SAVVAS

Grade 2

Let's Investigate Take and Teach

enVision+ MATHEMATICS

Real-World Math. Real-World Ready.

Let's Investigate

Lesson

3-4

Choose Strategies for Two-Digit Addition

FOCUS

Mathematics Objective Choose strategies to add two-digit numbers, using prior understanding of basic addition facts, and various pictorial and concrete representations.

Language Objective Explain, orally and in writing, how to use drawings, models, or mental math to make adding within 100 easier.

Essential Understanding Students can choose different strategies to make adding numbers easier.

COHERENCE

Look Back Previously, students added tens and ones using a hundred chart and an open number line.

This Lesson Students use and choose different strategies to make adding numbers easier.

Look Ahead The next two lessons explicitly develop strategies for finding sums to 100, including breaking apart numbers and compensation.

Cross-Cluster Connection Strategies to add within 100 build on adding a two-digit number to a multiple of ten and adding and subtracting within 20.

RIGOR

Conceptual Understanding Students explore using various strategies to add two-digit numbers with sums up to 100. Students' prior knowledge includes adding two-digit numbers by using a hundred chart and using a number line.

Vocabulary

none

Materials

none

Student Resources

Family Engagement

Teacher Resources

enVision on the Go

Exit Ticket Support for using the Exit Ticket is available online.

Step 1 Investigate

10–25 min

Investigate Scout Observational Assessment

Name _____

Choose Strategies for Two-Digit Addition

Let's Investigate

Lesson 3-4

I can ... investigate how to make addition easier.

Family Reunion

Jada has to seat two families at a time for a family reunion. She also has to show the number of people seated each time.

Which pair of families should I choose each time? See the **Guest List** on the back to help me decide.

OUR FAMILY REUNION

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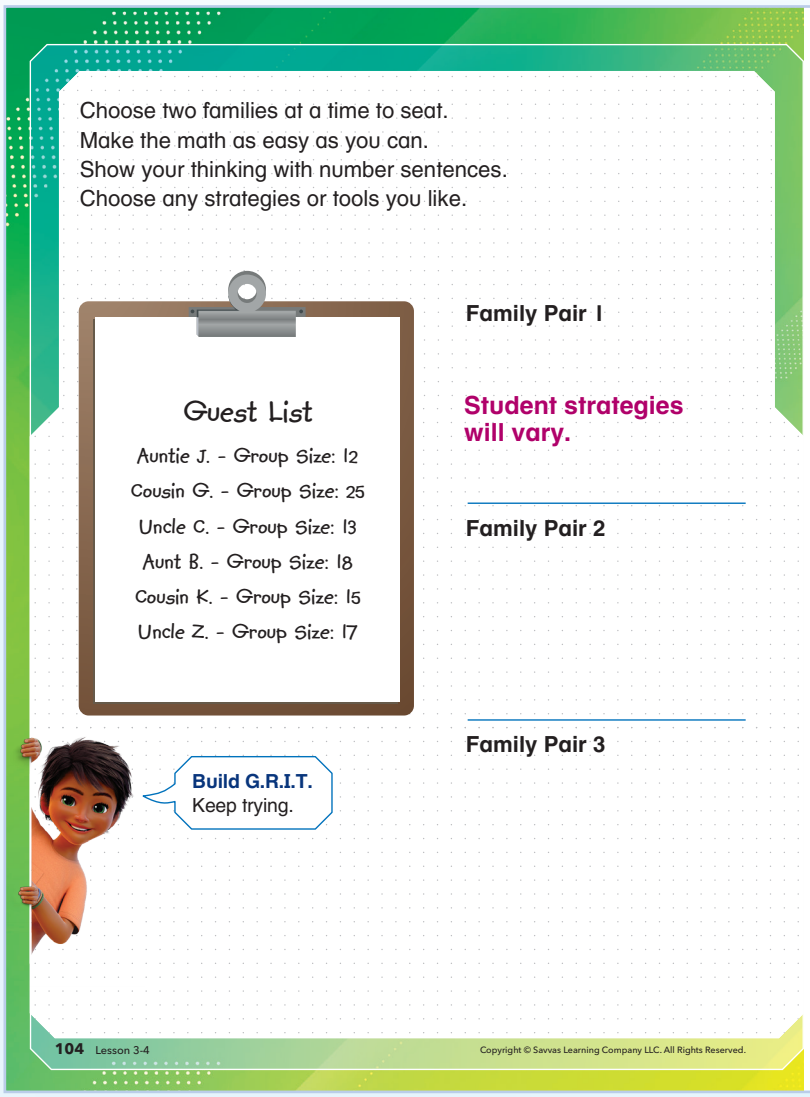

