LESSON 18: Add Mixed Fractions – Like Denominators

[OBJECTIVE]

The student will work with adding mixed fractions with like denominators.

[PREREQUISITE SKILLS]

adding fractions with like denominators

[MATERIALS]

Student pages **S172–S180**
Transparencies **T540, T542, T544, T546, T548, T550, and T552**
2 sets of overhead fraction strips
Fraction Kits 1–3
Colored pencils
Foldable from Lesson 15

[ESSENTIAL QUESTIONS]

1. How does building with concrete materials help our understanding of mixed fractions?
2. How does the use of pictures help our understanding of mixed fractions?
3. How can we add mixed fractions with like denominators?

[WORDS FOR WORD WALL]

improper fraction, mixed fraction, numerator, denominator, addends, sum, legal trade

[GROUPING]

Cooperative Pairs (CP), Whole Group (WG), Individual (I)
*For Cooperative Pairs (CP) activities, assign the roles of Partner A and Partner B to students. This allows each student to be responsible for designated tasks within the lesson.

[LEVELS OF TEACHER SUPPORT]

Modeling (M), Guided Practice (GP), Independent Practice (IP)

[MULTIPLE REPRESENTATIONS]

SOLVE, Verbal Description, Pictorial Representation, Concrete Representation, Graphic Organizer

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[WARM-UP] (5 minutes – IP, CP, WG) S172 (Answers on T539.)

- Have students turn to S172 in their books to begin the Warm-Up. Students will work with legal trading and adding fractions. Monitor students to see if any of them need help during the Warm-Up. Give students 3 minutes to complete the problems and then spend 2 minutes reviewing the answers as a class. **{Pictorial Representation, Concrete Representation, Verbal Description}**

[HOMEWORK] (5 minutes)

Take time to go over the homework from the previous night.

[LESSON] (60 minutes – M, GP, IP, I, WG, CP)

SOLVE Problem	**(3 minutes – GP, WG) T540, S173 (Answers on T541.)**

Have students turn to S173 in their books, and place T540 on the overhead. The first problem is a SOLVE problem. You are only going to complete the S step with students at this point. Tell students that during the lesson they will learn how to add mixed fractions. They will use this knowledge to complete this SOLVE problem at the end of the lesson. **{SOLVE, Graphic Organizer}**

| **Add Mixed Fractions – Concrete**	**(12 minutes – M, GP, IP, CP, WG) T540, S173 (Answers on T541.)**

7 minutes – M, GP, WG, CP: Have students work in partners. Each student will need Fraction Kits 1-3. Use two sets of overhead fraction strips and the following activity to help students investigate adding mixed fractions. Assign the roles of Partner A and Partner B to students. **{Concrete Representation, Graphic Organizer, Verbal Description}**

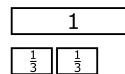
┌─────────────────── **MODELING** ───────────────────┐

Add Mixed Fractions – Concrete

Step 1: Direct students' attention to Problem 1. Ask the students in each pair to use both kits and work together to model $1\frac{1}{3}$ as shown below. Model on the overhead using the overhead fraction strips.

$$\boxed{1}$$
$$\boxed{\frac{1}{3}}$$
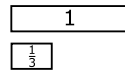
- Partner A, determine if the **denominator** in each fraction is the same. (Yes.) Record.

- Partner B, add $\frac{1}{3}$ to the model as shown below. Explain that after adding $\frac{1}{3}$ the model shows the **mixed fraction** $1\frac{2}{3}$. Have students record this **sum** under Problem 1.

$$\boxed{1}$$
$$\boxed{\frac{1}{3}}\ \boxed{\frac{1}{3}}$$

Step 2: Direct students' attention to Problem 2. Ask the students in each pair to use both kits and work together to show $1\frac{1}{6}$ as shown below. Model on the overhead using the overhead fraction strips.
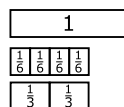
$$\boxed{1}$$
$$\boxed{\frac{1}{6}}$$
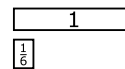
- Partner A, determine if the denominators in the problem are the same. (Yes.) Record.

- Partner B, add $\frac{3}{6}$ to the model as shown below.

$$\boxed{1}$$
$$\boxed{\frac{1}{6}}\boxed{\frac{1}{6}}\boxed{\frac{1}{6}}\boxed{\frac{1}{6}}$$
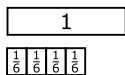
- What is the sum? ($1\frac{4}{6}$) Record.

