

## KEY CONCEPT OVERVIEW

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During the next week, our math class will continue working with place value strategies to build a deeper understanding of addition and subtraction to 100. We will learn **simplifying strategies** to develop fluency.

You can expect to see homework that asks your child to do the following:

- Add and subtract multiples of 10 to and from numbers to 100 (e.g.,  $84 - 20$ ).
- Use the **arrow way** or number bonds to add and subtract ones and tens to and from numbers to 100.
- Use a tape diagram to make a simpler problem. For example, to solve  $43 - 9$ , add 1 to each number to make an easier problem with the same difference:  $44 - 10 = 34$ . (See Sample Problem.)
- Use the RDW process to solve one- and two-step word problems.

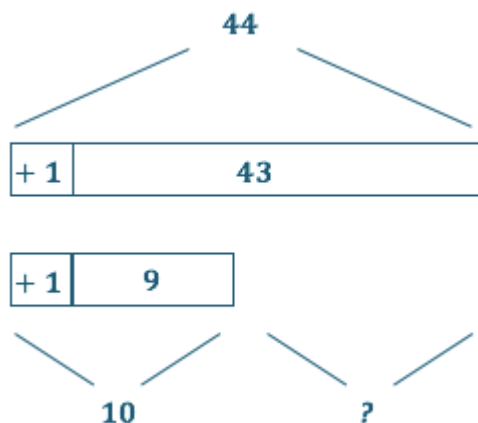
## SAMPLE PROBLEM (From Lesson 4)

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Solve. Draw and label a tape diagram to subtract 10, 20, 30, 40, and so on.

$$43 - 9 = 34$$

$$43 - 9 = 44 - 10 = 34$$



Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at [GreatMinds.org](https://www.GreatMinds.org).

## HOW YOU CAN HELP AT HOME


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- Practice place value understanding by asking your child to tell how many ones, tens, and hundreds are in various numbers. For example, you say, "134," and your child responds, "4 ones, 3 tens, 1 hundred."
- Invite your child to find the missing part to make the next ten. For example, ask, "How much does 7 need to make 10?" (3) Then say, "Tell me the number sentence." ( $7 + 3 = 10$ ) Continue with 17, 27, 37, and so on. Repeat this activity with other sequences, starting small and building to larger numbers up to 100.
- Play More/Less. For every number you say, ask your child to say the number that is 1 more, 1 less, 10 more, and 10 less.

**TERMS** 

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**Simplifying strategy:** A mental math or recorded method for making a problem simpler, such as using a number bond to make the next ten. (See example below.)

$$79 + 6 = 80 + 5 = 85$$


**MODELS** 

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**Arrow Way (Arrow Notation):** A simplifying strategy that allows students to record their mental math. This strategy is often used for getting to a “friendly” number that is easy to work with, such as a ten or a hundred.

$$91 \xrightarrow{+9} 100 \xrightarrow{+100} 200$$

## KEY CONCEPT OVERVIEW

During the next week, our math class will learn how to add vertically, with a focus on building lasting place value understanding. Grade 2 students are not expected to solve solely by using the **algorithm**. They will first learn how to model and record the steps of the **vertical form** by using **place value disks** on a place value chart. Then students will move on to drawings of place value disks and, later, the **chip model** to show place value concepts at work.

You can expect to see homework that asks your child to do the following:

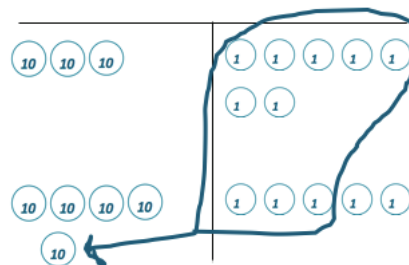
- Use a place value chart and place value disks to model and solve addition problems.
- Create simple place value disk and chip model drawings to solve addition problems in vertical form.
- Use place value understanding to solve word problems.

