



Grade 2 - Week 2

ST Math® Immersion - Virtual



Topic: Problems Involving addition and subtraction

[Week 2 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 solve problems where they have some of the parts and the whole. They will need to solve for missing parts.

Week 2 Overview

Day 1

- Class Meeting
 - Opening
 - Weekly Warm-Up
 - Goal Setting
- Lessons for the Week
 - Introduction
 - Activate Prior Knowledge
- My Thinking Path
- Independent Assignment
 - ST Math Puzzles

Day 2

- Problem Solving Discussion
 - Pre-work Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Push Box Two Operations
- Independent Assignment
 - Problem of the Day
 - Math Writing Prompt (Optional)
 - ST Math Puzzles

Day 3:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Push Box Missing Quantity
- Independent Assignment
 - Problem of the Day
 - ST Math Puzzles

Day 4:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Pie Monster
- Independent Assignment
 - Problem of the Day
 - ST Math Puzzles

Day 5:

- Friday Math Clubs
 - Problem Solving Review and Discussion
 - Small Group Math Activity (Choose One)
 - Math Stories
 - My Thinking Path Discussion
- Independent Assignment
 - ST Math Puzzles



Class Meeting (20-30 minutes)

Opening

Welcome students to a new week.

- Use the Slide Deck for [Class Meeting](#)
 - You may want to use the slide deck to support goal setting, number exploration, which one doesn't belong activities, math data collection stories or you may choose to do the Weekly Warm-Up.

Weekly Warm-Up

- Ask students, "What is your favorite number?" Tell students to write the number and why it's their favorite in their journals. Have them all share their numbers in the chat and then ask a few people to share why.

Goal Setting

- Discuss last week's goal. Did students achieve their goals? What did they do that helped them? What do they need to improve on?
 - Set an ST Math goal for the week.

Lessons for the Week (20-30 minutes)

Introduction

- Let students know that this week they will be focused on solving problems with addition and subtraction.
- Brainstorm what students know about this topic and what they wonder about this topic.

Activate Prior Knowledge

Pose this question to the students. A man had 45 dog treats. He gave his dogs 12 treats on Monday and 9 treats on Tuesday. The man believes that he has 21 treats left. Is he right?

- Discuss what students know about the problem and what they need to know.
- Ask students to share how they would represent that problem in an equation and then describe what each number in the equation represents.
- Ask students to draw a model to represent the equation.
- Have students solve the problem and share their solution.

Independent Assignment (45-60 minutes)

Pre-work

- Complete the Pre-work for Push Box Two Operations.

My Thinking Path

- Write in the topic, “solving problems with addition and subtraction.” Complete the first two boxes in My Thinking Path.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Pre-work Review and Discussion

- Discuss the first two questions on the pre-work with the students.
- Review the problem. Have students share their strategies and solutions. Discuss.
 - NOTE: You may want to strategically share student work that will promote a rich discussion.

My Thinking Path Discussion

- Ask students to reflect on the discussion yesterday about what they know about solving problems involving partitioning a whole into equal sections.
- Review the whole group brainstorming and see if there are any additional things students would like to add. Was there anything new that they can add to their understanding after completing the pre-work?
- Discuss any questions the students have. Use this as an opportunity for students to see each other's knowledge as mathematical resources they can build from. The teacher's role here is to facilitate the discussion.
 - NOTE: You may want to put students in breakout groups for the discussion and then return to the whole group to summarize the conversations.

Puzzle Talk: Push Box Two Operations (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Two Step Situations > Push Box Two Operations > Level 1.

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.

Predict and Justify

- Have students Think-Pair-Share their strategy for solving the puzzle with each other.
- Ask a few students to share out, and respond about if they agree/disagree with each other's strategies.

Test and Observe

- Try one of the students' ideas. Watch the feedback and have students share their observations of what happened.

Analyze and Learn

- Ask students to think about how what they saw happen compares to their prediction. How many steps did it take to get to the orange blocks? If necessary, replay the puzzle using the same solution strategy and pause the animation to support the discussion.

Connect and Extend

- Using the next puzzle in Level 2, model how to write an equation to represent what is known and unknown. For example, the puzzle might show $6 + ? + 5 = 14$. Ask students to work with a partner to solve the puzzle and solve for the unknown.

- Repeat with additional puzzles in Level 1. As you try students strategies, be sure to try ones that work and those that don't. Analyze the feedback in both correct and incorrect solutions: "How do you know you've solved for the unknown correctly?"
- Display the first puzzle in Level 2. Repeat the Problem Solving Process to have students write an equation.
- Do a share out of equations and strategies. Try a student's solution and watch the feedback. Ask students, "How do we know this is a two-step addition situation?"
- Using the correct equation, (e.g., $9 - 3 - ? = 4$) ask students, "Which parts of the puzzle are represented in the equation?"
- Repeat with additional puzzles in Level 2.
- Display the first puzzle in Level 3. Say to students, "We are still doing two steps to solve this puzzle, but what do you notice about the two steps in this puzzle?"
- Ask students, "What is known in this problem? What is unknown?" Have students work with a partner to write an equation (e.g., $6 + ? - 4 = 5$) and solve for the unknown.
- Share students' equations and solutions. Solve the puzzle and watch the feedback together. Match each part of the puzzle to the corresponding part in the equation.
- Repeat with additional puzzles in Level 3.

How does the student:

- identify the two steps in the puzzle?
- represent the puzzle with an equation containing an unknown?
- explain what part of the puzzle each part of the equation represents?
- explain their strategy for solving the puzzle?

Independent Assignment (45-60 minutes)

Problem of the Day

- A cafeteria has 19 bananas, 16 apples, and 43 oranges. How many pieces of fruit are in the cafeteria? How many more pieces of fruit are needed to make 100 pieces? Write or draw a picture to show how you got your answer.

Math Writing Prompt

- You have some gumballs and your friend gave you some more. If you know you have 35 gumballs total and you started with 12, explain how you could find out how many your friend gave you.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Problem Solving Review and Discussion:

- Review the problems from yesterday. Have students share their strategies and solutions. Discuss.
 - NOTE: You may want to strategically share student work that will promote a rich discussion.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday and add additional thoughts to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.

