

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

If you have questions or comments, please contact us.

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Fun with Numbers

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Fun with Numbers

Week 6

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Week 6 Summary

The children will be introduced to measurement, the concepts of taller and shorter, and polygons. They will learn how ordinal numbers are used and how to sort by attributes. The children will also:

- Further develop graph interpretation skills through the Calendar Routine
- Practice identifying numbers that are one less and one more
- Measure using a nonstandard measuring tool
- Compare lengths of objects

Preparation

DAY 1

Have a classroom measurement chart located where it is easy for the children to see.

Prepare a name card for each child, and have reusable adhesive available to attach the name cards to the wall next to the measurement chart.

DAY 2

Navigate a classroom computer with projection capabilities to *Starfall.com*, Math Songs: "Five Little Farmers."

You will use Number Cards 1 through 10 for today's Magic Math Moment. Place the Number Cards in a bag or basket for today's lesson.

DAY 3

You will need ten small stick pretzels for each child, and Shape Cards: *triangle, circle, square, rectangle, rhombus, ellipse, pentagon, hexagon, octagon, and trapezoid.*

DAY 4

The children will use individual whiteboards and markers in today's Magic Math Moment.

You will need one set of Shape Cards for display and enough other sets to provide one Shape Card for each child.

Gather three containers of like objects (books, connect cubes, toy cars, blocks, etc.) for sorting.

DAY 5

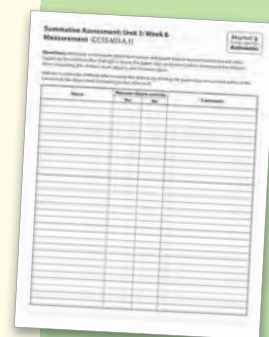
Activity Center 1 — Navigate classroom computers to *Starfall.com*.

Activity Center 2 — Provide math mats and a tub(s) of various objects such as blocks, buttons, chips, toy cars, magnets etc. for sorting.

Activity Center 3 — Duplicate *Backpack Bear's Math Workbook #1*, page 20 and color the key for the children to reference in completing the workbook page.

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

Summative Assessment — Prepare a copy of the Summative Assessment Checklist for Unit 3 – Week 6 (Measurement). Gather a classroom object for each child to measure (e.g., a book, a marker, a paintbrush, or a pencil) and have several paper clips or connect cubes available for each child to use as nonstandard measuring tools.



Summative Assessment
Unit 3 – Week 6

DAY 1

DAY 2

Daily Routines

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

Magic Math Moment

Writing equations vertically and horizontally

Recognize the number that is one less

Math Concepts

Meaning of equations
Review vertically and horizontally

Introduce

Ordinal Numbers (first through fifth)

Introduce

Measurement (height) and Baseline

Positioning (first through tenth)

Taller/shorter

Formative / Summative Assessment

Taller/shorter

Ordinal numbers

Workbooks & Media

Workbook page 18



Starfall.com, Math Songs: "Five Little Farmers"

Workbook page 19



DAY 3

DAY 4

DAY 5

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

Learning Centers

One less (subtraction preview)

One more (addition preview)

Starfall.com:

- Monthly Calendar
- Numbers: 0-10
- Geometry & Measurement: "Polygons" and "Button Sort"

Review and discriminate polygons (triangle, rectangle, rhombus, ellipse, hexagon, octagon, trapezoid)

Introduce
Attributes and sorting

Sorting

Create polygons

Sort shapes by attributes

Color by Number

Math Melodies CD Track 6, "Five Little Chickadees"

Teacher's Choice

Summative Assessment
Measurement (length)

Workbook page 20



Equations

Materials

 None

Say: **Raise your hand if you would like to be a mathematician today.** (The children do this.) **What do you think mathematicians do? Right, mathematicians work with numbers.**

Write $2+2 = \underline{\quad}$ on the whiteboard and read: **$2 + 2 = \text{what?}$ Put your hands on your head if you know the answer.** The children do this and a volunteer responds.

