



Grade 1 | Module 3

Topic: Write equations to solve addition and subtraction problems

[Module 3 Resources](#)

Students work with puzzles to develop their understanding of addition and subtraction situations within 100 to solve one-step and two-step problems. Students use strategies involving situations of adding to, taking from, putting together, taking apart, and comparing unknowns in different positions. Students will represent situations with equations.

Module 3 at a Glance

Printed Resources

- **Bookmarks**
 - Problem Solving Process Bookmark
 - Problem Solving Facilitation Bookmark
- **K-2 Table Games Directions**
 - Tic-Tac-Ten
 - Number Path Race
 - *Addition War (optional)*
 - *Pyramid Make Ten (optional)*
 - *Number Kicker (optional)*
 - *Make Ten Concentration (optional)*
 - Addition Connect Four (Day 4)
 - Three Cards Make Ten (Day 4)
- **Game Mat**
 - Push Box Game Mat
- **Problem Solving Journal** (pages 15–21)
 - My Thinking Path
 - Problem of the Day
 - Exit Ticket
 - ST Math Puzzle Reflection

Optional Printed Resources

- Accomplishments Log
- ST Math Activity Pages
- Pre/Post Quizzes

Immersion Slide Deck (slides 39–57)

- The Immersion Slide Deck is intended to be projected to the class in a whole group setting.

Teacher Resources

- Teacher Planner

Supplies for Table Games (per group)

- **Tic-Tac-Ten** - 1 deck of cards with face cards removed or 1 dice, 1 Tic-Tac-Ten game board, 2 different colored pencils, crayons, or markers
- **Number Path Race** - 1 dice, 1 game piece per player, 2 index cards (draw a + sign on one and a – sign on the other), 1 paper bag, number path game board 0–20

My Thinking Path

- This module, students reflect on solving problems with addition and subtraction.

ST Math Puzzle Talks

- Push Box
- Push Box Symbolic

Problem Solving

Day 1:

- **Problem Solving Slide Deck** - JiJi was stacking critter blocks. How many blocks did JiJi stack? Here is JiJi's stack of blocks. If Paco made another stack just like this one, how many blocks to JiJi and Paco have altogether? JiJi wanted to make the critter block taller. If JiJi puts 6 more critter blocks on top, how many critter blocks will be in each tower? How many altogether?
- **Problem Solving Journal** - Students will solve a critter block problem.

Day 2:

- **Problem Solving Slide Deck** - Cyli and Cubee are making a block tower. They wanted their tower to be 20 blocks high. Cyli stacked 7 blocks and Cubee stacked 5 more. How many more blocks do they need to stack?
- **Problem Solving Journal** - Students will solve a bracelet problem.

Day 3:

- **Problem Solving Slide Deck** - JiJi is playing basketball. JiJi is keeping track of points in basketball. On Monday, JiJi had 4 points. On Tuesday, JiJi had 6 points. And on Wednesday, JiJi had 12 points. How many points did JiJi have this week? JiJi's goal this week was 30 points. Did JiJi meet the goal? How many more points would JiJi need to achieve this goal?
- **Problem Solving Journal** - Students will solve equations using dice.

Day 4:

- **Problem Solving Slide Deck** - JiJi is learning about football. In football, a touchdown is 7 points and a field goal is 3 points. JiJi's team scored 2 touchdowns and 1 field goal. How many points did they score?
- **Problem Solving Journal** - Students will solve equations using dice.

Instructional Stations

On Days 1–3, each student will visit two stations per day following the schedule in the [Instructional Station Overview](#). On Day 4, students do not participate in Instructional Stations.

Station 1: Small Group Instruction

- Use the Instructional Stations Overview and the Teacher Planner to help organize your small group instruction.
- Give students problems similar to the Problem of the Day and puzzle problems. Have students solve the problems.

Station 2: ST Math Puzzles

- Have students sign in and play ST Math puzzles.
- Remind students to use manipulatives and/or paper and pencil to help them solve problems.
- With 5 minutes left, have students stop playing and complete their Puzzle Reflection and Accomplishments Log.

Station 3: Table Games

- Select Tic-Tac-Ten or Number Path Race.
- Have students play that game.
- Ask students to complete an Exit Ticket during the final 5 minutes.



