

Understand Place Value



Dear Family,

This week your child is exploring
place value in numbers.

Our number system is based on a pattern of tens. The value of a digit in a number is based on the place where the digit appears in the number.

A digit in one place has 10 times the value that the same digit would have in the place to its right.

Thousands Period			Ones Period		
Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
7	4	2	5	5	9

This number in standard form:	742,559
This number in word form:	Seven hundred forty-two thousand, five hundred fifty-nine
This number in expanded form:	$700,000 + 40,000 + 2,000 + 500 + 50 + 9$

Invite your child to share what he or she knows about place value by doing the following activity together.



ACTIVITY PLACE VALUE

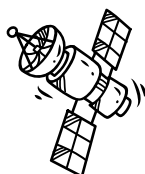
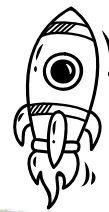
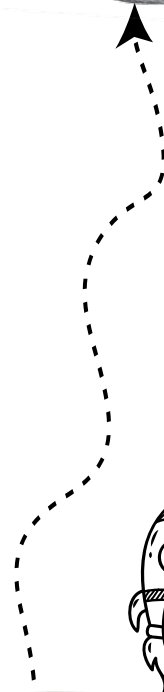
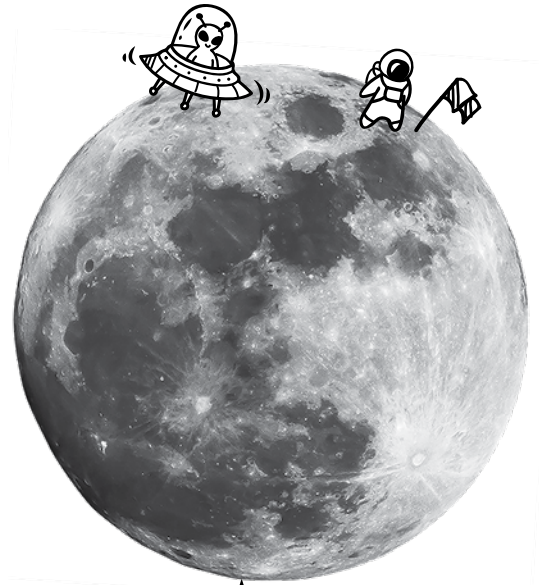
Do this activity with your child to explore place value.

The distance from Earth to the moon is about 238,855 miles.

This number in standard form: 238,855.

This number in word form: two hundred thirty-eight thousand, eight hundred fifty-five.

- Write the number 238,855 on a sheet of paper. Show your child the number and have your child read the number aloud in word form (two hundred thirty-eight thousand, eight hundred fifty-five).
- Cover the standard form of the number so that your child cannot see it. Read the number aloud (in word form) and have your child write the number in standard form.
- Now have your child write a six-digit number in standard form without showing you the number. Then have your child tell you the number in word form while you write it in standard form.
- Compare the number you wrote with the number your child wrote.
- Repeat this activity several times, alternating between you and your child giving the six-digit number.



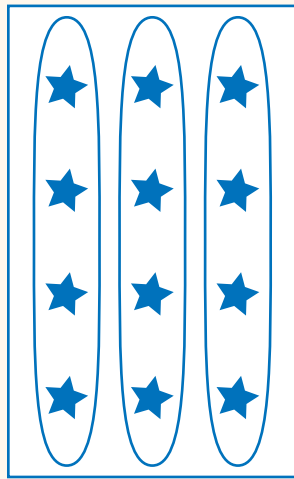
Understand Multiplication as a Comparison



Dear Family,

This week your child is exploring multiplication as a comparison.

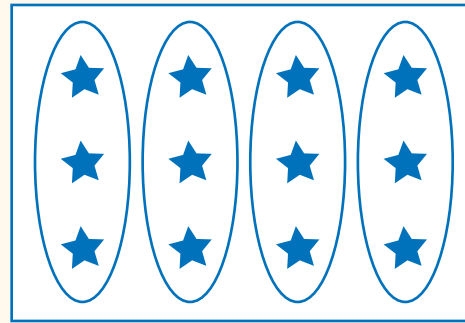
Your child is learning about multiplication as a way to compare two numbers.



This model shows that
12 is 3 times as many as 4.

You can write the comparison as a multiplication equation:

$$12 = 3 \times 4$$

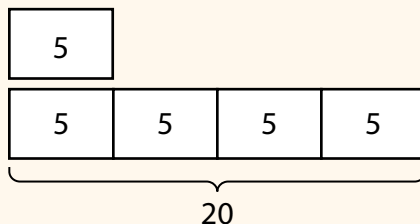


This model shows that
12 is 4 times as many as 3.

