Unit 4
Lesson
7

Student Edition pages and Presentation Screens support learning in this lesson.

Do They Show the Same Number?

Interpreting Representations of Two-Digit Numbers

Let's explore different ways to represent two-digit numbers.

Key Concepts

Today's Goals

1. **Goal:** Interpret base-ten representations of two-digit numbers, including standard form and expanded form.
2. **Language Goal:** Justify if 2 different base-ten representations show the same number. **(Listening and Speaking)** ELPS 1.B, 2.B, 2.E

Connections and Coherence

Students interpret a variety of base-ten representations of two-digit numbers, including drawings and written numerals in **standard form** and words, to determine if 2 representations show the same number. They are formally introduced to **expanded form**, in which the addends represent the values of the tens and ones digits. They then deepen their understanding of two-digit numbers through a matching activity and reason about the amounts of tens and ones to make connections between different representations of the same number. **(TEKS 1.1.E)**

Prior Learning

In Unit 3, students represented teen numbers with *10 + n* expressions. In Lesson 6, students represented two-digit numbers with cubes and drawings and discussed how representations showed the amounts of tens and ones in each number.

Future Learning

In Lesson 8, students will continue to develop their conceptual understanding of the base-ten structure of two-digit numbers as they represent two-digit numbers in multiple ways.

Integrating Rigor in Student Thinking

- Students develop their **conceptual understanding** of place value.

Vocabulary

New Vocabulary

standard form

expanded form

Review Vocabulary

digit

equal

TEKS

Building Toward

1.2.C

Use objects, pictures, and expanded and standard forms to represent numbers up to 120.

Math Process Standards: 1.1.E, 1.1.F, 1.1.G

ELPS: 1.B, 1.D, 1.E, 2.B, 2.C, 2.D, 2.E. 2.F, 3.E, 3.F

Building Math Identity

I can be all of me in math class.
How do you keep track of your thinking in math class?

Invite students to reflect on this question as they complete this lesson.

Lesson at a Glance

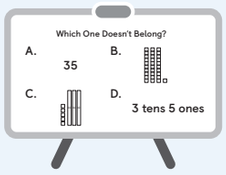
60 min

TEKS: 1.1.E, 1.1.F, 1.1.G, Building Toward 1.2.C

Warm-Up

Whole Class | 10 min

Students use the **Which One Doesn't Belong?** routine to find similarities and differences in 4 base-ten representations of two-digit numbers. They should be encouraged to use precise language as they give their reasons for the one they chose. **(TEKS 1.1.F, 1.1.G)**



Activity 1

Small Groups | 15 min

Students interpret different base-ten representations of two-digit numbers, including drawings, words, and expanded form, to determine if pairs of representations show the same number.

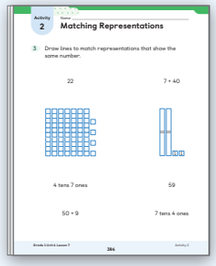
Materials: Activity 1 PDF

Additional Prep Display: 2 sets of Posters A–F from the Activity 1 PDF in order by letter in various places in the classroom

Activity 2

Independent | 15 min

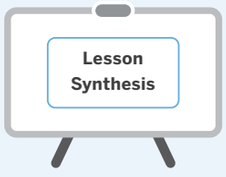
Students match representations of the same two-digit number to make connections between different representations. They recognize that two-digit numbers could be represented with **expanded form**, which shows the value of each digit.



Synthesis

Whole Class | 5 min

Students review and reflect on how different representations of two-digit numbers show the amounts of tens and ones.

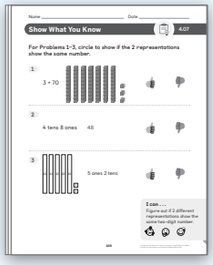


Show What You Know (optional)

Independent | 5 min

Students demonstrate their understanding by determining if 2 representations show the same two-digit number.