Choose two families at a time to seat.
Make the math as easy as you can.
Show your thinking with number sentences.
Choose any strategies or tools you like.

Guest List

Auntie J. - Group Size: 12
Cousin G. - Group Size: 25
Uncle C. - Group Size: 13
Aunt B. - Group Size: 18
Cousin K. - Group Size: 15
Uncle Z. - Group Size: 17

Family Pair 1

Student strategies will vary.

Family Pair 2

Family Pair 3

Build G.R.I.T. Keep trying.

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MTP Anticipate

Anticipate students' solution strategies. Think of various ways students might use their prior knowledge to solve the problems. See the next page for sample student work.

Introduce the Investigation

Use the Slow Reveal Slides

You might use the slides to reveal part of the information. Then ask: What do you notice? What do you wonder?

Elevate Student Voice: Engage Students in the Context

Have students bring their own unique experiences and ideas to the situation by using prompts like these:

- Have you ever been to a family reunion?
- What are some things you and your family like to do?
- How would you seat people at a family reunion?

Check for Understanding

MLR5 Co-Craft Questions and Problems

Read the task to the class. Before students look at the Guest List, have them write questions that they have about the task.

- How many people can Jada seat at one time?
- How many people are in each family?
- How many families are there?
- How could Jada choose which families to seat together?

Have students share their questions with a partner and discuss what information they might need to answer their questions. Then have them read the rest of the task by themselves.

- What information do you have now?
- What do you notice about the Guest List?
- What information do you still need to solve the problem?

Finally, have students work individually to choose the family pairs.

Step 1 Investigate *continued*

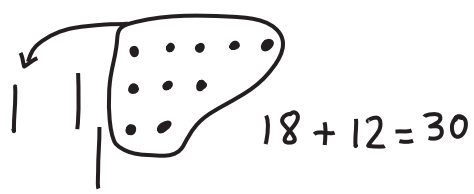
Sample Student Work

Family Reunion Problem

Given the number of people in different families at a family reunion (all 2-digit numbers), choose three pairs of families and find the total number of people in each pair (add 2-digit numbers). Make the math as easy as possible (choose efficient strategies).

- **Dulce added 18 and 12 using place value drawings.** She drew 1 ten rod and 8 unit cubes for 18 and 1 ten rod and 2 units cubes for 12. She changed 10 ones for 1 ten.

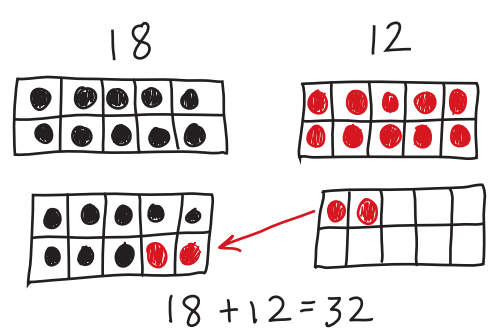
Dulce's Work



You might ask Dulce: Why did you circle the ones? [Listen for "I changed 10 ones for 1 ten. It was easier for me to add 1 ten to 2 tens than to count up by ones from 20."]

- **Aziz added 18 and 12 using double ten-frames.** He drew 18 in the first set of ten-frames and 12 in the second set of ten-frame. He moved 2 ones to fill up the first set of set of ten-frames. **Error** Aziz forgot to mark out the ones he moved from the second set of ten-frames.