You can write the comparison as a multiplication equation:

$$12 = 4 \times 3$$

Your child is also learning how to use bar models to help understand multiplication as a comparison.



This bar model shows that 20 is 4 times as many as 5: $20 = 4 \times 5$.

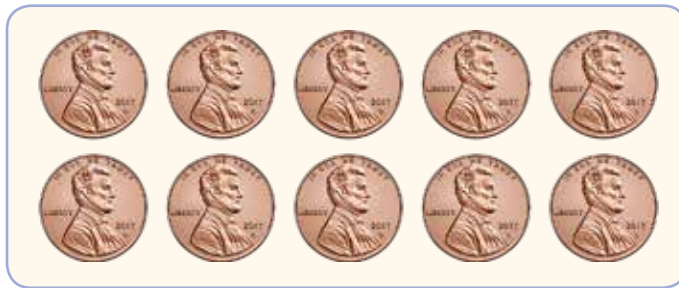
Invite your child to share what he or she knows about multiplication as a comparison by doing the following activity together.

ACTIVITY MULTIPLICATION AS A COMPARISON

Do this activity with your child to explore multiplication as a comparison.

Materials 20 pennies or other identical small objects

- With your child, arrange 10 pennies to show that 10 is 2 times as many as 5. The pennies should look like this:

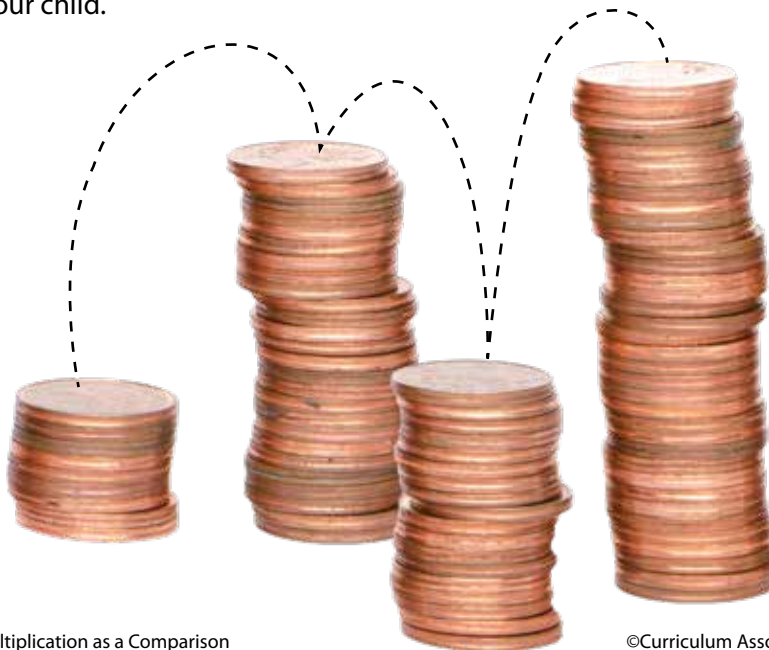


- Now ask your child to arrange 10 pennies to show that 10 is 5 times as many as 2. (The pennies should be arranged in 5 rows with 2 pennies in each row.)
- Repeat the activity, asking your child to arrange pennies to show other multiplication comparisons.

Examples:

- 14 is 7 times as many as 2.
- 14 is 2 times as many as 7.
- 18 is 6 times as many as 3.
- 18 is 3 times as many as 6.

Look for real-life opportunities to explore multiplication as a comparison of two numbers with your child.



Multiply by One-Digit Numbers



Dear Family,

This week your child is learning to multiply two-, three-, and four-digit numbers by one-digit numbers.

Your child is learning to multiply a greater number by a one-digit number, such as 324×9 .

