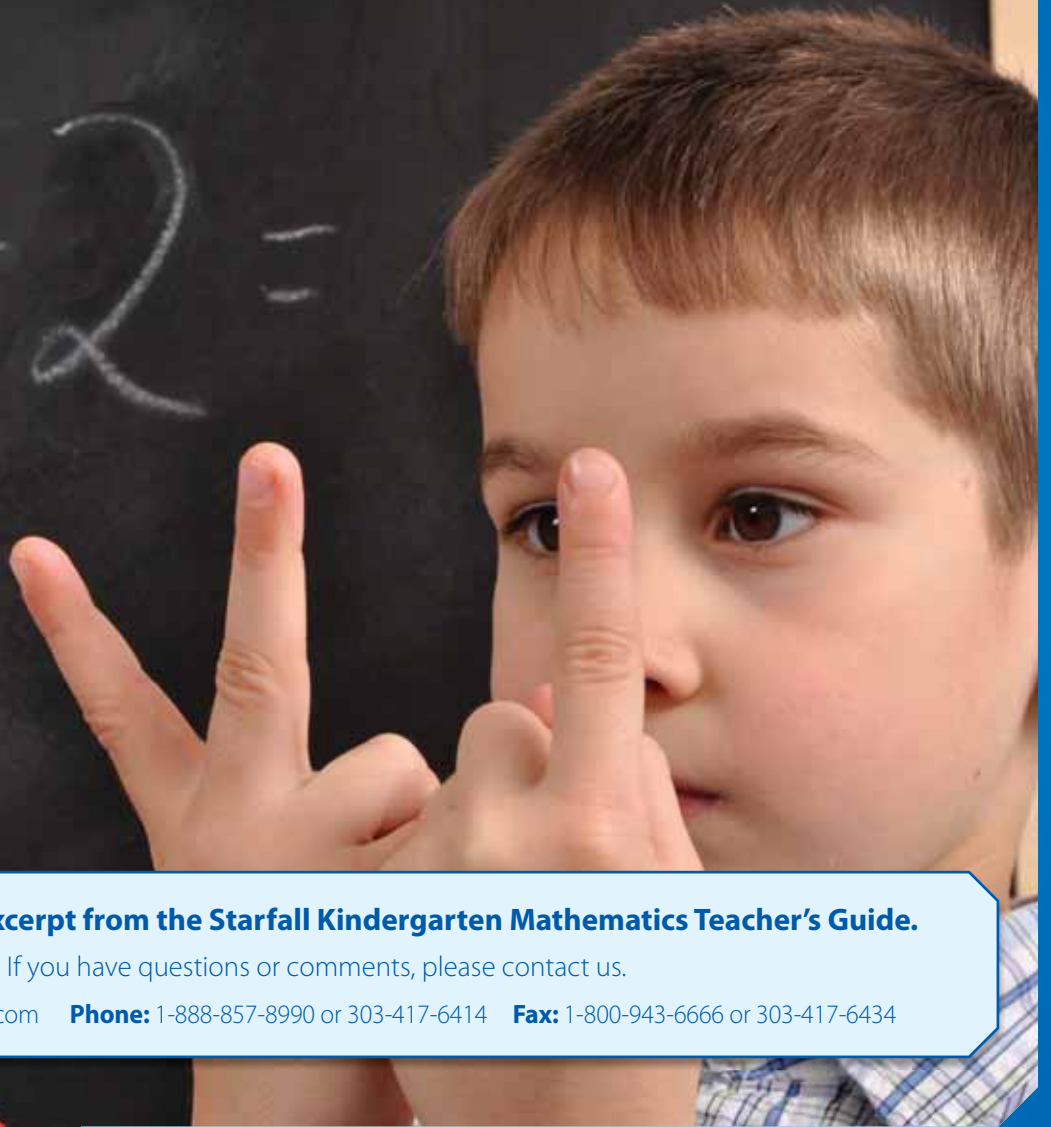


$$2 - 1 =$$
$$1 + 2 =$$



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 24

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Week 24 Summary

This week the children will work to strengthen their skills by practicing addition and subtraction facts, creating equations, and learning key phrases that will help them determine which operation to use in order to correctly answer story problems. They will review coins, and practice adding and subtracting money.

