Concept Mini Lessons | Add Decimals to the Hundredths

Progression of Mini Lesson Objectives

1 Add decimals by applying **fraction equivalence**.

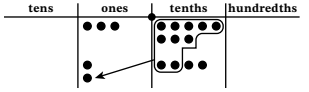
$$0.2 + 0.6 = 0.8$$

$$\frac{2}{10} + \frac{6}{10} = \frac{8}{10}$$

Start here if students

- **can** rename decimals in fraction form as tenths and hundredths and
- **can** add fractions with like denominators, but
- **need support** adding decimals.

2 Add decimals by using **place value drawings** and relate to a **written recording**.

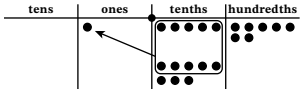


$$\begin{array}{r} 3.8 \\ +\ 1.4 \\ \hline 5.2 \end{array}$$

Start here if students

- **can** represent decimals on a place value chart and
- **can** add whole numbers by drawing on the place value chart and recording in vertical form, but
- **need support** adding decimals by drawing on the place value chart and recording in vertical form.

3 Add decimals with a **different number of digits**.



$$\begin{array}{r} 0.5\,7 \\ +\ 0.8 \\ \hline 1.3\,7 \end{array}$$

Start here if students

- **can** add decimals with the same number of digits by drawing on the place value chart and recording in vertical form, but
- **need support** adding decimals that have different numbers of digits.

4 Add decimals by using the **standard algorithm**.

$$\begin{array}{r} 0.6 \\ +\ 1.8 \\ \hline 2.4 \end{array}$$

Start here if students

- **can** add decimals by drawing on the place value chart and recording in vertical form and
- **can** add whole numbers by using the standard algorithm, but
- **need support** adding decimals by using the standard algorithm.

Objective 1 | Add decimals by applying fraction equivalence.

10 MINUTES

Summary

Students use what they know about the addition of fractions with like units to add decimals by renaming tenths and hundredths from decimal form into fraction form.

Materials

- Objective 1 Student Page

Distribute the Objective 1 Student Page. Direct students to problem 1: $0.2 + 0.6 = \_\_\_\_\_$.

Ask students to read the expression aloud in unit form.

2 tenths plus 6 tenths

We are adding tenths to tenths. We can rename the decimal numbers in fraction form to help us add. I can rename 0.2 as $\frac{2}{10}$ with 10 as the denominator because the unit is tenths. How can you rename 0.6 in fraction form?

We can rename it as $\frac{6}{10}$.

Guide students to record the addition equation in fraction form: $\frac{2}{10} + \frac{6}{10} = \_\_\_\_\_$.

I see that the two fractions have the same units, so I can ask myself, How many tenths is 2 tenths plus 6 tenths? What do you think?

8 tenths

$$0.2 + 0.6 = 0.8$$

$$\frac{2}{10} + \frac{6}{10} = \frac{8}{10}$$

There are 8 tenths in all.

Guide students to record $\frac{8}{10}$ to complete the addition equation in fraction form.

The sum is $\frac{8}{10}$. How can we rename that in decimal form? How do you know?

I know we can rename it as 0.8 with 8 in the tenths place because the unit is tenths.

Guide students to record 0.8 to complete problem 1.

We can add 2 tenths and 6 tenths in either decimal form or fraction form. Either way, we are adding units of tenths and the total is 8 tenths.

Teacher Tip

Consider recording the equation in unit form to reinforce the concept of adding like units: 2 tenths + 6 tenths = 8 tenths. Invite students to discuss the ways the equations are similar and different in fraction form, decimal form, and unit form.

Direct students to problem 2: $0.05 + 0.03 = \_\_\_\_\_$. Ask students to read the expression aloud in unit form.

5 hundredths plus 3 hundredths

Objective 1 | Add decimals by applying fraction equivalence.

10 MINUTES

How can we rewrite the expression in fraction form? How do you know?

I know we can rewrite the expression as $\frac{5}{100} + \frac{3}{100}$ because the unit is hundredths, so the denominator is 100.

Write $\frac{5}{100} + \frac{3}{100}$ as students do the same.

We rewrite the equation in fraction form with a denominator of 100 because the units are hundredths. What is the total?

$\frac{8}{100}$

Guide students to complete the equation in fraction form.

How can we complete the equation in decimal form? How do you know?

0.08 with 8 in the hundredths place; the unit is hundredths.

We can add tenths and hundredths in either decimal form or fraction form and find the sum.

