$$2 + 3 = 5$$
$$6 + 2 =$$

Starfall
Kindergarten
MATHEMATICS

Applying Addition

Starfall Education Foundation
P.O. Box 359, Boulder, CO 80306

UNIT **8**

Applying Addition

Week 19

Week 19 Summary

This week the children will be formally introduced to the operation of addition. They will learn to use several strategies that will serve as tools to assist them in solving addition problems.

The children will also:

- Be introduced to the plus sign ("Plus Sign Poem")
- Explore number combinations of five
- Learn strategies to solve number stories
- Create their own addition number stories

Preparation

Display *Backpack Bear's Math Big Book*, page 44, "Strategies for Adding" where you will be able to refer to it during this week's math lessons.

DAY 1

Display *Backpack Bear's Math Big Book*, page 43, the "Plus Sign Poem" where the children may easily view it.

The children will use their math mats and math bags.

DAY 2

Prepare each child's math bag to include a small plastic bag of 5 double-sided colored counters. You will also need a small plastic or paper cup for each pair of children.

DAY 3

You will use Addition Equation Cards and 1 index card for each child.

Note: Save the index cards after today's lesson. You will use them again in **Unit 9**, **Week 22**.

DAY 4

No additional preparation needed.

DAY 5

*Activity Center 1* — Navigate classroom computers to *Starfall.com*.

Activity Center 2 — The children will each need a math mat, a plastic bag of 10 double-sided, colored counters, a ten-frame, and a plastic or paper cup.

Activity Center 3 — The children will use 1 or 2 "What's Your Answer?" game boards and a pair of dice. Each child in the center will need 20 connect cubes.

Activity Center 4 — Prepare materials for this week's Teacher's Choice Activity.

Summative Assessment — The children in this group will play "A Walk in the Park." They will use 1 or 2 "A Walk in the Park" game boards, game spinners numbered 1 through 5, and a playing piece for each child.

To perform this week's Summative Assessment, the children individually identify the larger numbers on dominoes and count on from those numbers. Record responses on the Summative Assessment Checklist for Unit 8, Week 19.
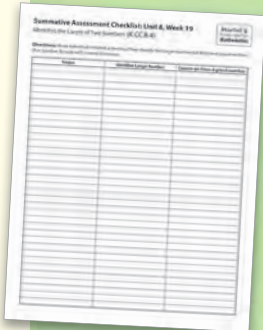
Summative Assessment
Unit 8 - Week 19

	DAY ①	DAY ②
Daily Routines	• Calendar • Place Value • Weather • Hundreds Chart • Number Line	
Magic Math Moment	Introduce "Operation"	"Five Little Bears"
Math Concepts	Determine the number that is one more than another "Plus Sign" Poem Introduction to addition and addition strategies	Review addition strategies "Shake, Spill, and Add" Create addition equations using colored counters Addition practice
Formative / Summative Assessment	Use addition strategies to solve problems	Write addition equations to total 10
Workbooks & Media		*Starfall.com*: Math Songs: "Five Little Bears" Workbook page 9

DAY **3**	DAY **4**	DAY **5**

• Calendar • Place Value

• Weather • Hundreds Chart

• Number Line

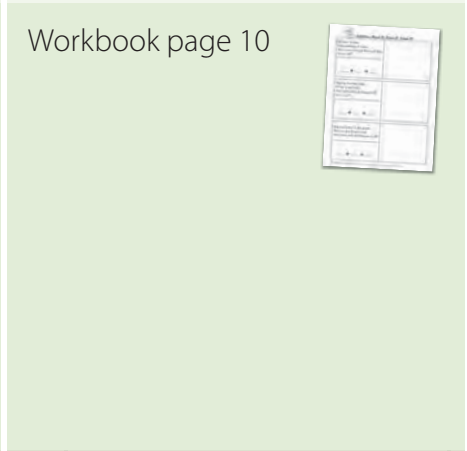|		
Counting on using the Number Line	Addition Equation Cards and counting on	**1** *Starfall.com:* • Monthly Calendar • Addition & Subtraction: "Addition Intro," Addition Practice, "Addition within 10"
Using the Number Line to count on from a number other than one Using the Number Line to add Create a floor number line	Review addition strategies Act out addition story problems Write addition equations Illustrate number stories	**2** "Shake, Spill, and Add"
Solve addition equations using the floor number line	Solve addition number stories	**3** "What's Your Answer?"
		4 Teacher's Choice
	Workbook page 10	**5** "A Walk in the Park" Summative Assessment: Distinguish the larger number on dominoes and count on from them

Magic Math Moment

Introduce "Operation"

Materials
☐ None

Ask: **Who knows what it means to operate on someone?** (Volunteers respond**.) Right, when a doctor operates he or she works to change someone.** Volunteers may share their experiences if time permits.