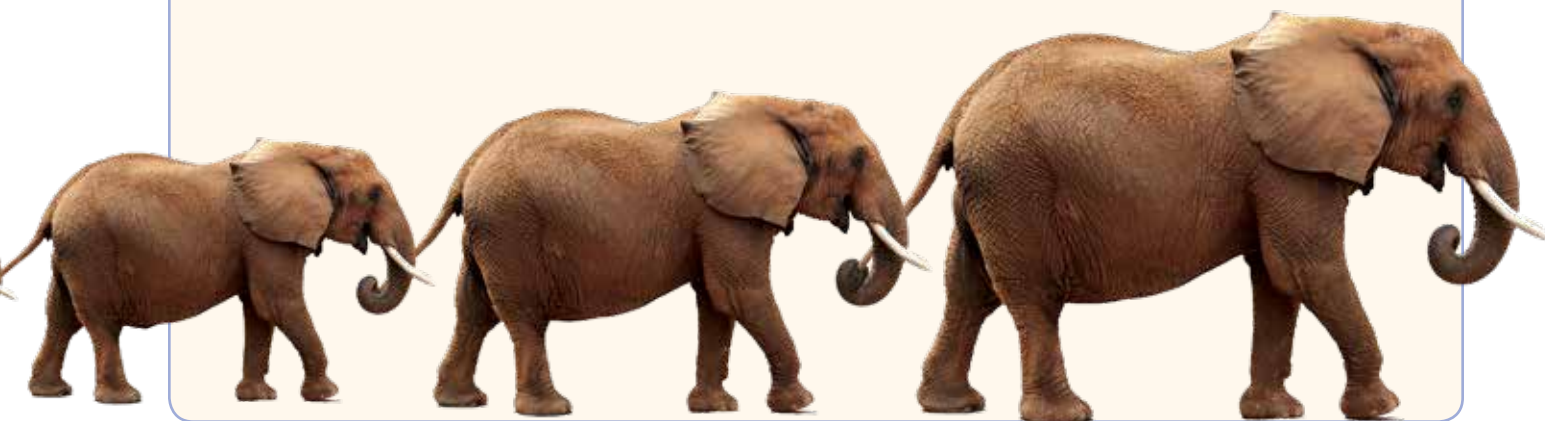
One way to multiply is to use **partial products**. With this strategy, you multiply each digit in 324 by 9, taking into account the place value of each digit.

The first step is to write the multiplication vertically. Next, find the individual partial products. Then add the partial products together to find the total product of the multiplication.

$$\begin{array}{r} 324 \\ \times \quad 9 \\ \hline 36 \longrightarrow 9 \times 4 \text{ ones} \\ 180 \longrightarrow 9 \times 2 \text{ tens} \\ + 2,700 \longrightarrow 9 \times 3 \text{ hundreds} \\ \hline 2,916 \end{array}$$

So, $324 \times 9 = 2,916$.

Invite your child to share what he or she knows about multiplying by one-digit numbers by doing the following activity together.



ACTIVITY MULTIPLYING BY ONE-DIGIT NUMBERS

Do this activity with your child to multiply a three-digit number by a one-digit number.

An adult elephant can eat between 200 and 600 pounds of food each day. Multiplication is a good way to find how much an elephant can eat over several days.

- Have your child choose a number between 200 and 600. Suppose this number is the number of pounds of food an elephant eats in one day. For example, your child might choose 532.
- Have your child use this number to find out how much the elephant eats in a week (7 days).
- Have your child multiply to find the answer.

$$\begin{array}{r} 532 \\ \times \quad 7 \\ \hline 14 \longrightarrow 7 \times 2 \\ 210 \longrightarrow 7 \times 30 \\ + 3,500 \longrightarrow 7 \times 500 \\ \hline 3,724 \end{array}$$

So, the elephant eats 3,724 pounds of food in one week!

- Switch roles and repeat the activity.

Look for real-life opportunities to multiply two-, three-, and four-digit numbers by one-digit numbers with your child.



Multiply by Two-Digit Numbers



Dear Family,

This week your child is learning to multiply two-digit numbers by two-digit numbers.

Your child is learning to multiply a two-digit number by another two-digit number, such as 17×38 .

One way to multiply two-digit numbers is to use an area model. With this strategy, you multiply using the place value of each digit.

The area model below shows the number **17** as **10** + **7** at the left of the rectangle as its width and the number **38** as **30** + **8** along the top of the rectangle as its length. First, find the individual products that represent each individual area. Then add the products together to find the total area. The total area is the product of 17 and 38.

	30	+	8
10	10×30 1 ten $\times$ 3 tens = 3 hundreds 300		10×8 1 ten $\times$ 8 = 8 tens 80
+			
7	7×30 7 $\times$ 3 tens = 21 tens 210		$7 \times 8 =$ 56

$$300 + 210 + 80 + 56 = 646$$

$$17 \times 38 = 646$$

Invite your child to share what he or she knows about multiplying by two-digit numbers by doing the following activity together.

ACTIVITY MULTIPLYING BY TWO-DIGIT NUMBERS

Do this activity with your child to multiply two-digit numbers.

Materials timer or watch with a second hand

- Together with your child, think of things that can be counted in one minute, such as the number of times you clap your hands or the number of steps you walk.
- Choose one idea. Have one person do the activity while the other person uses a timer or watch to time the activity for one minute.
- The person doing the activity counts how many. Count carefully. Stop counting when the person with the timer says "Stop!" For example, you might clap your hands for one minute and count 92 claps.
- Have your child use that number to figure out how many could be counted in 15 minutes. For example, to find out the number of times you might clap your hands in 15 minutes, your child would find: 15×92 .
- Have your child multiply to find the answer.
- Switch roles and repeat the activity.

Look for other real-life opportunities to multiply two-digit numbers with your child.