## SAMPLE PROBLEM (From Lesson 8)

Solve vertically. Draw and **bundle** place value disks on the place value chart.

$$37 + 45 = 82$$

$$\begin{array}{r} 37 \\ + 45 \\ \hline 82 \end{array}$$



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## HOW YOU CAN HELP AT HOME

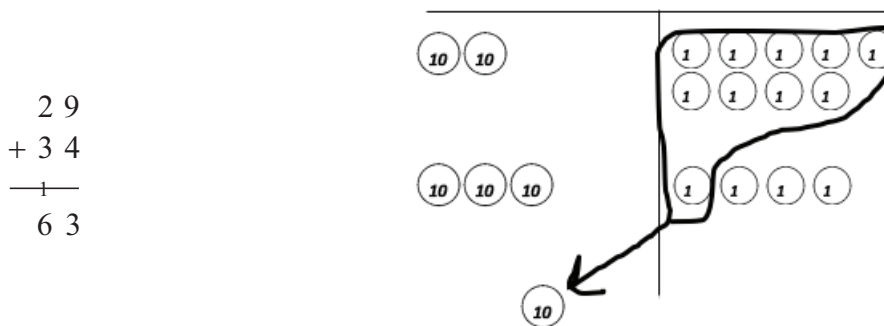
- Give your child a plastic bag to store the place value disks she will bring home after completing Lesson 6. Your child will need these disks for future lessons. You might also provide pennies, dimes, and dollar coins to represent ones, tens, and hundreds. You can use groups, or bundles, of straws or toothpicks for concrete visual support for homework in this topic, such as modeling word problems.
- Encourage your child to explain what she is doing when solving problems to reinforce place value language. For example, ask, “How did you know you needed (or didn’t need) to bundle in the ones place?” “I knew I needed to bundle in the ones place because 7 ones plus 5 ones equals 12 ones. That’s 1 ten 2 ones.”
- At a separate time away from homework, practice sequences of math problems that use the same pattern, starting with a problem your child can easily solve. For example, you might use the sequence  $9 + 3$ ,  $19 + 3$ ,  $29 + 3$ . Encourage your child to tell you what he noticed about the sequence of problems: “How did knowing  $9 + 3$  help with later problems?”

## TERMS

**Algorithm:** A step-by-step procedure used to solve a particular type of problem, usually recorded in vertical form. (See below.) In Grade 2, students may use the standard algorithm to solve two- and three-digit addition and subtraction problems.

$$\begin{array}{r} 67 \\ -41 \\ \hline 26 \end{array}$$

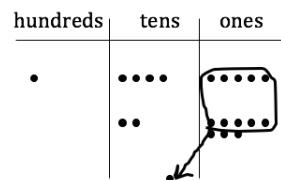
**Bundle/Unbundle:** To exchange smaller place value units for a larger place value unit (bundle) or a larger place value unit for smaller place value units (unbundle) when adding or subtracting. For example, you might exchange 10 ones for 1 ten or 1 ten for 10 ones.



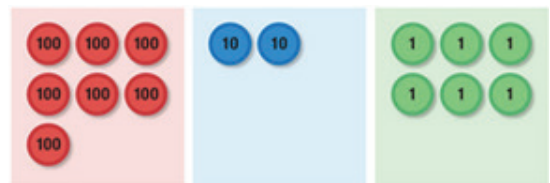
**Vertical form:** A way of adding and subtracting by lining up place value units vertically. (See Algorithm above.)

## MODELS

**Chip Model:** Drawings of dots in 5-groups that represent numbers on a place value chart. For example, the chip model at the right represents  $145 + 28$ .



