

## Core Focus

- Subtraction: Two-digit numbers from three-digit numbers (decomposing tens and hundreds)
- Subtraction: Estimating to solve problems
- Time: Working with 5-minute intervals and quarter-past the hour

## Subtraction

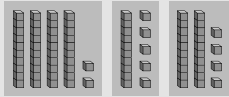
- In this module, students compose (put together) and decompose (break apart) numbers in many ways. E.g. 53 is 5 tens and 3 ones, or 4 tens and 13 ones.

**Composing** and **decomposing** are two of the most important ideas in mathematics at all levels, from elementary through to college.


**8.1 Subtraction: Composing and decomposing two-digit numbers**

**Step In** Look at these pictures of blocks.


What number does each picture show?



Imagine all the blocks were used to show one number.  
How could you figure out what number they would show?



I could add the tens then the ones. There are 7 tens and 11 ones.

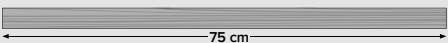


In this lesson, students regroup tens and ones blocks to explore ways to compose and decompose two-digit numbers.


- In real life, an exact answer is not always needed, and an estimate will do.
- To estimate  $48 + 23$ , students might think  $50 + 20 = 70$  (changing both addends to the closest ten). For a closer estimate, students might think  $50 + 23 = 73$  (changing only 48 to the closest ten).
- Students also use estimation strategies with mental subtraction. To estimate  $84 - 39$ , students might think  $84 - 40 = 44$ . This subtraction is easy to do mentally because the second number (40) is a multiple of 10. Changing the first number to a multiple of ten ( $80 - 39$ ) does not make the subtraction easier.

**8.5 Subtraction: Estimating to solve problems**

**Step In** Imagine you cut off 39 cm from this piece of wood.




What is an easy way to estimate the length of the piece left over?



39 is close to 40 so I just think  $75 - 40$ .

Imagine the full length is 45 cm and you cut off a piece that is 16 cm long.  
How would you estimate  $45 - 16$ ?



16 is close to 15, so I think  $45 - 15$  to make it easier.

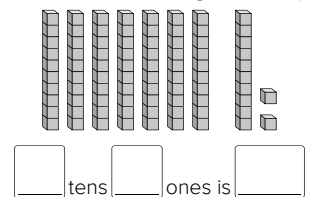
In this lesson, students explore efficient strategies to estimate the difference between two-digit numbers.

## Ideas for Home

- Children often want to find the exact answer to an addition or subtraction problem. After they solve a problem, encourage them to compare different estimates to the exact answer and discuss which estimates were closest and why. Ask, "When is it better to change both numbers to the closest ten, and when is it better to change only one number?"
- Tell your child about times when you estimate with addition and subtraction. Explain when it is important for you to have an exact answer (e.g. balancing the household budget), and when it is okay to have an estimate (e.g. thinking about how much money will be left after buying an item).

## Glossary

- ▶ **Decomposing** is breaking apart numbers by place value (e.g. 79 can be broken apart into 7 tens and 9 ones).
- ▶ **Composing** is putting numbers together by place value (e.g. 7 tens and 12 ones can be put together as 82, as shown in the image below).



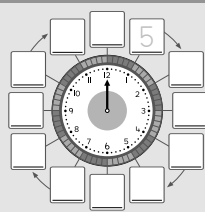
Time

- Students read times that are five-minute intervals past the hour, such as 8:25. They count the five-minute intervals to describe how far the minute hand has moved.
- It is important to understand the variety of ways in which we report times; e.g. for 3:10, we can say three ten, ten after three, or ten past three.


**8.9 Time: Identifying five-minute intervals**

**Step In** Count in steps of five around this clock.

Write the numbers you say.  
 What happens when you reach 12 on the clock?  
 How many minutes past the hour is a half-past time? How do you know?



How many minutes past the hour is this clock showing?  
 Which hour is it?  
 What time is the clock showing?  
 What is another way you could read this time?



In this lesson, students match various times to five-minute positions shown on an analog clock.

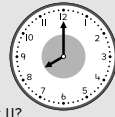
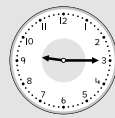
- Students see that “a quarter past 9” makes sense if they see a clock face as a circle, and 15 minutes is one-quarter of the circle.

**8.11 Time: Introducing quarter-past the hour**

**Step In** Look at this analog clock.


Where will the hands be pointing when the time is 11 o'clock? How do you know?  
 Where will the hands be pointing when the time is half past 11? How do you know?

How many minutes has the minute hand moved past the hour on this clock?  
 What are the different ways you could read or say the time shown on the clock?

Fifteen minutes past nine, nine fifteen, and quarter past nine.

How could you show the same time on this digital clock?  
 How do you know?




In this lesson, students read and write time as quarter past the hour on analog and digital clocks.

- Students identify and record time using a.m. and p.m.

**8.12 Time: Identifying and recording time using a.m. and p.m.**


**Step In** At what time does a day begin? What time does it end? How do you know?  
 What time is exactly in the middle of the day?

Look at the clock. What do you know about this time of the day?  
 How could you show the difference between 6 o'clock in the morning and 6 o'clock in the afternoon?



We write **a.m.** to describe times between midnight and noon.  
 We write **p.m.** to describe times between noon and midnight.

**a.m.** is short for **ante meridiem** which means **before midday**.  
**p.m.** is short for **post meridiem** which means **after midday**.



**Ideas for Home**

- Counting by fives while pointing to the numbers around the clock face is an easy activity to do with your child. It is the first step toward them being able to read times such as 2:05 and 4:35.
- Look up the start times and running times of movies. Help your child show where the hour and minute hands will be when the movie starts, and when it ends.