Materials: *Show What You Know* PDF

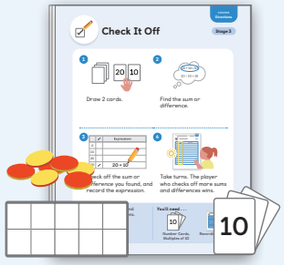


Center Choice Time

Small Groups | 15 min

Students have an opportunity to revisit these Centers to build fluency and practice organizing, counting, and describing quantities.

- Check It Off
- Counting Collections
- Cover Up



Math Language Development

Emergent Bilinguals

Consider using the *Math Language Development Resources* with the **Activity 1, Monitor** to support math language acquisition.

- ✓ Cognates
- ✓ Visuals
- ✓ Sentence frames and word bank

ELPS 1.B, 1.E, 2.B, 2.C, 2.D, 2.E, 2.F

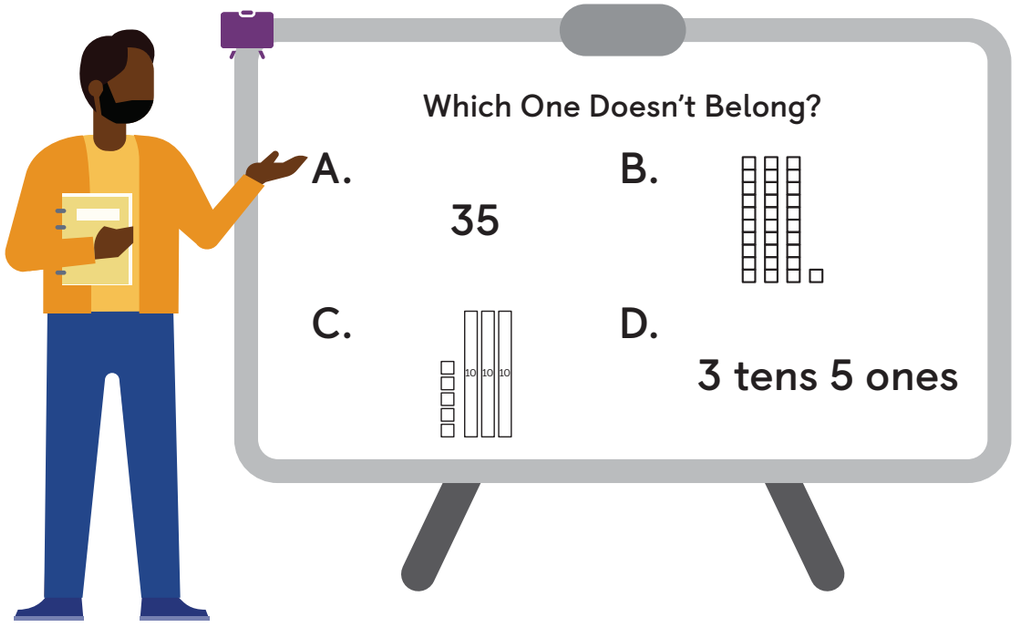
Pre-Production	Beginning	Intermediate	High Intermediate	Advanced
Students **listen** to spoken English and **respond** using their primary languages and gestures.	Students **listen** to spoken English and **speak** using their primary languages, gestures, and single words or short phrases.	Students **listen** to spoken English and **speak** using short phrases or simple sentences.	Students **listen** to spoken English and **speak** using a variety of sentence types.	Students **listen** to spoken English and **speak** using longer sentences. Exemplar responses are provided.

Whole Class | 10 min

Presentation Screens

Warm-Up Which One Doesn't Belong?

Purpose: Students analyze and compare 4 base-ten representations to build precision with place-value related mathematical terms including *tens*, *ones*, *digit*, and *two-digit number*.



1 Launch

Display the 4 representations.

Use the Which One Doesn't Belong? routine.

Say, "Choose one that doesn't belong. Be ready to share your reasoning."

2 Connect

Record students' responses as they share.

Ask, "Look at Representations B and C. Why might a person choose to draw a ten by labeling a rectangle with '10' instead of drawing a stack of 10 ones?"

Say, "You will continue to think about different representations of two-digit numbers."