Invite students to turn and talk about how renaming decimals in fraction form helps them add.

Repeat the process: Use the following problems during Concept Mini Lessons or at another time to provide additional practice as needed. Consider providing the Objective 1 Practice Helper and supporting students in using the worked-out example to guide their own work.

- 0.41 + 0.16
- 0.04 + 0.82

Analyze Student Progress

Monitor:

- Can the student rename the decimal as a fraction?
- Can the student find the total when adding like units?
- Can the student rename the sum in decimal form?

Questions to Advance Student Thinking:

- How can you rename the decimal as a fraction?
- What is the total number of tenths or hundredths?
- How can you rename the total in decimal form?

Plan Future Practice:

Use Practice Page 1 to support students who need additional practice. Structure the additional practice strategically to allow for teacher support or peer support.

Objective 2 | Add decimals by using place value drawings and relate to a written recording.

10 MINUTES

Summary

Students represent two decimal addends in a place value chart and add, composing new units as needed. They represent the addition in a vertical recording.

Materials

- Objective 2 Student Page

Distribute the Objective 2 Student Page. Direct students to problem 1: $3.8 + 1.4 =$ _____.

Let's use the place value chart to help us add these two decimal numbers and record vertically. What units do you see in both numbers?

Ones and tenths

Each number has a digit in the ones place and a digit in the tenths place. I see 3 ones and 8 tenths in the first addend. I can ask myself, How can I represent the addend on the place value chart? What do you think?

We could draw 3 dots in the ones place and 8 dots in the tenths place.

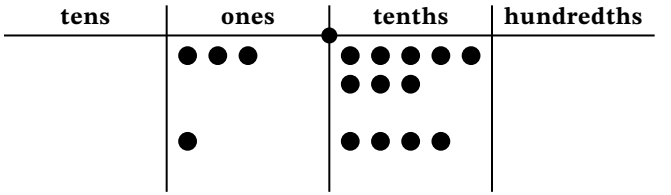
Language Support

Consider creating a visual that labels the addends and sum in an addition equation.

$3.8 + 1.4 = 5.2$

addends addends sum

Guide students to represent 3.8 on the place value chart with dots. Repeat the process to represent 1.4.



$$\begin{array}{r} 3.8 \\ +\ 1.4 \\ \hline \end{array}$$

Teacher Tip

Encourage students to draw dots on the place value chart in 5-groups to help students see the number of disks in each column without having to recount.

Let's record our work vertically and add by using the standard algorithm. How can you use units to record the addends correctly?

We can line up like units.

We can write ones on top of ones and tenths on top of tenths.

Record the problem vertically as students do the same. Ensure students align the digits correctly by place value.

Objective 2 | Add decimals by using place value drawings and relate to a written recording.

10 MINUTES

💬 **We can start by adding the smallest units and move to the larger units, just like we do when adding whole numbers with the standard algorithm.**

Point to the dots in the tenths column as you ask the following question.

💬 **What is 8 tenths + 4 tenths?**

12 tenths

💬 **8 tenths + 4 tenths = 12 tenths. I can ask myself, Do I have enough to compose a new unit? What do you think?**

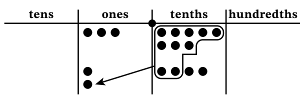
Yes. 10 tenths makes a new unit.

Yes. 12 tenths is 1 one and 2 tenths.

💬 **10 tenths equals 1 one. So 12 tenths is 1 one and 2 tenths.**

Guide students to circle 10 tenths, draw an arrow, and draw a new unit in the ones place. Encourage students to draw the new unit below the dots that are already in the ones column.

Point to units in the place value chart as you guide students to record adding the tenths and composing 1 one.



$$\begin{array}{r} 3.8 \\ +\ \underset{1}{1}.4 \\ \hline 5.2 \end{array}$$

💬 **Let's show our work in vertical form. 8 tenths + 4 tenths = 12 tenths. 12 tenths is 1 one and 2 tenths. We record 1 on the line in the ones place and 2 in the tenths place below the line.**

Teacher Tip

New groups below, or regrouping on the line instead of regrouping above the numbers, supports conceptual understanding. This notation keeps the digits in proximity to one another and helps reduce the likelihood of a student reversing the order of the digits when recording the regrouping, which is a common error.

Furthermore, when adding the digits in each column, students see and add the digits of the addends first and then add the regrouped 1 last instead of adding the regrouped 1 to an addend first and having to remember the sum before adding the other addend.

