

Understand the Meaning of Multiplication



Dear Family,

This week your child is exploring the meaning of multiplication.

Multiplication can involve working with equal groups of objects. For example:



3 groups of 5 flowers is 15 flowers in all.

Multiply:

$$3 \times 5 = 15$$

The **product** tells how many in all.

The first **factor** tells how many groups.

The second **factor** tells how many in each group.

Your child is also using arrays to show multiplication. An array is a set of objects arranged in equal rows and equal columns.



4 rows of 6 apples is 24 apples in all. Use the **multiplication equation** $4 \times 6 = 24$.

Invite your child to share what he or she knows about the meaning of multiplication by doing the following activity together.

ACTIVITY MULTIPLICATION

Do this activity with your child to explore the meaning of multiplication.

Materials 30 pennies or other small items, 4 to 6 small cups



- Ask your child to show 4×5 by putting pennies in cups.
- Using the pennies in the cups, complete this sentence:
.....groups ofpennies equalspennies in all.
- Next, ask your child to remove the pennies from the first cup and arrange them in a row to begin an array.
- Have your child create the second, third, and fourth rows of the array with the pennies from the other three cups, as shown.
- Using the array, ask your child to multiply to find the total.

..... \times =
how many rows how many in each row total

- Repeat this activity for equal groups of other sizes, such as 5×3 , 2×4 , or 3×6 .

As your child becomes more familiar with the idea of multiplication, point out examples of multiplication in real life; for example, 3 groups of 2 socks shows $3 \times 2 = 6$.

Answers:

4 groups of 5 pennies equals 20 pennies in all.

Array:



$$4 \times 5 = 20$$

Multiply with 0, 1, 2, 5, and 10



Dear Family,

This week your child is learning multiplication facts for 0, 1, 2, 5, and 10.

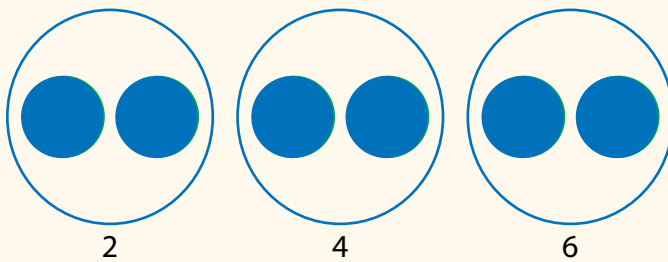
You can use what you know about multiplication and skip-counting to build fluency with the multiplication facts for 0, 1, 2, 5, and 10.

Look at the two models below.

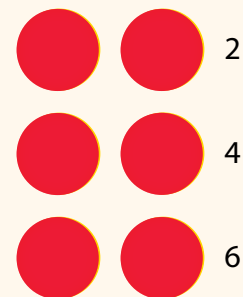
Both models show $3 \times 2 = 6$.

You can also skip-count by twos in each model.

3 equal groups of 2

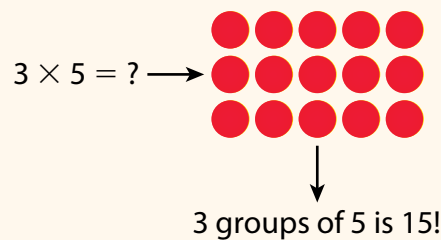


3 rows of 2



Your child will also explore what it means to multiply with 0 and 1.

Your child will build understanding of facts by thinking about what facts mean and not by just trying to memorize facts.



Invite your child to explore multiplication facts and share what he or she knows about skip-counting by doing the following activity together.

ACTIVITY MULTIPLICATION FACTS FOR 0, 1, 2, 5, AND 10

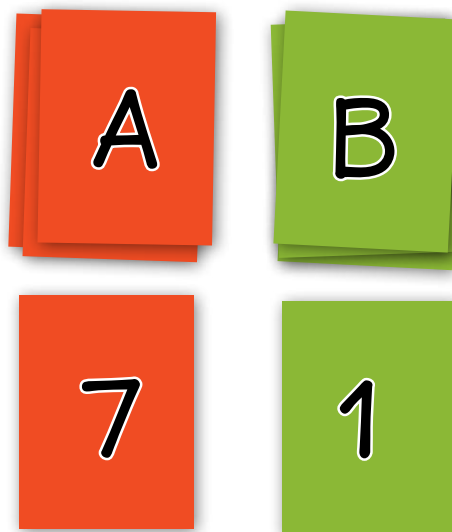
Do this activity with your child to multiply with 0, 1, 2, 5, and 10.

Materials 20 index cards or slips of paper in 2 colors (10 of each color), paper, pencil

Play this game with your child to practice multiplication facts for 0, 1, 2, 5, and 10.