Aziz's Work



You might ask Aziz: Where is 18 in the ten-frames? Where is 12? How did you add 18 and 12? [Listen for "The first ten-frames show 18 and the second ten-frames show 12. I moved 2 from the 12 to fill up the first ten-frames. Oh, I forgot to mark those out when I moved them. 18 + 12 = 30."]

- **Jing added 18 and 12 using a hundred chart.** He skip counted by 10 and then counted 2 more. He counted 18, 28, 29, 30.

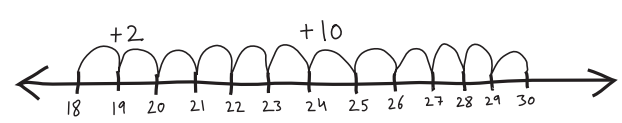
Jing's Work

41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

You might ask Jing: Is there another way you could show 18 + 12? [Listen for "I could start with 12 and count 1 ten and 8 ones. But it was easier for me to start with the larger number."]

- **Talula added 18 and 12 using an open number line.** She labeled 18 on the number line and showed 2 jumps to 20. She then showed 10 more jumps to 30.

Talula's Work



You might ask Talula: Is there another way to show 10 jumps on the number line? [Listen for "I could start at 18 and count 2 ones first, to get to 20. Then I could count a single jump of 10 to get to 30."]

Step 1 Investigate *continued*

MTP Monitor

Monitor Students at Work Ask questions to assess and advance students' thinking.

Assessing Questions

Questions for Students to Understand Their Thinking

- Can you tell/show me what you did?
- What do your pictures/numbers mean?

Questions for You as You Observe

- How are students representing the families?
- What prior knowledge are students using to help solve the problem?

Advancing Questions

Questions to Ask Students Who Need Help

- If students cannot get started, ask: What are some strategies you have used to add? How can you show 18?
- If students' work is incorrect, ask: How did you get that answer? Listen for understandings and build on what they know.

Questions to Ask Students Think More Deeply

- Is there another way to solve the problem?
- Can you write an equation to show your solution?

Early Finishers

Ask: If the tables could seat no more than 38 people at a time, how could Jada fit everyone? [Sample answer: Cousin G. is the largest family, with 25 people. They would have to eat at the same time as Auntie J., the smallest family. Otherwise, Jada could not fit everyone.]

MTP Select and Sequence

Select and Sequence Students' Solutions for them to present with the goal of building understanding of key concepts.

Start with solutions that show a common error of not adding correctly. (Aziz)

Then show solutions that show counting one at a time to add. (Talula)

Finally, show solutions that show adding tens and ones to find the total. (Jung, Dulce)

Step 2 Connect

10–55 min

MTP Connect

Name _____

Connect

1. Circle whether this problem looks easy or hard to solve. $45 + 30$

   Easy **Hard**

2. **Make Sense** Show how you would solve the problem. Tell why the problem was easy or hard for you.

   Student responses and strategies will vary.

3. **Reason** These two numbers might look hard to add. Work with a partner to show a way to add these numbers in an easier way.

   $37 + 19$

   Student responses will vary.

Talk About Ideas Why is it a good idea to use number strategies to make adding easier?

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Connect Solution Strategies Discuss students' work. Ask how the solutions are similar and different. Help students see that Dulce changed 10 ones for 1 ten and Jing added 1 ten and then 2 ones. But they both started with 18 and added 1 ten and 2 ones.

Connect to Key Concepts Use the Connect questions to build understanding of the key concept at the top of the next page.

