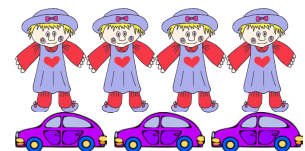
$$\underline{\quad\quad} - \underline{\quad\quad} = \underline{\quad\quad}$$

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





a.





b.



3. Write an addition sentence for the pictures.

 <p>a. <math>\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>	 <p>b. <math>\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>
 <p>c. <math>\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>	 <p>d. <math>\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>

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

 <p>a. <math>3 + 2 + \underline{\quad} = 8</math></p>	 <p>b. <math>1 + 5 + \underline{\quad} = 10</math></p>
--	--

5. Draw a picture to solve these problems.

a. Jane had some red, some blue, and some yellow roses in a vase. Two of the roses were blue, and two were red. If she had a total of ten 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 and two medium-sized ones. The rest of her pencils are short. If she owns nine pencils in all, 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, from 5, 3, and 2 we get the fact family on the right:

5



$$2 + 3 = 5$$

$$5 - 3 = 2$$

$$3 + 2 = 5$$

$$5 - 2 = 3$$

1. Write the fact families that match the pictures.

a. 6



$$1 + 5 = 6$$

$$5 + 1 = 6$$

$$6 - \underline{\quad} = \underline{\quad}$$

$$6 - \underline{\quad} = \underline{\quad}$$

b. 8



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

c. 9



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

d. 10



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$



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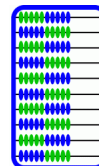
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## Chapter 3: Place Value Within 0-100

### Introduction

In this chapter, children learn numbers up to 120. They compare whole numbers within 100, and learn to think of them in terms of tens and ones.

I recommend the usage of the 100-bead abacus, or school abacus, to help children learn these concepts. The 100-bead abacus simply has 10 beads on each of 10 rods for a total of 100. It is not the place-value abacus used by the Chinese or the Japanese. On this abacus, each bead simply represents one. For example, it can look like the picture on the right.



You can browse Amazon's abacus collection at this link:

<https://www.amazon.com/gp/search?ie=UTF8&keywords=abacus&tag=mathmammoth-20>

Instead of a physical abacus, you can use this on-line virtual abacus instead:

<https://apps.mathlearningcenter.org/number-rack/>

In the main FAQ you will find instructions for a home-made abacus:

<https://www.mathmammoth.com/faq-lightblue.php>

Besides the abacus, we also use a visual model of blocks where ten of them “snap” together to form a stick. If you already have these so-called base-ten blocks, you can use them along with the visual exercises, if you prefer.

Moreover, we also use number lines and a 100-chart. Number lines help visualize how numbers continue indefinitely and also relate to 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 a kind of continuum that goes on without end. With simple counting, the child might not catch on to the inherent structure, and how numbers are composed of groups of tens, hundreds, and thousands.

The main idea in learning place value has to do with counting objects, not one by one, but in *groups*. Our entire 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 concept of place value is based on the idea that a *certain position represents a group of a certain size*. The digit in each position tells us how many there are of a group of that size. For example, in the number 2,381, an adult already knows that the 8 represents eight tens, and not just “8” and that the 3 represents three hundreds, and not just “3”. The PLACE of the digit tells us the size of the group, and the digit itself tells us how many groups there are.

There is nothing inherently necessary about our system of numerical place value. In fact it would be possible to develop a different system of writing numbers where font size would indicate the size of the group: For example,  $78_2$  (or  $7_28$  or  $278$ ) would represent 8 hundreds, 7 tens, and 2 ones, or 872. (Please note that the text does NOT present this concept to the student. It is just mentioned here as an example to point out that the concept of place value, which we as adults take for granted, is an abstraction that is not intuitively obvious.)

## The Lessons in Chapter 3

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## Helpful Resources on the Internet

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

### PLACE VALUE

#### Shark Pool Place Value

Click on the number shown by the ten-stacks and individual blocks.