The winner of the game will have collected the most cards at the end.

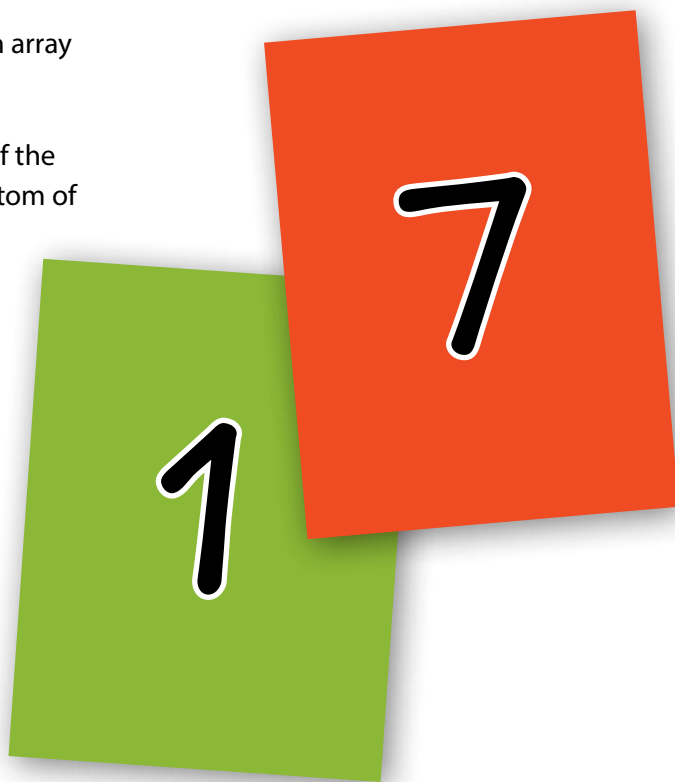
- Create 2 groups of 10 colored cards. Write the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 on one color of cards (Pile A) and the numbers 0, 0, 1, 1, 2, 2, 5, 5, 10, and 10 on the other color (Pile B).
- Shuffle each pile and place each pile of cards facedown.
- Each player takes turns choosing 1 card from Pile A and then 1 card from Pile B. The player should complete a multiplication fact ($A \times B$) from the factors chosen. For example, if the A card is a 7 and the B card is a 1, complete $7 \times 1 = ?$.



$$7 \times 1 = ?$$

- Help your child skip-count or use equal groups or an array to show the fact.
- If the product is correct, the player keeps the cards. If the product is incorrect, the cards are placed on the bottom of each pile and play moves to the next player.
- Continue taking turns until the cards are gone. The player with the most cards wins.
- Shuffle each pile of cards and play again.

Look for other opportunities to practice multiplication facts with your child.



Understand the Meaning of Division



Dear Family,

This week your child is exploring the meaning of division.

When you **divide**, you separate a group of objects into smaller, equal-sized groups.

You can use **division** to find the number in each group. Consider the problem below.

*Betsy has 6 stickers. She puts the same number of stickers on 3 different pages.
How many stickers are on each page?*

The picture shows that 6 stickers grouped equally onto 3 pages is 2 stickers on each page.



So, $6 \div 3 = 2$.

Other times you know how many objects you want in each group, and you use division to find how many groups you can make. Consider the problem below.

*Betsy has 15 flowers she wants to group into bunches of 5.
How many bunches of flowers can she make?*

If she puts 15 flowers into bunches of 5, she makes 3 bunches.

So, use the **division equation** $15 \div 5 = 3$.

Invite your child to share what he or she knows about the meaning of division by doing the following activity together.



ACTIVITY EXPLORE THE MEANING OF DIVISION

Do this activity with your child to understand the meaning of division.

Materials 12 of one kind of item, such as socks, spoons, or coins

Help your child understand the meaning of division with this activity.

- Collect 12 of one item, such as socks.
- Have your child show $12 \div 3$ by dividing the 12 items into 3 equal groups. One way to approach this is to think about “dealing” the socks into 3 piles, one at a time, until all the socks are gone.
 1. Ask your child to tell what he or she did. You child might say: *I put 12 socks into 3 equal groups. Each group got 4 socks.*
 2. Then ask your child to write or say the division equation.
 3. Gather up all the items. Then have your child divide the 12 items into groups with 4 in each group. Ask him or her to tell how many groups were formed and write or say the division equation.
- Repeat the exercise, dividing the 12 items into 6 equal groups and then dividing into groups with 2 items each. Each time, have your child describe what he or she did and write or say the division equation.