The children will also:

- Create addition and subtraction problems
- Practice identifying plus and minus signs
- Count by twos, fives and tens
- Distinguish between addition and subtraction problems

Preparation

DAY 1

Select Addition and Subtraction Equation Cards within 5 and mix the cards to create a deck.

For today's lesson you will divide your class into 5 groups to play "Build the Tower." Number the children in each group. This will be the order of play. Each group will need a box of cubes in a variety of colors, 10 Addition Equation Cards and a math mat for each child.

Divide the class into 5 different groups to play "Disappearing Train Cube Subtraction." Number the children in each group. This will be the order of play. Each group will need 10 Subtraction Equation Cards and a math bag and a math mat for each child.

DAY 2

You will need a set of Number Cards 0 through 9 placed in a paper bag, and a plus and a minus sign in another paper bag for today's Magic Math Moment.

Prepare 3 index cards, one with a + (plus sign), one with a - (minus sign), and one with an = (equal sign). Use Number Cards to create the following sets:

- 1, 4, 5
- 2, 3, 5
- 1, 5, 6
- 4, 2, 6
- 1, 6, 7
- 5, 2, 7

The children will need pencils, scissors, and glue sticks.

DAY 3

Write the numbers +1, -2, +2, and -1 (repeated to fill all spaces) on a blank game spinner.

You will need a small amount of play dough for each child. You will also need a clear container or bucket and 10 small balls or other manipulatives.

Optional: Use a large demonstration penny, nickel and dime if available. If you do not have large demonstration coins available, draw the coins on a whiteboard.

DAY 4

You will need 2 index cards per child.

DAY 5

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

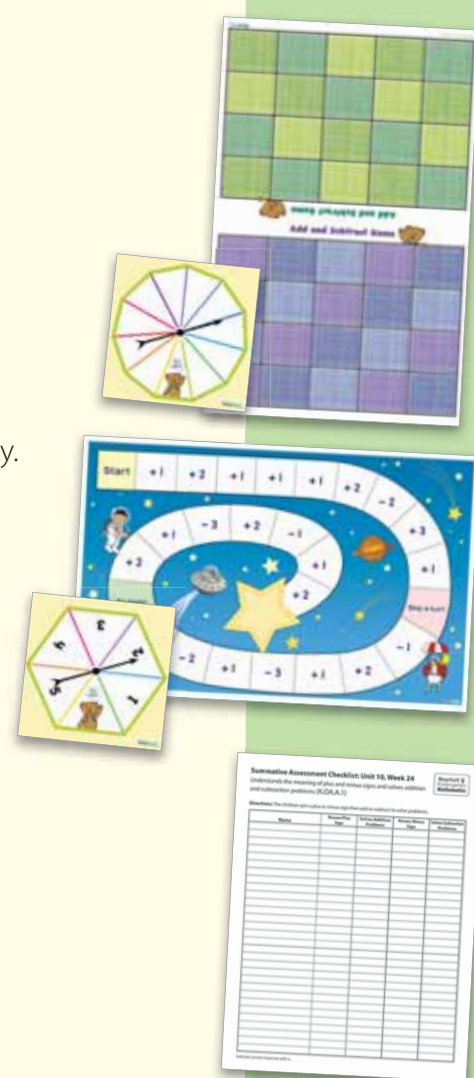
Activity Center 2 — The children will use Addition and Subtraction Equation Cards.

Activity Center 3 — You will need an “Add & Subtract” game board for each pair of children, 20 connect cubes for each child and a game spinner labeled with the numbers -1, -2, -3, -4, +1, +2, +3, +4, +5, and +6.