Model with students how to make a **legal trade** from $\frac{4}{6}$ to $\frac{2}{3}$ and record the simplified sum of $1\frac{2}{3}$ for Problem 2.

$$\boxed{1}$$
$$\boxed{\frac{1}{6}}\boxed{\frac{1}{6}}\boxed{\frac{1}{6}}\boxed{\frac{1}{6}}$$
$$\boxed{\frac{1}{3}}\ \boxed{\frac{1}{3}}$$

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3 minutes – IP, CP: Have students complete Problems 3–4 on S173 with a partner using their fraction kits. **{Concrete Representation, Verbal Description, Graphic Organizer}**

2 minutes – WG: Have students come back together as a class and share their results. They should be able to justify their sums using fraction strips. **{Concrete Representation, Verbal Description, Graphic Organizer}**

Add Mixed Fractions – Concrete to Pictorial   **(12 minutes – M, GP, IP WG, CP)**
T542, T544, S174, S175 (Answers on T543, T545.)

7 minutes – M, GP, CP, WG: Have students turn to S174 in their books, and place T542 on the overhead. Pass out the colored pencils. Have students continue to work in partners. Each partner will need all three of their fraction kits. Use two sets of overhead fraction strips and the following activity to help students investigate adding mixed fractions pictorially. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

─────────────── **MODELING** ───────────────

**Add Mixed Fractions – Concrete to Pictorial**

Step 1: Direct students' attention to Problem 1. Model how to build $1\frac{1}{8} + \frac{2}{8}$ using the fraction strips, as students build with their partners. Shade in $1\frac{1}{8}$ on the first two fraction bars, using blue for the whole and red for the eighths, as students shade. Shade $\frac{2}{8}$ on the third fraction strip in red, as students shade.


Step 2: • Partner A, determine if the mixed fraction and the fraction have a common denominator. (Yes.) Have students model how to legally trade the whole unit strip for eighths as you model on the overhead. Then, model how to pictorially trade each of the fraction strips in the problem for eighths by drawing lines to divide the first strip into eighths as shown below.

• Partner B, identify the **improper fraction** that was created. $\left(\frac{9}{8}\right)$ Record the improper fraction and then record the number sentence using the improper fraction. $\left(\frac{9}{8} + \frac{2}{8}\right)$
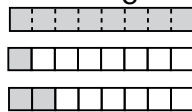
Step 3: • Partner A, identify the number of shaded eighths to determine the sum. $\left(\frac{11}{8}\right)$ Record. Model how to change the improper fraction to a mixed fraction using the fraction strips and then have students shade the last two fraction strips in the problem as shown below to represent the sum as a mixed fraction. The fourth strip should be solidly shaded to represent 1 whole, and the bottom strip will need to be divided into eighths with 3 eighths shaded.
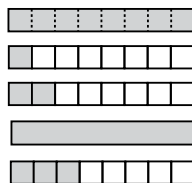
Point out that the fraction is in simplest form. Have students write the answer in the bottom box.

3 minutes – IP, CP: Have students complete Problems 2–4 on S174–S175 in partners. Students may use their fraction strips. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

2 minutes – WG: Have students come back together as a class and share their results. They should be able to justify their sums using fraction strips. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

| **Add Mixed Fractions – Pictorial to Abstract**	**(10 minutes – M, GP, IP, WG, CP)**
	T546, S176 (Answers on T547.)

5 minutes – M, GP, WG, CP: Have students turn to S176 in their books, and place T546 on the overhead. Have students continue to work in partners. Each partner will need to share his/her fraction kits. Use two sets of overhead fraction strips and the following activity to help students investigate adding fractions and mixed fractions, moving from the pictorial to the abstract. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

MODELING

Add Mixed Fractions – Pictorial to Abstract

Step 1: Direct students' attention to Problem 1.

- Partner A, build $1\frac{2}{10}$ with the fraction strips.
- Partner B, build $\frac{7}{10}$ with the fraction strips.

Draw a picture of the concrete model under Problem 1 as students draw on S176.
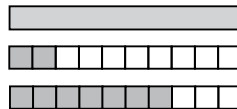
Step 2: Model how to change the mixed fraction to an improper fraction by dividing the whole unit strip into 10 sections. Record in the second column. Model how to change the improper fraction result $\left(\frac{19}{10}\right)$ to a mixed fraction and have students draw the mixed fraction model in the third column next to Problem 1 as shown below. $\left(1\frac{9}{10}\right)$ Then, write the problem numerically in the last column.