Students might say . . . ELPS 2.C, 2.D, 2.E

A: *It is the only one written as a two-digit number.*

B: *It is the only one that doesn't show 35.*

C: *It is the only one that shows the ones on the left and the tens on the right.*

D: *It is the only one that tells how many tens and ones with words.*

Small Groups | 15 min

Activity 1 Representation Tour

Purpose: Students apply their understanding of place value to interpret different representations of two-digit numbers and determine if they show the same number.

Presentation Screens

Materials

Lesson Resources:

- Display two sets of Posters A–F from the Activity 1 PDF in order by letter in various places around the classroom with enough space for students to gather.

Short on time? Consider modifying the activity so that groups visit 4 posters rather than 6 posters.

1 Launch

Arrange students in groups of 3.

Say, "Two-digit numbers can be represented in more than 1 way."

EB **Emergent Bilinguals** Invite students to share different meanings of the term booth. Clarify which meaning this word will have for this lesson. ELPS 1.D

Read aloud the directions and Problems 1 and 2.

Say, "When you finish discussing, rotate to the next poster. For example, if you are visiting Poster C, you will visit Poster D next."

Note: As an alternative, determine when students should rotate to the next poster.

2 Monitor

While students complete the activity, refer to the D Differentiation | Teacher Moves table on the following page.

If students need help getting started . . .

- Ask, "What do you notice about this representation?"
- Ask, "What do you notice about the number of tens in this representation? The number of ones?"

3 Connect

MLR This Connect is structured using the *MLR7: Compare and Connect* routine. ELPS 1.B, 1.E, 2.B, 2.D, 2.E

Ask, "How did you know if 2 representations were showing the same number?"

Display the different representations of 52.

Use the Think-Pair-Share routine. Ask:

- "How are the representations alike?"
- "How are the representations different?"

A **Accessibility: Visual-spatial processing** Annotate the representations to highlight the similarities and differences students notice between the representations.

Key Takeaway: Say, "There is more than 1 way to represent the number of tens and the number of ones in a two-digit number."

Unit 4 Lesson 7

Name

TEKS: 1.1.E, Building Toward 1.2.C

Do They Show the Same Number?

Let's explore different ways to represent two-digit numbers.

I can be all of me in math class. How do you keep track of your thinking in math class?

Warm-Up eyes on teacher

Activity 1

Representation Tour

Discuss each representation with your group.

1 Discuss

Do the representations show the same number? How do you know?

- I know the representations show the same number because _____.
- I know the representations do not show the same number because _____.

Oral activity: No writing expected. Sample response shown.

I know the representations do not show the same number because one has 2 tens and the other has 4 tens.

Activity 1

Name

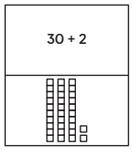
Representation Tour (continued)

2 Circle to show if each poster shows representations of the same number.

Representation poster	Do they show the same number?	
A	👍	👎
B	👍	👎
C	👍	👎
D	👍	👎
E	👍	👎
F	👍	👎

Presentation Screens

D Differentiation | Teacher Moves

Look for students who . . .	For example . . . Poster B	Provide support . . .
Almost there Reason that different numbers are shown because the representations look different.	 *The top shows an expression and the bottom shows a drawing.*	**Support** Ask, "You noticed a difference in the representations. What do you notice is the same about the representations?"
Reason that the numbers are the same or different by figuring out the number shown in each representation.	*The top shows 30 plus 2, which is 32, and the bottom shows 10, 20, 30, 31, 32.*	**Strengthen** Ask, "You figured out that both representations show the same number. What other connections can you make between the representations?"
Reason that the numbers are the same or different by comparing the amount of tens and ones shown in each representation.	*The drawing shows 3 tens. The expression shows 3 tens represented by the number 30. Both representations show 2 ones.*	**Stretch** Ask, "When might you want to use each type of representation?"

Independent | 15 min

Activity 2 Matching Representations

Purpose: Students match representations that show the same two-digit number, including expanded form that shows the values of the digits, to deepen their understanding of the values of the digits in two-digit numbers.

Presentation Screens

Materials

Classroom materials:

- Display the *Words to Describe Numbers* chart (from Lesson 8) during the Launch.

1 Launch

Read aloud Problem 3.