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

Summative Assessment — The children will use a “Reach to the Stars” game board, 10-20 connect cubes for each player (different colors) and a game spinner labeled 1-5.

Prepare a copy of the Summative Assessment Checklist for Unit 10, Week 24. You will assess the children’s knowledge and application of plus and minus signs.



Summative Assessment
Unit 10 - Week 24

DAY 1

DAY 2

Daily Routines

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

Magic Math Moment

Equation Flash Cards

“Plus and Minus”

Math Concepts

Distinguish plus and minus signs when solving equations

Distinguish plus and minus signs

Review Addition and Subtraction Facts

Add and subtract

“Build a Tower”

Create addition and subtraction equations

“Disappearing Train Cube Subtraction”

Human equations

Formative / Summative Assessment

Observe children playing addition and subtraction games

Use plus and minus signs to create equations

Workbooks & Media

Workbook page 25



DAY 3

DAY 4

DAY 5

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

Learning Centers

"My Coin Book" 0-10

Count by twos, fives and tens

Starfall.com:

- Monthly Calendar
- Add & Subtract: "Coin Book" 0-10

1

Create Plus and Minus Signs with play dough

Distinguish addition and subtraction words and phrases

Add and Subtract using coins

Introduce "The Bucket Game"

Draw plus and minus signs

Listen for word clues to solve Addition and Subtraction Story Problems

Flash Card Game

2

Use pictures to create and solve addition and subtraction money problems


Create addition and subtraction story problems by drawing pictures and writing equations

"Add & Subtract"


3

Starfall.com: "Add & Subtract," My Coin Book: 0-10"

Workbook page 27



Workbook page 28



Teacher's Choice

4

"Reach to the Stars"

Summative Assessment: Observe knowledge and application of plus and minus signs

5

Addition and Subtraction Equation Cards

Create a deck by mixing Addition and Subtraction Equation Cards (answers within 5).

Materials

- Addition and Subtraction Equation Cards within 5, mixed

Say: **Backpack Bear has a challenge for you! He mixed some addition and subtraction problems to try to trick you. He said you should really look to see if there is a plus or a minus sign! He would like you to tell if the problem is an addition problem or a subtraction problem. How will you know?**

Discuss the fact that the plus or minus sign tells whether to add or subtract.

Flash the cards. The children say “add” or “subtract” then volunteers give the answers.

Operations & Algebraic Thinking

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

A.5 - Fluently add and subtract within 5.

Review Addition and Subtraction Facts

Essential Question: How can practicing math facts help us quickly add and subtract?

Materials

- 5 containers of connect cubes in a variety of colors
- Addition Equation Cards (approximately 5 sets of ten mixed)
- Subtraction Equation Cards
- Math mats
- Math bags

1 “Build a Tower” Game

Briefly demonstrate “Build a Tower.”

The children work on their math mats. They take turns to draw Addition Equation Cards. They add the numbers then use connect cubes in two different colors to build the answer.

2 “Build a Tower Addition” Game

Divide the class into 5 groups. Number the children or establish the order in which they will play. Each group will need a box of connect cubes in a variety of colors and a math mat for each child.

The children will work on individual math mats.

- The first child draws an Addition Equation Card, adds the numbers, then uses two different colored connect cubes to “build” the answer.
- The second child draws an Addition Equation Card and does the same.
- Play continues until each child has 2 turns. They connect the cubes from both turns together to build towers.

Groups compare their towers to determine whose tower is the tallest.



Formative Assessment

“Disappearing Train Cube Subtraction” Game

Gather the children together and briefly demonstrate the “Disappearing Train Cube Subtraction Game.”

The children work on their math mats. They connect 20 connect cubes together. They then take turns to draw Subtraction Equation Cards, subtract the numbers and remove the corresponding connect cubes.

Divide the class into 5 different groups. Number the children or establish the order in which they will play. Each group will need 10 Subtraction Equation Cards, a math bag and a math mat for each child.

The children will work on individual math mats.