LESSON 18: Add Mixed Fractions – Like Denominators

Step 3: Direct students' attention to Problem 2. Complete Problem 2 with students without using concrete models. Tell students that this problem has two mixed fractions, rather than one mixed fraction and a fraction.

Draw a picture to represent both mixed fraction **addends** in column 1, as shown below, as students record: $1\frac{5}{12} + 2\frac{6}{12}$

Step 4: Model how to draw the legal trades for both mixed fraction addends, as shown below, and have students draw the trades in the second column.
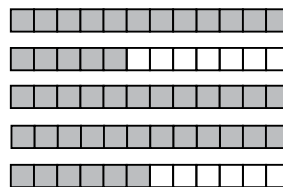
In the third column, model how to change the improper fraction result $\left(\frac{47}{12}\right)$ to a mixed fraction as shown below. $\left(3\frac{11}{12}\right)$ Then, write the problem numerically in the last column as students record.
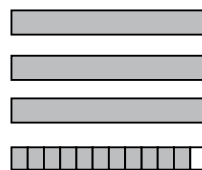
3 minutes – CP, IP: Have students complete Problem 3 on S176 in partners. Students may use their fraction strips as needed. **{Concrete Representation, Verbal Description, Pictorial Representation, Graphic Organizer}**

2 minutes – WG: Have students come back together as a class and share their results. They should be able to justify their sums using fraction strips. **{Concrete Representation, Verbal Description, Pictorial Representation, Graphic Organizer}**

Add Mixed Fractions Without Models	**(11 minutes – M, GP, IP, WG, CP)**
	T548, S177 (Answers on T549.)

6 minutes – M, GP, CP, WG: Have students turn to S177 in their books, and place T548 on the overhead. Use the following activity to help students add mixed fractions with like denominators without models. Some students may need to draw pictures. **{Verbal Description, Graphic Organizer}**

MODELING
Add Mixed Fractions Without Models

Step 1: Direct students' attention to Problem 1.

- Partner A, determine if the fractions have a common denominator. (Yes.) Record.

- Partner B, explain how to change the mixed fraction to an improper fraction. (Use the fraction strips if students need clarification.) Have students write the mixed fraction as an improper fraction. Record.

- Partner A, determine the sum by adding the **numerator** of each fraction. $\left(\frac{15}{8}\right)$ Have students write the number sentence using improper fractions. Then, have students rewrite the improper fraction sum as a mixed fraction. $\left(1\frac{7}{8}\right)$ Record.

- Partner B, determine if we can simplify this fraction. (No.)

Step 2: Direct students' attention to Problem 2.

- Partner A, determine if the fractions have a common denominator. (Yes.) Record.

- Partner B, explain how to write the mixed fractions as improper fractions. $\left(\frac{10}{6}, \frac{7}{6}\right)$ Record.

- Partner A, determine the sum. $\left(\frac{17}{6}\right)$ Record. Have students write the number sentence using improper fractions. Then, have students rewrite the improper fraction sum as a mixed fraction. $\left(2\frac{5}{6}\right)$ Record.

- Partner B, determine if we can simplify this fraction. (No.)

3 minutes – IP, CP:	Have students complete Problems 3–6 on S177 in partners. Students may use their fraction strips to check or legally trade the solutions for fraction strips in other colors. **{Verbal Description, Graphic Organizer}**
2 minutes – WG:	Have students come back together as a class and share their results. They should be able to justify their sums using pictorial models. **{Verbal Description, Graphic Organizer}**

Fraction Foldable	**(5 minutes – M, GP, WG)**

Use the following activity to help students continue to add to the fraction foldable. **{Verbal Description, Graphic Organizer}**

MODELING

Fraction Foldable

Step 1: Have students take out their fraction foldables.

Step 2: Create a transparency to model for students what should be written on each page.

Step 3: On page 4 of the Fractions foldable, model for the students how to label the section – Add Mixed Fractions with Like Denominators. Discuss with students what they have to do to add mixed numbers with like denominators, and then write on the appropriate section. Use your foldable to reference what you want written in the student foldable.