Say: **$2 + 2 = 4$ is an equation. Say, equation.** (The children repeat, equation.) **An equation is a number sentence. Whatever is on one side of the equal sign (indicate $2+2$) is equal to what is on the other side of the equal sign (indicate 4). $2+2$ is the same as 4.**

Continue: **This equation is written horizontally. Say, horizontally.** (The children repeat, *horizontally*.) **Now watch! I will write the same equation vertically. Who remembers what vertically means?**

Write the equation vertically. Say: **Both of these equations are the same. It doesn't matter if an equation is written horizontally or vertically, the equation doesn't change.**

Counting & Cardinality

A.2 - Count forward from a given number.

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

Measurement & Data

A.1 - Describe measurable attributes of objects.

Operations & Algebraic Thinking

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

Measurement

Essential Question: How can we use measurement to describe and compare objects?

Materials

- Classroom measuring chart
- Backpack Bear's Math Workbook #1, page 18
- Prepared name cards
- Reusable adhesive
- Pencils

1 Introduce Measurement

Gather the children around the classroom measuring chart. Say: **A measuring chart records how tall you are. How tall you are is called your height.**

Choose two children of the same height to stand at the front of the classroom. Ask: **Are both of these children the same height?**

Instruct one of these children to stand on a chair or a thick book. Ask:

- **Now are they the same height?**
- **Did one child grow taller?**
- **Why is one child taller than the other now?**

2 Introduce Baseline

Say: **When you measure an object, you must start at a baseline.** Point out how the children are not being measured from the same baseline.

Say: **The baseline for measuring these children could either be the floor or the chair, but both children must be measured from the same baseline.**

Instruct the child on the chair (or book) to step down. Ask:

- **Now, are both children on the same baseline?**
- **Are they children the same height now?**

3 Measurement Chart

Measure each child and add their name cards to the wall. Be sure to include yourself and Backpack Bear.

Compare and contrast the results.



Formative Assessment

Backpack Bear's Math Workbook, Page 18

Distribute *Backpack Bear's Math Workbook #1* and instruct the children to turn to page 18. Discuss the three sections. Say:

- **Look for something in the classroom that is taller than you are, and draw a picture of it in the middle box.**
- **Find something that is shorter than you are, and draw a picture of it in the last box.**

The children gather together to share their results.



Magic Math Moment

Less Than

Materials

-
- Number Cards 1-10

Choose ten volunteers to each hold a Number Card and stand in order side-by-side at the front of the classroom.

Say: **I will say a number. Raise your hand if you can point to the number that is one less than the number I say. Ready? Four.**

Assist a volunteer to indicate the Number Card 3. Continue: **Right, 3 is one less than 4.** The volunteer takes the place of the child holding the Number Card. Repeat with several other numbers.

Counting & Cardinality

CC.2 - Supply missing number in a sequence.

CC.5 - Identify ordinal numbers.

Ordinal Numbers

Essential Question: What would happen if we didn't have ordinal numbers?

Materials

-
- Math Melodies*
- CD Track 7
-
-
- Starfall.com*
- : Math Songs, "Five Little Farmers"
-
-
- Backpack Bear's Math Workbook #1*
- , page 19
-
-
- Number Cards: 1 -10 in a bag or basket
-
-
- Backpack Bear

1 Introduce Ordinal Numbers

Say: **Today we will learn about special kinds of numbers called ordinal numbers. Ordinal numbers tell the position or order of people, objects, and events. For example, in a race with three people:**

- **Someone finishes first.**
- **Someone finishes second.**
- **Someone finishes third.**

2 "Five Little Farmers"

Project *Starfall.com*, Math Songs: "Five Little Farmers," or gather the children around a classroom computer. Say: **Listen for ordinal numbers in the song.**

Play the song again using the *Math Melodies* CD, Track 7.

Say: **Let's play the song again. This time listen for what each little farmer did.** Discuss the actions of the five farmers. Instruct the children to mimic the actions.