Record 1 one on the line in the ones place and 2 tenths below the line in vertical form. Have students do the same. Point to the ones place on the place value chart as you ask the following question.

💬 **How many ones are there in total?**

5 ones

Guide students to add the ones and to record 5 below the line in the ones column in vertical form.

💬 **Where do we write the decimal point in the answer?**

We write it between the ones and tenths place, or between 5 and 2.

Record the decimal point between 5 ones and 2 tenths as students do the same.

💬 **The sum is 5.2. We added the tenths, composed a new one, and added the ones.**

Invite students to turn and talk about how they can add decimals by drawing on the place value chart and recording in vertical form.

Objective 2 | Add decimals by using place value drawings and relate to a written recording.

10 MINUTES

Repeat the process: Use the following problems during Concept Mini Lessons or at another time to provide additional practice as needed. Consider providing the Objective 2 Practice Helper and supporting students in using the worked-out example to guide their own work.

- 0.16 + 0.25
- 1.39 + 1.72
- 5.62 + 5.63

Analyze Student Progress

Monitor:
- Can the student represent the addends on the place value chart?
- Can the student compose a new unit when necessary?
- Does the student correctly record the problem in vertical form?

Questions to Advance Student Thinking:
- How can you draw to represent both addends?
- Can you compose a new unit? If so, how can you show that in your drawing?
- How can you record your work and the total in vertical form?

Plan Future Practice:
Use Practice Page 2 to support students who need additional practice. Structure the additional practice strategically to allow for teacher support or peer support.

Notes

Objective 3 | Add decimals with a different number of digits.

10 MINUTES

Summary

Students use place value units and the place value chart to align decimal numbers correctly when using a vertical recording for addition.

Materials

- Objective 3 Student Page

Distribute the Objective 3 Student Page. Direct students to problem 1: $3 + 0.5 =$ _____.

How can you say the addition expression in unit form?

3 ones + 5 tenths

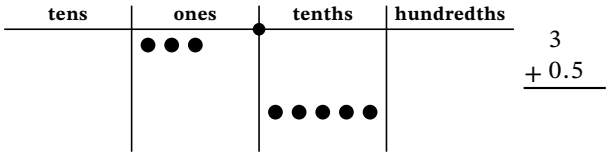
How can we represent 3 ones on the place value chart?

We can draw 3 dots in the ones column.

How can we represent 5 tenths on the place value chart?

We can draw 5 dots in the tenths column.

Draw to represent 3 ones and 5 tenths as students do the same.



Are 3 and 0.5 represented in the same column or in different columns on the place value chart?

Different columns

We represent 3 and 0.5 in different columns on the place value chart. As I get ready to record this problem vertically, I can ask myself, Where can I write 3 and 0.5 so the digits in the ones place are aligned? What do you think?

Write 3 over 0 in 0.5 because the ones place is to the left of the decimal point.

Guide students to record the problem vertically with the digits aligned correctly.

Teacher Tip

Consider supporting the vertical alignment of digits by recording 3 as 3.0. Refer to the place value chart, seeing 0 tenths in the tenths place when 3 is represented, to ensure the quantity is not changed when written as 3.0.

Now we can add by using the place value chart and the standard algorithm. Let's start in the tenths place.

Point to the tenths column on the place value chart and the vertical recording as you ask the following question.

What is 0 tenths + 5 tenths?

5 tenths

Record 5 in the tenths place in vertical form below the line. Have students do the same. Then point to the ones column in the place value chart and the vertical recording as you ask the following question.

Objective 3 | Add decimals with a different number of digits.

10 MINUTES

What is 3 ones + 0 ones?

3 ones

Write 3 in the ones place in vertical form below the line as students do the same.

Where do we write the decimal point in the sum?

Between the ones place and the tenths place

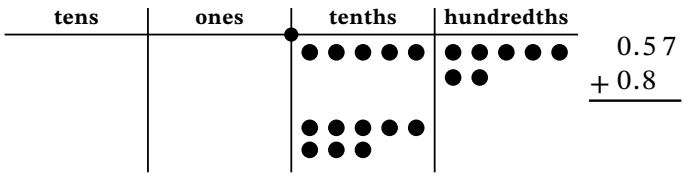
Write the decimal point between 3 ones and 5 tenths as students do the same.

We added the tenths and then added the ones. The sum is 3.5.

Ensure students have recorded the sum as 3.5.

Direct students to problem 2 on the Student Page: $0.57 + 0.8 =$ _____.

Ask students to draw dots to represent both addends on the place value chart.