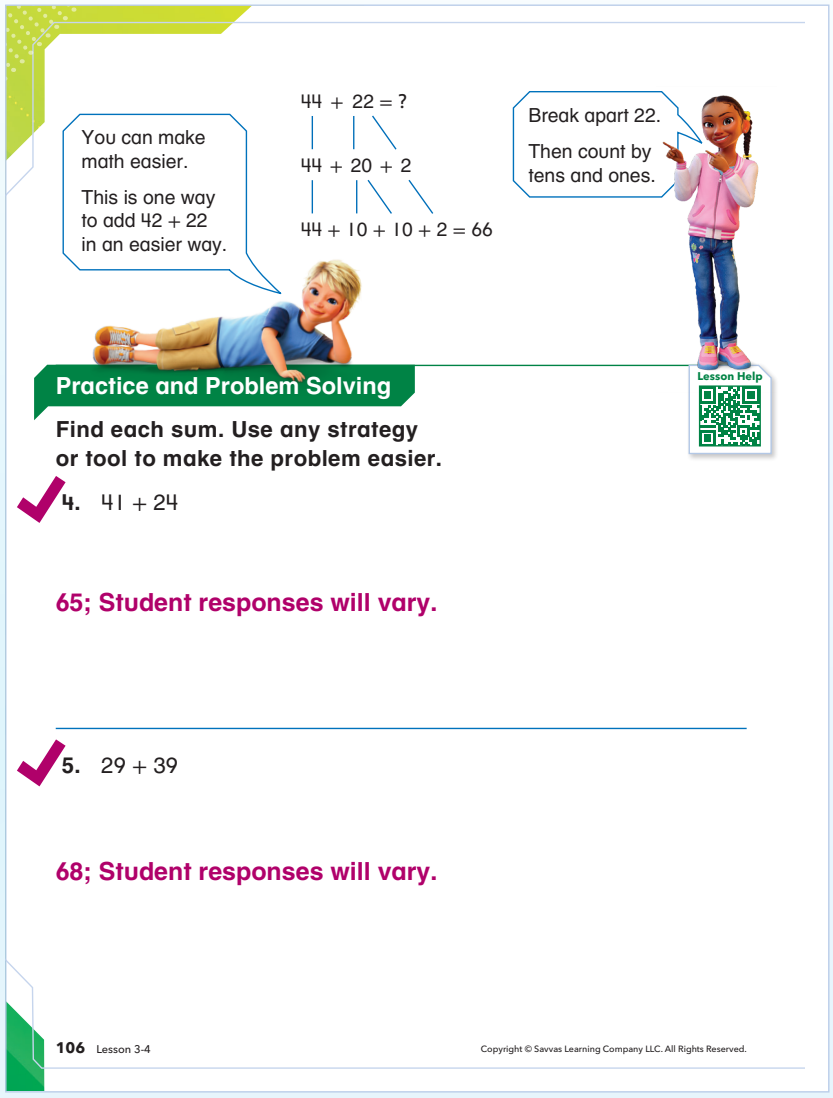
MTP Talk About Ideas

Have students engage in a think-pair-share to discuss why using number strategies can make it easier to add. Listen for conversations about how they made the math as easy as they could by using known strategies.

Step 3 Practice and Problem Solving

10–15 min

Interactive Practice Adaptive Practice



You can make math easier.

This is one way to add 42 + 22 in an easier way.

44 + 22 = ?

44 + 20 + 2

44 + 10 + 10 + 2 = 66

Break apart 22.

Then count by tens and ones.

Lesson Help

Practice and Problem Solving

Find each sum. Use any strategy or tool to make the problem easier.

4. 41 + 24

65; Student responses will vary.

5. 29 + 39

68; Student responses will vary.

106 Lesson 3-4

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MLL Multilingual Learners Speaking

Provide support to students as they complete Item 2.

Emerging Write sentence frames such as "First, I would _____." "Next, I would _____." "Then, I would _____." Have students talk with a partner about how they would solve 45 + 30 using the sentence frames, and then solve the problem. Then have them discuss whether the problem was easy or hard and why.

Expanding Ask students to describe orally the steps they would take to solve 45 + 30. Provide support to them as they begin their answer, if needed. Then have them solve the problem and discuss with a partner why they think the problem was easy or hard before explaining in writing.

Bridging Have students work in pairs to model their addition strategies for 45 + 30 as they explain them to their partners. Then have partners work together to write explanations of their strategies and why the problem was hard or easy.

Reflection

Have students look at the problem at the top of the page. Describe how 22 was broken apart to make an easier problem. [22 was broken into 20 + 2, and then 10 + 10 + 2.] How does breaking 22 apart make 44 + 22 an easier problem? [I can find 44 + 10 + 10 + 2 by starting at 44, skip counting by 10s two times, and then skip counting by 2s once.] What other strategies can you use to make adding numbers easier? [I can look for numbers whose ones make a 10. I can use a hundred chart or an open number line and then add tens and ones. I can use doubles and near doubles. I can use place value drawings and change 10 ones for 1 ten.]