- **The first farmer milked the cow.**
- **The second farmer plowed.**
- **The third farmer fed the hens.**
- **The fourth farmer mended broken pens.**
- **The fifth farmer took vegetables to town.**

Ask: **What did the first farmer do?** Volunteers respond. Choose a volunteer to represent the first farmer. Continue until all five farmers are standing side-by-side.

Play the song again and the children add actions.

Choose a different set of five children to come to the front of the classroom. Tap each child's head as you count first, second, third, fourth, and fifth.

Ask: **Which child is third? Which child is fifth?** Repeat with each position.

3 Put Backpack Bear in Position

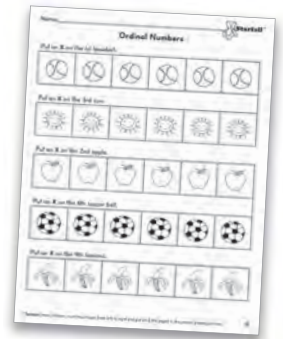
Place 10 chairs in a row one behind the other. Say: **I will place Backpack Bear in the first chair.** (Do this.) Ask: **Who can move him to the fifth chair?** (A volunteer does this.) Continue until you have named each position.

Formative Assessment

Backpack Bear's Math Workbook, Page 19

Distribute *Backpack Bear's Math Workbook #1* and instruct the children to turn to page 19. If you have projection capabilities, project the page as a guide.

Read the directions above each row of pictures one section at a time, and the children color the appropriate objects. Check for understanding as the children complete the workbook page.



One Less

Instruct the children to listen as you play the *Math Melodies* CD Track 6, "Five Little Chickadees."

Ask: **What did you notice about the number of chickadees each time one flew away?** (Volunteers respond.) **Right, each time a chickadee flew away the number was one less. First there were 5 chickadees then 1 flew away. How many were left? Right, four.**

Continue: **Listen to the song again. This time hold up five fingers and put one down each time a chickadee flies away.** Assist the children as necessary.

Materials

- Math Melodies* CD Track 6

"Five Little Chickadees"

Five little chickadees
Pecking at the door
One flew away and
Then there were four

Four little chickadees
Sitting in a tree
One flew away and
Then there were three

Three little chickadees
Looking at you
One flew away and
Then there were two

Two little chickadees
Sitting in the sun
One flew away and
Then there was one

One little chickadee
Left all alone
He flew away and
Then there were none

Counting & Cardinality

CC.2 - Supply missing number in a sequence.

Geometry

A.2 - Correctly name shapes.

B.5 - Build and/or draw shapes.

Polygons

1 Introduce Polygons

Display the following Shape Cards in a pocket chart: *triangle, circle, square, rectangle, rhombus, ellipse, pentagon, hexagon, and octagon.*

Say: **Today we will learn about a special group of shapes called polygons. A polygon is any shape that has three or more straight lines that are connected. Say, polygon.**

Materials

- Shape Cards: *triangle, circle, square, rectangle, rhombus, ellipse, pentagon, hexagon, octagon, and trapezoid*
- Ten small stick pretzels per child

2 Discriminate Polygons

Say: **Remember the rule, a polygon has at least three straight lines that are connected. Look at these shapes. Who can find a polygon?** A volunteer removes a Shape Card from the pocket chart, identifies the shape, and explains why it is a polygon. If a child selects the circle or ellipse, the class may assist in explaining that these shapes do not follow the polygon rules (at least three straight lines that are connected). Repeat until only the circle and ellipse remain.

Ask: **Why are the circle and ellipse still in the pocket chart?** (Volunteers respond.) **Right, they do not have at least three straight lines that are connected. They have curved lines.** Remove the circle and ellipse from the pocket chart.

Indicate the trapezoid. Say: **This is a trapezoid. Say, trapezoid.** (The children repeat, trapezoid.) **Is a trapezoid a polygon? Why?**



Formative Assessment

Create Polygons

Distribute ten stick pretzels to each child. Say: **Let's use pretzels to create polygons!** Say the name of a polygon and the children construct it using their pretzels. Remind the children that the ends of their pretzels must touch.