<http://www.ictgames.com/sharknumbers.html>

#### Fruit Splat Place Value

Click on the fruit with the number that matches the number of tens and ones which are shown. Choose “medium” level for this game.

[http://www.sheppardsoftware.com/mathgames/placevalue/fruit\\_shoot\\_place\\_value.htm](http://www.sheppardsoftware.com/mathgames/placevalue/fruit_shoot_place_value.htm)

#### Base 10 Blocks

Use base ten blocks to help count and show number values.

<http://www.roomrecess.com/pages/BaseTenBlocks.html>

#### Name That Number

Match the number on the fruit to the name of the number.

<http://www.sheppardsoftware.com/mathgames/earlymath/fruitShootNumbersWords.htm>

#### Number Line

Illustrate 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>

## **Lifeguards**

Move the boat the correct number of jumps on the number line to save the person.

<http://ictgames.com/LIFEGUARDS.html>

## **100-CHART**

### **Count to 99!**

Enter the number shown by the colored blocks on 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.primarygames.co.uk/pg2/dogbone/gamebone.html>

### **Number Charts**

Create different kinds of printable number charts.

<http://www.homeschoolmath.net/worksheets/number-charts.php>

### **Interactive 100-Chart**

Choose a color and create pretty number patterns on this interactive chart.

[http://www.abeya.com/interactive\\_100\\_number\\_chart.htm](http://www.abeya.com/interactive_100_number_chart.htm)

### **Number Grid Fireworks**

Click on the correct square on the number chart to find the hidden fireworks.

[http://www.abeya.com/100\\_number\\_grid.htm](http://www.abeya.com/100_number_grid.htm)

### **Fill in the Missing Numbers—customizable chart**

Practice filling in the numbers in order, or by types. Set the “End Number” to 120.

<http://mrnussbaum.com/number-chart-2/>

### **Hundred Chart Game**

Answer the questions using the number chart.

[http://www.softschools.com/math/hundreds\\_chart/games/](http://www.softschools.com/math/hundreds_chart/games/)

### **Interactive Hundred Chart**

Color to see skip-counting patterns.

<http://www.mathsisfun.com/numbers/number-chart.php>

## **COMPARING**

### **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>

### **Counting Caterpillar**

Click to place the leaves with numbers in the correct order for the caterpillar to munch. First, choose your minimum and maximum numbers (such as 0 and 100).

<http://www.ictgames.com/mobilePage/countingCaterpillar/index.html>

## **Order Numbers 1-100 Balloon Pop**

Pop the balloons in order from the smallest to the greatest.

<http://www.sheppardsoftware.com/mathgames/earlymath/BalloonPopOrder2.htm>

## **SKIP-COUNTING**

### **Skip-Count by 2s – Balloon Rise – Washington Monument**

Practice skip-counting by 2s and help the hot-air balloons rise to the top of the Washington Monument.

<http://www.free-training-tutorial.com/skip-counting/skip-counting-by-twos-washington-monument.html>

### **Skip-Count by 5s – Balloon Rise – Empire State Building**

Practice skip-counting by 5s and help the hot-air balloons rise to the top of the Empire State Building.

<http://www.free-training-tutorial.com/skip-counting/skip-counting-by-fives-empire-state.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>

### **Connect the Dots**

Connect the dots by counting by twos.

[http://www.harcourtschool.com/activity/connect\\_the\\_dots/](http://www.harcourtschool.com/activity/connect_the_dots/)

### **Octopus Game**

Find the shell that contains a number that is 10 more than the given number.

<http://www.ictgames.com/octopus.html>

### **Froggy Hop**

Find 10 more or 1 more than a given number.

<http://www.ictgames.com/frog.html>

## **GRAPHS**

### **Bar Graph Sorter**

Sort shapes according to shape or color and fill the bar graph.

<http://www.shodor.org/interactivate/activities/BarGraphSorter/>

### **Interactive Bar Chart with Questions**

Choose a theme and the desired number of intervals for your bar chart, then answer the questions.