- Each child connects 20 cubes together to form a train.
- The first child in each group draws a Subtraction Equation Card, subtracts the number, then takes the corresponding number of cubes away from his or her train.
- Play continues until each child has two turns.
- If a child draws a card and does not have enough cubes to take away, he or she skips the turn and loses no cubes.

The groups compare their towers to determine whose tower is the shortest.

"Plus and Minus" Game

Draw a minus sign and a plus sign on the whiteboard and identify them to the children.

Say: **Let's play a game. I will touch one of these signs.**

You say plus if I touch the plus sign (indicate), or minus if I touch the minus sign (indicate). Ready? Touch the signs several times. Pretend you're going to touch one but don't, to add excitement to the game.

Choose two volunteers. Volunteer #1 will draw a plus or minus sign from the paper bag, and volunteer #2 will draw a Number Card from the other paper bag.

Create two teams (Example: girls and boys) and line the teams up side-by-side in two rows.

Each team in turn draws a sign and a Number Card and the team takes steps forward or backward to correspond to the number and sign chosen. The team that reaches the designated end point wins, or both teams may be winners.

Repeat with new teams and volunteers as time allows.

Materials

- Number Cards 0 through 9 in a paper bag
- Plus and minus sign in a paper bag

Counting & Cardinality

B.4 - Understand the relationship between numbers and quantities.

Operations & Algebraic Thinking

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

Creating Addition and Subtraction Equations**1 Form an Equation**

Say: **Today we will create human equations!**

- Distribute the plus, minus and equal signs to three volunteers
- Distribute a set of Number Cards to three volunteers. (Example: 1, 4, 5) Number holders stand in order left to right: 1, 4, 5.
- Arrange the three number volunteers so there are spaces between them.

Say: **If you are holding a sign, place yourself between the numbers to form an equation.** Discuss why the minus sign is not used in this equation.

Ask: **What could we do to use the minus sign rather than the plus sign?** Rearrange the number holders to show 5, 1, 4.

Say: **If you are holding signs, find the correct place to stand to form this equation.**

Materials

- Prepared index cards (plus, minus, equal signs)
- Backpack Bear's Math Workbook #2*, page 25
- Pencils, scissors, glue sticks
- Number Card Sets:
 - 1,4,5
 - 2,3,5
 - 1,5,6
 - 4,2,6
 - 1,6,7
 - 5,2,7

Classmates assist as necessary.

Repeat choosing different volunteers to hold the signs and remaining sets of numbers.

Note: Take opportunities to discuss different options of arranging sets of numbers such as $4 + 1 = 5$, $1 + 4 = 5$, and $5 = 1 + 4$.



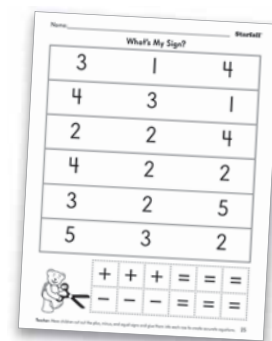
Formative Assessment

“What’s My Sign?”

Distribute *Backpack Bear’s Math Workbook #2* and instruct the children to turn to page 25. They cut apart the signs at the bottom of the page and glue them in the top section to create equations.

Note: There are more plus and minus signs than needed to complete the workbook page.

Modification: The children may write the correct signs first, then cut and glue the correct symbols over them.



Introduce Coin Book 0-10

Materials

 None

Navigate a computer with projection capabilities, or gather the children around a classroom computer navigated to *Starfall.com*: Add & Subtract: "My Coin Book: 0-10."

The children assist in navigating this activity in which they will distinguish addition and subtraction combinations to equal a featured number.

Note: Click the arrow to navigate to a different featured number.

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.

A.5 - Fluently add and subtract within 5.

Money

M.1 - Identify the value of coins.

Plus and Minus

Essential Question: How can knowing the name and value of a penny, nickel and dime help us in the real world?

