LETTER HOME

Subtracting Larger Numbers

Dear Family Member:

Students explore various subtraction methods. They apply their own subtraction strategies and have the opportunity to try new ones.

Our goal is for your child to be able to solve problems in a variety of situations. It is important that he or she understands that the traditional approach for solving problems is just one of many acceptable methods of finding the answer. Other problem-solving strategies your child will explore include mental math, estimating, drawing pictures, and using tools such as base-ten pieces and calculators.

Subtraction Strategies Menu

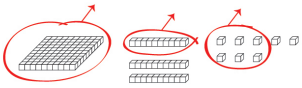
Finding Friendly Numbers

50 – 28

50 – 30 = 20
20 is a reasonable estimate.

Using Base-Ten Pieces

138 – 116

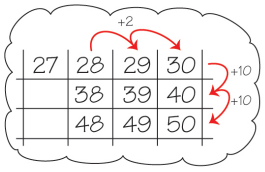


20 + 2 = 22

Counting Up

50 – 28

2 + 20 = 20



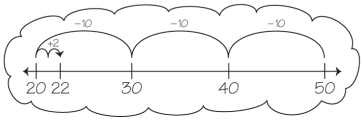
Using Expanded Form

Subtract 39 from 62

62 = 60 + 2 = 50 + 12
39 = 30 + 9 = 30 + 9
20 + 3 = 23

Counting Back

50 – 28 = 22



Using the Compact Method

7 13
8 3
– 2 7
5 6

As we continue to develop subtraction strategies in the classroom, you can provide additional support at home.

- **Discuss Strategies.** Encourage your child to state each new problem in his or her own words. Then, after the problem is solved, ask him or her to talk about the strategies that led to the answer. I hope you enjoy listening to the creative and insightful strategies your child is learning.

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Math Facts and Mental Math

Students' fluency with the subtraction facts related to the addition facts in Groups A will be assessed in this unit.

Group A: $1 - 0$, $1 - 1$, $2 - 0$, $2 - 1$, $2 - 2$, $3 - 1$, $3 - 2$, $4 - 1$, $4 - 2$, $4 - 3$, $5 - 2$, $5 - 3$, $6 - 2$, $6 - 4$

You can help your child review these facts using the flash cards the teacher sent home or by making a set of flash cards from index cards or scrap paper. Study the facts in small groups each night. As your child goes through the flash cards, put the cards in three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For Facts I Need to Learn, work on strategies for figuring them out.

For Facts I Can Figure Out, use the flash cards to practice the facts for fluency.

For Facts I Know Quickly, help your child use strategies to solve problems like these using mental math: $22 - 2$ (practices $2 - 2$), $34 - 2$ (practices $4 - 2$).

Grade 2 Math Facts Overview

The goal of the math facts development in *Math Trailblazers* is for students to learn the basic facts efficiently, gain fluency with their use, and retain that fluency over time. A large body of research supports an approach in which students develop strategies for figuring out the facts rather than relying on rote memorization. This not only leads to more effective learning and better retention but also to the development of mental math skills. In fact, too much drill before conceptual understanding may interfere with a child's ability to understand concepts at a later date. Therefore, the teaching of the basic facts in *Math Trailblazers* is characterized by the following elements:

Use of Strategies. Students first approach the basic facts as problems to be solved rather than as facts to be memorized. In all grades, students are encouraged to use strategies to find facts, so they become confident that they can find answers to facts problems that they do not immediately recall. In this way, students learn that math is more than memorizing facts and rules which "you either get or you don't."

Distributed Facts Practice. Students study small groups of facts that can be found using similar strategies. In Second Grade, they practice the addition facts and the related subtraction facts. See Figure 1.

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Unit	Subtraction Facts Related to the Addition Facts	Strategies Used	Focus
9	Group A 1 – 0, 1 – 1, 2 – 0, 2 – 1, 2 – 2, 3 – 1, 3 – 2, 4 – 1, 4 – 2, 4 – 3, 5 – 2, 5 – 3, 6 – 2, 6 – 4	Counting On, Zero, Thinking Addition	Use strategies fluently for facts with sums to ten. Develop mental math strategies and number sense and solve fact families for facts with sums more than ten.
10	Group B 3 – 0, 4 – 0, 5 – 1, 5 – 4, 6 – 1, 6 – 5, 7 – 1, 7 – 2, 7 – 5, 7 – 6, 8 – 1, 8 – 2, 8 – 3, 8 – 5, 8 – 6, 8 – 7, 9 – 1, 9 – 8	Counting On, Zero, Thinking Addition	
11	Group C 9 – 2, 9 – 3, 9 – 6, 9 – 7, 10 – 1, 10 – 2, 10 – 3, 10 – 4, 10 – 5, 10 – 6, 10 – 7, 10 – 8, 10 – 9, 11 – 2, 11 – 3, 11 – 4, 11 – 5, 11 – 6, 11 – 7, 11 – 8, 11 – 9	Making Ten, Using Ten, Thinking Addition	
12	Group D 6 – 3, 7 – 3, 7 – 4, 8 – 4, 9 – 4, 9 – 5, 12 – 6, 13 – 6, 13 – 7, 14 – 7, 15 – 7, 15 – 8, 16 – 8, 19 – 10, 19 – 9, 20 – 10	Using Doubles, Thinking Addition	
13	Group E 11 – 1, 11 – 10, 12 – 2, 12 – 3, 12 – 4, 12 – 5, 12 – 7, 12 – 8, 12 – 9, 12 – 10, 13 – 3, 13 – 4, 13 – 5, 13 – 8, 13 – 9, 13 – 10, 14 – 5, 14 – 9	Making Ten, Using Ten, Thinking Addition	
14	Group E 14 – 4, 14 – 6, 14 – 8, 14 – 10, 15 – 5, 15 – 6, 15 – 9, 15 – 10, 16 – 6, 16 – 7, 16 – 9, 16 – 10, 17 – 7, 17 – 8, 17 – 9, 17 – 10, 18 – 8, 18 – 9, 18 – 10	Making Ten, Using Ten, Thinking Addition	
15	All Facts		

Figure 1: *Development of related subtraction facts in Grade 2*

Practice in Context. Students continue to practice all the facts as they use them to solve problems, investigate math concepts, and play math games.

Appropriate Assessment. Students are regularly assessed to see if they can find answers to facts problems quickly and accurately and retain this skill over time. They take a short quiz on each group of facts. Students will record their progress on their *Subtraction Facts I Know* charts to determine which facts they need to study.

A Multiyear Approach. In Grades 1 and 2, the curriculum emphasizes the use of strategies that enable students to develop proficiency with addition and subtraction facts by the end of Second Grade. Students focus on gaining proficiency with the facts with sums to ten in Grade 1 and on facts with sums more than 10 in Grade 2. In Grade 3, students review the subtraction facts and develop proficiency with the multiplication facts. In Grade 4, the addition and subtraction facts are checked, the multiplication facts are reviewed, and students develop fluency with the division facts. In Grade 5, students review the multiplication and division facts.

Facts Will Not Act as Gatekeepers. Use of strategies and calculators allow students to continue to work on interesting problems and experiments while learning the facts. Lacking quick recall of the facts does not prevent students from learning more complex mathematics.

Sincerely,

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