Repeat for each of the polygons.

One More

Distribute individual whiteboards and markers. Partner the children and instruct them to sit back-to-back. Say:

I will say a number. You write the number that is one more than the number I say. When I say “show your answer,” turn and show your answer to your partner. Ready?

Discuss the number that is one more after partners share their answers.

Materials

- Individual whiteboards, markers

Counting & Cardinality

CC.2 - Supply missing number in a sequence.

Measurement & Data

B.3 - Classify, count, and sort objects.

Geometry

A.2 - Correctly name shapes.

Sort By Attributes

1 Introduce Attributes

Divide the children into groups of boys and girls.

Say: **Let's count the children in each group.** Do this.

Ask: **Why is this one way to divide the class?** Discuss.

Continue: **One of the ways to divide the class is to separate you into a group of girls and a group of boys. This is a physical attribute. You are either a boy or a girl. Attributes are ways to describe people and objects. We use attributes for sorting. Say, attribute.** (The children repeat, *attribute*.)

2 Sorting by Attribute

Say: **There are many ways to sort people and objects.** Indicate three containers full of objects of varying size. (Example: connect cubes, tiles, toy cars, blocks, books)

Say: **These objects are classified into three groups.**

Describe the objects in each group. Ask: **How are the objects classified or sorted? Right, all of the books are together, all of the connect cubes are together, and all of the toy cars are together, so they are classified by the type of object. What are some other ways the objects could be classified into categories?** Lead the children to understand that the objects could be classified by color, size, etc.

Materials

- Shape Cards (one set for display and one card for each child)
- Three containers of similar objects (books, connect cubes, toy cars, blocks, etc.)
- Pocket chart



Formative Assessment

Different Ways to Sort

Display one set of Shape Cards across the top row of a pocket chart. Indicate and identify each shape. Distribute a Shape Card to each child. Say: **Keep your shape a secret!**

The children take turns completing the sentence stem “My secret shape is a _____. It has _____ sides/curves. It belongs with the _____ (shape name).” The children place their Shape Cards in the pocket chart under the corresponding shape.

Collect several classroom books that can easily be sorted into three categories such as ABC books, color, animals, etc.

Say: **Let’s see how many ways we can think of to classify these books.**

What is one way? The children suggest ways of sorting the books (subject matter, hardcover/soft cover, size, etc.) and volunteers sort them accordingly.

Learning Centers

1 Computer

The children explore:

- Numbers: 0-10
- Geometry & Measurement, "Polygons"
- Geometry & Measurement, "Button Sort"

Materials

- Computers navigated to *Starfall.com*

2 Sorting Objects

The children partner or work in small groups to discover different ways to sort tubs of various objects on their math mats.

Materials

- Tub(s) of a variety of objects (blocks, buttons, chips, toy cars, magnets, etc.)
- Math mats

3 Color by Number

The children reference a color key to assist them in completing *Backpack Bear's Math Workbook #1*, page 20.

Materials

- Backpack Bear's Math Workbook #1*, page 20
- Pencils, crayons

4 Teacher's Choice

Prepare an activity that will provide the children with an opportunity to practice a skill from this unit.

5 Summative Assessment

Distribute the objects and paper clips or connect cubes to each child. Explain to the children that their job is to use the paper clips or connect cubes to measure the objects. Each child does this. The children trade objects and measure.

Record mastery on the Summative Assessment Measurement Checklist for Unit 3, Week 6 for children who measure the objects by placing the paper clips or connect cubes at the baselines and continue to the other end.

Materials

- Summative Assessment Checklist for Unit 3, Week 6 (Measurement)
- One object for each child (book, marker, paintbrush, pencil)
- Several paper clips or connect cubes for each child

Counting & Cardinality

A.2 - Count forward from a given number.

A.3 - Write numbers from 0 to 20.

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

Operations & Algebraic Thinking

OA.1 - Identify, describe, or extend simple patterns.

Geometry

A.2 - Correctly name shapes.