1 Plus or Minus Play Dough Activity

Distribute a small amount of play dough to each child.

Say: **Today you will make plus and minus signs with play dough.** The children do this and place both signs on their math mats.

Note: Instruct the children to press two pieces of play dough together where they intersect when making the plus sign.

Say: **I will say a word or a group of words. If the word or group of words is about addition, hold up your plus sign. If the word or group of words is about subtraction, hold up your minus sign. Ready?**

- How many in all?
- Plus
- Take away
- Join together
- How many are left?
- Minus
- Count on
- Add
- Count backwards
- More
- Subtract

Materials

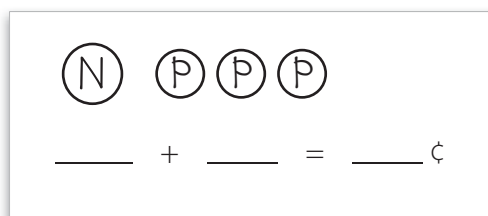
- Clear bucket or container
- Prepared game spinner
- Backpack Bear's Math Workbook #2*, page 27
- Small amount of play dough for each child
- Math mats (back side)
- Whiteboards, markers
- 20 small balls or manipulatives
- Coins (pennies, nickel, dime)
- Math bags
- Pencils

- Combine two sets
- All together
- Less than

2 Adding and Subtracting with Money

Gather the children in front of a classroom whiteboard. Say: **Watch as I draw some coins on the board.**

Draw circles on the board to represent a nickel and three pennies, with the first letter of the coin written inside (N for nickel, P for penny). Draw lines under each group to form an equation (see below).



Ask:

- **How much is a nickel worth?** A volunteer writes 5 on the line under the nickel.
- **How much are 3 pennies worth?** A volunteer writes 3 under the pennies.

Continue: **If a nickel is worth 5 cents we can start counting at 5 and count on. 5, 6, 7, 8. How much money is there in all?** (A volunteer writes 8.) **Right, 5 plus 3 equals 8.**

Repeat for a dime and two pennies.

Say: **Now let's go shopping. If coins are used to pay for something should we add or subtract? Yes, when you pay for something you subtract the coins from what you have.**

Draw 6 pennies. Say: **Sarah had 6 pennies. She bought some peanuts that cost 2 cents. How much money does Sarah have left?** (A volunteer crosses out 2 of the pennies.) **Yes, Sarah has 4 cents left because $6 - 2 = 4$.**

Draw 1 dime and 3 pennies. Say: **Jared had 13 cents. His brother borrowed a dime. How much money does Jared have left?** (A volunteer crosses out the dime.) **Jared has 3 cents left because $13 - 10 = 3$.**



Formative Assessment

Adding and Subtracting using Money

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 27.



Note: This page should be completed with the children. Project the page for demonstration if you have the capability.

Say: **Look at the first problem. In the first blank write the number that represents how much a nickel is worth. In the second blank write the number that represents how much two pennies are worth. Does the plus sign tell you to add the numbers together or to subtract? Right, a plus sign tells you to add.**

A volunteer writes the equation and the answer on the whiteboard.

Repeat for the remaining problems.

Note: If you do not have time to introduce “The Bucket Game,” do so prior to learning center time on **Day 5**.

Say: **Today we will play “The Bucket Game.” It will help us practice identifying plus and minus signs. Remember, the plus sign means to join two sets together, which makes a larger number. The minus sign means to take away so you end up with a smaller number.**

Place 10 balls in the bucket or container and reserve the others to use with addition problems. Choose two volunteers to demonstrate the game. The first child spins and determines if he or she will add or subtract, then adds or takes away the corresponding number of balls. The second child does the same.

They continue taking several turns adding and subtracting balls.

After the game has been demonstrated, volunteers take turns to spin and add or subtract balls.

Explain: **You will all play this game during Learning Centers!**

Magic Math Moment

DAY

4

Counting by Twos, Fives, and Tens

Materials

 None

Divide the class into groups of 5.

