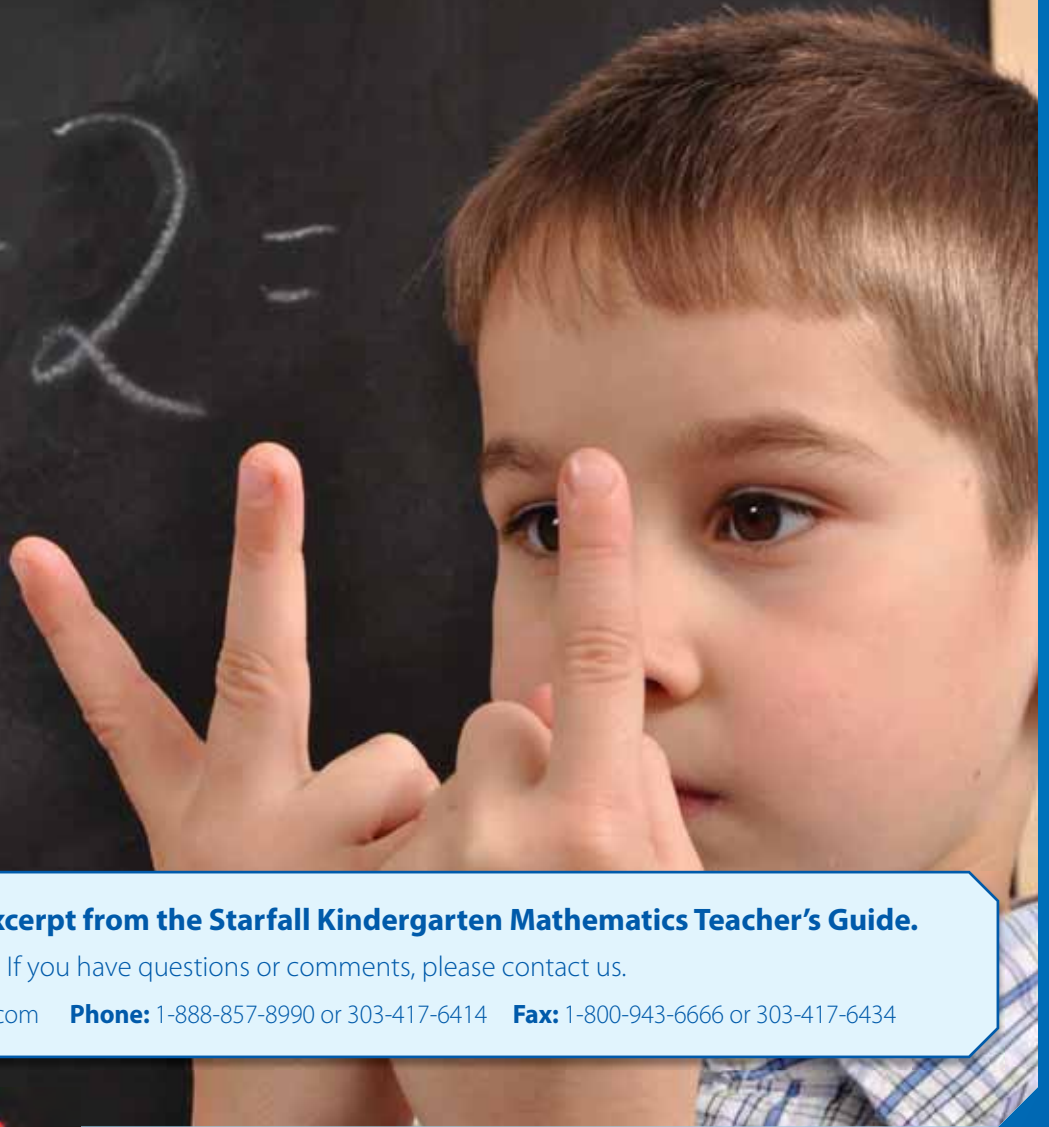


$$2 - 1 =$$
$$1 + 2 =$$



This is a one-week excerpt from the Starfall Kindergarten Mathematics Teacher's Guide.

If you have questions or comments, please contact us.