Have students work on Problem 3 independently for 5 minutes.

Read aloud Problem 4.

A **Accessibility: Memory and attention** Clarify vocabulary by encouraging students to review the *Words to Describe Numbers* chart before discussing the problems. Provide time for students to ask clarifying questions about the language displayed on the chart.

2 Monitor

While students complete the activity, refer to the D **Differentiation | Teacher Moves** table on the following page.

If students need help getting started . . .

- Ask, "In your own words, what do you need to do to complete the problem?"
- Ask, "What do you notice about the tens in this representation? The ones?"

EB **Emergent Bilinguals** Foster metalinguistic awareness by using a think-aloud routine to demonstrate how to complete Problem 4. Then have students choose a different pair of matching representations to explain to their partner. **ELPS 1.E, 2.F**

3 Connect

Record the number 59 and the expression 50 + 9.

Use the Think-Pair-Share routine. Ask, "How do you know these representations show the same number?"

Say (if not yet mentioned during discussion), "The 5 in 59 represents 5 tens, and 5 tens is 50. The 9 in 59 represents 9 ones. When the expression shows the value of each digit, 50 + 9, it is called **expanded form**. When it is represented using only digits, it is called **standard form**."

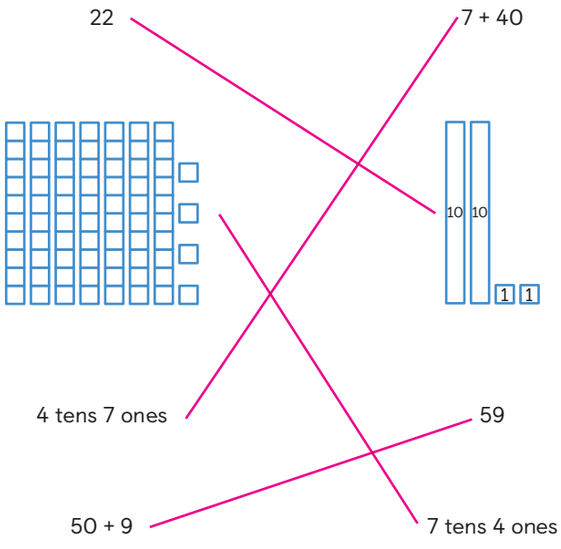
Key Takeaway: Say, "Two-digit numbers can be represented in many ways, including **standard form** and **expanded form**."

Activity 2

Name _____

Matching Representations

3 Draw lines to match representations that show the same number.



Activity 2

Name _____

Matching Representations (continued)

4 Discuss

Choose a pair of matching representations from Problem 3. Explain to a partner how you know the representations show the same number.

I know the representations show the same number because _____.

Oral activity: No writing expected. Sample response shown.

I know the representations show the same number because 22 has 2 tens and 2 ones and the drawing shows 2 tens and 2 ones.

Presentation Screens

D Differentiation | Teacher Moves

Look for students who . . .	For example . . .	Provide support . . .
Almost there Determine matches using the digits.	**4 tens 7 ones and 7 tens 4 ones have the same numbers.** or **4 tens 7 ones is a match with 7 + 40 because there is a 4 and 7.**	**Support** Ask, "What does the 4 represent in 4 tens 7 ones? What does the 4 represent in 7 tens 4 ones?"
Determine matches by counting to find each number.	**4 tens and 7 ones is 10, 20, 30, 40, 41, 42, . . . , 47. 7 + 40 is equal to 47 because 40, 41, 42, . . . , 47. Both representations show 47.**	**Strengthen** Ask, "You found that the 2 representations show 47. Where do you see the number of tens in these representations? Where do you see the number of ones?"
Determine matches by reasoning about the values of the tens and ones.	**4 tens is 40, and 7 ones is 7, so it matches 7 + 40. The 4 in 47 represents 4 tens and the 7 in 47 represents 7 ones.**	**Stretch** Ask, "How could you represent 47 in another way to help someone understand that these representations show the same number?"

Whole Class | 5 min

Synthesis

Presentation Screen

Lesson Takeaway: A two-digit number can be represented in different ways, including with **expanded form** and **standard form**.

