Unit 2: Family Letter

Home Link 1-14

NAME DATE TIME

Number Stories and Arrays

In this unit, your child will learn to make sense of and solve many number stories and explore multiplication and division. In Unit 2, children will:

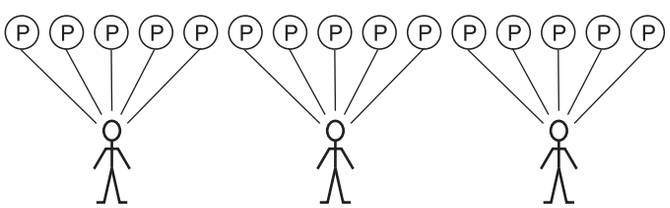
- use basic facts to add and subtract larger numbers.
- solve change, comparison, and parts-and-total number stories.
- solve multistep number stories using 2 or more operations.
- understand multiplication in terms of equal groups, including multiplying by 0 and 1.
- use pictures and arrays to solve multiplication and division problems.
- understand division as sharing a quantity.
- make sense of remainders in division problems.

Understanding multiplication in terms of equal groups:

2 groups of 7 is 14
$2 \times 7 = 14$

Using pictures and arrays to divide:

15 pennies are shared equally among 3 children. How many pennies does each child get?



$15 \div 3 = 5$

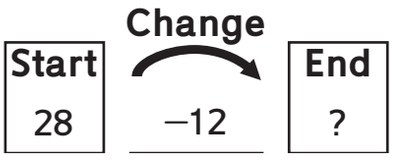
Please keep this Family Letter for reference as your child works through Unit 2.

Vocabulary

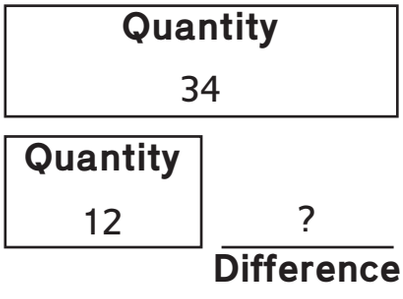
Some important terms in Unit 2:

array An arrangement of objects in a regular pattern, usually rows and columns.

change number story A number story involving a starting quantity, a change, and an ending quantity. If the ending quantity is more than the start, it is a *change-to-more* number story. If the ending quantity is less than the start, it is a *change-to-less* number story. For example, the following is a change-to-less number story: *Rita had $28. She spent $12. How much money does Rita have now?* Change number stories can be modeled using a change diagram.



comparison number story A number story about two quantities and the difference between them. For example, *34 children ride the bus to school. 12 children walk to school. How many more children ride the bus?* Comparison number stories can be modeled using a comparison diagram.



equal groups Sets with the same number of elements, such as cars with 5 passengers each and rows with 6 chairs each.

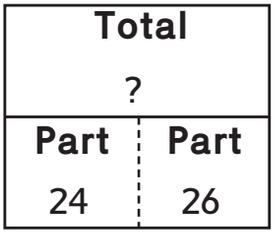
fact extensions Calculations with larger numbers that use basic arithmetic facts. For example, knowing the addition fact $5 + 8 = 13$ makes it easier to solve problems such as $50 + 80 = ?$ and $65 + ? = 73$.

Frames-and-Arrows diagrams Diagrams with connected arrows that are used to represent number patterns. Each frame contains a number, and each arrow represents a rule that determines which number goes in the next frame. There may be more than one rule, represented by different types of arrows.

number model A number sentence or expression that models a number story or situation. For example, the story *Sally had $25, and then she earned $12* can be modeled by the number sentence $25 + 12 = 37$.

number sentence An equation such as $15 + 8 = 22$, or an inequality such as $18 > 12$.

parts-and-total number story A number story in which a whole is made up of two or more distinct parts. For example, *Leo baked 24 muffins. Nina baked 26 muffins. How many muffins in all?* Parts-and-total number stories can be modeled using a parts-and-total diagram.



remainder An amount left over when one number is divided by another number. For example, 16 divided by 5 results in an answer of 3 remainder 1 or $16 \div 5 \rightarrow 3$ R 1.

unknown A quantity whose value is not known. An unknown is sometimes represented by a ____, a ?, or a letter. For example, in $5 + w = 13$, w is an unknown.

