

Core Focus

- Subtraction: Using the think-addition strategy (make-ten facts) and solving word problems
- Algebra: Counting in steps of two, five, and ten and exploring patterns
- Money: Relating dollars and all coins

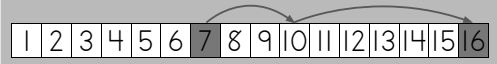
Subtraction

- Make-ten facts and the think-addition strategy are useful for mastering mental subtraction strategies. Students can choose to use addition or subtraction to solve a subtraction word problem, and a number track helps make their thinking visible.

11.1 Subtraction: Introducing the think-addition strategy (make-ten facts)


Step In There were 16 stickers on this sheet.

Some of the stickers have been taken off.
How many stickers have been taken off the sheet?
How can you figure out the number of stickers that have been taken without counting each space?
Karen uses a number track to help her thinking.



What steps does she take?
Why does she make the first jump to 10?
What is the difference?

Karen uses addition to figure out the difference. She thinks $7 + \underline{\quad} = 16$.



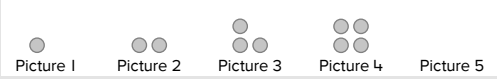
In this lesson, students use the think-addition strategy for a subtraction question.

Algebra

- Mathematical reasoning often relates to patterns. Identifying patterns prepares them for more advanced work with arithmetic and algebra in later grades. Students focus on patterns through the development of *skip counting* by twos, fives, and tens.

11.7 Algebra: Exploring growing and shrinking patterns

Step In This is a growing pattern. Draw the next picture.



How would you describe this pattern to another student?

In this lesson, students explore growing and shrinking patterns using shapes and numbers.

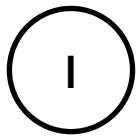
Ideas for Home

- To count by twos, fives, and tens, cut an egg carton down to ten cups. Place two objects in each cup and count by twos to find the total.
- Repeat the above activity with five objects, counting by fives to find the total; then repeat with ten objects in each cup.
- Count by twos starting at 3, and talk about that pattern. Count by twos from any number.

Helpful videos

View these short one-minute videos to see these ideas in action.

www.bit.ly/OI_2




Module II

Money

- Students use pennies to show the value of quarters and nickels and then figure out the number of these coins needed to represent one dollar.

11.9 Money: Relating all coins

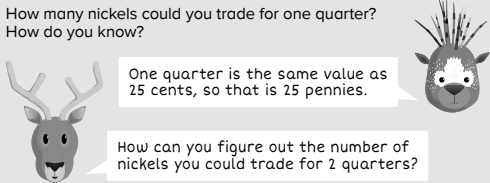
Step In Look at these coins.



What is the name of the small coin?
What is the name of the large coin?

How many pennies could you trade for one quarter?
How do you know?

How many nickels could you trade for one quarter?
How do you know?



One quarter is the same value as 25 cents, so that is 25 pennies.


How can you figure out the number of nickels you could trade for 2 quarters?

In this lesson, students explore the relationships between quarters, dimes, nickels, and pennies.


- Other coins are introduced, and by making change and paying with coins, students gain a stronger grasp on place-value concepts.

11.10 Money: Determining the value of a collection of coins

Step In Look at these pennies.





How many cents are there?
How do you know?





I counted by twos.
That is 10 cents.

How could you count these nickels to figure out the total value?

I counted by fives.
That is 60 cents.

How could you count these dimes to figure out the total value?

I counted by tens.
That is 80 cents.

In this lesson, students determine the value of coins and practice skip counting.

Ideas for Home

- Play with money with your child. Because our monetary system is base-10, ignore the decimal points in three-digit prices and use the numbers when comparing, adding, or subtracting (\$1.55 becomes 155 cents).
- Use only pennies and dimes, because these relate well to the ones (pennies) and tens (dimes) place values in our number system. For instance, pay \$2.95 by using 29 dimes, and 5 pennies. Your child can combine the quantities by place value similarly to using base-10 blocks.
- Nickels and quarters require more complicated thinking, so if you and your child want to use those, it is recommended that you begin with lesser prices.