Continue: **Today we will operate, but not on each other! Instead we will operate on numbers. When we operate on numbers, we do something to change those numbers.**

Write 2 _____ 2 on the board. Say: **Let's perform the operation of addition on these numbers.**

Add a plus sign between the twos. Continue: **How will performing the operation of addition change them? Right when we perform the operation of addition on 2 + 2, they become 4. Let's operate on other numbers.**

Continue with several other addition problems using the term "operation" so the children get accustomed to hearing it.

Introduction to Addition

Materials
☐ Whiteboards, markers
☐ *Backpack Bear's Math Big Book*, pages 43 and 44
☐ Math mats
☐ Math bags

1 Plus Sign Poem

Indicate *Backpack Bear's Math Big Book*, page 43, the "Plus Sign Poem."

Say: **Backpack Bear has been learning about the operation of addition. He even wrote a poem to help himself learn to add. He would like to share it with us! He thinks it will help us learn to perform the operation of addition, too.**

2 Strategies for Adding

Say: **We have learned strategies for counting. What are some of the strategies we use to help us count?** Volunteers respond.

Continue: **Right, one strategy is to use your fingers. Another strategy is to use the number line. We can use counters or cubes to help us count. Now, Backpack Bear has some good strategies to help you add numbers.**

Indicate *Backpack Bear's Math Big Book*, page 44, Strategies for Adding.

Say: **Let's look at the different strategies Backpack Bear uses to help him perform the operation of addition.**

Introduce the Strategies for Adding in a way that is appropriate for your class. One suggestion is to discuss each strategy. Another suggestion is to have volunteers identify each strategy using the pictures as clues.

③ Using Addition Strategies

Distribute math mats, math bags, whiteboards, and markers.

Write the equation: 2 + 3 =___ on a whiteboard.

Say: **Let's try each of these strategies to perform the operation of addition and solve the problem 2 + 3 = what?**

- Strategy 1 — *I can use my fingers.* Say: **Hold up 2 fingers on one hand and 3 on the other hand. How many fingers are you holding up altogether? Right, 5.**

- Strategy 2 — *I can use a ten-frame.* Say: **Place 2 red counters and 3 blue counters in the ten-frame on your math mat. How many counters are on the ten-frame in all? Right, 5.**

- Strategy 3 — *I can use counters.* Say: **Take 2 red connect cubes and join them to 3 blue connect cubes. How many connect cubes are there altogether? Right, 5.**

- Strategy 4 — *I can use the number line.* Say: **Find the 2 and put your finger on it. Now hop like a bunny 3 times. What number did you land on? Right, 5.**

- Strategy 5 — *I can use tally marks.* Say: **Draw 2 tally marks on your whiteboard. Now draw 3 more tally marks. How many tally marks are there in all? Right, 5.**

- Strategy 6 — *I can use my head and count on.* Say: **Think the number 2. Now put up 3 fingers. Start at 2 and count 3 more. What is the number? Right, 5.**

- Strategy 7 — *I can draw pictures.* Say: **Draw 2 circles on your whiteboard. Now draw 3 squares. How many shapes do you have in all? Right, 5.**

- Strategy 8 — *I can act it out.* Say: **Let's act out a story. Two children were playing a game. (**Choose 2 volunteers to come forward.**) Three more children joined them. (**Choose 3 more volunteers to join the first two.**) How many children were playing the game in all? Right, 5!**

Ask: **What did you notice about the answer to the problem 2 + 3 = ___ each time?**

Explain: **Right, no matter what addition operation strategy we used to solve the addition problem, the answer was always the same. All of the strategies helped us find the correct answer, 5.**

Formative Assessment

Using Addition Strategies to Solve Equations

Say: **Now you will work with a partner to solve an addition problem. You and your partner will choose one of these strategies to help you perform the operation of addition and solve it.**

Partner the children. Write the equation 5 + 2 = _____ on a whiteboard.

Say: **The first thing you need to do is decide which addition strategy you and your partner will use. Talk about it and raise your hand when you have chosen your strategy.**

The children do this. They do not need to share which strategy they chose.

Continue: **Use the strategy you and your partner chose to solve the problem 5 + 2 = what?** Partners solve the problem and share which addition operation strategy they used with the class.

Repeat with another equation. Partners choose a different strategy to solve the problem.

Magic Math Moment

Five Little Bears

Navigate a classroom computer to *Starfall.com*:
Math Songs: "Five Little Bears."