Answers:

1. Your child might say: *I put 12 socks into 3 equal groups. Each group has 4 socks.*
2. $12 \div 3 = 4$
3. 3 groups; $12 \div 4 = 3$

Understand How Multiplication and Division Are Connected



Dear Family,

This week your child is exploring how multiplication and division are related.

Multiplication and division can both describe problems where there are equal groups. Either one can be used to solve a problem like the one below.

*Lola buys 16 apples. She puts the same number of apples in 4 bags.
How many apples does she put in each bag?*

You know the total (16 apples) and the number of groups (4 bags). You need to find the number in each group.



A multiplication equation for the problem is:

$$4 \times ? = 16$$

$$4 \times 4 = 16$$

A division equation for the problem is:

$$16 \div 4 = ?$$

$$16 \div 4 = 4$$

Lola puts 4 apples in each bag.

Invite your child to share what he or she knows about how multiplication and division are related by doing the following activity together.

ACTIVITY MULTIPLICATION AND DIVISION

Do this activity with your child to explore how multiplication and division are connected.

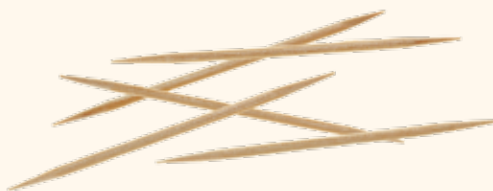
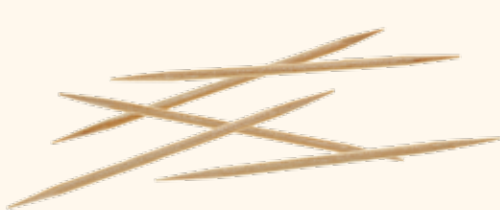
Materials 12 to 20 of one small item, such as pennies, toothpicks, or toy bricks

Do this activity with your child to demonstrate how multiplication and division are related.

- Collect a set of small items such as toothpicks. Act out problems like the one below.
- Count out 10 toothpicks. Ask your child to consider the question: *How many toothpicks will be in each pile if I put these 10 toothpicks into 2 equal piles?*



1. Ask him or her to write both a multiplication equation and a division equation for the problem.
2. Have your child group the toothpicks into 2 equal groups to find how many are in each and fill in the value for ? in the equations they wrote.



- Repeat but invite your child to give you a problem. Write a multiplication equation and a division equation and have your child check your work.
- After three or four examples, see if your child can talk to you about how multiplication and division are alike. Look for an understanding that both operations can represent equal groups.

Answers: 1. $2 \times ? = 10$ and $10 \div 2 = ?$; 2. $2 \times 5 = 10$ and $10 \div 2 = 5$

Multiplication and Division Facts



Dear Family,

This week your child is learning about multiplication and division fact families.

Fact families for multiplication and division are groups of related equations that use the same numbers. Here is one example:

$$3 \times 7 = 21 \quad 7 \times 3 = 21 \quad 21 \div 3 = 7 \quad 21 \div 7 = 3$$

Knowing about fact families can help sometimes when you are trying to solve a problem. If you know the answer to any one of these, you know the answer to all of them.

$$30 \div 5 = \square \quad 30 \div \square = 5 \quad 5 \times \square = 30 \quad \square \times 5 = 30$$

You might remember that $5 \times 6 = 30$. Then you also know $30 \div 5 = 6$, $30 \div 6 = 5$, and $6 \times 5 = 30$.

Your child may use a **multiplication table** to help learn multiplication facts.

This multiplication table shows all the facts up to 10×10 . The numbers that are circled show that **$5 \times 6 = 30$** .

Invite your child to share what he or she knows about multiplication and division fact families by doing the following activity together.

\times	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

ACTIVITY FACT FAMILY

Do this activity with your child to explore multiplication and division facts.

Materials scissors, index cards (optional), pencil (optional)

Play this game to practice recognizing facts that are in the same family.

Create fact family cards by cutting out the facts below or by writing the facts on index cards.

- Each player chooses one of the single-number cards (42 or 56) and places it faceup in front of him or her. Shuffle the fact cards. Place them facedown in two rows with four cards in each row.
- Players take turns flipping over two cards.
 - If *both* the cards are in the same fact family as the player's number card, then the player keeps the cards.
 - If either of the cards is *not* in the same fact family as the player's number card, then the player flips the cards back over.
- The first player to find the four cards that make a fact family that goes with his or her number card wins.
- Create a new game. Choose two numbers from 1 to 10 and use the multiplication table to write two new fact families on index cards or slips of paper.



$8 \times 7 = 56$	$7 \times 8 = 56$	$56 \div 8 = 7$	
$56 \div 7 = 8$	$7 \times 6 = 42$	$6 \times 7 = 42$	
$42 \div 7 = 6$	$42 \div 6 = 7$	56	42