Do-Anytime Activities

Work with your child on some of the concepts and skills taught in this unit:

1. Practice addition and subtraction fact extensions. For example:

$6 + 7 = 13$	$13 - 7 = 6$
$60 + 70 = 130$	$23 - 7 = 16$
$600 + 700 = 1300$	$83 - 7 = 76$

2. Help your child recognize examples of equal groups, equal sharing, or array situations in everyday life. Examples: 2 boxes of granola bars with 6 bars in each box (2 equal groups of 6) gives you a total of 12 granola bars. 20 mints shared among 5 people gives each person 4 mints.
3. Continue practicing 2s, 5s, and 10s multiplication facts by using Fact Triangles and playing *Multiplication Draw* (see *Student Reference Book* for directions).

Building Skills through Games

In Unit 2 your child will practice multiplication and mental addition by playing the following games. For detailed instructions, see the *Student Reference Book.*

Array Bingo Players make a 4-by-4 array of array cards. They draw number cards and try to match them with array cards showing that number of dots. If an array card matches, they turn it facedown.

Division Arrays Players use counters to create arrays with a given total number and number of rows. They determine whether or not there are any leftovers or a *remainder* and write division number models to match their arrays.

Roll to 1,000 Players mentally add the results of dice rolls.

As You Help Your Child with Homework

As your child brings home assignments, you may want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through this unit's Home Links.

Home Link 2-1

1. 16; 26; 76; 106
2. 12; 22; 62; 282
3. 8; 28; 58; 98
4. 5; 15; 115; 475
5. 13; 130; 1,300; 13,000

Home Link 2-2

Number model: $750 - 300 = ?$; $300 + ? = 750$
450 cans; Sample answer: The unknown has to be smaller than 750. I know $3 + 4 = 7$, so 3 [100s] + 4 [100s] is 7 [100s]. 7 [100s] + 50 is 750.

Home Link 2-3

$35 + ? = 52$ or $52 - 35 = ?$; \$17; Sample answer: The answer has to be less than \$35 and \$52 because she started with \$35 and ended with \$52. The answer makes my number model true.

Home Link 2-4

1. 20 balloons **2.** 26 marbles

Home Link 2-5

1. $5 \times 2 = 10$ or $2 + 2 + 2 + 2 + 2 = 10$; $10 + 6 = 16$; 16 points

2. $4 \times 10 = 40$ or $10 + 10 + 10 + 10 = 40$; $40 + 8 = 48$; 48 pages

Home Link 2-6

1. 30 markers

2. \$0. Sample answer: If I buy 0 packs of markers, I do not buy any markers, so my cost is \$0.

3. Sample answer: I have 1 hand with 5 fingers. How many fingers do I have in all? I have 5 fingers in all.

Home Link 2-7

1. Sample answers: 1-by-12, $1 \times 12 = 12$; 12-by-1, $12 \times 1 = 12$; 3-by-4, $3 \times 4 = 12$; 4-by-3, $4 \times 3 = 12$; 2-by-6, $2 \times 6 = 12$; 6-by-2, $6 \times 2 = 12$

2. Sample answer: No. When I try to make an array with 5 rows, there are 2 left over.

Home Link 2-8

1. 8 stickers **2.** 5 cars

Home Link 2-9

1. 6 marbles for each friend, 0 marbles left over; $24 \div 4 = 6$

2. 5 flowers in each vase, 4 flowers left over; $29 \div 5 \rightarrow 5$ R 4

3. 4 rows of stamps, 6 stamps left over; $46 \div 10 \rightarrow 4$ R 6

Home Link 2-10

1. 

0

2. 

3. Sample answers: A package of markers, all the pillows in the house

4. 25 **5.** 8 **6.** 4 **7.** 9

Home Link 2-11

1. 15, 18, 21, 27

2. 900, 700, 600, 500

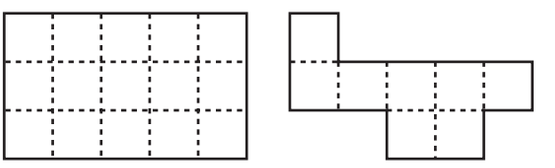
3. Rule: + 6; 30, 36, 54

4. 30 **5.** 60 **6.** 4 **7.** 4

Home Link 2-12

1. Sample answer: The volume doesn't change because even though the containers are different, the amount of liquid stays the same.

2.



15 square centimeters **8 square centimeters**

3. 12 **4.** 7 **5.** 9 **6.** 2