SOLVE Problem	**(5 minutes – GP, WG) T550, S178 (Answers on T551.)**

Remind students that the SOLVE problem is the same one from the beginning of the lesson. Complete the SOLVE problem with your students. Ask them for possible connections from the SOLVE problem to the lesson. (Students will be working with addition of mixed fractions.) **{SOLVE, Verbal Description, Graphic Organizer}**

If time permits…	**(10 minutes – IP, I) T552, S179 (Answers on T553.)**

Have students complete Problems 1–10 on S179.

[Closure] (2 minutes)

To wrap up the lesson, go back to the essential questions and discuss them with students.

- How does building with concrete materials help our understanding of mixed fractions? *(Using concrete materials helps us see and touch the fractions.)*
- How does the use of pictures help our understanding of mixed fractions? *(Using pictures helps us see the fractions.)*
- How can we add mixed fractions with like denominators? *(Change mixed fractions to improper fractions, find the sum, and then change the sum into a mixed fraction. Simplify if needed.)*

[Homework] Assign S180 for homework. (Answers on T554.)

[Quiz Answers] T555–T556
1. **D**   2. **C**   3. **C**   4. **A**   5. **C**   6. **D**   7. **D**   8. **A**   9. **B**   10. **C**

The quiz can be used at any time as extra homework or to see how students progress on the skill of adding mixed fractions.

Here is the key to **S172.**

Warm–Up

Directions: Work with your partner to find legal trades for the fraction strips below. Use your fraction kits and draw the legal trades.

1.

LEGAL TRADE

Answers will vary.

2.

Directions: Add the following fractions.

3. $\frac{1}{3} + \frac{2}{3} = \frac{3}{3} = 1$

4. $\frac{6}{10} + \frac{3}{10} = \frac{9}{10}$

TRANSPARENCY MASTER for S173

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Aria's father is laying tile in their new kitchen. The length of one side of the room is 17 feet. Each of the tiles has a length of $1\frac{5}{12}$ feet. What is the length of two tiles placed together?

S Underline the question.
This problem is asking me to find _____

_____.

Directions: Complete this page with your teacher and partner.

1.

Problem: $1\frac{1}{3} + \frac{1}{3}$

↓

Think about this:

Are the denominators the same?

↓

What is the sum in simplest form?

2.

Problem: $1\frac{1}{6} + \frac{3}{6}$

↓

Think about this:

Are the denominators the same?

↓

What is the sum in simplest form?

3.

Problem: $2\frac{1}{4} + \frac{2}{4}$

↓

Think about this:

Are the denominators the same?

↓

What is the sum in simplest form?

4.

Problem: $3\frac{2}{5} + \frac{1}{5}$

↓

Think about this:

Are the denominators the same?

↓

What is the sum in simplest form?

Here is the key to **S173**.

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Aria's father is laying tile in their new kitchen. The length of one side of the room is 17 feet. Each of the tiles has a length of $1\frac{5}{12}$ feet. <u>What is the length of two tiles placed together?</u>

S Underline the question.
This problem is asking me to find **the total length when two tiles are placed together.**

Directions: Complete this page with your teacher and partner.

1.

Problem: $1\frac{1}{3} + \frac{1}{3}$

↓

Think about this:

Are the denominators the same?
Yes

↓

What is the sum in simplest form?
$1\frac{2}{3}$

2.

Problem: $1\frac{1}{6} + \frac{3}{6}$

↓

Think about this:

Are the denominators the same?
Yes

↓

What is the sum in simplest form?
$1\frac{4}{6} = 1\frac{2}{3}$

3.

Problem: $2\frac{1}{4} + \frac{2}{4}$

↓

Think about this:

Are the denominators the same?
Yes

↓

What is the sum in simplest form?
$2\frac{3}{4}$

4.

Problem: $3\frac{2}{5} + \frac{1}{5}$

↓

Think about this:

Are the denominators the same?
Yes

↓

What is the sum in simplest form?
$3\frac{3}{5}$

TRANSPARENCY MASTER for S174

Directions: Complete this page with your teacher and partner.

1.

Problem: $1\frac{1}{8} + \frac{2}{8} =$

Mixed fraction to improper fraction

Rewrite number sentence and add.

Is the sum an improper fraction?

Change to mixed fraction.

Simplify.

2.

Problem: $1\frac{2}{4} + \frac{1}{4} =$

Mixed fraction to improper fraction

Rewrite number sentence and add.