Puzzle Talk: Push Box Missing Quantity (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Two Step Situations > Push Box Missing Quantity > Level 1.

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.

Predict and Justify

- Ask students to think of their strategy for solving the puzzle and predict what will happen when they try it. Have students share out their predictions.

Test and Observe

- Select a student’s solution to try and watch the feedback. Ask students, “What happened when we tried that prediction? What did you see?”

Analyze and Learn

- Ask students : "Was our answer correct? How many steps are needed to solve? Does this puzzle require addition or subtraction? Both?" "What is known and unknown?"
- Display the next puzzle in Level 1, repeating the same question.
- Model how to represent the puzzle with an equation that includes a ? for the unknown (e.g., $4 + 4 + ? = 11$). Ask students to use their game mat, paper or whiteboard to solve for the unknown. Have some students share their solutions and strategies.
- Repeat with the next puzzle in Level 1.

Level 2

- Display the first puzzle in Level 2. Ask students, “How is this puzzle different from the ones we just did? How many steps does it take to solve this puzzle? What operation is happening in this puzzle? How do you know this is a subtraction problem?”

Connect and Extend

- Model for students how to represent the puzzle with an equation that includes a ? for the unknown (e.g., $9 - 2 - ? = 4$). Ask students to use their game mat and tools to solve for the unknown. Share students' solutions and strategies.
- Repeat with the next puzzle in Level 2.
- Display the first puzzle in Level 3. Repeat the same process for a few more Level 3 puzzles guiding students through questioning to write an equation like Level 2.
- Have students reflect on their strategies and how they know they have solved for the unknown.

How does the student:

- identify the two steps in the puzzle?
- represent the puzzle with an equation containing an unknown?
- explain what part of the puzzle each part of the equation represents?
- explain their strategy for solving the puzzle?
- explain how they know which operation is required for each step?

Independent Assignment (45-60 minutes)

Problem of the Day

- Create two examples of new JiJi puzzles. Each example must have 2 steps like the puzzles you did earlier and result in an answer of 18.

Math Writing Prompt

- Compare the two puzzles you created. How are they alike? How are they different?

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Problem Solving Review and Discussion:

- Review the problem. Place students in breakout groups with a partner and have them share their work. Are their number lines the same? Have the students reconcile their differences and determine the best placement for the fractions.
- Allow a couple of groups to share with the whole class.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday and add additional thoughts to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.

Puzzle Talk: Pie Monster (20-30 minutes)

- ◻ Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- ◻ Have students gather paper/whiteboards to represent problems and show their work.
- ◻ Display Grade 2 > Addition and Subtraction Situations > Pie Monster > Level 1

Notice and Wonder

- Display the first puzzle in Level 1 of the Pie Monster. Ask students, “What do you see? What do we need to do to clear a path for JiJi?”

Predict and Justify

- Ask students, “What number should I choose on the Pie Monster and why? Type into the chat what you think the answer is.”

Test and Observe

- Ask students about how they knew the total number of pies the Pie Monster was eating. Try one of the students' solutions and watch the feedback.

Analyze and Learn

- Ask students to explain how what they observed compared to what they thought would happen. What did they learn?

Levels 1 and 2

- Play additional puzzles in Level 1.
- Display the first puzzle in Level 2. Ask students, “How is this puzzle different from the ones we just did? How many pies do we need to choose now and how do you know?” Solve the first puzzle together. Model how to represent the puzzle using an equation with a variable (e.g., $4 + ? = 6$). Explain that the unknown represents the number of pies picked from the bottom.
- Display the next puzzle in Level 2. Ask students to write down the equation represented by the puzzles, using a variable for the unknown. Discuss answers as a whole class.
- Repeat with additional puzzles in Level 2.

Connect and Extend

- Project a puzzle from Level 4. Have the students model the problem and solution using paper/whiteboards.
- Have students explain how their model represents the problem and solution. Select different students to share (look for different types of strategies) and discuss as a class.
- Repeat with additional puzzles from Level 4.

How does the student:

- solve the puzzles? (Are they thinking flexibly about addition and subtraction?) Do they struggle with specific problem types (e.g., result unknown, change unknown, start unknown)?
- write an equation to represent the problem? (Great opportunity to connect the visual to the symbolic and reinforce the meaning of equality as “same as.”)
- represent the puzzle? (Do they use tools? An equation with a variable?)

Independent Assignment (45-30 minutes)

Problem of the Day

- Devin has some cards in his collection. Joe gave him 16 cards and Mark gave him 27 cards. He has 92 cards in total.
 - How many cards did he start with?
 - Use words or pictures to explain how you found your answer.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Friday Math Clubs (45-60 minutes each)

Divide the class into small groups and meet with each group as a Friday Math Club. This allows you to personalize instruction for students.

Problem Solving Review & Discussion:

- Review the problem from yesterday. Discuss any additional strategies or student work you want shared.

Small Group Activity

• Math Stories

- Pose math stories to students with different addition and subtraction problems. Vary the problem situations.
- For example:
 - » Start Unknown: Joe had some gumballs. His friend gave him 4 more gumballs. He now has 9 gumballs. How many gumballs did he have to begin with?
 - » Change Unknown: Sidney has 19 lemon pies and some blueberry pies. She has 46 pies altogether. How many blueberry pies does she have?
 - » Result Unknown: JiJi had 14 stickers. Pie Monster gave JiJi 6 more stickers. How many stickers does JiJi have now?
 - » Challenge students with a multi-step problem: Bruce has 18 cookies. He eats 6 cookies. Bruce buys 4 more cookies at the store. How many cookies does Bruce have now?
 - Have students solve the problems and share their strategies.
 - Discuss what they know in the problem and what they need to know to solve the problem.
 - Have students write equations to represent the problem.
 - Variation: Play True or False: Pose additional math stories. Give students some time to think about and write an equation to represent the situation. Show students an equation you created. Discuss whether it represents the problem (true) or not (false).