Grade 1 | Module 3 | Day 1

My Thinking Path (5-10 minutes)

- Have students write in the topic, “Writing equations.”
- Have students begin working on the My Thinking Path page in their journals.
- Discuss their ideas, and allow students to add to their paper any additional thoughts they have.
- Have students take the Pre-Quiz (optional).

Puzzle Talk: Push Box (20-25 minutes)

- Focus on student thinking and developing problem solving skills using the guiding questions in each step of the Problem Solving Process.
- Provide a [Push Box Game Mat](#), whiteboards/dry erase markers, and math tools to students.

Notice and Wonder

- Display the first puzzle in Level 1. Ask “What do you notice? What do you wonder?” Allow a few students to share out.
- Ask students: “How do you think we solve this puzzle? What is the unknown in this puzzle?”

Predict and Justify

- Have students make a prediction and use their game mat and tools to model what they think they need to do to solve this puzzle.
- Give them a few minutes to discuss with a partner: What do they think is going to happen and why?
- Have a volunteer share their strategy. Before trying the strategy, have them discuss with each other.

Test and Observe

- Try a student’s solution, and watch the feedback. Talk with students about what they saw. Does it compare to their prediction? Do they need to change their strategy?

Analyze and Learn

- Display the next puzzle in Level 1. Repeat the Problem Solving Process above, asking guiding questions such as:
 - How many blocks would JiJi be standing on if we added 6 more blocks in a second stack?
 - Does this puzzle represent addition or subtraction? How do you know?

Connect and Extend

- Select another puzzle. Discuss what is known and unknown in the puzzle. Ask students how many steps it takes to solve the puzzle. Work together to write an equation to represent the puzzle using a question mark for the unknown. For example, $3 + ? = 8$.
- Repeat with additional puzzles in Level 1. For each puzzle, have students represent the puzzle on their paper/whiteboard and show how they would solve it.
- Display the first puzzle in Level 2. Ask students: “What do you notice in this puzzle? How is this puzzle different from the puzzles in Level 1?”
- Have students share out how to write an equation to solve for the unknown on their mat or whiteboard. For example, $5 - ? = 2$. They may work with a partner to solve.
- Repeat with other puzzles in Level 2, continuing to have students represent this puzzle on their paper/whiteboard and show how they would solve it.

How does the student:

- share their strategies to solve the puzzle?
- write equations to represent the solutions?
- write an equation to show the new total after adding 10 to the solution?
- find and discuss all the possible solutions for one puzzle?

Problem Solving (20-25 minutes)

Engage students in problem solving discussions. Read and discuss the problem, share student work, compare strategies, and make connections.

Problem Solving Slide Deck (slides 42–44)

- JiJi was stacking critter blocks. How many blocks did JiJi stack? Here is JiJi's stack of blocks. If Paco made another stack just like this one, how many blocks do JiJi and Paco have altogether? JiJi wanted to make the critter block taller. If JiJi puts 6 more critter blocks on top, how many critter blocks will be in each tower? How many altogether?

Problem Solving Journal (page 16, top)

- Students will complete the Problem of the Day independently. Provide guidance as needed.
- Students will solve a critter block problem.

Instructional Stations (40 minutes)

Students will visit two stations today (20 minutes per station). See Instructional Station Overview.

Station 1: Small Group Instruction

- Give students problems with different problem situations. Discuss the journal questions.
- Have students solve the problems. Allow students to draw pictures or use math tools to help them understand the equation.
- For example, Garfield and his friends were seeing how high they could stack blocks before any of their towers fell. Garfield stacked up 18 blocks and 3 fell off. Then he stacked 6 more blocks. How many blocks high was Garfield's stack?
- For example, Jenny had 6 stickers, and her mom gave her 7 more stickers. Bob had 8 stickers, and his friend gave him 5 more stickers. Jenny said, "Look we have the same number of stickers." Is Jenny correct? Write an equation to show they are equal.
- After they solve a problem ask: "How many would they have if they got 10 more? Or 10 more each?"
- Have students write the equation for this change.
- For example, Vaughn had 5 jelly beans and his brother Leon had 3 jelly beans. Their mom gave them each more jelly beans. Now they both have the same number of jelly beans. Now Vaughn has 12 jelly beans. How many jelly beans did their mom give Vaughn and how many did she give Leon? Write an equation to show they have the same number of jelly beans (are equal).
- After they solve a problem ask: "How many would they have if they got 10 more? Or 10 more each?"
- Have students write the equation for this change.
- Have students explain and defend their answers. Discuss how each of the pictures or manipulatives represents the numbers in the equation.