Use the Think-Pair-Share routine. Ask, "How could you represent the number 27 with expanded form? How else could you represent the number 27?"

Say, "When representing a two-digit number, you can show the number of tens and ones in different ways using drawings, numbers, words, expanded form and standard form."

Formalize vocabulary: expanded form, standard form

(optional) **Consider using the Frayer Model routine** with one or more of the new vocabulary words. **ELPS 3.E, 3.F**

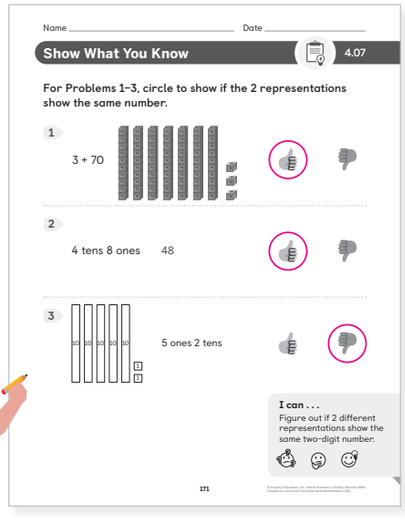
Refer to the *Math Language Development Resources* for a description of this routine and for more vocabulary support.

Invite students to refer to the **Summary** during Practice or anytime during the year.

Show What You Know (Optional)

Independent | 5 min

Show What You Know PDF


Name _____ Date _____

Show What You Know 4.07

For Problems 1–3, circle to show if the 2 representations show the same number.

1. 3 + 70
2. 4 tens 8 ones 48
3. 5 ones 2 tens

I can . . .
Figure out if 2 different representations show the same two-digit number.

171

Today's Goals

1. **Goal:** Interpret base-ten representations of two-digit numbers, including standard form and expanded form.
   - In Problems 1–3 in the *Show What You Know*, students determined if pairs of representations showed the same two-digit number.
2. **Language Goal:** Justify if 2 different base-ten representations show the same number. **(Listening and Speaking)** **ELPS 1.B, 2.B, 2.E**

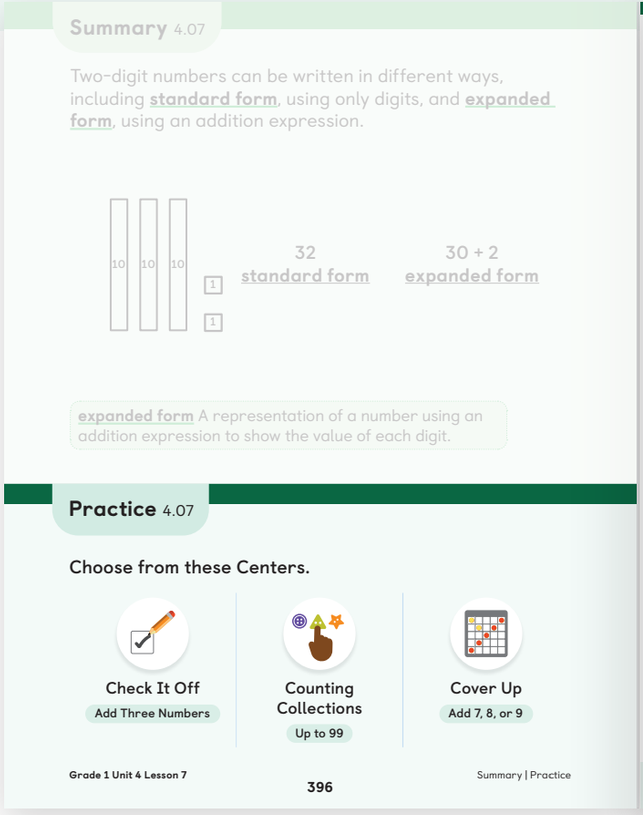
Differentiation See the last page of the lesson for differentiation and Math Language Development support.

Practice

Independent

Provide students with sufficient practice to build and reinforce their conceptual understanding, fluency, and application of mathematical topics, assessment practice, and ongoing spiral review.