My Thinking Path Discussion:

- Review student's learning with My Thinking Path. Ask them how their thinking has changed around the topic. How have the puzzles helped them better understand the math topic? What additional questions do they have?

Independent Assignment (35 minutes)

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Grade 2 - Week 3

ST Math® Immersion - Virtual



Topic: Solving problems with addition and subtraction

[Week 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.

Week 3 Overview

Day 1

- Class Meeting
 - Opening
 - Goal Setting
- Lessons for the Week
 - Introduction
 - Activate Prior Knowledge
- Independent Assignment
 - Pre-work: Pie Monster Symbolic
 - My Thinking Path
 - ST Math Puzzles

Day 2

- Problem Solving Discussion
 - Pre-work Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Push Box Symbolic
- Independent Assignment
 - Problem of the Day
 - Math Writing Prompt (Optional)
 - ST Math Puzzles

Day 3:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Pie Monster Symbolic
- Independent Assignment
 - Problem of the Day
 - Math Writing Prompt (Optional)
 - ST Math Puzzles

Day 4:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Bird Expressions Subtraction
- Independent Assignment
 - Problem of the Day
 - Math Writing Prompt (Optional)
 - ST Math Puzzles

Day 5:

- Friday Math Clubs
 - Problem Solving Review and Discussion
 - Small Group Math Activity (Choose One)
 - Virtual Math Talk
 - Word Problem
 - My Thinking Path Discussion
- Independent Assignment
 - ST Math Puzzles



Class Meeting (20-30 minutes)

Opening

Welcome students to a new week.

- Use the Slide Deck for [Class Meeting](#)
 - You may want to use the slide deck to support goal setting, number exploration, which one doesn't belong activities, math data collection stories or you may choose to do the Weekly Warm-Up.

Weekly Warm-Up

- This week we get to learn a new ST Math game called bouncing shoes. In this game, animals wear shoes!
- Let's play a game to warm up. Drop your answers in the chat!
 - How many shoes would a dog wear?
 - How many shoes would a duck wear?
 - How many shoes would a polar bear wear?
 - How many shoes would 2 dogs, 3 ducks, and a polar bear wear all together?
- Now who else wants to try one? You can give us one animal or two. Let a few students share. Pull up images to check their thinking as needed.

Goal Setting

- Discuss last week's goal. Did students achieve their goals? What did they do that helped them? What do they need to improve on?
 - Set an ST Math goal for the week.

Lessons for the Week (20-30 minutes)

Introduction

Let students know that this week they will be focused solving problems with addition and subtraction within 100.

- Brainstorm what students know about this topic and what they wonder about this topic.

Activate Prior Knowledge

- Pose this question to the class. There are 30 kids at the birthday party eating cupcakes. There are 13 chocolate cupcakes, some vanilla cupcakes, and 5 strawberry cupcakes. How many vanilla cupcakes are there?
 - Discuss what students know about the problem and what they need to know.
 - Ask students to share how they would represent that problem in an equation and then describe what each number in the equation represents.
 - Ask students to draw a model to represent the equation.
 - Have students solve the problem and share their solution.

Independent Assignment (45-60 minutes)

Pre-work

- Complete the Pre-work for Pie Monster Symbolic.

My Thinking Path

- Write in the topic "Solving problems with addition and subtraction within 100."
- Complete the first two boxes in My Thinking Path.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Pre-work Review and Discussion:

- Discuss the first two questions on the pre-work with the students.
- Review the problem. Have students share their strategies and solutions. Discuss.
 - NOTE: You may want to strategically share student work that will promote a rich discussion.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday about what they know about solving problems with addition and subtraction.
- Review the whole group brainstorming and see if there are any additional things students would like to add. Was there anything new that they can add to their understanding after completing the pre-work?
- Discuss any questions the students have. Use this as an opportunity for students to see each other's knowledge as mathematical resources they can build from. The teacher's role here is to facilitate the discussion.
 - NOTE: You may want to put students in breakout groups for the discussion and then return to the whole group to summarize the conversations.

Puzzle Talk: Pie Monster Symbolic (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Two Step Situations > Pie Monster Symbolic > Level 1

Notice and Wonder

- Display the first puzzle in Level 1. Ask students, "What do you notice?" Have students share all of the things they see in the puzzle.

Predict and Justify

- Ask students to determine a strategy for solving the puzzle and predict what will happen when they try it.
- Have students share their strategy and why it can be used to solve this puzzle.

Test and Observe

- 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, "How does what you thought would happen compare to what did happen? What did we learn from the feedback?"
- Say to students, "What does each number in this puzzle represent? How many pies does the Pie Monster have? How many pies does the Pie Monster want to eat? What do we need to do to end up with the correct number of pies?" Discuss.

- Display the next puzzle in Level 1. 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.
- Display the first puzzle in Level 2. Ask students, “How is this puzzle different from the puzzles we just solved? How do you think you solve this puzzle?”
- Have students use their paper/whiteboard to find a solution. Ask students to share possible solutions.
- Ask students, “How many steps does it take to solve this puzzle? How could we represent this puzzle with an equation?”
- Solve the puzzle and watch the feedback. Look for the two steps that are happening in the puzzle. Have students share their strategy for solving the puzzle. What was the first step? The second step?
- Repeat with a few more puzzles in Level 2.

How does the student:

- solve the puzzles?
- write equations to represent the puzzles?
- identify what the numbers in the puzzles represent?
- explain the strategy they used to solve the puzzle?

Independent Assignment (45-60 minutes)

Problem of the Day

- Jaden has 45 coins. He has 12 pennies, 27 dimes and some nickels. How many nickels does he have? How did you find your answer? Draw a picture or write an equation to represent the problem.

Math Writing Prompt

- Explain how to represent addition and subtraction on a number line.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Problem Solving Review and Discussion:

- Review the problem. Have students share their strategies and solutions. Discuss.
 - NOTE: You may want to strategically share student work that will promote a rich discussion.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday and add additional thoughts on how to add and subtract fractions to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.