Before opening the link, the children look for the addition strategies they learned (counting fingers, number line, acting out).

Play "Five Little Bears" and discuss what happened to the number of bears each time a new bear arrived.

***Operations &
Algebraic Thinking***

*A.1 - Represent addition
and subtraction in
a variety of ways.*

*A.5 - Fluently add and
subtract within 5.*

Using Counters and Ten-Frames

Essential Question: *How can we use objects to show addition?*

Materials

☐ Paper or plastic cup for
each set of partners

☐ Whiteboards, markers

☐ Math bags with 5 double-
sided colored counters

☐ *Backpack Bear's Math
Big Book,* page 44

☐ Math mats

☐ *Backpack Bear's Math
Workbook #2*, page 9

1 Review Strategies for Adding

Indicate *Backpack Bear's Math Big Book,* page 44,
Strategies for Adding.

Say: **Backpack Bear would like to know if you remember the different
addition strategies.**

Choose volunteers to indicate a strategy on page 44 of *Backpack Bear's Math Big
Book*, and explain what the strategy is.

2 Use Counters and Ten-Frame Strategies

Gather the children in a semi-circle to demonstrate "Shake, Spill and Add." You will
need a math mat, a cup, 5 double-sided, colored counters, a whiteboard, and a marker.

Say: **Today we will practice two of the addition strategies.**

- **Who can find "I can use counters" on the strategy page?**
- **Who can find "I can use a ten-frame?"**

Volunteers indicate these strategies on the Strategies for Adding page.

Choose a volunteer to partner with you to demonstrate the "Shake, Spill and Add"
activity. Then choose two new volunteers to demonstrate the activity again.

The children partner (stand up, hand up, partner up). Designate which child in
each pair is partner 1 and which is partner 2. Distribute a paper or plastic cup,
a math mat, a math bag containing 5 double-sided, colored counters, and an

individual whiteboard and marker to each pair. Choose one set of partners to demonstrate the following procedure to the class.

Say: **Partner 1, shake your cup gently. Partner 2, spill the counters onto the math mat. Now work together to place the yellow counters on the ten-frame. Add the red counters to the ten-frame.**

Continue: **Partner 1, count the yellow and red counters. How many are there in all? Partner 2, write the equation on your whiteboard.**

❸ Partner Work—Addition Practice

Assign new partners to work together. The children who are partner 1 get their math bags and math mats and the children who are partner 2 get their whiteboards and markers. Distribute 1 cup to each set of partners.

The partners repeat the above procedure as you provide step-by-step directions. Partners switch after each run through.

Allow as much time as needed to be sure the children understand the game.

# Formative Assessment

Different Ways to Make 5

Distribute *Backpack Bear's Math Workbook #2*. Instruct the children to turn to page 9.

Say: **This time when you spill your counters you will use your yellow and red crayons to record your spill. Then use your pencil to write the equation. Let's see how many different ways we can make 5!**

Note: Complete the first row together if necessary.

Magic Math Moment
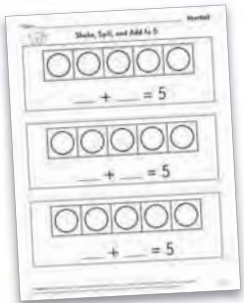
Counting On Using the Number Line

Say: **Look at the number line. I will use a pointer to touch a number. We will use the number line to help us count on.**

Point to 7 on the number line. Say: **Here is 7. If we add 2 more (**Demonstrate "hopping" 2 more and count, 7, 8, 9.**) what number will we end on? Right, 9. Seven plus 2 more equals 9.**

Continue: **Now, it's your turn. Here is the number 5. What is 5 plus 2 more?** A volunteer indicates 5 on the number line and "hops" 2 more.

Repeat with several numbers and volunteers.

Counting & Cardinality

A.2 - Count forward from a given number.

Operations & Algebraic Thinking

A.1 - Represent addition and subtraction in a variety of ways.

Using a Number Line to Add

Materials

☐ 1 Index card per child (**NOTE:** Save the index numbers for use in Unit 9, Week 22.)

☐ Pencils, crayons

☐ Addition Equation Cards

☐ *Backpack Bear's Math Big Book,* page 44

☐ Pointer

1 **Using the Number Line to Add**

Indicate the *Backpack Bear's Math Big Book*, page 44, Strategies for Adding.

Say: **Today we will use the addition strategy "I can use a number line" to help us add. Who can find that strategy on the list?** A volunteer does this.

Draw a number line from 0 to 10 on the classroom whiteboard.

Write 3 + 5 = _____.