Is the sum an improper fraction?

Change to mixed fraction.

Simplify.

LESSON 18: Add Mixed Fractions – Like Denominators

Here is the key to **S174.**

Directions: Complete this page with your teacher and partner.

1.

Problem: $1\frac{1}{8} + \frac{2}{8} = \mathbf{1\frac{3}{8}}$

Mixed fraction to improper fraction
$\frac{9}{8}$

Rewrite number sentence and add.
$\frac{9}{8} + \frac{2}{8} = \frac{11}{8}$

Is the sum an improper fraction?
Yes
Change to mixed fraction. $\mathbf{1\frac{3}{8}}$

Simplify.
$\mathbf{1\frac{3}{8}}$

2.

Problem: $1\frac{2}{4} + \frac{1}{4} = \mathbf{1\frac{3}{4}}$

Mixed fraction to improper fraction
$\frac{6}{4}$

Rewrite number sentence and add.
$\frac{6}{4} + \frac{1}{4} = \frac{7}{4}$

Is the sum an improper fraction?
Yes
Change to mixed fraction. $\mathbf{1\frac{3}{4}}$

Simplify.
$\mathbf{1\frac{3}{4}}$

TRANSPARENCY MASTER for S175

Directions: Complete this page with your partner.

3.

Problem: $1\frac{1}{6} + \frac{4}{6} =$

↓

| Mixed fraction to improper fraction |

↓

| Rewrite number sentence and add. |

↓

| Is the sum an improper fraction? |
| Change to mixed fraction. |

↓

| Simplify. |

4.

Problem: $1\frac{3}{10} + \frac{3}{10} =$

↓

| Mixed fraction to improper fraction |

↓

| Rewrite number sentence and add. |

↓

| Is the sum an improper fraction? |
| Change to mixed fraction. |

↓

| Simplify. |

Here is the key to **S175.**

Directions: Complete this page with your partner.

3.

Problem: $1\frac{1}{6} + \frac{4}{6} = \mathbf{1\frac{5}{6}}$

Mixed fraction to improper fraction
$\frac{7}{6}$

Rewrite number sentence and add.
$\frac{7}{6} + \frac{4}{6} = \frac{11}{6}$

Is the sum an improper fraction?
Yes

Change to mixed fraction. $\mathbf{1\frac{5}{6}}$

Simplify.
$1\frac{5}{6}$

4.

Problem: $1\frac{3}{10} + \frac{3}{10} = \mathbf{1\frac{6}{10}} = \mathbf{1\frac{3}{5}}$

Mixed fraction to improper fraction
$\frac{13}{10}$

Rewrite number sentence and add.
$\frac{13}{10} + \frac{3}{10} = \frac{16}{10}$

Is the sum an improper fraction?
Yes

Change to mixed fraction. $\mathbf{1\frac{6}{10}}$

Simplify.
$1\frac{6}{10} = 1\frac{3}{5}$

TRANSPARENCY MASTER for S176
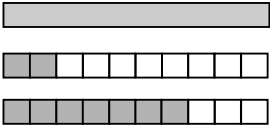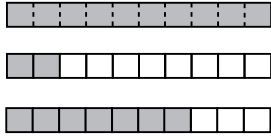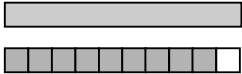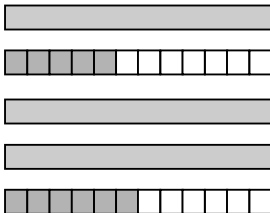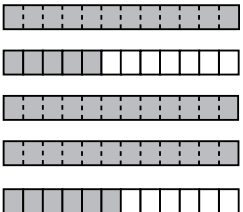
Directions: Complete this page with your teacher and partner.