Say: **When I give the signal practice counting by tens to 100 in your group. Ready, go!**

After a few seconds say: **Clap once if you can hear me.** (The children do this.) **Clap twice if you can hear me.**

Say: **Now let's try counting by tens to 100 again all together.** Repeat with the children counting by:

- Fives to 30
- Twos to 20

Counting & Cardinality

A.1 - Count to 100 by ones and by tens.

CC.4 - Count to 100 by twos and by fives.

Operations & Algebraic Thinking

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

Addition and Subtraction Story Problems

Materials

- Backpack Bear's Math Workbook #2, page 28
- 2 index cards per child
- Pencils, crayons

1 Make Plus and Minus Signs

Distribute 2 index cards to each child. Say: **Use a pencil to draw a large plus sign on one index card and a large minus sign on the other.** The children do this.

Continue: **Now trace over the plus and minus signs with a dark crayon.**

2 Listen for Addition and Subtraction Clues

Say: **Listen to this story and see if you can tell if the story is an addition story or a subtraction story.**

Optional: Recall the activity in which the children listened for addition and subtraction words.

Say: **If you think you should add to solve the problem hold up your plus sign. If you think you should subtract to solve the problem hold up your minus sign. Let's practice.**

- **Four ladybugs were on a leaf. One more ladybug came. How many ladybugs were on the leaf altogether? Raise the plus sign if you should add to solve the problem, or raise the minus sign if you should subtract to solve the problem.**

Discuss why the correct answer is to add the numbers, and point out the word *altogether* is always a clue to use addition.

Repeat for the following story problems:

- 1 pear grew on a pear tree. Then 4 more pears grew. How many pears grew on the tree in all?
- Rachel had 5 pennies. She lost 1 penny on the sidewalk. How many pennies does Rachel have left?
- David's shirt has 5 buttons and his friend's shirt has 3 buttons. How many buttons do the shirts have altogether?
- Grace's dog had 4 dog treats. He ate 3. How many dog treats does Grace's dog have left?
- There were 5 flowers growing in a field. Susie picked 1 of the flowers. How many flowers are left?

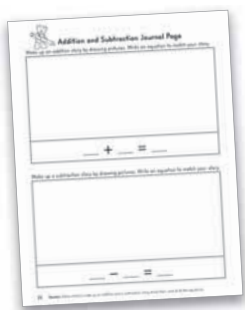


Formative Assessment

Addition and Subtraction Journal Page

Distribute *Backpack Bear's Math Workbook #2* and instruct the children to turn to page 28.

The children each create their own addition problem by drawing pictures and writing the matching equations. They then create a subtraction problem by drawing a picture and writing the matching equation.



Learning Centers

DAY

5

1 Computer

The children explore:

- Monthly calendar
- Add & Subtract: "Coin Book" 0-10

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

Materials

- Computers navigated to *Starfall.com*

2 Flash Card Game

Distribute a set of Addition and Subtraction Equation Cards to each pair of partners.

Partner 1 flashes the Equation Cards to Partner 2. Together they agree on the answer. This continues until all of the Equation Cards have been solved.

The children mix the Equation Cards and repeat with Partner 2 flashing the Equation Cards to Partner 1.

Materials

- Addition and Subtraction Equation Cards (mixed and divided into a set for each pair of children in the group)

3 Add & Subtract

The children take turns spinning the spinner. For positive numbers, they add the corresponding number of connect cubes to their game boards.

For negative numbers, the children remove the corresponding number of connect cubes from their game boards, unless there are not enough connect cubes to remove.

The game ends when a child fills his or her entire game board, or until both children fill their game boards.

Materials

- "Add & Subtract" game board
- 20 connect cubes for each player
- Prepared game spinner (labeled with numbers +1, -2, +2, and -1 repeated)



4 Teacher's Choice

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

Counting & Cardinality

B.4a - Say number names in order, pairing each object with one number.

Operations & Algebraic Thinking

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