Email: helpdesk@starfall.com **Phone:** 1-888-857-8990 or 303-417-6414 **Fax:** 1-800-943-6666 or 303-417-6434



Review Addition & Subtraction

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Review Addition & Subtraction

Week 23

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Week 23 Summary

This week the children will review addition and subtraction strategies and practice using them to solve equations and story problems. They decide which operation (addition or subtraction) to use in solving story problems and write equations both vertically and horizontally. The children will also:

- Count by twos, fives and tens
- Sequence the numbers 0 through 11
- Represent equations using connect cubes

Preparation

DAY 1

Display *Backpack Bear's Math Big Book* pages 43 and 44, the Plus Poem and Strategies for Adding.

DAY 2

Prior to today's lesson, write each addition strategy on an index card and place them in Backpack Bear's backpack.

DAY 3

Display *Backpack Bear's Math Big Book* pages 45 and 46, the Minus Poem and Strategies for Subtraction.

DAY 4

The children will use manipulatives to create and solve equations for today's Formative Assessment.



DAY 5

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

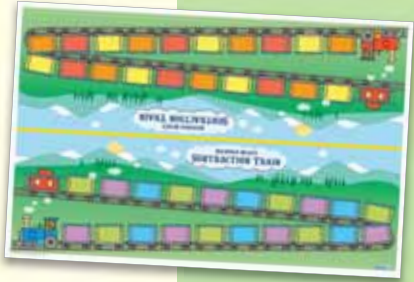
Activity Center 2 — The children will need a box or container of various colors of connect cubes to match the Addition Equation Cards.

Activity Center 3 — The children will use 1 or 2 “Backpack Bear’s Subtraction Train” game boards, 1 die per pair, and 20 connect cubes per player.

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

Summative Assessment — The children will complete page 24 in *Backpack Bear’s Math Workbook #2*. They will need counters or connect cubes, pencils, math bags, math mats and their workbooks.

Prepare a copy of the Summative Assessment Checklist for Unit 10, Week 23. Circulate as the children work in the different centers, and note each child’s progress.



Summative Assessment
Unit 10 - Week 23

DAY 1

DAY 2

Daily Routines

- Calendar
- Weather
- Number Line
- Place Value
- Hundreds Chart

Magic Math Moment

Human Number Line

Word Problems

Math Concepts

Arrange 0 – 10 Number Cards in order

Review Addition Strategies

Review Addition

Practice using Addition Strategies

Solve addition equations

Use strategies to show 10

Three ways equations may be written

Formative / Summative Assessment

Write equations in three different ways

Solve equations and color by sum

Workbooks & Media

Workbook page 20



Starfall.com, Addition & Subtraction: Word Problems

Workbook page 21



DAY 3

DAY 4

DAY 5

- Calendar
- Weather
- Number Line
- Place Value
- Hundreds Chart

"Ten Little Kittens"

"Ten Little Bears"

Learning Centers

Starfall.com:

- Monthly Calendar
- Add & Subtract: "Word Problems"
- Add & Subtract: "Subtract within 10."
- Add & Subtract: "Make 10 Objects"

Review Subtraction Strategies
Practice using Subtraction Strategies
Act out subtraction story problems

Dramatize a subtraction song
Match equations to answers


Form Equations with Cubes

Create and solve subtraction equations


Solve equations and color by answers

"Backpack Bear's Subtraction Train"

Starfall.com, Math Songs: "Ten Little Kittens"
Workbook page 22




Math Melodies Track 23, "Ten Bears in the Bed"
Workbook page 23



Teacher's Choice

Adding and Subtracting Within 5
Summative Assessment: Addition and Subtraction Within 5
Workbook p. 24



Human Number Line

Materials

- Number Cards 0-10

Distribute Number Cards 0-10 to 11 volunteers and instruct them to move to the front of the classroom.

Say: **Arrange yourselves in order, then sit on the floor and hold your Number Card under your chin.** Classmates assist as necessary.

Say: **This is a human number line. We will use this number line to help us answer plus 1 questions.**

Select a volunteer and say: (Volunteer's name) **stand behind the number 8. Class, what number will (Volunteer's name) stand behind to add one more? Right, (Volunteer's name) should move forward 1 number.** (The volunteer does this.) **What number is (Volunteer's name) standing behind now? Right, 9, so $8 + 1 = 9$.**

Continue to choose volunteers to stand behind the human number line and solve plus 1 equations.

Counting & Cardinality

B.4c - Each successive number refers to one more.

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.



Review Addition

1 Review Strategies for Adding

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

Read the poem and the children join you. Ask: **When do we use a plus sign? Yes, we use a plus sign when we add.**

Indicate the Strategies for Adding on page 44. Say: **Let's review the Strategies for Adding to see if we remember strategies we can use to help us add.**

Briefly review the addition strategies with the children.