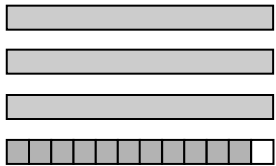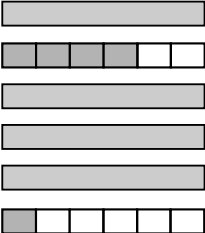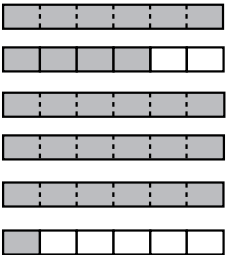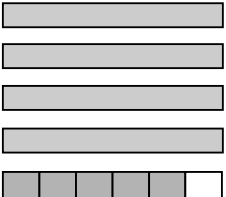| Draw your problem.	Legally trade, if needed, changing mixed fraction(s) to improper fractions with common denominators and add.	Change improper fraction to mixed fraction sum.	Write numerically what you have in the previous column.
1. $1\frac{2}{10} + \frac{7}{10} =$			
2. $1\frac{5}{12} + 2\frac{6}{12} =$			
3. $1\frac{4}{6} + 3\frac{1}{6} =$			

Here is the key to **S176**.

Directions: Complete this page with your teacher and partner.

Draw your problem.	Legally trade, if needed, changing mixed fraction(s) to improper fractions with common denominators and add.	Change improper fraction to mixed fraction sum.	Write numerically what you have in the previous column.
1. $1\frac{2}{10} + \frac{7}{10} =$			$1\frac{2}{10} + \frac{7}{10} =$ $\frac{12}{10} + \frac{7}{10} = \frac{19}{10} = 1\frac{9}{10}$
2. $1\frac{5}{12} + 2\frac{6}{12} =$			$1\frac{5}{12} + 2\frac{6}{12} =$ $\frac{17}{12} + \frac{30}{12} = \frac{47}{12} = 3\frac{11}{12}$
3. $1\frac{4}{6} + 3\frac{1}{6} =$			$1\frac{4}{6} + 3\frac{1}{6} =$ $\frac{10}{6} + \frac{19}{6} =$ $\frac{29}{6} = 4\frac{5}{6}$

TRANSPARENCY MASTER for S177

Directions: Complete this page with your teacher and partner.

1. $1\frac{3}{8}$ $+ \ \frac{4}{8}$ ――― Are denominators common? Addends as improper fractions: Rewrite number sentence and sum as improper fraction and mixed fraction:	**4.** $2\frac{1}{3} + 1\frac{1}{3}$ Are denominators common? Addends as improper fractions: Rewrite number sentence and sum as improper fraction and mixed fraction:
2. $1\frac{4}{6} + 1\frac{1}{6}$ Are denominators common? Addends as improper fractions: Rewrite number sentence and sum as improper fraction and mixed fraction:	**5.** $3\frac{1}{10} + 2\frac{5}{10}$ Are denominators common? Addends as improper fractions: Rewrite number sentence and sum as improper fraction and mixed fraction:
3. $1\frac{2}{12}$ $+ \ 2\frac{3}{12}$ ――― Are denominators common? Addends as improper fractions: Rewrite number sentence and sum as improper fraction and mixed fraction:	**6.** $4\frac{3}{5}$ $+ \ 1\frac{1}{5}$ ――― Are denominators common? Addends as improper fractions: Rewrite number sentence and sum as improper fraction and mixed fraction:

Here is the key to **S177**.

Directions: Complete this page with your teacher and partner.

1. $1\frac{3}{8} = \frac{11}{8}$ $+ \frac{4}{8} = \frac{4}{8}$ Are denominators common? **Yes** Addends as improper fractions: $\frac{11}{8}$ Rewrite number sentence and sum as improper fraction and mixed fraction: $\frac{11}{8} + \frac{4}{8} = \frac{15}{8} = 1\frac{7}{8}$	**4.** $2\frac{1}{3} + 1\frac{1}{3}$ $\frac{7}{3} + \frac{4}{3}$ Are denominators common? **Yes** Addends as improper fractions: $\frac{7}{3}, \frac{4}{3}$ Rewrite number sentence and sum as improper fraction and mixed fraction: $\frac{7}{3} + \frac{4}{3} = \frac{11}{3} = 3\frac{2}{3}$
2. $1\frac{4}{6} + 1\frac{1}{6}$ $\frac{10}{6} + \frac{7}{6}$ Are denominators common? **Yes** Addends as improper fractions: $\frac{10}{6}, \frac{7}{6}$ Rewrite number sentence and sum as improper fraction and mixed fraction: $\frac{10}{6} + \frac{7}{6} = \frac{17}{6} = 2\frac{5}{6}$	**5.** $3\frac{1}{10} + 2\frac{5}{10}$ $\frac{31}{10} + \frac{25}{10}$ Are denominators common? **Yes** Addends as improper fractions: $\frac{31}{10}, \frac{25}{10}$ Rewrite number sentence and sum as improper fraction and mixed fraction: $\frac{31}{10} + \frac{25}{10} = \frac{56}{10} = 5\frac{6}{10} = 5\frac{3}{5}$
3. $1\frac{2}{12} = \frac{14}{12}$ $+ 2\frac{3}{12} = \frac{27}{12}$ Are denominators common? **Yes** Addends as improper fractions: $\frac{14}{12}, \frac{27}{12}$ Rewrite number sentence and sum as improper fraction and mixed fraction: $\frac{14}{12} + \frac{27}{12} = \frac{41}{12} = 3\frac{5}{12}$	**6.** $4\frac{3}{5} = \frac{23}{5}$ $+ 1\frac{1}{5} = \frac{6}{5}$ Are denominators common? **Yes** Addends as improper fractions: $\frac{23}{5}, \frac{6}{5}$ Rewrite number sentence and sum as improper fraction and mixed fraction: $\frac{23}{5} + \frac{6}{5} = \frac{29}{5} = 5\frac{4}{5}$