Station 2: ST Math Puzzles

- Have students sign in and play ST Math puzzles.
- Remind students to use manipulatives and/or paper and pencil to help them solve problems.
- With 5 minutes left, have students stop playing and complete their Puzzle Reflection and Accomplishments Log.

Station 3: Table Games

- Select Tic-Tac-Ten or Number Path Race.
- Have students play that game.
- Ask students to complete an Exit Ticket during the final 5 minutes.



Grade 1 | Module 3 | Day 2

My Thinking Path (5-10 minutes)

- Have students reflect on what they have learned about writing equations to solve problems with addition and subtraction.

Puzzle Talk: Push Box (20-25 minutes)

- Focus on student thinking and developing problem solving skills using the guiding questions in each step of the Problem Solving Process.
- Provide a Push Box Game Mat, whiteboards/dry erase markers, and math tools to students.

Notice and Wonder

- Discuss what students learned in the puzzles discussed yesterday. You may want to play one puzzle from Level 2 to support the discussion.
- Show a puzzle from Level 3. Ask students: "What do you notice that is similar/different from the puzzles we did yesterday?" Allow students to share.

Predict and Justify

- Have students make a prediction and determine a strategy for solving the puzzle. Have students turn to their neighbor, share their predictions about what they think will happen and why.

Test and Observe

- Select a student to share what they and their partner discussed. Then, try a student's solution and watch the feedback. Talk with students about what happened as they solved the puzzle.

Analyze and Learn

- Ask students to think about how what they saw happen compares to their prediction. What did they learn from the feedback about their strategy? Do they need to change it?

Connect and Extend

- Project another puzzle from Level 3, and get students thinking about making equations to represent the puzzles on their paper/whiteboards or game mat.
 - What is the unknown in this puzzle?
 - Does this puzzle represent addition or subtraction? How do you know?
 - How could you represent this puzzle with an equation?
- On one of the addition problems in Level 3, ask students how many orange blocks there would be if they had 10 more (or other appropriate values)?
- Have students write the equation for this change (e.g., $4 + 5 = 9$ to $4 + 5 + 10 = 9 + 10$). Discuss the relationship between addition and subtraction.
- Show a puzzle from Level 4 of Push Box, repeating the Problem Solving Process.
- Have students draw a picture on their paper/whiteboard to show how they would solve the problem.
- Share several examples of students' drawings. Discuss that there are multiple ways to represent these problems. Could they find all of the ways?
- Show and have students solve other Level 4 puzzles. Check for understanding. Ask students: "Is $6 + 4 = 7 + 3$ a true equation? Justify your reasoning. What other true equations can you find to solve the problems?"

How does the student:

- use their model to help solve the puzzles?
- share their strategies to solve the puzzle?
- write equations to represent the solutions?
- write an equation to show the new total after adding 10 to the solution?
- find and discuss all the possible solutions for one puzzle?

Problem Solving (20-25 minutes)

Engage students in problem solving discussions. Read and discuss the problem, share student work, compare strategies, and make connections.

Problem Solving Slide Deck (slides 47–48)

- Cyli and Cubee are making a block tower. They wanted their tower to be 20 blocks high. Cyli stacked 7 blocks and Cubee stacked 5 more. How many more blocks do they need to stack?

Problem Solving Journal (page 16, bottom)

- Students will complete the Problem of the Day independently. Provide guidance as needed.
- Students will solve a bracelet problem.

Instructional Stations (40 minutes)

Students will visit two stations today (20 minutes per station). See Instructional Station Overview.