Puzzle Talk: Pie Monster Symbolic (20-30 minutes)

- ◻ Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- ◻ Have students gather paper/whiteboards to represent problems and show their work.
- ◻ Display Grade 2 > Two Step Situations > Pie Monster Symbolic > Level 3

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 students a puzzle from Level 3.

Predict and Justify

- Focus on the two steps needed to solve the puzzle and how to represent those steps with an equation.
- Ask them to compare this puzzle to what they did in the earlier levels (similarities/differences).
- Ask a volunteer for their strategy.
- Ask the students to say what they think will happen when they try this strategy.

Test and Observe

- Have some students share their strategies. Ask the students to write an equation to represent the strategy posed by the student. Try a student's solution and watch the feedback.

Analyze and Learn

- Talk with students about what happened as they solved the puzzle.
- Play the animation and pause it during the feedback. Have students compare the animation to the equation that they created. Does it represent what they are seeing visually occurring in the puzzle?

Connect and Extend

- Are there other equations that would represent this same visual model? Discuss.
- Show puzzles from Level 4. Have students write and share equations to represent their solutions for the puzzles. Discuss similarities and differences in the equations.
- Have students share their strategies and the equations that they wrote to represent the problem and solution. Pause the feedback as you try the students ideas to discuss how the visual model and the feedback relates to the equation that was written.
- Brainstorm with students the math that they learned in this game. How is it like what they have learned before? What are some ideas they have learned around addition and subtraction from playing this game?

How does the student:

- write equations to represent the puzzles?
- identify what the numbers in the puzzles represent?
- explain the strategy they used to solve the puzzle?

Independent Assignment (45-60) minutes

Problem of the Day

- Complete the Pie Monster Worksheet.

Math Writing Prompt

- What does the equal sign in an equation mean? How can you tell if an equation is true?

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Problem Solving Review and Discussion:

- Review the problem. Pair students in breakouts to discuss their strategies for solving the problem and their solutions. Have students compare their solutions.
- Discuss whole group how different students approached the problem. Allow students to share their strategies and how their solutions compare to their partners.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday and add additional thoughts to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.
 - Is the target number even or odd? How do you know?
 - Did you skip count to solve this puzzle? What number did you skip count by? Why?
 - How can you prove your answer is correct?
 - Is the target number even or odd? How do you know?
 - Did you skip count to solve this puzzle? What number did you skip count by? Why?
 - How can you prove your answer is correct?
 - What strategy did you use to solve this puzzle?

Puzzle Talk: Bouncing Shoes (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Equal Groups > Bouncing Shoes > Level 1

Notice and Wonder

- Display the first puzzle in Level 1. Ask students, "What do you notice? What do you wonder? What do we need to do to solve this puzzle?"

Predict and Justify

- Ask students, "How many creatures do we need to fill these shoes? How do you know?"
- Discuss students' strategies. How did students figure out how many of the creatures were needed. Did students count each shoe and each leg? Did students skip count by the number of legs the creature had? Did they match each leg with a shoe?
- Ask the students to say what they think will happen when they try this strategy.

Test and Observe

- Try a student's solution and watch the feedback.

Analyze and Learn

- Talk with students about what happened as they solved the puzzle.
- Play the animation and pause it during the feedback. Discuss what students learn from the feedback.

Connect and Extend

- Repeat with additional puzzles in Level 1.
- Display the first puzzle in Level 2. Ask students, “What do you notice is different about this puzzle and the ones we just solved? What do you know about the number that is labeled on this puzzle?” Have students do a chat burst. They type everything they know about the target number and when you say go, they hit send.
- Have some students share what they typed and discuss.
- Ask students, “Is this target number even or odd?” Explain to students that an even number can be divided into two equal groups with no leftovers.
- Have students draw out the target number of shoes (they can draw circles or squares for shoes) on their paper/whiteboard. Have students divide the shoes they drew into two equal groups and determine if there are any leftovers.
- Without solving each puzzle, go through all of the puzzles in Level 2 and repeat this process. Make a list of the numbers with one side labeled “even numbers” and one side labeled “odd numbers”.
- Look at the list of even numbers and ask students what they notice about all of the numbers on that list. Prove that when you skip count by 2’s starting at 0, you land on all even numbers.
- Go back to the first puzzle in Level 2. Ask students to figure out how to solve the puzzle. Have them write their solutions on paper/whiteboard. Share students strategies and solutions.
- Repeat with the puzzles in Level 3.
- Add the target numbers to the list of even and odd numbers.

How does the student:

- describe the strategy they used to solve the problem?
- define an even number? Odd number?
- prove whether a number is even or odd?
- skip count?

Independent Assignment (45-60 minutes)

Problem of the Day

- Lacey had a collection of dolls. Her mom was making pink shoes for each of her doll’s feet. If her mom made 12 shoes, how many dolls does Lacey have?

Math Writing Prompt

- Explain how fair sharing can help you determine if a number is even or odd.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Friday Math Clubs (45-60 minutes each)

Divide the class into small groups and meet with each group as a Friday Math Club. This allows you to personalize instruction for students.

Problem Solving Review and Discussion:

- Review the problem. Give students time to think and write their thoughts. Then discuss. You may want students to submit their responses after they have discussed to give them a chance to revise or add to their responses based on learnings from the discussion. Discuss any additional strategies or student work you want shared.

Small Group Activity (choose one)

- **Virtual Math Talk:**
 - Give students some different math stories like the example below.
 - Give the students some one and two step addition and subtraction problems within 100. For example, JiJi baked _____ cupcakes to share with friends. Paco ate _____ cupcakes. JiJi baked _____ more. There are now 6 cupcakes left.
 - Fill in the blanks with numbers that would make this problem correct.
 - Explain how you know your answer is correct.
 - Discuss what they know in the problem and what they need to know to solve the problem.
 - Bring the discussion about each problem to the equation and discuss what each of the numbers in the equation represents.
 - Ask students to compare their drawings, etc., to the numbers in the equations.
- **Word Problem:**
 - Pose this question to the class. You have 15 pieces of gum. You gave your brother some on Monday and gave your sister some on Tuesday. You now have 6 pieces of gum. How much gum did you give to your brother? How much gum did you give to your sister? Explain how you found the answer.
 - Discuss what students know about the problem and what they need to know.
 - Ask students to share how they would represent that problem in an equation and then describe what each number in the equation represents.
 - Ask students to draw a model to represent the equation.
 - Have students solve the problem and share their solution.