TRANSPARENCY MASTER for S178

Directions: Complete the following SOLVE problem with your teacher.

Aria's father is laying tile in their new kitchen. The length of one side of the room is 17 feet. Each of the tiles has a length of $1\frac{5}{12}$ feet. What is the length of two tiles placed together?

S Underline the question.
This problem is asking me to find _____

_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Choose an operation or operations.
Write in words what your plan of action will be.

V Estimate your answer.
Carry out your plan.

E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)

Write your answer in a complete sentence.

Here is the key to **S178**.

Directions: Complete the following SOLVE problem with your teacher.

~~Aria's father is laying tile in their new kitchen.~~ | ~~The length of one side of the room is 17 feet.~~ | Each of the tiles has a length of $1\frac{5}{12}$ feet. | <u>What is the length of two tiles placed together?</u>

S Underline the question.
This problem is asking me to find **the total length when two tiles are placed together.**

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts. **Length of one tile – $1\frac{5}{12}$ feet, used two tiles**

L Choose an operation or operations. **Addition**

Write in words what your plan of action will be. **Change the length of the tiles to improper fractions and add. Change the improper fraction sum to a mixed fraction and simplify**.

V Estimate your answer. **About 3 feet**

Carry out your plan. $1\frac{5}{12} = \frac{17}{12}$

$\frac{17}{12} + \frac{17}{12} = \frac{34}{12} = 2\frac{10}{12} = 2\frac{5}{6}$ **feet**

E Does your answer make sense? (Compare your answer to the question.) **Yes, because we are looking for the length of two tiles placed together.**

Is your answer reasonable? (Compare your answer to the estimate.) **Yes, because it is close to our estimate of about 3 feet.**

Is your answer accurate? (Check your work.) **Yes**.

Write your answer in a complete sentence. **The length of both tiles is $2\frac{5}{6}$ feet**.

TRANSPARENCY MASTER for S179

Directions: Complete each fraction and mixed fraction problem. Simplify all sums.

1. $2\frac{3}{10} + 1\frac{2}{10} =$

2. $4\frac{2}{4} + 1\frac{1}{4} =$

3. $2\frac{1}{3} + \frac{1}{3} =$

4. $3\frac{5}{8} + 1\frac{1}{8} =$

5. $2\frac{6}{10} + \frac{2}{10} =$

6. $4\frac{7}{10} + 1\frac{9}{10} =$

7. $3\frac{1}{2} + \frac{1}{2} =$

8. $1\frac{1}{6} + 2\frac{4}{6} =$

9. $2\frac{3}{8} + 4\frac{4}{8} =$

10. $2\frac{7}{12} + 3\frac{2}{12} =$

Here is the key to **S179**.

Directions: Complete each fraction and mixed fraction problem. Simplify all sums.