Say: **We will use the number line to count on and solve the equation. The problem starts at 3. Who can find 3 on the number line?** A volunteer uses a pointer and points to 3 on the number line. Circle 3 in the equation on the whiteboard.

Say: **The problem tells us to add 5. Adding 5 is the same as adding 1, 5 times!**

Demonstrate:
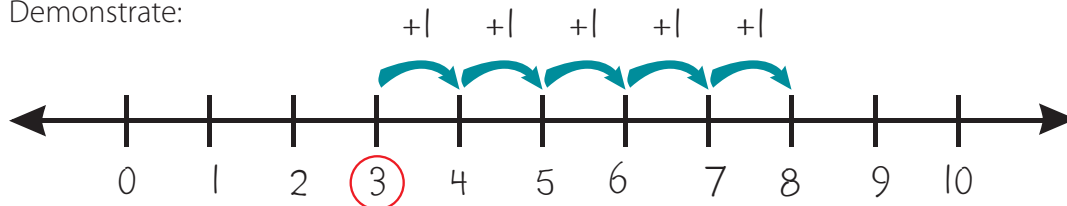
Say: **Let's count to be sure we added 5. We started at 3 and added 5 more. What number did we land on? Right, 8, so 3 plus 5 equals 8.**

Repeat with several other equations.

2 **Making a Large Number Line**

Say: **Let's make our own number line! Each of you will write a different number on your index card.**

- Distribute an index card to each child.
- The children fold the index cards in half with the fold at the top.
- Assign a different number beginning with zero to each child. He or she writes that number on the bottom half of the folded index card. The children write the number in pencil first then trace it with a crayon. (The size of your class will determine how many numbers will be on your number line.)
- Remind the children they can look at the number line to help them write their numbers.

The children bring their index cards to an area where they can arrange the folded index cards in order on the floor. Make sure there is space behind the cards for the children to stand.

The child with zero places his or her index card where you would like the number line to begin.

Each child places his or her index card in order to create a floor number line.

Note: To make this activity more challenging, call children out of numerical order.

Formative Assessment

Use the Floor Number Line to Add

Flash and read an Addition Equation Card (Example: 5 + 2). A volunteer stands behind the number 5 index card.

Say: **The equation says 5 + 2. How many "hops" should we make? Right, 2.** The volunteer "mini-hops" two times and lands behind the 7.

Ask: **Where did we land? (7) Right, 5 plus 2 more equals 7.**

Repeat this activity so each child has an opportunity to be the "hopper."

Addition Equation Cards (Counting On)

Say: **Today we will use the addition strategies "I can use my head and count on" and "I can use my fingers."**

Indicate an Addition Equation Card (Example: 1 + 4 =). Ask: **Who can read this equation?** A volunteer does this.

Indicate the equation 4 + 1 = and ask: **Who can read this equation?** A volunteer does this.

Ask: **Are these two equations the same or are they different? Right, the numbers are the same but they are in a different order. If we solve both of these equations the answer will be the same since we are adding the same numbers. But if we want to use the strategy of counting on to solve the equations, would it be faster to count on from 1 or to count on from 4?** (Volunteers respond**.) Let's try it.** Solve the equations by counting on. Lead the children to understand that is quicker to solve an addition problem by counting on from the larger number.

Flash other Addition Equation Cards. Ask: **Which number is greater (**or larger**)?** Let's put that number in our heads and count on.

Operations & Algebraic Thinking

A.1 - Represent addition and subtraction in a variety of ways.

A.2 - Solve word problems with addition and subtraction within 10.

Acting It Out

Essential Question: *What strategies can we use to solve word problems?*

Materials
- [ ] Individual whiteboards, markers
- [ ] *Backpack Bear's Math Workbook #2,* page 10
- [ ] Pencil, crayons
- [ ] *Backpack Bear's Math Big Book,* page 44
- [ ] Nine crayons

❶ Review the Strategies for Adding

Indicate the *Backpack Bear's Math Big Book*, page 44, Strategies for Adding.

Review the strategies encouraging the children to read them with you.

❷ Acting Out Story Problems

Say: **Let's use the addition strategy "I can act it out." Who can find that strategy on the list?** A volunteer does this.

Choose two volunteers to come to the front of the classroom.

Story #1

- **Listen closely to this number story. There was once a teacher who wanted the children in her class to work with partners to draw beautiful pictures together. The teacher gave one of the children five crayons** (Do this.**)**

- **The teacher gave another child four crayons.** (Do this.**)**

- **How many crayons did these partners have to draw their pictures with altogether?** (Volunteers respond.**) Right, nine.**

- Continue: **How do you know they had nine crayons altogether? Let's count to be sure.** Count the crayons orally with the children.