<http://www.topmarks.co.uk/Flash.aspx?f=barchartv2>

### **Tally Chart**

Use the tally chart to answer 5 questions.

[http://www.softschools.com/math/data\\_analysis/tally\\_chart/](http://www.softschools.com/math/data_analysis/tally_chart/)

### **Tally Game**

Record the passing cars using tally marks and then enter the totals correctly.

There is also a 'make your own survey' option.

<http://www.tallygame.co.uk/>

### **Interactive Tally Chart and Bar Graph activity**

Click on the children to find out their favorite hobbies. Using that information, make a frequency table and a bar chart.

<http://www.topmarks.co.uk/Flash.aspx?b=maths/interpretingdata>

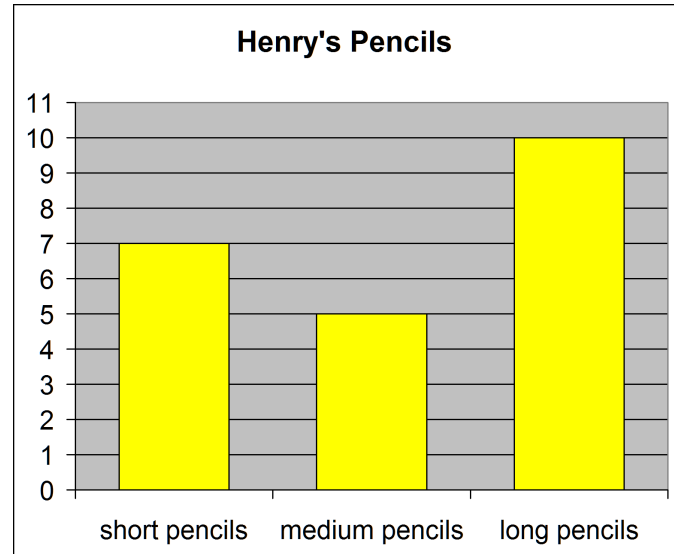
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## Bar Graphs

This is a **bar graph**. Read it this way: look at the TOP of each column (bar), and look towards the left. How high does the top of the bar reach? Read the number.

Look at the first bar, for short pencils. Where does the top of that bar reach?

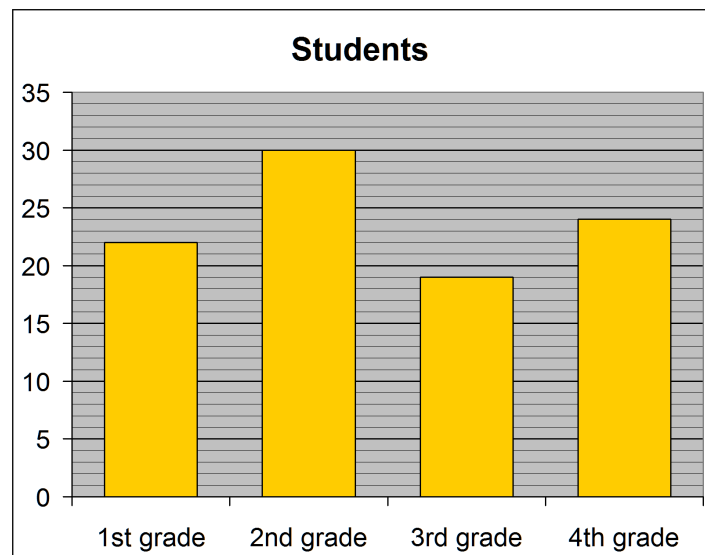
It reaches to 7. So, Henry has 7 short pencils.