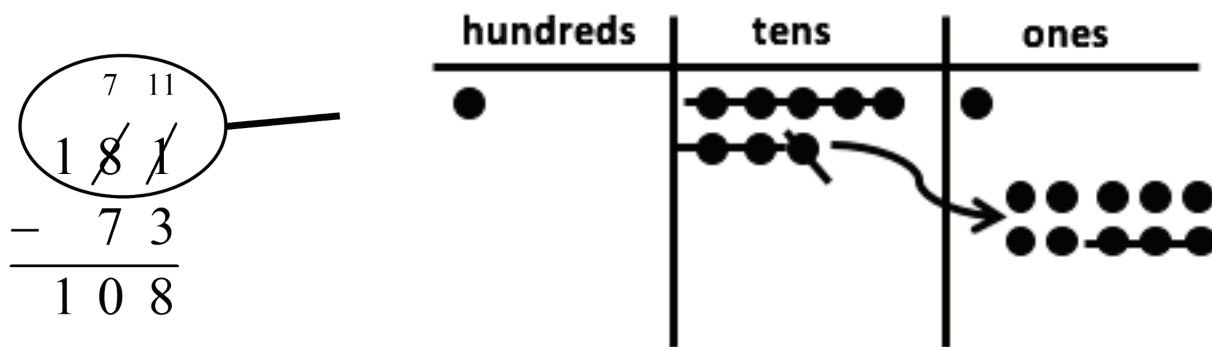
**Place Value Disks:** Circles, or disks, that have a value of 1, 10, or 100. (In later grades, disks may have a larger or smaller value, such as 1,000 or 0.1.)



## KEY CONCEPT OVERVIEW

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During the next week, our math class will learn to subtract vertically by aligning place value units, which is similar to last week's work with addition. Grade 2 students are not expected to solve solely by using the algorithm. To support understanding, we will work with place value disks and relate that model to the vertical form. Students will notice that when modeling subtraction, only the total is drawn or created since the part being subtracted is taken from the total. We will draw a magnifying glass around the total to help us “look closer” to see whether we have enough ones or tens to subtract.



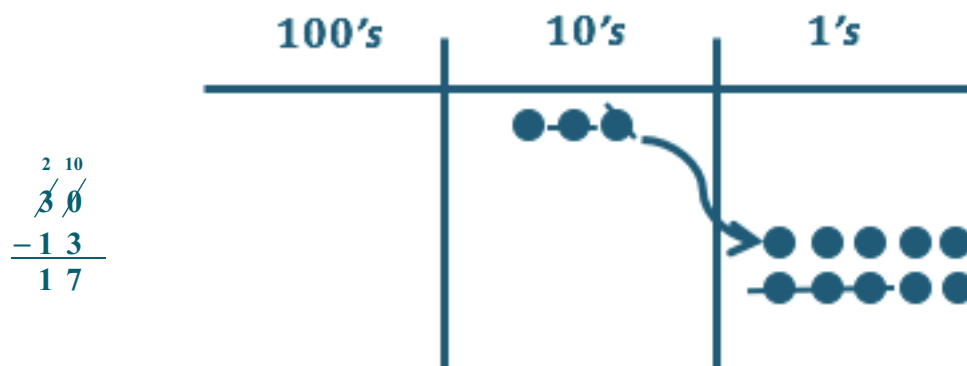
You can expect to see homework that asks your child to do the following:

- Use place value disks to model unbundling a ten to subtract.
- Write the subtraction problems in vertical form to solve.
- Model the subtraction process by using the chip model.
- Use the RDW process and tape diagrams to model word problems involving subtraction in varied situations.

**SAMPLE PROBLEM** *(From Lesson 13)*

Solve vertically. Draw a place value chart and chips to model the problem. Show how you change 1 ten for 10 ones when necessary.

$$30 - 13 = 17$$



Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at [GreatMinds.org](http://GreatMinds.org).

**HOW YOU CAN HELP AT HOME**

- Help your child practice knowing when and when not to unbundle a ten by playing Take from the Tens or Ones. For example, if you say, “46 – 5,” your child should say, “Take from the ones.” If you say, “46 – 7,” your child should say, “Take from the tens.”
- Encourage your child to explain what he is doing when solving problems to reinforce place value language. For example, to solve 46 – 7, your child might say, “First, I see that there are not enough ones to subtract in the ones place. So I need to change 1 ten for 10 ones. I had 6 ones, so now there are 16 ones!”
- Present everyday situations to help your child understand the idea of whether there is enough. For example, “Imagine you have 4 eggs in a carton. You need 6 eggs for your pancake mix. Do you have enough eggs to make pancakes?” (No.) “What might you do?” (Open a new carton of eggs!)