How can we record each addend vertically? How do the units help us?

We need to line up the units. We record 8 under 5 because they are both tenths.

How does the place value chart drawing represent the addends?

There are 5 tenths 7 hundredths and 8 tenths to represent the addends, 0.57 and 0.8.

We lined up tenths with tenths and hundredths with hundredths in both the place value chart and the vertical recording. When we add with the standard algorithm, we add like units.

Point to the hundredths column on the place value chart and in vertical form as you ask the following question.

What is 7 hundredths + 0 hundredths?

7 hundredths

Record 7 below the line in the hundredths place in vertical form as students do the same.

What is 5 tenths + 8 tenths?

13 tenths

Can we make a new unit?

Yes. 13 tenths is 1 one and 3 tenths.

Direct students to represent making a new unit on the place value chart by circling 10 tenths, drawing an arrow, and drawing 1 one in the ones column.

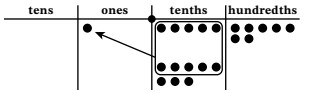
Objective 3 | Add decimals with a different number of digits.

10 MINUTES

How do we record 1 one and 3 tenths in vertical form?

Write 1 on the line in the ones place and write 3 in the tenths place

Record 1 on the line in the ones place and 3 below the line in the tenths place as students do the same.



$$\begin{array}{r} 0.57 \\ +\ 0.8 \\ \hline 1.37 \end{array}$$

What is 0 ones + 1 one?

1 one

Record 1 below the line in the ones place as students do the same.

Where do we write the decimal point in the answer?

Between the ones and tenths place, or between 1 and 3 tenths

Record the decimal point between 1 one and 3 tenths as students do the same.

What is the sum?

1.37

We used the place value chart and the standard algorithm to add each unit, starting with the smallest unit.

Invite students to turn and talk about how they can use the place value chart and the standard algorithm to add like units.

Repeat the process: Use the following problems during Concept Mini Lessons or at another time to provide additional practice as needed. Consider providing the Objective 3 Practice Helper and supporting students in using the worked-out example to guide their own work.

- $3.4 + 1.72$
- $0.6 + 4.77$

Analyze Student Progress

Monitor:

- Can the student represent the addends on the place value chart?
- Can the student compose a new unit when necessary?
- Does the student correctly record the problem in vertical form?

Questions to Advance Student Thinking:

- How can you draw to represent both addends?
- Can you compose a new unit? How do you show that in your drawing?
- How can you record your work and the total in vertical form?

Plan Future Practice:

Use Practice Page 3 to support students who need additional practice. Structure the additional practice strategically to allow for teacher support or peer support.

Objective 4 | Add decimals by using the standard algorithm.

10 MINUTES

Summary

Students use the standard algorithm to add decimal numbers.

Materials

- Objective 4 Student Page

Write $0.6 + 1.8$ in vertical form with the digits incorrectly aligned.

$$\begin{array}{r} 0.6 \\ +\ 1.8 \\ \hline \end{array}$$

Is this problem recorded correctly in vertical form? How do you know?

No. Tenths are above ones. We need to add like units.

The numbers are not lined up by place value units. To help us add like units, the digits in the same place value need to be lined up with each other.

Distribute the Objective 4 Student Page. Direct students to problem 1: $0.6 + 1.8 =$ _____.

Let's add these decimal numbers by using the standard algorithm. First, we need to record the addends in vertical form. I can ask myself, How do I record the problem vertically and line up like units? What do you think?

Line up 6 tenths over 8 tenths and 0 ones over 1 one.

6 tenths are lined up above 8 tenths because they are like units.

Guide students to write the problem vertically.

$$\begin{array}{r} 0.6 \\ +\ 1.8 \\ \hline 2.4 \\ {\scriptstyle 1} \end{array}$$

Teacher Tip

Consider writing the numbers in unit form to support aligning the digits correctly.

$$\begin{array}{r} 6 \text{ tenths} \\ +\ 1 \text{ one } 8 \text{ tenths} \\ \hline \end{array}$$

When adding by using the standard algorithm, what is the first step?

Add the smallest unit, the tenths.

Point to the tenths place as you ask the following question.

What is 6 tenths + 8 tenths?

14 tenths

Can we make a new unit?

Yes. 14 tenths is 1 one and 4 tenths.

How do we record 1 one and 4 tenths?

We write 1 on the line below the ones and 4 in the tenths place.

Record 1 on the line in the ones place and 4 below the line in the tenths place. Have students do the same.