My Thinking Path Discussion:

- Review student's learning with My Thinking Path. Ask them how their thinking has changed around the topic. How have the puzzles helped them better understand the math topic? What additional questions do they have?

Independent Assignment (35 minutes)

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Grade 2 - Week 4

ST Math® Immersion - Virtual



Topic: Solving problems involving equal groups and representing numbers with repeated addition.

[Week 4 Resources](#)

- Students work with puzzles to develop their understanding of equal groups. Students will solve problem situations involving array and equal group models. Students work with arrays to represent repeated addition. They will find multiple ways to represent a number.

Week 4 Overview

Day 1

- Class Meeting
 - Opening
 - Goal Setting
- Lessons for the Week
 - Introduction
 - Activate Prior Knowledge
- Independent Assignment
 - Pre-work: Fruit Monster
 - My Thinking Path
 - ST Math Puzzles

Day 2

- Problem Solving Discussion
 - Pre-work Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Fruit Monster
- Independent Assignment
 - Problem of the Day
 - ST Math Puzzles

Day 3:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Fruit Monster
- Independent Assignment
 - Problem of the Day
 - ST Math Puzzles

Day 4:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Bouncing Shoes Multiple Groups
- Independent Assignment
 - Problem of the Day
 - ST Math Puzzles

Day 5:

- Friday Math Clubs
 - Problem Solving Review and Discussion
 - Small Group Math Activity (Choose One)
 - Extend the problem
 - Play Target Number with Equal Groups
 - Problem Solving
- Independent Assignment
 - ST Math Puzzles



Class Meeting (20-30 minutes)

Opening

Welcome students to a new week.

- Use the Slide Deck for [Class Meeting](#)
 - You may want to use the slide deck to support goal setting, number exploration, which one doesn't belong activities, math data collection stories or you may choose to do the Weekly Warm-Up.

Weekly Warm-Up

- This week we will meet the Fruit Monster in ST Math. Ask students to show you their best monster faces. "Show me on your fingers 1-5: which of these is your favorite fruit? Choose one:"
 1. apples
 2. bananas
 3. oranges
 4. pears
 5. strawberries
 - Display a virtual chart and tally responses. Ask which fruit kids like the most, how many more students like strawberries than apples (or something similar using the data.) Ask, "how can we use this data to see how many people voted?"

Goal Setting

Discuss last week's goal. Did students achieve their goals? What did they do that helped them? What do they need to improve on?

- Set an ST Math goal for the week.

Lessons for the Week (20-30 minutes)

Introduction

Let students know that this week they will be focused on solving problems involving equal groups and representing numbers with repeated addition.

- Brainstorm what students know about this topic and what they wonder about this topic.

Activate Prior Knowledge

- Pose this question to the class. Pilar has 16 bracelets. She gives an equal number of bracelets to two friends. How many bracelets will each friend get?
 - Discuss what students know about the problem and what they need to know.
 - Ask students to share how they would represent that problem in an equation and then describe what each number in the equation represents.
 - Ask students to draw a model to represent the equation.
 - Have students solve the problem and share their solution.
 - What happens if two more friends come and Pilar wants them to have bracelets too? How many will each friend have now?

Independent Assignment (45-60 minutes)

Pre-work

- Complete the Pre-work for Fruit Monster.

My Thinking Path

- Write in the topic “Solving problems involving equal groups and representing numbers with repeated addition.”
- Complete the first two boxes in My Thinking Path.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Pre-work Review and Discussion:

- Discuss the first two questions on the pre-work with the students.
- Review the problem. Have students share their strategies and solutions. Discuss.
 - NOTE: You may want to strategically share student work that will promote a rich discussion.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday about what they know about solving problems involving equal groups and representing numbers with repeated addition.
- Review the whole group brainstorming and see if there are any additional things students would like to add. Was there anything new that they can add to their understanding after completing the pre-work?
- Discuss any questions the students have. Use this as an opportunity for students to see each other's knowledge as mathematical resources they can build from. The teacher's role here is to facilitate the discussion.
 - NOTE: You may want to put students in breakout groups for the discussion and then return to the whole group to summarize the conversations.

Puzzle Talk: Fruit Monster (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Equal Groups > Fruit Monster > Level 1

Notice and Wonder

- Display the first puzzle in Level 1. Ask students, "What do you notice? What do you wonder? What do we need to do to solve this puzzle?" Display the first puzzle in Level 1.

Predict and Justify

- Ask students, "What do you think you need to do to solve this puzzle?" Ask the students to say what they think will happen when they try this strategy.
- Have students share strategies and ideas for how to solve the puzzle.

Test and Observe

- Try a student's solution and watch the feedback.

Analyze and Learn

- Talk with students about what happened as they solved the puzzle.
- Play the animation and pause it during the feedback. Discuss what students learn from the feedback.
- Ask students, "How did you know how many fruits to feed the Fruit Monster? How did you count the fruit? How did you count the Fruit Monsters?"

- Repeat with additional puzzles in Level 1.
- Display the first puzzle in Level 2 that has 3 Fruit Monsters. Say to students, "Now we have more Fruit Monsters than the last puzzle. How can you figure out how much fruit to feed 3 Fruit Monsters?"
- Look for students sharing skip counting strategies. Say to students, "Why is skip counting an efficient strategy for solving this puzzle?" Model counting the fruit monster by the number of fruit pieces they eat.
- Display a puzzle that has 4 Fruit Monsters and repeat.
- Practice skip counting with a few more puzzles from Level 2.