## KEY CONCEPT OVERVIEW

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During the next week, our math class will extend the learning from Topics A and B as we **compose**, or bundle, tens and hundreds when adding. We will learn how to use facts students know, such as  $5 + 8 = 13$  (5 ones + 8 ones = 13 ones), to solve more complex problems, such as  $50 + 80 = 130$  (5 tens + 8 tens = 13 tens). We will continue to use place value drawings to model composing tens and hundreds as we work with the vertical form.

You can expect to see homework that asks your child to do the following:

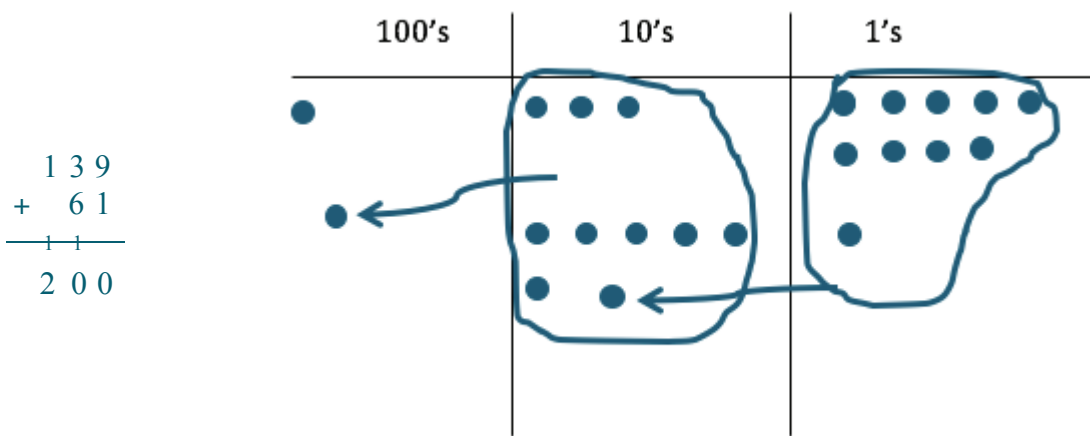
- Add ones to create units of ten, such as 9 ones + 4 ones = 1 ten 3 ones, and add tens to create units of hundreds, such as 9 tens + 4 tens = 1 hundred 3 tens.
- Use the arrow way to show making a new ten or a new hundred.
- Solve addition problems by bundling a group of 10 ones or 10 tens, using place value disks, the chip model, and the vertical form.
- Use the RDW process to solve word problems involving addition.

## SAMPLE PROBLEM (From Lesson 21)

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Solve vertically. Draw chips on the place value chart, and bundle when needed.

$$139 + 61 = 200$$



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**HOW YOU CAN HELP AT HOME** 

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- When your child sees a number that is close to the next ten (one that ends in 7, 8, or 9), suggest she use a simplifying strategy rather than the vertical form. For example, to solve  $58 + 63$ , ask your child, “How can you make the next ten to solve a simpler problem?” ( $60 + 61$ ).
- Practice basic addition and subtraction facts up to 20 with your child to help him build fluency. This fluency will help your child to solve two-digit addition problems. Challenge your child by putting the unknown number in different positions. For example,  $8 + \underline{\quad} = 12$  OR  $\underline{\quad} - 8 = 4$ .
- To reinforce place value understanding, encourage your child to use place value language when adding. For example, to solve  $23 + 54$ , instead of saying, “ $2 + 5 = 7$  and  $3 + 4 = 7$ ,” she should say, “2 tens + 5 tens = 7 tens, and 3 ones + 4 ones = 7 ones.”

**TERMS** 

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**Compose/Decompose:** To make (compose) or break apart (decompose) a number, a figure, or an array.

## KEY CONCEPT OVERVIEW

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During the next week, our math class will deepen our understanding of the repetitive nature of the subtraction algorithm. Students will unbundle 1 hundred for 10 tens and 1 ten for 10 ones when necessary. Through practice, students will discover that just as we asked, “Do I have enough ones?” we can ask, “Do I have enough tens?” The only difference is in place value.