Students using print



Summary 4.07

Two-digit numbers can be written in different ways, including **standard form**, using only digits, and **expanded form**, using an addition expression.

10 10 10 1 1

32
standard form

30 + 2
expanded form

expanded form A representation of a number using an addition expression to show the value of each digit.

Practice 4.07

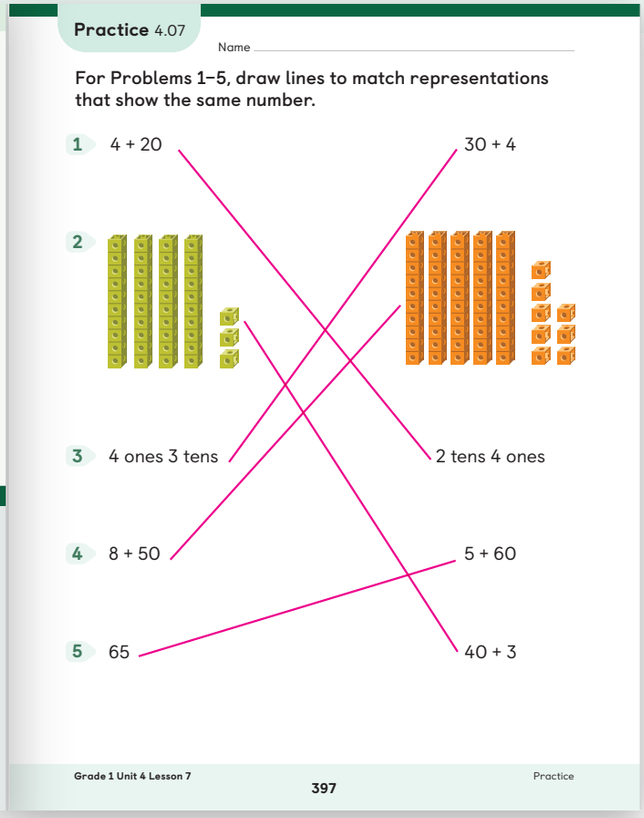
Choose from these Centers.

Check It Off
Add Three Numbers

Counting Collections
Up to 99

Cover Up
Add 7, 8, or 9

Grade 1 Unit 4 Lesson 7 396 Summary | Practice



Practice 4.07

Name _____

For Problems 1–5, draw lines to match representations that show the same number.

1 4 + 20

2

3 4 ones 3 tens

4 8 + 50

5 65

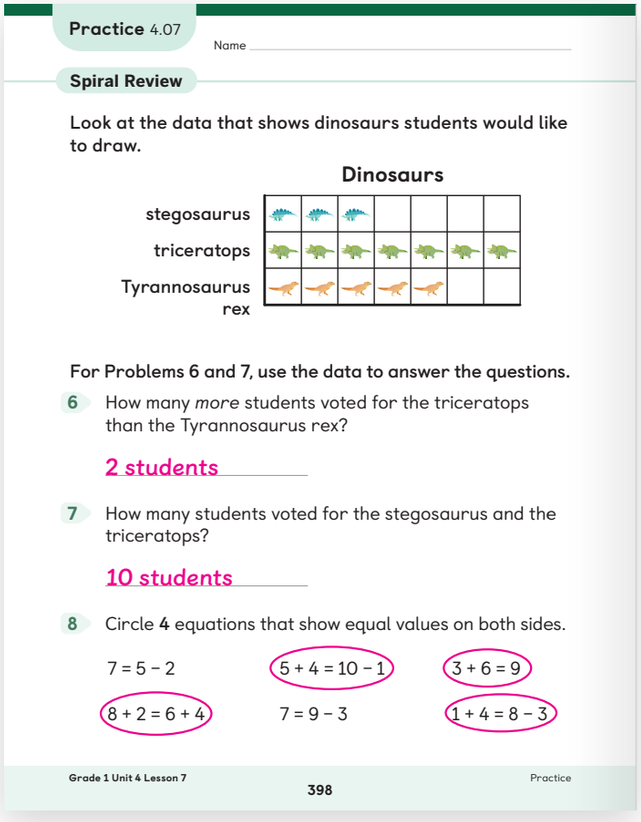
30 + 4

2 tens 4 ones

5 + 60

40 + 3

Grade 1 Unit 4 Lesson 7 397 Practice



Practice 4.07

Name _____

Spiral Review

Look at the data that shows dinosaurs students would like to draw.