Station 1: Small Group Instruction

- Give students problems with different problem situations. Discuss the journal questions.
- Have students solve the problems. Allow students to draw pictures or use math tools to help them understand the equation.
- For example, Jenny had 6 stickers, and her mom gave her 7 more stickers. Bob had 8 stickers, and his friend gave him 5 more stickers. Jenny said, "Look we have the same number of stickers." Is Jenny correct? Write an equation to show they are equal.
- After they solve a problem ask: "How many would they have if they got 10 more? Or 10 more each?"
- Have students write the equation for this change.
- For example, Vaughn had 5 jelly beans, and his brother Leon had 3 jelly beans. Their mom gave them each more jelly beans. Now they both have the same number of jelly beans. Now Vaughn has 12 jelly beans. How many jelly beans did their mom give Vaughn, and how many did she give Leon? Write an equation to show they have the same number of jelly beans (are equal).
- After they solve a problem ask: "How many would they have if they got 10 more? Or 10 more each."
- Have students write the equation for this change.
- Have students explain and defend their answers. Discuss how each of the pictures or manipulatives represents the numbers in the equation.

Station 2: ST Math Puzzles

- Have students sign in and play ST Math puzzles.
- Remind students to use manipulatives and/or paper and pencil to help them solve problems.
- With 5 minutes left, have students stop playing and complete their Puzzle Reflection and Accomplishments Log.

Station 3: Table Games

- Select Tic-Tac-Ten or Number Path Race.
- Have students play that game.
- Ask students to complete an Exit Ticket during the final 5 minutes.



Grade 1 | Module 3 | Day 3

My Thinking Path (5-10 minutes)

- Have students reflect on what they have learned about writing equations to solve problems with addition and subtraction.

Puzzle Talk: Push Box (20-25 minutes)

- Focus on student thinking and developing problem solving skills using the guiding questions in each step of the Problem Solving Process.
- Provide a Push Box Game Mat, whiteboards/dry erase markers, and math tools to students.

Notice and Wonder

- Show an addition and subtraction puzzle from Level 3 to remind students of how Push Box works. Ask students: "What do you notice? What do you wonder? What happens when you add and subtract in this game?"
- Next, show a puzzle from Level 4 of Push Box. Have students discuss what they notice with a partner, and then discuss with the whole group.
- Give students think time about how to solve the puzzle.

Predict and Justify

- Have students make a prediction and determine a strategy for solving the puzzle.
- Have some students share out. Ask the students to think about if they agree/disagree with the strategy and why. How does it relate to their own?

Test and Observe

- Try one of the students' ideas. (As you try students' strategies, be sure to try strategies that work and those that don't.)
- Watch the feedback together and discuss what you saw.

Analyze and Learn

- Ask: "What happened? Did we add or subtract boxes? How do you know?"

Connect and Extend

- Show the next puzzle in Level 4. Have students use the Push Box Game Mat to show their multi-step solution and discuss it with a partner. If necessary, hand out cubes to recreate the puzzle.
- Share several examples from drawing arrows to writing equations. (There are multiple equations that could be used.) Discuss that there are multiple ways to represent these problems.

How does the student:

- use their model to help solve the puzzles?
- share their strategies to solve the puzzle?
- write equations to represent the solutions?
- write an equation to show the new total after adding 10 to the solution?
- find and discuss all the possible solutions for one puzzle?

Problem Solving (20-25 minutes)

Engage students in problem solving discussions. Read and discuss the problem, share student work, compare strategies, and make connections.

Problem Solving Slide Deck (slides 51–53)

- JiJi is playing basketball. JiJi is keeping track of points in basketball. On Monday, JiJi had 4 points. On Tuesday, JiJi had 6 points. And on Wednesday, JiJi had 12 points. How many points did JiJi have this week? JiJi's goal this week was 30 points. Did JiJi meet the goal? How many more points would JiJi need to achieve this goal?

Problem Solving Journal (page 17, top)

- Students will complete the Problem of the Day independently. Provide guidance as needed.
- Students will solve equations using dice.

Instructional Stations (40 minutes)

Students will visit two stations today (20 minutes per station). See Instructional Station Overview.

Station 1: Small Group Instruction

- Give students problems with different problem situations. Discuss the journal questions.
- Have students solve the problems. Allow students to draw pictures or use math tools to help them understand the equation.
- For example, Jenny had 6 stickers, and her mom gave her 7 more stickers. Bob had 8 stickers, and his friend gave him 5 more stickers. Jenny said, "Look we have the same number of stickers." Is Jenny correct? Write an equation to show they are equal.
- After they solve a problem ask: "How many would they have if they got 10 more? Or 10 more each?"
- Have students write the equation for this change.
- For example, Vaughn had 5 jelly beans, and his brother Leon had 3 jelly beans. Their mom gave them each more jelly beans. Now they both have the same number of jelly beans. Now Vaughn has 12 jelly beans. How many jelly beans did their mom give Vaughn, and how many did she give Leon? Write an equation to show they have the same number of jelly beans (are equal).
- After they solve a problem ask: "How many would they have if they got 10 more? Or 10 more each?"
- Have students write the equation for this change.
- Have students explain and defend their answers. Discuss how each of the pictures or manipulatives represents the numbers in the equation.