You can expect to see homework that asks your child to do the following:

- Use number bonds to subtract from 100. (See Sample Problem.)
- Use place value disks, place value disk drawings, and the chip model to model and subtract from three-digit numbers.
- Use the RDW process to solve word problems involving subtraction.

## SAMPLE PROBLEM (From Lesson 23)

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Solve by using a number bond to subtract from 100.

$$\begin{array}{r} 115 - 80 = 35 \\ 115 - 80 = 35 \\ \begin{array}{c} \diagup \quad \diagdown \\ 15 \quad 100 \end{array} \\ 100 - 80 = 20 \\ 20 + 15 = 35 \end{array}$$

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at [GreatMinds.org](https://www.GreatMinds.org).

**HOW YOU CAN HELP AT HOME**

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- Use consistent language to help your child through the subtraction process. For example, to solve  $172 - 56$ , you might say, “Let’s look at the ones place first. Do you have enough ones to subtract 6 ones?” (No, because 6 ones are more than 2 ones.) “Where can you get more ones?” (From the tens place.) “Show what happens in the tens place.” (7 tens becomes 6 tens.) “How many ones do you have in the ones place now?” (12 ones.) Continue with, “Now, let’s look at the tens place. Do you have enough tens to subtract 5 tens?” (Yes, there are 6 tens.) And so on. Encourage your child to use place value language to respond, and have him record his work.
- Help your child to organize her place value disk or chip model drawings as neatly as possible, with dots or place value disks in 5-group formation. This will assist her in quickly seeing quantities and noticing whether there are enough ones or tens to subtract.
- Practice subtraction facts up to 20, and encourage your child to use simplifying strategies for any facts that he has trouble recalling. For example, to solve  $16 - 9$ , use the take from ten strategy: “I can break 16 into 10 and 6, and  $10 - 9 = 1$  and  $1 + 6 = 7$ , so  $16 - 9 = 7$ .”

## KEY CONCEPT OVERVIEW

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During the next few days, our math class will compare and discuss the various strategies students have learned for adding and subtracting up to 200. We will use place value language (ones, tens, hundreds) in describing each method. We will also learn about an addition method called **totals below**.

You can expect to see homework that asks your child to do the following:

- Add like units (e.g., add ones to ones and tens to tens) to solve three-digit addition problems by showing the totals below. (See Sample Problem.)
- Explain methods of solving addition and subtraction problems.
- Solve addition and subtraction problems in two different ways (e.g., totals below and the standard algorithm).
- Use the RDW process and tape diagrams to model and solve word problems.

## SAMPLE PROBLEM (From Lesson 29)

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Add like units and record the totals below.

$$\begin{array}{r} \phantom{+} \phantom{1} \phantom{6} \phantom{7} \\ + \phantom{1} \phantom{6} \phantom{7} \\ \hline \phantom{+} \phantom{1} \phantom{6} \phantom{7} \\ \phantom{+} \phantom{1} \phantom{6} \phantom{7} \\ + \phantom{1} \phantom{6} \phantom{7} \\ \hline \phantom{+} \phantom{1} \phantom{6} \phantom{7} \end{array}$$

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**HOW YOU CAN HELP AT HOME** 

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- Ask your child to use place value language (ones, tens, hundreds) to explain why the totals below method works.
- Ask your child to explain her thinking before beginning to write an explanation. If she is stuck, suggest using the words bundle (for addition) or unbundle (for subtraction) or the place value language of ones, tens, or hundreds to help explain.
- When a word problem asks your child to compare amounts, ask questions such as “Who has more?” to help your child move through the RDW process by identifying which bar in the tape diagram should be longer. Questions will also help him recognize that he is finding the difference.

**TERMS** 

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**Totals below:** A method for solving addition by using the vertical form, where the total of each place value is recorded below the line, and then all totals are added together.

$$\begin{array}{r}
 124 \\
 + 38 \\
 \hline
 12 \\
 50 \\
 + 100 \\
 \hline
 162
 \end{array}$$