

Math at Home

Below, please find grade-level ideas for supporting math at home:

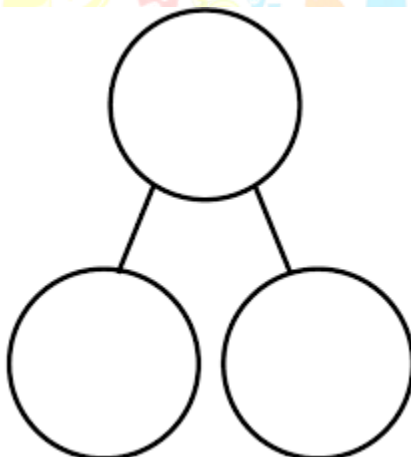


Kindergarten

Students in Kindergarten are learning how to *put together* two small groups of objects (*parts*) to form a larger group (the *whole*). They will also *take apart* a whole group to form two parts. They will use a *number bond* to show the numbers of objects in the parts and in the whole.

Use the activities below to help your student practice putting together parts to make a whole and taking apart a whole to make parts.

- Drop up to ten pennies on a table. Have your student name the number of heads, the number of tails, and the number of all pennies.
- Make a line on a tabletop with chalk or tape. Invite your student to drop up to ten dried beans or other small objects on the table. Ask your student to write the numbers of beans that fell on each side of the line and the number of beans in all.
- On the count of three, you and your student each show up to five fingers. Have your student name the number of fingers each person is showing and the number of fingers in all.
- Set out up to ten buttons or other small objects. Place a cup on a table. Players take turns trying to toss all the buttons, one at a time, into the cup. After each round, guide your student to write the score as the number of buttons in the cup and the number of buttons outside the cup. Talk about how the two numbers are parts of the whole.





First Grade

Students in First Grade are learning how to add numbers with sums up to 20. Your student is learning mental math strategies for adding numbers: doubles, doubles +1, doubles -1, making a ten, and counting on. These strategies are helping your student develop mathematical proficiency and problem solving skills.

There are many situations to practice how to add numbers with sums up to 20. Here are a few ways to help your student practice these math skills.

- Model adding three numbers by separating the items in the shopping cart into three groups. Ask your student to count the number of objects in each group. Then ask, "How many are in each group? What is the sum of the three numbers? How can you make a 10 to add the three numbers?"
- Show your student the coins you receive as change after paying. Have your student count the coins (10 or fewer). Ask, "How many pennies? Dimes? Nickels? What is the sum if you add these three numbers? What is double that number?"
- To model counting on, show your student a number of items. Then tell your student that you need a specific number more (with a total less than 20). For example, "There are 9 apples in the cart. Suppose we pick up 5 more. Count on to find the total number we will have."
- Videos: [Doubles! Doubles!](#), [Adding Doubles](#) Jack Hartmann & [I Like to Make 10!](#)

Second Grade

Students in second grade are learning strategies for adding numbers up to 100. Students will learn a variety of strategies, such as using open number lines and place value.

There are many real-life situations you can use to practice using addition strategies. You can add ages, amounts of money, numbers of objects, and so on. Here are a few activities you can use with your student:

- Say various 2-digit numbers. Have your student tell you how many tens and ones are in the number. For example, say, “How many tens and ones are in 43?” Your student should be able to tell you that there are 4 tens and 3 ones in 43.
- Ask your student to help you add an amount of money when shopping at a store (just dollars, not cents). Say, “This item costs \$24 and this one costs \$35. How much do they cost in all?” Give your student a notebook or receipt to write the numbers and add them.
- Help your student practice using an open number line. For example, draw a number line without any numbers labeled. Have your student use the number line to add numbers you provide, such as $22 + 51$. Ask, “How can you use the number line to add these numbers?”