Dinosaurs

stegosaurus	3
triceratops	7
Tyrannosaurus rex	5

For Problems 6 and 7, use the data to answer the questions.

6 How many *more* students voted for the triceratops than the Tyrannosaurus rex?

2 students

7 How many students voted for the stegosaurus and the triceratops?

10 students

8 Circle **4** equations that show equal values on both sides.

7 = 5 − 2

5 + 4 = 10 − 1

3 + 6 = 9

8 + 2 = 6 + 4

7 = 9 − 3

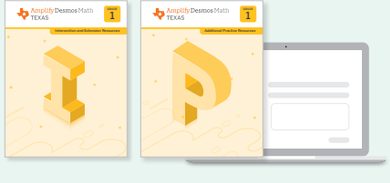
1 + 4 = 8 − 3

Grade 1 Unit 4 Lesson 7 398 Practice

Practice Problem Item Analysis

	Problem(s)	DOK	TEKS
On-Lesson			
	1–5	1	1.2.C
Spiral Review			
	6, 7	2	1.8.C
Fluency	**8**	1	1.5.E

Need more Practice?



Additional practice can be found in the **Practice Resources, Intervention and Extension Resources,** and online resources (item banks, Boost Personalized Learning, and Fluency Practice).

Center Choice Time

Presentation Screen

Purpose: Use this time to support students working in Centers, gather formative assessment data, or work with a small group of students on targeted skills.

Check It Off

Add Three Numbers

Pairs | 15 min | 1.5.G

Students add 3 numbers to practice strategies for adding within 20.

Materials

- number cards (0–10) **(Manipulative Kit)**
- Directions, Recording Sheet **(Centers Resources)**

Corresponds with the checklist from Unit 3, Sub-Unit 3.

Counting Collections

Up to 99

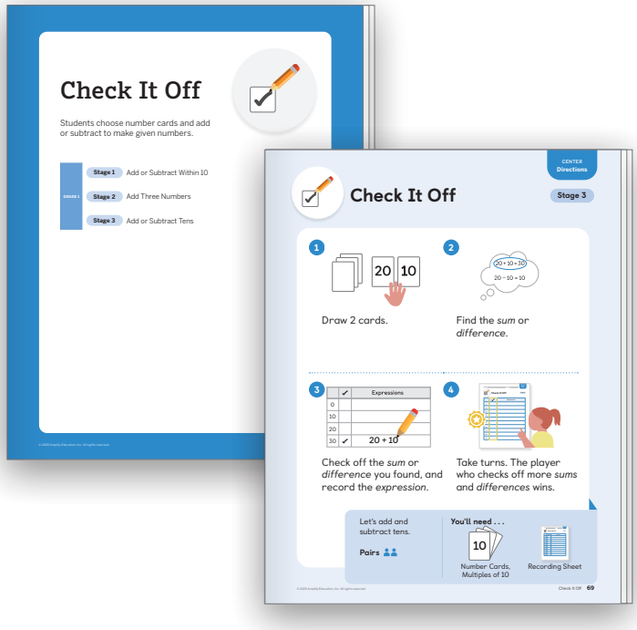
Pairs | 15 min | 1.2.C

Students count collections and represent how many and how they counted.

Materials

- 10-frames **(Manipulative Kit)**
- collections of objects (one per pair), cups **(Classroom materials)**
- Directions, Recording Sheet **(Centers Resources)**

Corresponds with the checklist from Unit 4, Sub-Unit 2.



Use Centers as games to offer fun and engaging ways for students to practice math skills.

GAMES

Cover Up

Add 7, 8, or 9

Pairs | 15 min | 1.3.D, 1.5.G

Students add 7, 8, or 9 to a number between 0 and 10.

