Unit 5: Family Letter

Home Link 4-13

NAME DATE TIME

Fractions and Multiplication Strategies

In this unit, your child will build on earlier experiences and continue to partition shapes and recognize fractions as equal parts of a whole. Children are formally introduced to standard notation for fractions $\left(\frac{1}{2}, \frac{3}{4}\right)$ and explore the relationship between the numerator and the denominator. They use fraction circle pieces to represent fractions of regions and to recognize equivalent fractions, such as $\frac{1}{2}$ and $\frac{2}{4}$.

Your child will also continue to develop multiplication strategies and work with properties of multiplication. Strategy application and discussion help children gain fluency and eventually automaticity with their multiplication facts.

In Unit 5, children will:

- Develop the understanding that the size of a fractional part changes with the size of the whole.
- Represent fractions using standard notation, words, numbers, and drawings.
- Recognize the importance of using the same whole when comparing fractions.
- Recognize equivalent fractions.
- Use known multiplication facts (helper facts) to solve unknown multiplication facts.
- Use doubling as a multiplication facts strategy.
- Play a game to find missing factors.
- Break apart a factor as a multiplication facts strategy.
- Identify and explain patterns in multiplication products.

−9	−8	−7	−6	−5	−4	−3	−2	−1	0
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Copyright © McGraw-Hill Education. Permission is granted to reproduce for classroom use.

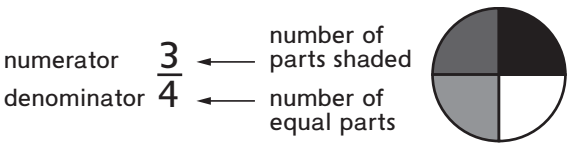
Vocabulary

Important lesson components and terms in Unit 5:

adding a group A multiplication strategy that involves thinking of a multiplication fact such as 6×4 as 6 groups of 4 and adding a group to a known fact to solve an unknown fact. *Example:* Knowing $5 \times 4 = 20$ can help solve $6 \times 4 = ?$. By adding a group of 4 to 20, you can solve $6 \times 4 = 24$.

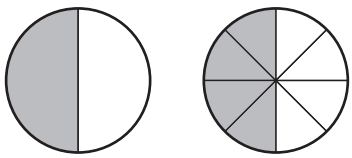
break-apart strategy A multiplication strategy in which a factor is broken apart, or decomposed, into smaller numbers. To solve 7×8, children can break 7 into 5 and 2. Then they can solve. $5 \times 8 + 2 \times 8 = 40 + 16 = 56$, so $7 \times 8 = 56$.

denominator The number below the line in standard fraction notation, such as the 2 in $\frac{1}{2}$. The number of equal parts into which the whole has been divided.



doubling A multiplication strategy in which the product of a known fact is doubled to solve an unknown fact. *Example:* Knowing $2 \times 7 = 14$ can help solve $4 \times 7 = ?$. By doubling 14, you can determine $14 + 14 = 4 \times 7 = 28$.

equivalent fractions Fractions that name the same value, such as $\frac{1}{2}$ and $\frac{4}{8}$.



factor Any of the numbers that are multiplied to find a product. *Example:* In the problem $4 \times 7 = 28$, the factors are 4 and 7.

fraction A number in the form $\frac{a}{b}$. The numerator, *a*, can be any number. The denominator, *b*, cannot be 0. For example, $\frac{1}{4}$, $\frac{3}{8}$, and $\frac{5}{2}$ are fractions. A fraction may be used to name part of a whole, to compare two quantities, or to represent division.

helper facts A known fact that can be used to solve an unknown fact.

$7 \times 7 = 49$ can be used as a helper fact to find 6×7 by subtracting a group or to find 8×7 by adding a group.

missing factor The unknown factor in a multiplication fact. *Example:* In $5 \times ? = 30$, the missing factor is 6.

near squares Facts that can be solved by adding or subtracting a group to square multiplication facts. *Example:* 3×4 is a near square because it is closely related to 4×4.

numerator The number above the line in standard fraction notation, such as the 1 in $\frac{1}{2}$. In a part-whole *fraction,* in which the *whole* is divided into a number of equal parts, the numerator is the number of equal parts being considered.

product The result of multiplying two factors. *Example:* In $4 \times 3 = 12$, the product is 12.

subtracting a group A multiplication strategy that involves subtracting a group from a known fact to solve an unknown fact.

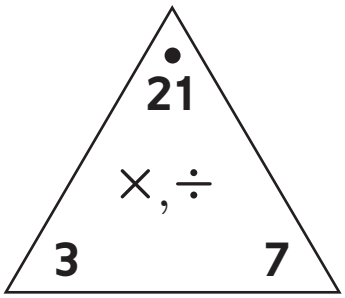
unit fraction A *fraction* whose *numerator* is 1. For example, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{8}$ are unit fractions.

Copyright © McGraw-Hill Education. Permission is granted to reproduce for classroom use.

Do-Anytime Activities

The following activities provide practice for concepts taught in this and previous units.