Error Intervention Item 4

If students are not sure how to start,
then remind them that they can break apart one of the addends into tens and ones. Then ask them to name a strategy that adds tens and then ones.

Item 5 Make Sense and Persevere Encourage students to include drawings, words, and numbers to show their strategy.

MTP Quick Check

Formative Assessment

✓ Check marks indicate items for prescribing differentiation. Items 4 and 5: up to 2 points. The online Quick Check is auto scored and auto prescribes differentiation.

Step 4 Assess and Differentiate

10–15 min

Additional Practice

Name _____

Choose Strategies for Two-Digit Addition

Additional Practice **3-4**

HOME ACTIVITY Write two numbers that are each between 10 and 50. Ask your child to explain an easier way to find the sum. Then have him or her show or describe how to use that way to find the sum.

Another Look!

Video

Find the sum. Use any strategy or tool to make the problem easier.

55 + 22 = 77

Break apart tens and ones.

55 + 22 = ?
/ \
20 2

55 + 20 + 2 = 77

So, 55 + 22 = 77.

Strategies will vary. Check students' work.

1. 49 + 9 = 58

2. 42 + 37 = 79

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Use the table to answer each problem. Use any strategy or tool to make each problem easier.

Fran's Fun Shop sells toys and coloring books. The table shows the number of pictures in the coloring books.

Coloring Books	
Book	**Number of Pictures**
Farm Animals	38
Super Heroes	25
Fairy Tales	40

3. **Make Sense** How many pictures are there in the Super Heroes and Fairy Tales coloring books in all?
Check students' work.
65 pictures

4. **Higher Order Thinking** Paulo says that the Farm Animals and Super Heroes coloring books have 67 pictures in all. Is his work correct? Explain.

38 + 25 = ?
+ 2 + 2
40 + 27 = ?
/ \
20 7
40 + 20 + 7 = 67

No; Sample answer: He made a mistake. He added 2 to both addends, but he forgot to subtract that amount at the end. There are 63 pictures in all.

5. **Assessment Practice** Fran purchased more Farm Animals books for the shop. She counted 57 pictures in the books. How many pictures do the Farm Animals books have in all now?
Check students' work.
95 pictures

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Differentiation Library

The **Differentiation Library** at the beginning of this topic shows the differentiation options available, each of which can be appropriate for all students. However, based on the **Quick Check** results, you may prescribe:

0–3 points: Intervention Activity or Reteach to Build Understanding Activity

4–5 points: Enrichment Activity

In addition, **multilingual learners** may benefit from the Build Mathematical Literacy Activity.

Intervention Activity

Materials Open number lines (Teaching Tool 62), 1 per pair, Hundred chart (Teaching Tool 33), 1 per pair

- Have students work in pairs. Give each pair a hundred chart and an open number line. On the board, write addition equations with sums unknown:

  24 + 45 = ____ [69]

  17 + 23 = ____ [40]

  28 + 59 = ____ [87]

  43 + 19 = ____ [62]

- Students work in pairs to complete each equation. One student uses the open number line and the other student uses the hundred chart to show their work.

17 + 23 = ?

41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
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- Have students compare solutions and explain how they found the sum. Students should switch tools to solve the next problem.
- Repeat the process with equations adding two 2-digit numbers with and without regrouping.

Video Tutorial

Another Look Video

Intentional Blank Page

Name _____

Choose Strategies for Two-Digit Addition

Let's Investigate

Lesson 3-4

I can ... investigate how to make addition easier.

Family Reunion

Jada has to seat two families at a time for a family reunion. She also has to show the number of people seated each time.

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Show your thinking with number sentences.
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Guest List

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Family Pair 1

Family Pair 2

Family Pair 3

Build G.R.I.T.
Keep trying.

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Name _____

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Practice and Problem Solving

Lesson Help

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