Point to the ones place as you ask the following question.

What is 0 ones + 1 one + 1 one?

2 ones

Record 2 below the line in the ones place.

Objective 4 | Add decimals by using the standard algorithm.

10 MINUTES

Where do we write the decimal point?

Between the ones place and the tenths place

Record the decimal point between 2 ones and 4 tenths as students do the same.

What is the sum?

2.4

We lined up like units in the vertical recording. Then we added tenths, made a new unit, and added ones. The sum is 2.4.

Invite students to turn and talk about how to align like units when using the standard algorithm to add in vertical form.

Language Support

Consider providing a word bank to support student discussions. Include words and phrases such as *tenths*, *hundredths*, *standard algorithm*, *compose*, *like units*, and *decimal point*.

Repeat the process: Use the following problems during Concept Mini Lessons or at another time to provide additional practice as needed. Consider providing the Objective 4 Practice Helper and supporting students in using the worked-out example to guide their own work.

- 0.48 + 0.75
- 7.36 + 2.85
- 5.78 + 4

Analyze Student Progress

Monitor:

- Can the student align the units in vertical form?
- Does the student start by adding the smallest unit and then add each larger unit?
- Can the student compose a new unit when necessary?

Questions to Advance Student Thinking:

- How can you line up like units in vertical form?
- Which unit do you add first? Next?
- Can you compose a new unit? Where do you write the new unit?

Plan Future Practice:

Use Practice Page 4 to support students who need additional practice. Structure the additional practice strategically to allow for teacher support or peer support.

Answer Key

Objective 1

1. $\frac{2}{10} + \frac{6}{10} = \frac{8}{10}$; 0.8
2. $\frac{5}{100} + \frac{3}{100} = \frac{8}{100}$; 0.08
3. $\frac{41}{100} + \frac{16}{100} = \frac{57}{100}$; 0.57
4. $\frac{4}{100} + \frac{82}{100} = \frac{86}{100}$; 0.86

Objective 2

1. Completed place value chart; addition represented in vertical form; 5.2
2. Completed place value chart; addition represented in vertical form; 0.41
3. Completed place value chart; addition represented in vertical form; 3.11
4. Completed place value chart; addition represented in vertical form; 11.25

Objective 3

1. Completed place value chart; addition represented in vertical form; 3.5
2. Completed place value chart; addition represented in vertical form; 1.37
3. Completed place value chart; addition represented in vertical form; 5.12
4. Completed place value chart; addition represented in vertical form; 5.37

Objective 4

1. 2.4
2. 1.23
3. 10.21
4. 9.78

Observational Data Recording Sheet

Add Decimals to the Hundredths

Student	Objective 1	Objective 2	Objective 3	Objective 4

Observational Data Recording Sheet

Add Decimals to the Hundredths

Student	Objective 1	Objective 2	Objective 3	Objective 4

Student Edition | Printable pages for students

NAME _____ DATE _____

Objective 1 | Add decimals by applying fraction equivalence.

Add. Rename the decimals as fractions.

1 $0.2 + 0.6 =$ _____

2 $0.05 + 0.03 =$ _____

3 $0.41 + 0.16 =$ _____

4 $0.04 + 0.82 =$ _____

NAME _____ DATE _____

Objective 2 | Add decimals by using place value drawings and relate to a written recording.

Add. Use a place value drawing and write in vertical form.

1 $3.8 + 1.4 =$ _____

tens	ones	tenths	hundredths

2 $0.16 + 0.25 =$ _____

tens	ones	tenths	hundredths

3 $1.39 + 1.72 =$ _____

tens	ones	tenths	hundredths

4 $5.62 + 5.63 =$ _____

tens	ones	tenths	hundredths

NAME _____ DATE _____

Objective 3 | Add decimals with a different number of digits.

Add. Use a place value drawing and write in vertical form.

1 $3 + 0.5 =$ _____

tens	ones	tenths	hundredths

2 $0.57 + 0.8 =$ _____

tens	ones	tenths	hundredths

3 $3.4 + 1.72 =$ _____

tens	ones	tenths	hundredths

4 $0.6 + 4.77 =$ _____

tens	ones	tenths	hundredths

NAME _____ DATE _____

Objective 4 | Add decimals by using the standard algorithm.

Add. Use the standard algorithm.

1 $0.6 + 1.8 =$ _____

2 $0.48 + 0.75 =$ _____

3 $7.36 + 2.85 =$ _____

4 $5.78 + 4 =$ _____