Connect and Extend

- Pull up another puzzle. Ask students, "How many pieces of fruit does each Fruit Monster eat? How much fruit do we need to feed this number of Fruit Monsters? Can you count the fruit by 2's? 5's? We have ___ pieces of fruit, how many of these Fruit Monsters can we feed? Can you represent this with a repeated addition sentence?"

How does the student:

- skip count fruit or Fruit Monsters?
- determine the number of fruit or Fruit Monsters needed?
- represent the puzzle with a repeated addition sentence?
- determine how to write the repeated addition sentence?

Independent Assignment (45-60 minutes)

Problem of the Day

- Complete the Toy Cars Task.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Problem Solving Review and Discussion:

- Review yesterday's problem of the day. Have some students share their work. Compare the different strategies students used. Discuss any additional strategies or student work you want shared.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday and add additional thoughts to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.

Puzzle Talk: Fruit Monster (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Equal Groups > Fruit Monster > Level 3

Notice and Wonder

- Display the first puzzle in Level 3. Ask students, "How is this puzzle different from the ones we've been working on?"

Predict and Justify

- Ask students, "What do you think you need to do to solve this puzzle?" Ask the students to say what they think will happen when they try this strategy.
- Have students share strategies and ideas for how to solve the puzzle.

Test and Observe

- Try a student's solution and watch the feedback.

Analyze and Learn

- Talk with students about what happened as they solved the puzzle. Ask students to share what they learned.
- Play the animation and pause it during the feedback. Discuss what students learn from the feedback.
- Ask students, "How did you know how many fruits to feed the Fruit Monster? How did you count the fruit? How did you count the Fruit Monsters?"

Connect and Extend

- Display the next puzzle. Say to students, “Now we are trying to figure out how many Fruit Monsters we can feed with the fruit we have. Look at this puzzle and think about passing out the fruit to the Fruit Monsters. Could we represent the fruit with an array?”
- Ask students to think about what they know about arrays. Have a volunteer explain what an array is to the group.
- Have students look at the screen and ask them to think about how the fruit selected could be rearranged into an array.
- Display the next puzzle.
- Ask, “How would you create an array to show the solution for this problem? Could you write this in a repeated addition sentence? Write the repeated addition sentence.”
- Share students’ repeated addition sentences. Prove that the number sentence is correct (e.g., Each Fruit Monster eats 2 bananas. I have 10 bananas so I can feed 5 Fruit Monsters. Once I pass out the bananas I would see $2 + 2 + 2 + 2 + 2 = 10$).
- Move to Level 4 repeat with the puzzles in Level 4.

How does the student:

- write equations to represent the puzzles?
- identify what the numbers in the puzzles represent?
- explain the strategy they used to solve the puzzle?

Independent Assignment (45-30 minutes)

Problem of the Day

- Complete the Packs of Markers task.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Problem Solving Review and Discussion:

- Review the problem solving from the previous day. (See answer key.) Give students time to think and write their thoughts. Then discuss. You may want students to submit their responses after they have discussed to give them a chance to revise or add to their responses based on learnings from the discussion. Discuss any additional strategies or student work you want shared.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday and add additional thoughts to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.

Puzzle Talk: Bouncing Shoes Multiple Groups (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Equal Groups > Bouncing Shoes Multiple Groups > Level 1

Notice and Wonder

- Display the first puzzle in Level 1. Ask students, “What do you notice? What do you wonder?”

Predict and Justify

- Ask students, “What do you think you need to do to solve this puzzle?” Ask the students to say what they think will happen when they try this strategy.
- Have students share strategies and ideas for how to solve the puzzle.

Test and Observe

- Try a student’s solution and watch the feedback.

Analyze and Learn

- Talk with students about what happened as they solved the puzzle. What did they learn?
- Ask students, “Can either creature be used to solve this puzzle? Why or why not? How did you determine which creature could be used?”
- Display the next puzzle in the Level 1 and ask students, “Which creature cannot be used to solve this puzzle? Why not?” Talk with students about skip counting. Prove that skip counting by the number of legs on the chosen creature will land on the number of shoes shown.
- Repeat with other puzzles in Level 1.

- Display the first puzzle in Level 2. Ask students, “What is different about this puzzle and the ones we just did? How many possible answers are there? Does this mean that each creature will work to solve this puzzle?”
- Have students use their paper/whiteboard to prove that both creatures will work. Ask students to represent both creatures wearing the shoes on their paper/whiteboard (e.g. for 8 shoes: 8 groups of 1 for the eyeball and 2 groups of 4 for the dog).

Connect and Extend

- Model for students how to create two different arrays. Explain to students that an array is an arrangement of objects in equal rows and columns. Ask students to read their array as addition of equal groups (e.g. $1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$ or $4 + 4$). Prove that both arrays total 8, they are just organized in different ways.
- Repeat with the remaining puzzles in Level 2.
- Display the first puzzle in Level 3. Say to students, “Now there are two right answers but more than two creatures.” Have students use their tools to solve each puzzle. Share students’ strategies and solutions to each puzzle. Have students create and read an array for each correct solution.
- Repeat with additional puzzles in Level 3.

How does the student:

- create an array to model a puzzle?
- discuss how the array models the puzzle?
- write equations using repeated addition to represent the puzzles?
- prove their answer is correct?

Independent Assignment (45-60 minutes)

Problem of the Day

- Mariana was arranging 24 cupcakes on a plate. Draw an array to represent one way Mariana could have arranged the cupcakes. Write an equation using repeated addition to represent your array.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Friday Math Clubs (45-60 minutes each)

Divide the class into small groups and meet with each group as a Friday Math Club. This allows you to personalize instruction for students.

Problem Solving Review and Discussion:

- Review yesterday's problem of the day. Strategically share student work that will promote a rich discussion.

Small Group Math Activity (Choose One):

Math activities that encourage discussions, sharing ideas, strategies, solutions, and developing student understanding of concepts.

