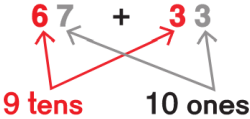
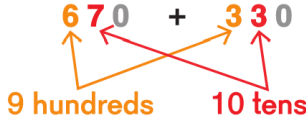

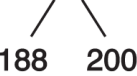


**Dimensions Math**  
**Grade 3 Letter Home**  
**Chapter 2 Addition and Subtraction - Part 1**

**Home Connection**

In this chapter, your child will review and build on their knowledge of mental math strategies: *See Mental Math Strategies document for a full explanation and examples.* They will also extend those strategies to three-digit numbers.

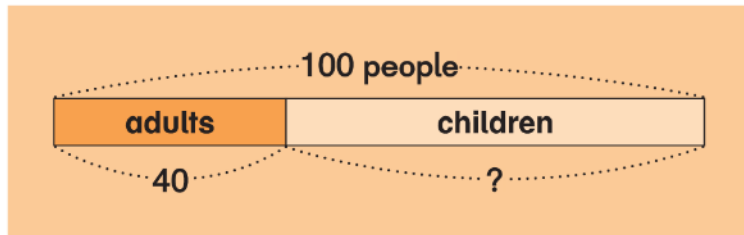
<p><math>760 + 180</math> is also <math>76 \text{ tens} + 18 \text{ tens}</math></p>	<p>Students can then use any already known strategy to solve the problem:</p> <ul style="list-style-type: none"> <li><math>80 \text{ tens} + 14 \text{ tens} = 94 \text{ tens}</math> or 940</li> <li><math>74 \text{ tens} + 20 \text{ tens} = 94 \text{ tens}</math> or 940</li> <li><math>76 \text{ tens} + 20 \text{ tens} - 2 \text{ tens} = 760 + 200 - 20 = 940</math></li> </ul>	
<p><math>760 - 180</math> is also <math>76 \text{ tens} - 18 \text{ tens}</math></p>	<p>Students can then use any already known strategy to solve the problem:</p> <ul style="list-style-type: none"> <li><math>76 \text{ tens} - 10 \text{ tens} - 8 \text{ tens} = 760 - 100 - 80 = 580</math></li> <li><math>76 \text{ tens} - 20 \text{ tens} + 2 \text{ tens} = 760 - 200 + 20 = 580</math></li> </ul>	
<p><math>100 = 90 + 10</math>  <math>1,000 = 900 + 100</math></p>		
<p>Adding numbers close to hundreds by compensation or “over-adding”</p>	<p><math>498 + 56 = 500 + 54 = 554</math></p> 	<p><math>500 + 56 - 2 = 554</math></p>
<p>Subtracting numbers close to hundreds by subtracting from the hundreds or “over-subtracting”</p>	<p><math>388 - 197 = 188 + 3 = 191</math></p> 	<p><math>388 - 197 = 388 - 200 + 3 = 191</math></p>

In second grade students learned how to use a provided bar model to interpret a word problem. In this chapter students will be asked to draw the bar models and extend their understanding of bar models to multi-step problems. The purpose of drawing the models is to understand the concepts and choose a good problem-solving method. As students solve harder problems, they will begin to appreciate the usefulness of the model drawing strategy. For each problem they will be expected to draw a bar model, write an expression, solve each problem, and give the answer in a complete sentence.

Bar models will be used for word problems throughout the Dimensions Math Series.

There are two main types of models they will work with at this level:

**There are 100 people at the park. There are 40 adults at the park. How many children are at the park?**



$$100 - 40 = 60 \text{ or } 60 + \underline{\quad} = 100$$

There are 60 children at the park.

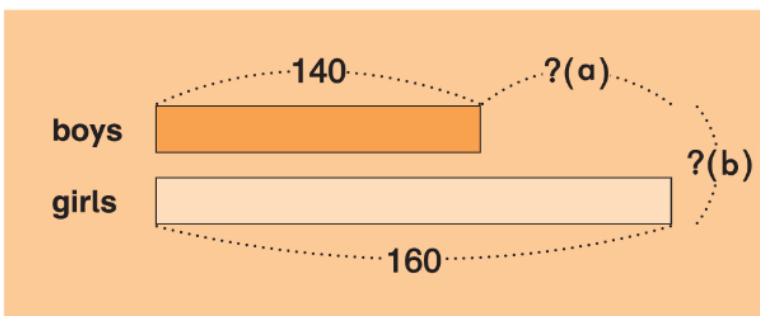
**Part-Whole Models** extend the understanding of part-whole relationships from a number bond to a more adaptable representation.

Students can easily see from the model, as they could from the number bond, that since they are given the whole and one part, they subtract to find the other part.

**There are 140 boys and 160 girls at the park.**

**(a) How many more boys than girls are at the park?**

**(b) How many children were at the park in all?**



**Comparison Models** reinforce the concepts of "more than" and "less than" and are related to the concept of difference.

Students can easily see that they need to subtract to find the answer to (a). Although (b) is actually a part-whole question, the same model can be used to indicate the whole by placing a question mark at the end of the two bars.

Bar modeling is a good introduction to algebra as it provides pictorial representations of algebraic equations. In Dimensions 3A, students are **not** asked to use algebra to solve the problem.

## What can we do at home?

Memorizing math facts is critical for all students to build math fluency. When students have their facts memorized and can automatically recall them, more of their brain's working memory is freed up to focus on more difficult concepts. At this point in third grade students should have mastered addition and subtraction to 20 and multiplication and division of 2, 3, 4, 5, and 10. There are many fun ways to practice at home to help your child master these facts.

- Play Multiplication War (2 players): You will need a deck of playing cards with face cards removed (use the ace as a 1). Separate the deck so that all the 2s, 3s, 4s, 5s, and 10s are in one pile and all the remaining numbers are in another pile. Give a pile to each player. On the count of 3 each player flips over a card, the first player to say the product, determined by multiplying the 2 numbers on the 2 cards wins that round and keeps both cards. If there is a tie, repeat, turning over 2 more cards. Continue playing until all cards have been turned over. The winner is the player that collects the most cards.
- KenKen activities are a great way to practice both addition and subtraction as well as logical thinking. Here are some websites where you can customize, print, or complete some KenKen boards. [www.kenkenpuzzle.com](http://www.kenkenpuzzle.com) and [www.calcudoku.org](http://www.calcudoku.org)
- Check out the addition, subtraction, multiplication, and division activities on the TCA website:  
[http://www.tcatitans.org/parents\\_students/elementary\\_parent\\_resources](http://www.tcatitans.org/parents_students/elementary_parent_resources)  
**Four in a Row Multiplication 1 -5 and 10** is especially good for students at this level.