2 Addition Equation Cards

Continue: **Today you will be Math Wizards! Watch as I flash an equation, and give a thumbs-up if you know the answer. Ready? (Flash a card.) When I count to 3 say the answer... 1, 2, 3.**

Repeat for several equations.

Say: **All of these equations are written vertically. (Indicate) Is vertically the only way we can write an equation?** Discuss.

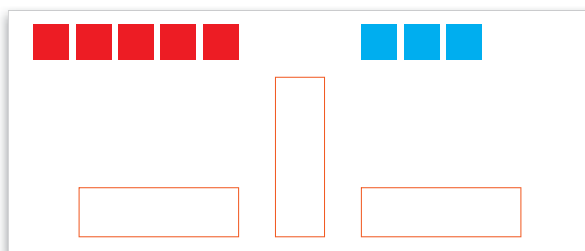
Materials

- Backpack Bear's Math Big Book*, pages 43 and 44
- Addition Equation Cards
- Whiteboards, markers
- Math bags
- Backpack Bear's Math Workbook #2*, page 20
- Pencils

3 Ways to Write an Addition Equation

Say: **Let's think of the different ways an equation can be written.**

Draw 5 red squares and 3 blue squares on a whiteboard, leaving a space between them. Draw 3 rectangular boxes under the cubes (see below).



Say:

- **An equation can be written horizontally.** Write $5+3=8$ in the first box.
- **An equation can be written vertically.** Write $5 + 3 = 8$ vertically in the middle box.
- **An equation can begin with the answer and have the problem follow it.** Write $8 = 5+3$ in the last box. Explain that this equation is also written horizontally like the first one, but it is written with the answer coming first.

Continue: **All three of these equations represent the same thing. When 5 and 3 are added together they always equal 8.**

4 Writing Equations

Distribute individual whiteboards, markers, and math bags.

Draw 2 blue cubes and 1 red cube on a whiteboard. Say: **Look at this addition problem. Use your connect cubes to create the addition problem that matches this drawing.**

Continue: **Now write the addition problem vertically, or up and down, on your whiteboard then hold it up.** The children do this.

Say: **Erase the problem and write it again horizontally then hold it up.** The children do this.

Say: **Erase the problem. This time write the answer first, then the problem.** The children do this.

Observe as the children create the addition problem and write the equations. Assist as necessary.

Repeat the above procedure using the equation $4 + 2 = 6$.

Note: If your class needs additional practice, demonstrate writing the equations the three different ways for another problem.

Say: **Now, listen to this story then use your red and blue connect cubes to create the problem. There are 5 large clouds in the sky and 2 small clouds. How many clouds are in the sky?** The children use their connect cubes to create the problem. Check their answers and discuss.

Draw 5 large clouds and 2 small clouds on a whiteboard. Give the following directions. Observe as the children write the equations, and assist as necessary.

Say: **Write the problem vertically on your whiteboard then hold it up.** (The children do this.) **Now erase the problem and write it horizontally, then hold up your whiteboard.**

Continue: **Here's the last one, ready? Erase the problem. Now, write the answer first, then the problem.**



Formative Assessment

Solve Addition Equations

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 20. Complete the first problem step-by-step with the children. They may complete the remainder of the page independently, or you may work with them to complete this page together as a group.

Modification: If there are only a small number of children who need help to successfully complete this workbook page, you may have the majority of the children complete this page independently, while you work with the children who need support to complete this page.



Word Problems

Project *Starfall.com* Addition & Subtraction: "Word Problems Add To: Change Unknown," or gather the children around a classroom computer.

Navigate to a story problem. The children help choose the equations based on the information given.

For each question, volunteers explain their choices. Lead the children to discuss why the other choices do not fit the story problem.

Materials

None

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.

My Answer Is...

1 Review Strategies for Adding

Say: **Today let's practice all of the ways to show an addition problem. Backpack Bear has been learning the addition strategies, too!**

Write 10 on the whiteboard. Choose volunteers to check Backpack Bear's backpack and each remove one index card. Ask the following questions to demonstrate the corresponding strategies.