Materials

- number cards (0–10), two-color counters **(Manipulative Kit)**
- Directions, Gameboards (A, B) **(Centers Resources)**

Corresponds with the checklist from Unit 4, Sub-Unit 1.

D Differentiation | Teacher Moves

Work with students in their Centers by:

- Reinforcing Center routines and positive interactions.
- Asking probing questions to propel student thinking forward.
- Recording observations using the checklist provided.

Consider pulling a small group of students for:

- Reviewing the lesson's learning goal by using the *Mini-Lesson* or the supports provided in the lesson.
- Reviewing essential skills from prior lessons or units.

Differentiation Use after Lesson 7

Lesson Goal: Interpret base-ten representations of two-digit numbers, including standard form and expanded form.

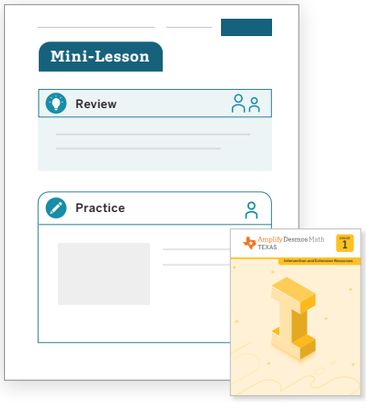
Support

Provide targeted intervention for students by using these resources.

If students interpret base-ten representations using the order in which the tens and ones are represented:

Respond:

- Assign the *Matching Representations of Two-Digit Numbers* Mini-Lesson. | 15 min
- Invite students to discuss the Activity 1 Monitor questions and reflect on which place value is represented first in a two-digit number.



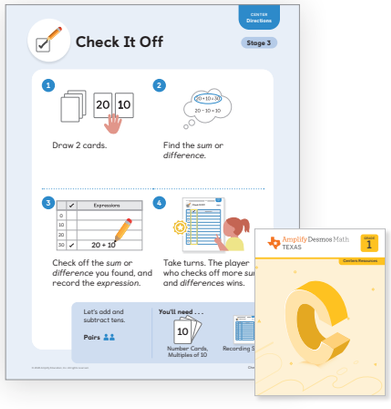
Strengthen

Reinforce students' understanding of the concepts assessed by using these resources.

If students interpret a base-ten representation by counting or adding to identify the total value of the representation:

Respond:

- Invite students to play these **Centers**. | 15 min
  Check It Off: Add Three Numbers
  Counting Collections: Up to 99
  Cover Up: Add 7, 8, or 9
- Have students complete **Lesson 7 Practice**. | 15 min
- **Item Bank**



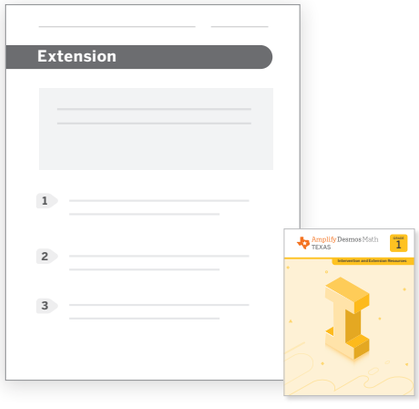
Stretch

Challenge students and extend their learning with these resources.

If students interpret a base-ten representation by identifying the amounts of tens and ones represented:

Respond:

- Invite students to explore the **Sub-Unit 2 Extension Activities.** | 15 min
- Revisit Activity 1 and invite students to respond to the **Stretch** question from the *Differentiation: Teacher Moves* table. | 5 min

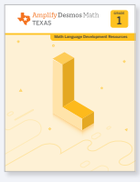


Support, *Strengthen*, and *Stretch* learning by assigning these digital resources that adjust to each student's current level of skill and understanding.
• **Boost Personalized Learning** • **Fluency Practice** • **Math Adventures**

Math Language Development

EB Use the ***Math Language Development Resources*** for further language support with all your students, including those building English proficiency.

- English/Spanish cognates, e.g., digit/dígito
- Frayer Model templates
- Vocabulary routines



Professional Learning

Considering students' responses, what was the best question you asked students today and why?