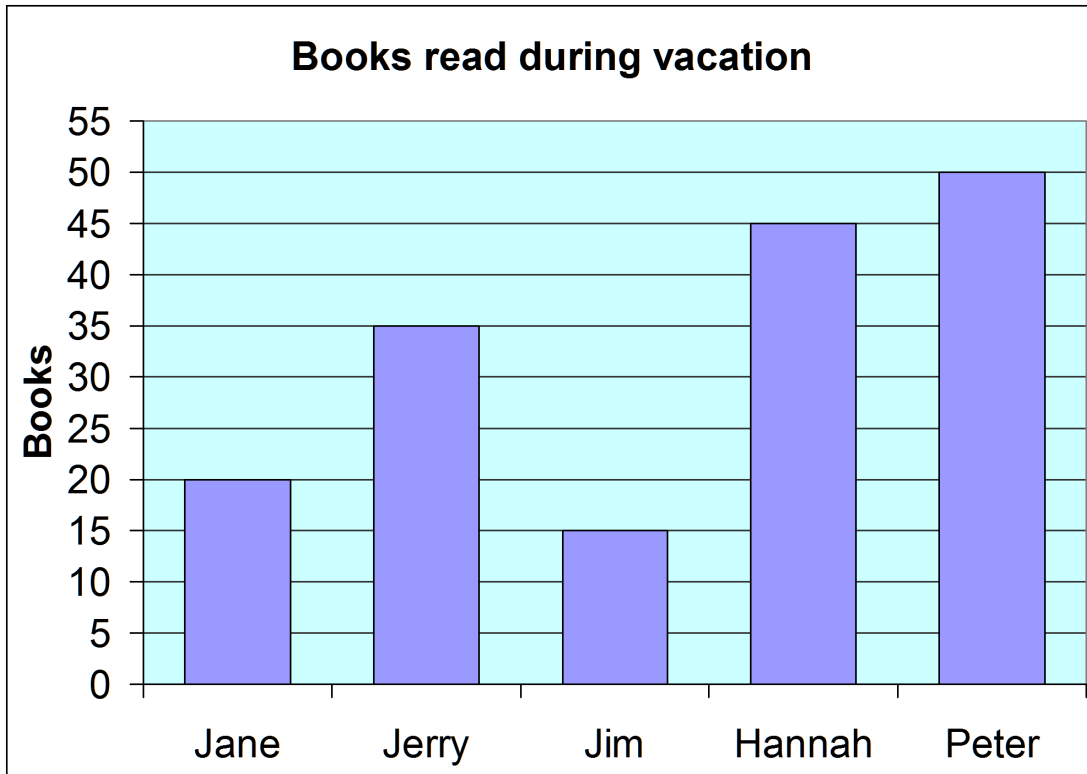


1. **a.** How many medium pencils does Henry have?
- b.** How many long pencils does Henry have?
- c.** How many short and medium pencils does Henry have in total?
- d.** How many more long pencils does he have than short ones?

2. Here, the bar for first grade students reaches two little lines past 20. That's 22 students.

- a.** How many students are in 2nd grade?
- b.** How many students are in 3rd grade?
- c.** How many students are in 4th grade?





3. **a.** How many books did each child read?

Jane \_\_\_\_\_ Jerry \_\_\_\_\_ Jim \_\_\_\_\_ Hannah \_\_\_\_\_ Peter \_\_\_\_\_

**b.** \_\_\_\_\_ read the fewest books.

\_\_\_\_\_ read the most books.

**c.** The two children who read the most books were \_\_\_\_\_

and \_\_\_\_\_.

The two children who read the fewest books were \_\_\_\_\_


and \_\_\_\_\_.

**d.** How many books did Jane and Peter read in total? \_\_\_\_\_ books





(Challenge) How many total books did Jim and Hannah read? \_\_\_\_\_ books



## Tally Marks

1. **Tally marks.** Tally marks are counting marks. When people count they make one tally mark for each thing they count. For one item or thing, draw one tally mark as “|”. The fifth tally mark is drawn across the four others like “”.

Write the number that matches the tally.