- **How can we show 10 with our fingers?**
The children show 10 fingers and you draw two hands with fingers raised on the whiteboard.
- **How can we show 10 using a ten-frame?** Draw a ten-frame on the whiteboard. A volunteer draws circles in all ten sections of the ten-frame.
- **How can we show 10 using counters?** A volunteer counts out 10 counters and the class counts along to confirm.
- **How can we show 10 using a number line?** Draw a number line on a whiteboard and add dots where the numerals 0 through 10 should be. Volunteers add the numerals to the number line.
- **Who can show a number sentence for 10 using the number line?**
A volunteer does this. Assist the volunteer as needed.
- **How can we show 10 using tally marks?** A volunteer does this.
- **How can we show 10 by using our heads, and counting on?** (Example: A volunteer says 8 then holds up 2 fingers, or draws 2 tally marks.)
- **How can we show 10 by drawing pictures?** A volunteer draws pictures of 10 objects.

Materials

- Addition strategies in Backpack Bear's backpack
- Backpack Bear's Math Workbook #2, page 21
- Individual whiteboards, markers
- Addition Equation Cards
- Number Cards 1-10
- Pencils and crayons
- Pocket chart
- Math mats
- Math bags
- Counters

- **How can we show 10 by acting it out?** Choose 10 children. Ask them to show an equation by creating two groups of children.
- **How can we show 10 by writing equations? Let's think of all the different equations that total 10.** Volunteers take turns writing equations on the board in any direction.

Review the different ways the children represented the answer 10.

2 Match the Equation

Select Addition Equation Cards with different equations but the same addends (Example: $1 + 8$ and $8 + 1$).

Distribute an Addition Equation Card to each child. The children find classmates with the Equation Cards that have the same addends.

Switch the Equation Cards around and repeat if time allows.



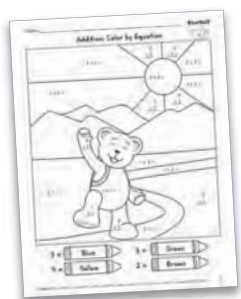
Formative Assessment

Color By Equation

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 21.

Explain to the children they are to add the numbers in each equation then color the sections using the color code. They may use the connect cubes in their math bags to solve the equations if needed.

Note: If necessary, complete one section as an example.



"Ten Little Kittens"

Project *Starfall.com*: Math Songs, "Ten Little Kittens," or gather the children around a computer to watch. They listen to determine if the song is an addition or subtraction song. Volunteers explain why.

Materials

- Starfall.com*

Subtraction

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

Materials

- Backpack Bear's Math Big Book*, pages 45 and 46
- Backpack Bear's Math Workbook #2*, page 22
- Pencils, crayons

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.

1 Review Subtraction Strategies

Indicate *Backpack Bear's Math Big Book*, pages 45 and 46, the Minus Poem and Strategies for Subtraction.

Say: **Let's play a game to review strategies for the operation of subtraction. Watch as I write a problem on the whiteboard. I will use one of the strategies to solve it. As soon as you know which strategy it is, raise your hand. Ready?**

Write an equation on the board and begin to solve it using one of the strategies. As soon as children discover the strategy you are using, stop and allow a volunteer to explain which strategy is being used.

Repeat for each strategy.

2 Act Out Subtraction

The children listen to the story problems then volunteers act them out.

- *Story Problem #1*—Select 5 volunteers to come forward. Say: (Names of the 5 volunteers) **were building a sand castle together.** (Name 2 volunteers) **decided to play on the swings. How many children were left building the sand castle?** (3)
- *Story Problem #2*—Select 10 volunteers to come forward. Say: **Ten children were planting a garden. They all worked together, and they all stayed until the garden was planted. How many children planted the garden?** (10) **Right, 10! None of the children left.**
- *Story Problem #3*—Select 3 girls and 3 boys to come forward. Say: **Three girls and three boys were planning to go swimming. All of the boys decided not to go. How many children went swimming?** (3)



3 Draw to Solve a Problem

Say: **Now let's use the strategy of drawing pictures to solve a subtraction story.**

Draw 8 fish on a whiteboard. Say: **Let's pretend these fish are swimming. How many fish are there? Right, 8. (Cross out 5 fish.) The crossed out fish swam away. How many fish swam away? (5) How many fish are left? (3) How do you know? Who can write the equation to match this story problem on the whiteboard vertically? (A volunteer does this.) Who can write the equation horizontally?**

Draw 6 suns on a whiteboard. Ask: **How many suns are there? Let's pretend the clouds covered some of the suns. How many did the clouds cover? (A volunteer crosses out some of the suns.) How many suns are left? How do you know? Who can write the equation to match this story problem on the whiteboard vertically? (A volunteer does this.) Who can write the equation horizontally?**



Formative Assessment

Weather Subtraction

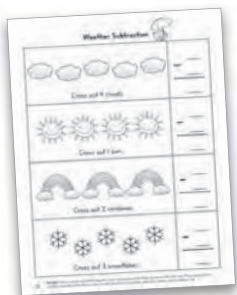
Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 22.