1. $2\frac{3}{10} + 1\frac{2}{10} = \mathbf{3\frac{1}{2}}$

2. $4\frac{2}{4} + 1\frac{1}{4} = \mathbf{5\frac{3}{4}}$

3. $2\frac{1}{3} + \frac{1}{3} = \mathbf{2\frac{2}{3}}$

4. $3\frac{5}{8} + 1\frac{1}{8} = \mathbf{4\frac{6}{8}} = \mathbf{4\frac{3}{4}}$

5. $2\frac{6}{10} + \frac{2}{10} = \mathbf{2\frac{8}{10}} = \mathbf{2\frac{4}{5}}$

6. $4\frac{7}{10} + 1\frac{9}{10} = \mathbf{6\frac{6}{10}} = \mathbf{6\frac{3}{5}}$

7. $3\frac{1}{2} + \frac{1}{2} = \mathbf{4}$

8. $1\frac{1}{6} + 2\frac{4}{6} = \mathbf{3\frac{5}{6}}$

9. $2\frac{3}{8} + 4\frac{4}{8} = \mathbf{6\frac{7}{8}}$

10. $2\frac{7}{12} + 3\frac{2}{12} = \mathbf{5\frac{9}{12}} = \mathbf{5\frac{3}{4}}$

Here is the key to **S180**.

Homework

Name _____   **Date** _____

Directions: Complete each fraction and mixed fraction problem. Simplify all sums.

1. $1\frac{2}{10} + 2\frac{5}{10} = \mathbf{3\frac{7}{10}}$

2. $3\frac{2}{12} + \frac{2}{12} = \mathbf{3\frac{4}{12}} = \mathbf{3\frac{1}{3}}$

3. $6\frac{1}{8} + 3\frac{3}{8} = \mathbf{9\frac{4}{8}} = \mathbf{9\frac{1}{2}}$

4. $3\frac{5}{8} + 1\frac{1}{8} = \mathbf{4\frac{6}{8}} = \mathbf{4\frac{3}{4}}$

5. $4\frac{1}{3} + \frac{1}{3} = \mathbf{4\frac{2}{3}}$

6. $2\frac{3}{5} + 4\frac{1}{5} = \mathbf{6\frac{4}{5}}$

7. $1\frac{3}{10} + \frac{6}{10} = \mathbf{1\frac{9}{10}}$

8. $1\frac{2}{6} + 2\frac{1}{6} = \mathbf{3\frac{3}{6}} = \mathbf{3\frac{1}{2}}$

9. $3\frac{2}{3} + 5\frac{2}{3} = \mathbf{9\frac{1}{3}}$

10. $3\frac{3}{10} + 4\frac{7}{10} = \mathbf{7\frac{10}{10}} = \mathbf{8}$

Name _____   Date _____

Quiz

Add. Simplify all sums.

1. $2\frac{2}{6} + 3\frac{3}{6} =$

   A. $2\frac{5}{12}$

   B. $4\frac{5}{12}$

   C. $4\frac{5}{6}$

   D. $5\frac{5}{6}$

2. $1\frac{2}{6} + 1\frac{3}{6} =$

   A. $1\frac{1}{2}$

   B. $1\frac{5}{6}$

   C. $2\frac{5}{6}$

   D. 3

3. $2\frac{3}{10} + \frac{4}{10} =$

   A. $2\frac{1}{10}$

   B. $2\frac{1}{2}$

   C. $2\frac{7}{10}$

   D. 3

4. $1\frac{4}{8} + 3\frac{2}{8} =$

   A. $4\frac{3}{4}$

   B. $4\frac{7}{8}$

   C. $5\frac{3}{4}$

   D. 6

5. $2\frac{1}{6} + 4\frac{5}{6} =$

   A. 6

   B. $6\frac{2}{3}$

   C. 7

   D. $7\frac{2}{3}$

6. $4\frac{1}{12} + \frac{11}{12} =$

   A. 4

   B. $4\frac{5}{12}$

   C. $4\frac{1}{2}$

   D. 5

7. $7\frac{2}{3} + 2\frac{1}{3} =$

   A. $7\frac{1}{3}$

   B. $8\frac{1}{3}$

   C. 9

   D. 10

8. $1\frac{7}{10} + 1\frac{1}{10} =$

   A. $2\frac{4}{5}$

   B. 3

   C. $3\frac{4}{5}$

   D. $3\frac{9}{10}$

9. $3\frac{1}{8} + 2\frac{3}{8} =$

   A. $5\frac{1}{4}$

   B. $5\frac{1}{2}$

   C. $6\frac{1}{8}$

   D. $6\frac{1}{2}$

10. $4\frac{2}{12} + \frac{8}{12} =$

   A. $4\frac{1}{4}$

   B. $4\frac{1}{2}$

   C. $4\frac{5}{6}$

   D. $5\frac{1}{2}$