- **Extend the problem.**
 - Mariana moved the cupcakes from the plate onto a tray.
 - She arranged the cupcakes differently.
 - Draw a different array and write an equation to represent your thinking.
 - Compare the two arrays you drew. How are they alike? How are they different?
- **Play Target Number with Equal Groups**
 - The challenge is to see how many ways you can solve the problem based on the shoes a creature can wear. (Snake = 0, Eyeball = 1, Ostrich = 2, Robot = 3, Dog = 4, Starfish = 5, Ant = 6, Amoeba = 7, Octopus = 8, Bus = 9, Lobster = 10)
 - Give a target number. Have students identify the creatures who can wear the same number of shoes as the target number. For example: target number is 24. It can be 3 octopuses, 4 ants, 12 ostriches, 8 robots, etc.
- **Problem Solving**
 - Pose different types of problems focused on one and two step addition and subtraction problems within 100. Discuss what they know in the problem and what they need to know to solve the problem. Bring the discussion about each problem to the equation and discuss what each of the numbers in the equation represents.
 - For example, Caroline has 12 boxes of cookies. She gives an equal number of boxes to two friends. How many boxes will each friend get?
 - » One more friend comes and Caroline wants them to have a box too.
 - » How many boxes will each friend get now?
 - » What if she has 4 friends? 6 friends?
 - Problems focused on equal groups.
 - For example, Taylor was planting a garden. She has 20 tomato plants.
 - » Draw an array to represent different ways she can plant her garden.
 - » Write an equation to represent the problem.

Independent Assignment (35 minutes)

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Grade 2 - Week 5

ST Math® Immersion - Virtual



Topic: solving problems involving equal groups and representing numbers with repeated addition

[Week 5 Resources](#)

- Students work with puzzles involving missing addends. They write equations to represent the problems. They discuss the meaning of the equal sign and whether equations are true or false. Students discuss the relationship of addition and subtraction. They explore the commutative property of addition.

Week 5 Overview

Day 1

- Class Meeting
 - Opening
 - Goal Setting
- Lessons for the Week
 - Introduction
 - Activate Prior Knowledge
- Independent Assignment
 - Pre-work: Creating Multiple Rectangles
 - My Thinking Path
 - ST Math Puzzles

Day 2

- Problem Solving Discussion
 - Pre-work Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Creating Multiple Rectangles
- Independent Assignment
 - Problem of the Day
 - Math Writing Prompt (Optional)
 - ST Math Puzzles

Day 3:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - My Thinking Path Discussion
- Puzzle Talk: Create Multiple Rectangles
- Independent Assignment
 - Problem of the Day
 - Math Writing Prompt (Optional)
 - ST Math Puzzles

Day 4:

- Problem Solving Discussion
 - Problem Solving Review and Discussion
 - Reflection Poster
 - My Thinking Path Discussion
 - Thinking and Reflecting
- Post-Assessment
- Independent Assignment
 - ST Math Puzzles

Day 5:

- Friday Math Clubs
 - My Thinking Path Discussion
 - Problem Solving
 - Thinking and Reflecting Time: Poster Showcase
 - Celebrate



Class Meeting (20-30 minutes)

Opening

Welcome students to a new week.

- Use the Slide Deck for [Class Meeting](#)
 - You may want to use the slide deck to support goal setting, number exploration, which one doesn't belong activities, math data collection stories or you may choose to do the Weekly Warm-Up.

Weekly Warm-Up.

- Tell students you have already seen them persevere in their math work even when it's been challenging (give a couple examples.)
- Ask students: What is something else in your life that has challenged you and how did you get better at it? Give students a few minutes to stop and write or draw in their math journal before sharing out.

Goal Setting

Discuss last week's goal. Did student's achieve their goals? What did they do that helped them? What do they need to improve on?

- Set an ST Math goal for the week.

Lessons for the Week (20-30 minutes)

Introduction

Let students know that this week they will be focused on representing numbers with repeated addition.

- Brainstorm what students know about this topic and what they wonder about this topic.

Activate Prior Knowledge

- Give the students some problems involving equal groups. For example, represent the following expression in an array. $4 + 4 + 4 + 4 + 4$.
 - Pose the following questions:
 - What is the sum? Create a new expression and array that will give you the same sum.
 - Discuss how each of the arrays compare.
 - Make up a story for each of the arrays and discuss how the numbers in the story are represented in the array.

Independent Assignment (45-60 minutes)

Pre-work

- Complete the Pre-work for Create Multiple Rectangles.

My Thinking Path

- Write in “representing numbers with repeated addition.” Complete the first two boxes in My Thinking Path.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Pre-work Review and Discussion:

- Discuss the first two questions on the pre-work with the students.
- Review the problem. Have students share their strategies and solutions. Discuss.
 - NOTE: You may want to strategically share student work that will promote a rich discussion.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday about what they know about what they know about representing numbers with repeated addition.
- Review the whole group brainstorming and see if there are any additional things students would like to add. Was there anything new that they can add to their understanding after completing the pre-work?
- Discuss any questions the students have. Use this as an opportunity for students to see each other's knowledge as mathematical resources they can build from. The teacher's role here is to facilitate the discussion.
 - NOTE: You may want to put students in breakout groups for the discussion and then return to the whole group to summarize the conversations.

Puzzle Talk: Creating Multiple Rectangles (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Rows and Columns > Creating Multiple Rectangles> Level 1

Notice and Wonder

- Display the first puzzle in Level 1. Ask students, "What do you notice? What do you wonder?"

Predict and Justify

- Ask students, "What do you think you need to do to solve this puzzle?" Ask the students to say what they think will happen when they try this strategy.
- Have students share strategies and ideas for how to solve the puzzle.

Test and Observe

- Try a student's solution and watch the feedback.

Analyze and Learn

- Discuss with students the rectangle that was created and how they would describe it (e.g., 1 row of 5).
- Repeat with the next puzzle.
- Show a puzzle that has an even number 4 to 10. Play the solution as the students suggest. Ask if there is a different way to show the solution to the puzzle. Redo the puzzle and show the other solution.
- Discuss what students notice about the two solutions. Ask students, "How are the solutions different for the even numbers? Why?"