Note: This workbook page is designed to be completed together as a class. Project the page if possible for demonstration.

Say: **Raise your hand if you know how many clouds there are in the first problem. (A volunteer responds.) There are 5 clouds so let's write 5 in the first blank in the equation.** Demonstrate this.

Continue: **Look at the words under the picture of the clouds. They say "Cross out 4 clouds." Use a pencil or a crayon to do that. The equation says 5 minus (blank). We crossed out 4 of the clouds, so how many clouds did we take away? Yes we took away 4. Write 4 in the blank under the 5. (The children do this.) The equation says 5 minus 4 equals blank. How many clouds are left? There is 1 cloud left so 5 minus 4 equals 1. Write 1 in the last blank.**

Continue for the other problems on the page.



"Ten Bears in the Bed"

Play *Math Melodies* Track 23, "Ten Bears in the Bed." The children listen and sing along if they know the song.

Ask: **Is this an addition song or a subtraction song? Yes, it is a subtraction song. How did you know?**

Select 10 children to "dramatize" the song as you play it a second time. The class chimes in during repeated phrases.

Materials

- Math Melodies* Track 23

Subtraction Equations

1 Story Problems on *Starfall.com*

Project *Starfall.com* Addition & Subtraction: "Word Problems: Take From: Total Unknown" or gather the children around a classroom computer.

Navigate to a story problem. The children help create the equation based on the information given.

2 Match the Equation

Say: **Let's play a game called "Match the Equation." Each of you will receive a different subtraction equation. I'll write a number on the board. You look at your equation. If your equation equals the number on the board, place your Equation Card in the pocket chart.**

Distribute a Subtraction Equation Card to each child.

Write 3 on the board. The children with equations that equal 3 place their Equation Cards in the pocket chart.

Repeat with other numbers.

Materials

- Backpack Bear's Math Workbook #2*, page 23
- Subtraction Equation Cards
- Pencil, crayons
- Pocket chart

Counting & Cardinality

CC.3 - Count backward from a given number.

Operations & Algebraic Thinking

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

Formative Assessment

Color by Equation

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 23.

The children add the numbers in each equation, then color the sections using the color code. Provide the children with manipulatives for support.



The children may use the connect cubes in their math bags to solve the equations if needed.

1 Computer

The children explore:

- Monthly calendar
- Add & Subtract: "Word Problems" (All links)
- Add & Subtract: "Subtract within 10" (bowling)
- Add & Subtract: "Make 10 Objects"

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

Materials

- Computers navigated to *Starfall.com*

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.

2 Equations with Cubes

The children select Addition Equation Cards then combine two different colored sets of connect cubes to match the equation on the cards.

Materials

- Box of multicolored connect cubes
- Addition Equation Cards

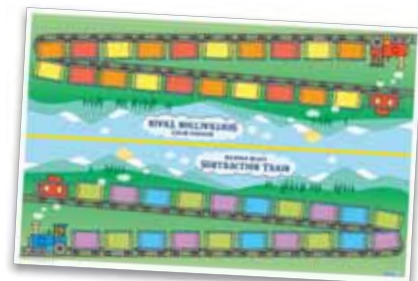
3 Backpack Bear's Subtraction Train

Place a cube on each car of both trains (not on the engine or caboose). The children take turns rolling a die, and removing the corresponding number of connect cubes.

The first child to uncover his or her whole train wins, or play continues until both players remove all of the connect cubes from their trains.

Materials

- 1 or 2 "Backpack Bear's Subtraction Train" game boards
- 20 connect cubes per player
- 1 die



4 Teacher's Choice

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

5 Summative Assessment: Adding and Subtracting Within 5

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 24.

The children use their counters to help solve the problems then they write the answers.

Observe whether or not children can successfully add and subtract within 5 and record your observations on the Summative Assessment Checklist for Unit 10, Week 23.

Materials

- Backpack Bear's Math Workbook #2*, page 24
- Math bags
- Math mats
- Pencils
- Summative Assessment Checklist for Unit 10, Week 23