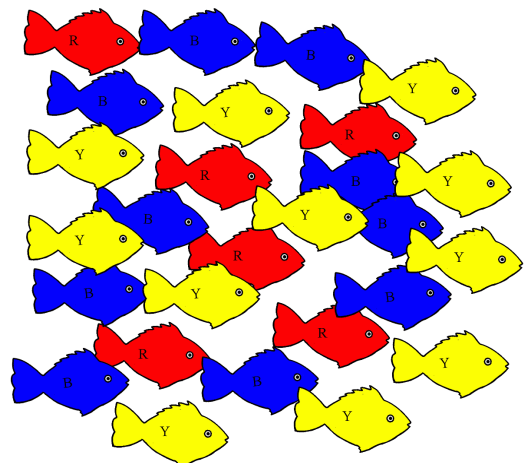
			
a. _____	b. _____	c. _____	d. _____

2. Draw tally marks for these numbers.

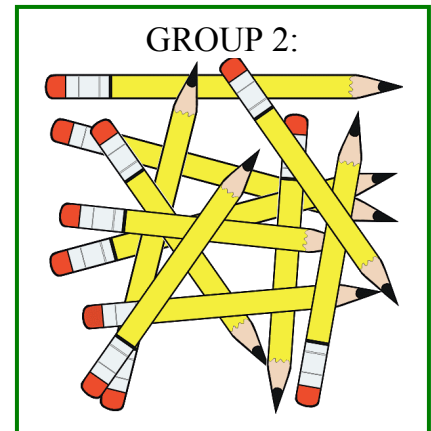
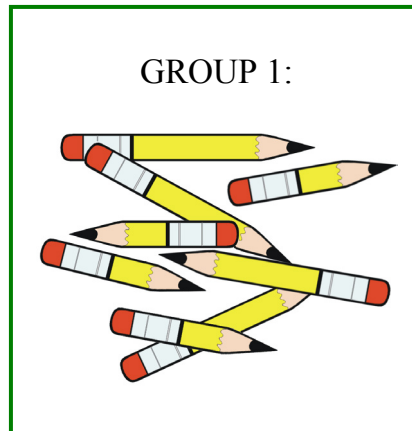
a. 7	b. 14
c. 16	d. 32
e. 41	f. 28

3. Count the fish. Use tally marks to keep track. Mark each fish you count and make a tally mark for it. That way you won't count the same fish twice. Then write the number under “Count”.

	Tally Marks	Count
Red		
Blue		
Yellow		



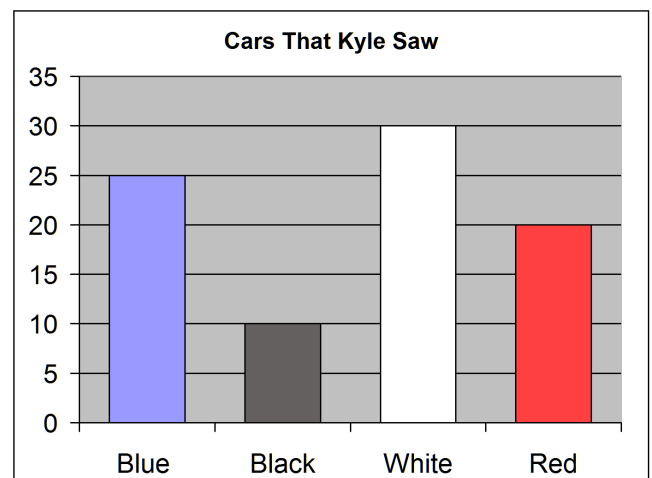
4. Count the pencils in each group. Use tally marks to keep track. Mark each pencil as you count it, and make a tally mark in the box. That way you won't count the same pencil twice.



	Tally Marks	Count
<b>Group 1</b>		
<b>Group 2</b>		

5. Do the tally marks show the same counts that the bar graph does? If not, correct the tally.

	Tally Marks
<b>Blue</b>	
<b>Black</b>	
<b>White</b>	
<b>Red</b>	



6. (Optional) Tally marks are most useful for counting things that are happening rather slowly, for example, birds that fly into the yard. For this project, count something using tally marks. For example, you could go outside and count how many red and how many grey cars you see pass by your house in 20 minutes.