Open Number Line

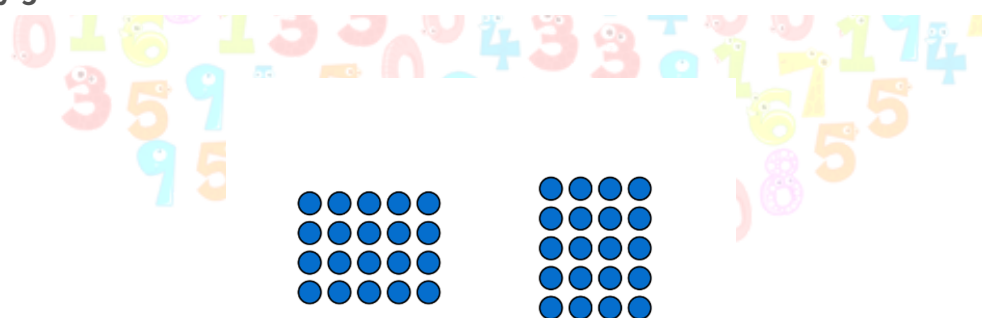
© 2018 Illustrative Mathematics



Students in Third Grade are learning strategies for multiplying by 3, 4, 6, 7, 8, and 9, and for multiplying three factors. These strategies include how to use equal groups, number lines and arrays to multiply. In addition, students will learn how to use the Distributive Property (with addition or subtraction) to multiply, and how to use a problem-solving plan to solve multiplication word problems.

How we practice multiplication with our students?

- Create a number line outside with chalk. Have students jump the number line to model multiplication facts.
- Have student model multiplication facts using a [graphic organizer](#) where they will review commutative property, repeated addition, groups, bar models, arrays and fact families.
- Count items when you are shopping. Racks and shelves are great models for practicing multiplication strategies. Check out the shelves at a grocery store, a convenient store, a department store or even a shoe store. Pick a shelf that displays a row or rows of an item. Ask your student how many rows of items there are. Then ask, "How many items are in each row?" Find out how many products and any given item has.



Fourth Grade

Students in Fourth Grade are learning about dividing multi-digit numbers by one-digit numbers. Students will use tape diagrams, counters, and area diagrams when dividing. Students will explore division problems with and without a remainder. Students will use a division strategy involving partial quotients, where quotients are found in parts until the remainder is less than the divisor.

You can help your student learn about dividing multi-digit numbers by one-digit numbers by practicing in real-life settings:

- Help your student find items that can be shared with many people. Then ask your student to complete the following:
 1. Determine the number of people sharing the items.
 2. Find the number of items that each person would receive.
 3. Suppose there is one less person to share the items with.
- Explain how you would change your expression to model the new situation. Explain the meaning of the remainder (if any)

Partial Quotients Division

divisor 14	367	dividend
- 140	10	(14 x 10 = 140)
227		
- 140	10	
87		
- 70	5	(14 x 5 = 70)
17		
- 14	+ 1	
remainder 3	26	quotient

1. Subtract from the dividend an easy multiple of the divisor. (x10, x5, x2...)
2. Repeat the subtraction until the number is less than the divisor.
3. Add up the multipliers of the divisor.

$$367 \div 14 = 26 R3$$



Fifth Grade

Students in fifth grade are learning how to multiply decimals using models, place value, partial products, and the laws of multiplication. Your student will find products involving multiples of 10 and powers of 10. They will also learn to estimate products. Finally, students will solve word problems involving money.



Here are some situations you can use to practice multiplying decimals together.

- 
- Take a walk outside with your student or use a fitness tracker. Make a plan to walk for 1 mile, and increase the amount by 0.1 mile each day for three days. Ask, "How would you find the distance you walk on the second day? the third day?"
 - Go grocery shopping. Find something with a dollars and cents cost of less than \$10 and ask, "How much will 3 of these cost?" Find something that is sold by the pound and ask, "How much will 2 pounds cost? How much will 2.5 pounds cost?" Find something in the produce section that is sold by the pound. Have your student weigh it, and ask, "How much will this cost to buy?"
 - When you pull up to a pump to get gas for your car, have your student identify the price per gallon for the type of gas you use. Ask, "How much will it cost to buy 2 gallons of gas?" Determine the amount of gas you are going to buy. Then ask, "About how much will it cost to buy that many gallons of gas?" Compare the actual cost and the estimated cost.