1. Help your child find fractions in the everyday world, in advertisements, on measuring tools, in recipes, and so on.
2. Discuss ways to cut a rectangular casserole, a circular pizza, or similar food to feed various numbers of people so that each person gets an equal portion. Draw pictures if you do not have the actual food item.
3. Continue to practice multiplication facts by playing games such as *Multiplication Draw* and *Salute!* (see *Building Skills through Games*) and by working with Fact Triangles.
4. Provide your child with problems that have missing factors for division and multiplication practice. *Example: 6 groups of how many pennies would equal 18 pennies?*
5. Discuss how various multiplication strategies, such as adding a group, subtracting a group, doubling, and breaking apart a factor, can help solve unknown facts.



Fact Triangle

$7 \times 3 = 21$

$3 \times 7 = 21$

$21 \div 7 = 3$

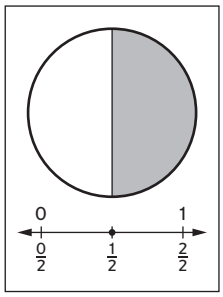
$21 \div 3 = 7$

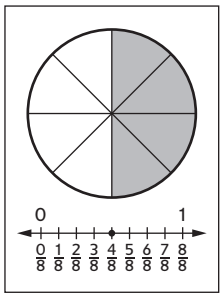
Fact family for the numbers 3, 7, and 21

Building Skills through Games

In Unit 5 your child will practice multiplication facts by playing the following games. For detailed instructions, see the *Student Reference Book*.

Fraction Memory Players turn over two fraction cards to find equivalent fraction pairs. Pairs are collected, while other cards are turned back over for future turns.





Multiplication Draw Players draw two number cards and multiply them. They add the products of five "draws" to try to get the largest sum.

Salute! The Dealer gives one card to each of two Players. Without looking at their cards, the Players place them on their foreheads facing out. The Dealer multiplies to find the product of the numbers on the cards and says it aloud. Each Player uses the product and the number on the opposing player's forehead to figure out the number (missing factor) on his or her own card.

Copyright © McGraw-Hill Education. Permission is granted to reproduce for classroom use.

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 5-1

1. 1-half **2.** 1-fourth **3.** 1-half

4. 35 **5.** 165

Home Link 5-2

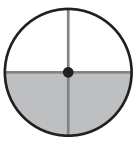
1. one-half or 1-half; $\frac{1}{2}$ **2.** $\frac{3}{8}$

3. five-sixths or 5-sixths; $\frac{5}{6}$

4. two-thirds or 2-thirds

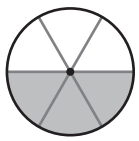
Home Link 5-3

1.



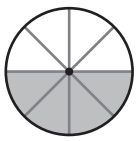
peach pie

2.



blueberry pie

3.



strawberry pie

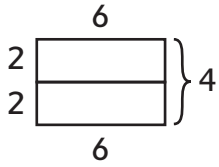
Home Link 5-4

1. Sample helper fact: $2 \times 8 = 16$
Sample answer: I start with 16 and add one group of 8 to get $16 + 8 = 24$.
$3 \times 8 = 24$

2. Sample helper fact: $10 \times 7 = 70$
Sample answer: I start with 70 and take away one group of 7 to get $70 - 7 = 63$.
$9 \times 7 = 63$

Home Link 5-5

1.



$2 \times 6 = 12$; $4 \times 6 = 24$

Sample answer: I started with the area of the first rectangle, which is 12. I doubled that by thinking $12 + 12 = 24$. So the area of the new rectangle is 24, which means $4 \times 6 = 24$.

Home Link 5-6

Sample answer: 8; $4 \times 6 = 24$, $24 + 24 = 48$; $8 \times 6 = 48$

Home Link 5-7

1–2.

1	2	3	4	5	6	7	8	9	(10)
11	12	13	14	15	16	17	18	19	(20)
21	22	23	24	25	26	27	28	29	(30)
31	32	33	34	35	36	37	38	39	(40)
41	42	43	44	45	46	47	48	49	(50)

3. Sample answer: With each 10s fact we add another 10, which is like moving down one row because the number grid has rows of 10. So they make a straight column.

4. Sample answer: With each 9s fact we add another 9. We can go down a row for the 10 but then go back a space because it is one less than 10. It makes a diagonal line.

Home Link 5-8

Round 1: Player 2: 5 Round 2: Player 1: 6
Round 3: Player 1: 4 Round 4: Player 2: 6
Sample answer: I thought: "What number do I have to multiply 5 by to get 30?" The answer is 6.

Home Link 5-9

1. 25; 36 **2.** Answers vary.

Home Link 5-10

1. 50 blocks **2.** 6 members

Home Link 5-11

Sample answers: Factor: 9; Parts: 5; 4
Helper facts: $7 \times 5 = 35$, $7 \times 4 = 28$;
$7 \times 9 = 7 \times 5 + 7 \times 4$; $7 \times 9 = 63$

Copyright © McGraw-Hill Education. Permission is granted to reproduce for classroom use.