Connect and Extend

- Display the first puzzle in Level 2. Ask students, “How does this puzzle compare to the puzzles we’ve just solved?” Have students solve the puzzle.
- Try a few different solutions and discuss the feedback. Ask students to describe what they are seeing and ways they could name it (e.g., 2 rows of 4 or $4 + 4$ or 2 groups of 4, etc.).
- Repeat with 1 -2 other puzzles in Level 2. Then choose one puzzle and try selecting the correct total number of squares but not in an array (e.g., for 2×3 select one row of 5 and 1 square) and watch the feedback. Ask students, “Why does this solution not work? Why is this solution NOT an array?”
- Solve additional puzzles in Level 2.

How does the student:

- represent the puzzles on the Rows and Columns Game Mat?
- discuss different solutions?
- explain which solution is an array and which is not?
- represent the array with a repeated addition sentence?
- identify even and odd numbers?

Independent Assignment (45-60 minutes)

Problem of the Day

- A garden is pictured on a worksheet. Using addition, create two equations that represent the garden.

Math Writing Prompt

- How does decomposing a number help you to solve a problem? Draw a picture to help explain your answer.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (20-30 minutes)

Problem Solving Review and Discussion:

- Review the problem solving from the previous day. (See answer key.) Give students time to think and write their thoughts. Then discuss. You may want students to submit their responses after they have discussed to give them a chance to revise or add to their responses based on learnings from the discussion. Discuss any additional strategies or student work you want shared.

My Thinking Path Discussion:

- Ask students to reflect on the discussion yesterday and add additional thoughts to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.

Puzzle Talk: Create Multiple Rectangles (20-30 minutes)

- Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process.
- Have students gather paper/whiteboards to represent problems and show their work.
- Display Grade 2 > Rows and Columns > Creating Multiple Rectangles > Level 3

Notice and Wonder

- Show a puzzle from Level 3 with 2 numbers. Ask “What do you notice?” “How is this like the puzzle from yesterday?”

Predict and Justify

- Have students make predictions. Discuss their predictions and strategies..

Test and Observe

- Try one of the students’ ideas. Ask the students what they think is going to happen. Watch the feedback together and discuss what they saw.

Analyze and Learn

- Ask students to think about how what they saw happen compares to what they thought would happen. What did they learn from the feedback?

Level 3

- Show the next puzzle. Have students represent this puzzle in two ways on their paper/whiteboard, if there are at least two solutions.
- Share and discuss several solutions.

Connect and Extend

- Show a puzzle with 3 numbers.
- Share different solutions whole group.
- Discuss what students notice about the different puzzles and solutions.
- Show other puzzles and have students solve the puzzles and discuss patterns they notice.

How does the student:

- discuss different solutions?
- explain which solution is an array and which is not?
- represent the array with a repeated addition sentence?
- identify even and odd numbers?

Post-Assessment (20-30 minutes)**Post-Assessment**

- Assign the post-assessment to the students. They will take this individually. The information in the Post-Assessment can be used to (1) see how students' understanding of the concepts progressed through the program (2) identify ST Math objectives that students may still need for extra practice.

Independent Assignment (45-60 minutes)**Problem of the Day**

- A farmer planted 20 stalks of corn in a rectangular field. He had the same number of corn stalks in each row. Draw a picture to show two ways the farmer could have planted the corn. Explain how you came up with your pictures.

Math Writing Prompt

- John's toy car case has rows that will hold 5 cars in each row. How many cars might the full case hold? Explain how you know.

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.



Problem Solving Discussion (45-60 minutes)

Problem Solving Review and Discussion

- Review the problem. Have students share their strategies and solutions. Discuss.
 - NOTE: You may want to strategically share student work that will promote a rich discussion.

Reflection Poster:

Create a poster that shows what you learned in the ST Math Immersion. Be creative. (Due Friday.)

- Some examples of what you might include are:
 - Show the hardest problem you solved.
 - Share how you grew on your My Thinking Path.
 - Write a challenging question for another student.
- Teacher Tip: You may want to make a shared google slide deck. Assign each student a slide. They create their “poster” on this slide. This makes it easy to conduct gallery walks, to see everyone’s work, and to discuss.

My Thinking Path Discussion

- Ask students to reflect on the discussion yesterday and add additional thoughts to their My Thinking Path document. You may want to ask a few students to share how they are thinking about the concept and how their thinking may have been challenged or changed.

Thinking and Reflecting

- Biggest take-aways - Think about all you have learned throughout this program. How has your thinking changed? What is the biggest takeaway? What challenged you? What did you learn?

Independent Assignment (35 minutes)

ST Math Puzzles

- Play ST Math for 30 minutes.
- Complete the ST Math Puzzle Reflection.

Friday Math Clubs (45-60 minutes each)

This is the last day and it is important for students to reflect and celebrate.

My Thinking Path Discussion

- Review student's learning with My Thinking Path. Ask them how their thinking has changed around the topic. How have the puzzles helped them better understand the math topic? What additional questions do they have?

Problem Solving

- Select problems from the Post-Assessment to engage students in discussion around. You may want to select problems where you can share some example student work (keep it anonymous). You may also want to engage in discussions around problems with interesting solutions, problems with a variety of strategies, and/or problems where several students struggled.

Thinking and Reflecting Time: Poster Showcase

- Have students share their posters, challenge questions and biggest take-aways. (You can do this in whole group or small pairs)
- If your students were in pairs, bring them back to the whole group for more discussion. Ask students to think about all that was learned during this program. How has it helped them? What is the most important thing that they learned?

Celebrate

Students have worked hard in the last five weeks to grow as mathematicians. Take time to celebrate students' successes! Choose from these celebrations or have students come up with their own:

- Send out the Celebrate Brilliance certificates or have students share who has earned them.
- Showcase the Immersion posters students have made.
- Have a dance party. Put music or a video on your screen and have students move with you. Tell them to turn it up.
- Play a favorite ST Math puzzle together.
- Make it Spirit day or week (pajama day, bring your favorite snack, hat day, crazy sock day, etc.).
- Make a class list of "proud moments" in immersion. Ask students, "when did you feel proud?" Have students look through the work they have done or their ST Math tracker to reflect.