Station 2: ST Math Puzzles

- Have students sign in and play ST Math puzzles.
- Remind students to use manipulatives and/or paper and pencil to help them solve problems.
- With 5 minutes left, have students stop playing and complete their Puzzle Reflection and Accomplishments Log.

Station 3: Table Games

- Select Tic-Tac-Ten or Number Path Race.
- Have students play that game.
- Ask students to complete an Exit Ticket during the final 5 minutes.



Grade 1 | Module 3 | Day 4

My Thinking Path (5-10 minutes)

- Have students reflect on what they have learned about solving problems involving addition and subtraction within 100. They should complete the My Thinking Path reflection page.

Puzzle Talk: Push Box Symbolic (20-25 minutes)

- Focus on student thinking and developing problem solving skills using the guiding questions in each step of the Problem Solving Process.
- Provide a Push Box Game Mat (optional), whiteboards/dry erase markers, and math tools to students.

Notice and Wonder

- Show a puzzle from Level 1. Ask: "What do you notice? What do you wonder?" Allow students to share.

Predict and Justify

- Have students make a prediction, and determine a strategy for solving the puzzle. Have students share their predictions, about what they think will happen and why.

Test and Observe

- Try one of the students' ideas. (As you try students' strategies, be sure to try strategies that work and those that don't. Analyze the feedback in both correct and incorrect solutions.)

Analyze and Learn

- Ask: "What happened? Did we add or subtract boxes? How do you know?"

Connect and Extend

- Find another puzzle in Level 1, and begin a think-pair-share or whole group discussion around:
 - What does the number by the bulldozer represent?
 - What does the minus sign tell us is happening?
- As students share, you may want to chart strategies, equations, or other key points they make.
- Display the first puzzle in Level 2. Have students use math tools to solve the puzzle and record their solution as an equation. If students need more guidance, consider asking, "How do you know this puzzle represents a subtraction problem? What part of the puzzle does each number in your equation represent?"
- Do a student share-out.
- Repeat with the remaining puzzles in Level 2.

How does the student:

- discuss what the numbers in the puzzle represent?
- explain why the puzzle is addition or subtraction?
- represent the puzzle using math tools?
- explain what parts of the puzzle the numbers in their equation represent?
- prove their answer is correct?

Problem Solving (20-25 minutes)

Engage students in problem solving discussions. Read and discuss the problem, share student work, compare strategies, and make connections.

Problem Solving Slide Deck (slides 51–53)

- JiJi is learning about football. In football, a touchdown is 7 points and a field goal is 3 points. JiJi's team scored 2 touchdowns and 1 field goal. How many points did they score?

Problem Solving Journal (page 17, bottom)

- Students will complete the Problem of the Day independently. Provide guidance as needed.
- Students will solve equations using dice.

Whole Group Table Games (15-20 minutes)

During this time you will introduce Addition Connect Four and Three Cards Make Ten. Students will play these games in the next module in Station 3.

- Introduce one of the games.
- After explaining the game and playing it with the whole group, give students time to play it on their own.
- After playing the game, have them discuss:
 - What math did they learn or use?
 - What strategies did they try to win the game?
- Repeat with the second game.

Optional Activity Page (15-20 minutes) - whole group

ST Math Activity Page

- Project the game *Push Box*.
- Play a few puzzles to help students understand the game.
- Have students turn to the Activity Page: *Push Box*.
- Ask students what they notice about the content on the page. What do they wonder? Where do they want to start on the page?
- Give them time to complete the page.
- Discuss the page and have students share their thinking.
- Take the time to compare strategies, and have students share their work.
- Make connections to the game.

Closing (10 minutes)

Thinking and Reflecting Time

- Have students complete the Post-Quiz (optional).
- Have students review their Puzzle Reflection, Exit Tickets, and Problem Solving work.
- Engage students in discussions about what they have learned in this module, what they have questions about, and what they would like to learn more about.