- **Did we add the crayons together or take some crayons away? Right, we added the crayons. Let's write the equation for this number story on the board.**

- Write 5 + 4 = 9 horizontally on a whiteboard.

- Say: **Now, you write the equation on your whiteboard.**

Story #2

- Choose ten volunteers to come to the front of the classroom.

- **Here is another number story. Listen closely. There were five children playing with blocks.** Five of the volunteers pretend to play with blocks.

- **Five more children wanted to play with blocks so they joined in.** The other five volunteers join the first group.

- **How many children played with the blocks altogether? Right, ten. How do you know? Let's count to be sure.** Count the volunteers orally with the children.

- Ask: **Did we add children or take away children to solve this problem?** (Volunteers respond.**) Right, we added. Write the equation that matches this number story on your whiteboard. Hold up your whiteboards when you are finished.**

3 Create an Addition Story

Volunteers take turns to make up their own addition number stories and choose classmates to act them out. The other children write the matching equations on their whiteboards.

④ Drawing Pictures

Say: **This time I will tell you a number story and we will draw pictures as we go.** Create the diagram pictured here on a whiteboard.

A volunteer reads the number story. Ask: **How many dogs does Ben have? Right, the number story said Ben has 3 dogs so I will draw 3 dogs.** Do this.

Ask: **How many cats does Tim have? Right, Tim has 2 cats, so I will draw 2 cats.**

Ask: **What should we do to find out how many pets Ben and Tim have in all? Right, we should add. Now, let's solve the problem. What numbers should we write in the equation?** Count the dogs together with the children and write 3 in the first blank. Repeat for the 2 cats.

Ask: **If we add 3 plus 2, how many pets are there in all? Right, 5.**

Ben has 3 dogs. Tim has 2 cats.
How many pets do Ben and Tim have in all?

Solve it: ____ + ____ = ____

Formative Assessment

Solve Number Stories

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 10.

- Say: **Now, you will solve number stories on your own. Let's read the first number story together.** A volunteer reads. Repeat the story.
- Continue: **Now, draw a picture that will help you solve the problem in the box.** The children do this.
- Say: **When you are ready, solve the problem and write the matching equation.**

Note: The children complete the other two stories independently, or you may solve them together.
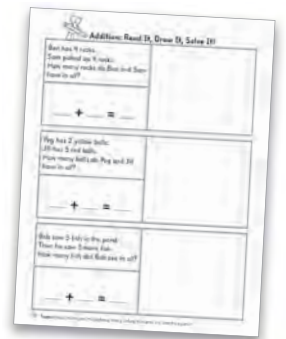
Learning Centers

1 Computer

The children explore:

- Monthly calendar
- Addition & Subtraction: "Addition Intro"
- Addition & Subtraction: "Addition Practice"
- Addition & Subtraction: "Addition within 10"

Children may navigate to other *Starfall.com* math activities after they have explored those suggested above.

Materials
- ☐ Computers navigated to *Starfall.com*

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2 "Shake, Spill, and Add"

The children shake their cups containing double-sided counters and "spill" them onto their math mats. They place the counters on their ten-frames, count each color, and write the corresponding equation on drawing paper. The children repeat as time allows.

Materials
- ☐ Math mat for each child
- ☐ Double-sided counters (10 for each child)
- ☐ Plastic or paper cup for each child
- ☐ Drawing paper, pencils
- ☐ Ten-frames

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3 "What's Your Answer?"

The children take turns rolling a pair of dice, adding the numbers together, then placing a cube on one of the squares that represents that number. If there are no spaces available for that number, the child does not place a cube on the board.

The game ends when the first player completely fills his or her board, or play may continue until both players fill their boards.

Materials
- ☐ 1 or 2 "What's Your Answer?" game boards
- ☐ 20 cubes per player
- ☐ Pair of dice

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4 Teacher's Choice

Review or expand a skill from this unit according to the needs of your students.

5 ## Summative Assessment: "A Walk in the Park"

The children place their playing pieces on start. They take turns spinning the spinner and moving their playing pieces the corresponding number of spaces. It they land on +2 or +1, they move the corresponding number of additional spaces. If they land on -3, they move back 3 spaces. The first child to get to the end wins, or play may continue until all of the children reach the end.

Assess individual children in this group by showing dominoes and asking them to identify the larger number on each, and to count on from that number.

Record results on the Unit 8, Week 19 Summative Assessment Checklist.

Materials

- ☐ 1 or 2 "A Walk in the Park" game boards
- ☐ Game spinners numbered 1–5
- ☐ Playing piece for each child
- ☐ Dominoes
- ☐ Summative Assessment Checklist for Unit 8, Week 19