	Tally Marks	Count
<b>Group 1</b>		
<b>Group 2</b>		

## Review Chapter 3

1. Name the numbers using numbers and words.

a. 1 ten 5 ones      15      \_\_\_\_\_

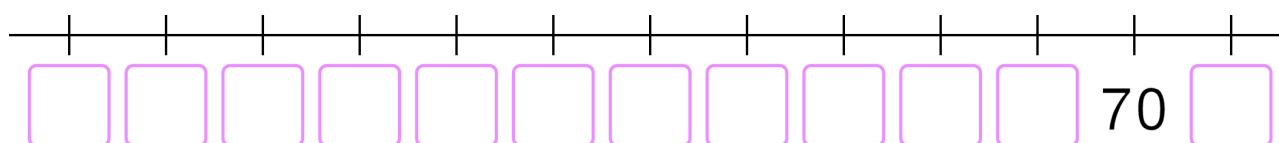
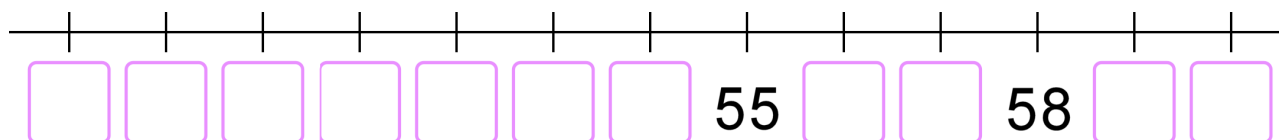
b. 6 tens 7 ones      \_\_\_\_\_      \_\_\_\_\_

c. 4 tens 0 ones      \_\_\_\_\_      \_\_\_\_\_

d. 10 tens 0 ones      \_\_\_\_\_      \_\_\_\_\_

e. 5 tens 1 one      \_\_\_\_\_      \_\_\_\_\_

2. Fill in the numbers missing from the number lines.



3. Circle the number that is *more*.

a.  
78    87

b.  
22    25

c.  
56    57

d.  
68    80

e.  
101    11

4. Count. You can also say this aloud with your teacher.

97, 98, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

5. Break the numbers into their tens and ones.

a. $45 = 40 + 5$ $68 = \underline{\quad} + \underline{\quad}$	b. $25 = \underline{\quad} + \underline{\quad}$ $54 = \underline{\quad} + \underline{\quad}$	c. $78 = \underline{\quad} + \underline{\quad}$ $91 = \underline{\quad} + \underline{\quad}$
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6. Build the numbers.

a. $50 + 7 = \underline{\quad}$ $20 + 0 = \underline{\quad}$	b. $8 + 10 = \underline{\quad}$ $9 + 70 = \underline{\quad}$	c. $90 + 6 = \underline{\quad}$ $9 + 60 = \underline{\quad}$
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7. Put the numbers in order.

a. 57, 17, 75 $\underline{\quad} < \underline{\quad} < \underline{\quad}$	b. 18, 48, 44, 41 $\underline{\quad} < \underline{\quad} < \underline{\quad} < \underline{\quad}$
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8. Compare the expressions and write  $<$ ,  $>$  or  $=$ .


a. $56 \square 5 + 60$	b. $20 + 8 \square 33$	c. $60 + 5 \square 50 + 6$
d. $34 \square 30 + 6$	e. $4 + 90 \square 49$	f. $80 + 2 \square 70 + 9$

9. Skip-count. (You can say this aloud with your teacher.)

a. 13, 15, 17,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$

b.  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ , 78, 88, 98

c.  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ ,  $\underline{\quad}$ , 55, 60, 65,  $\underline{\quad}$

	<p><i>I have five fewer ones than 39, and one more ten than 47.</i></p>
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