Introduction to
Connecting Literature and Math (CLAM)

Purpose

Connecting Literature and Math (CLAM) was developed through a contract with the Division of Child Care and Early Childhood Education. The project will support programs serving three to five year old children in meeting mathematics standards for children and for programs.

Children live in a mathematical world. They see and hear math all day long. Here are some examples of what they might experience:

- Clocks, phones and calendars with numerals
- Adults giving their phone number or their credit card number
- Prices on items in the grocery store
- Questions such as “Do you want a round or a square cracker?” “Would you like half or a whole banana for snack?”
- Comments such as “The new baby next door weighed 7 pounds 2 ounces.” Or “We’ve had rain for 3 days. Maybe the sun will shine tomorrow so we can go swimming.”
- From grandma, “You get taller every time I see you. I’ll bet you’ve grown two inches since your fourth birthday.”

These everyday events that surround children support the five mathematical standards identified by the National Council of Teachers of Mathematics (NCTM):

- Number and Operations
- Algebra
- Geometry
- Measurement
- Data Analysis and Probability

These standards may seem beyond what many think children between three and five can understand. But children are natural mathematicians. They like to count, to compare quantities, describe shapes, sizes, and numbers, and move their bodies in space. Teachers of young children are encouraged to take advantage of these interests of children by providing access to appropriate mathematics experiences in a positive and supportive environment.

In CLAM, there are Tips and Techniques plus twelve curriculum guides that focus on strategies for providing children with daily opportunities to experience mathematics through child-centered, hands-on activities as well as teacher-guided activities. Ten of the curriculum guides begin with a children’s book that focuses on one of more of the mathematical standards and two begin with two children’s books. Each guide extends to related experiences in the learning environment and the daily curriculum.
During the development of **Connecting Literature and Math (CLAM)**, guides were sent to selected early care and education programs for implementation and feedback. The feedback received from the programs was considered as revisions were made to the guides.

Two early childhood educators, Dot Brown and Beverly C. Wright, spent a year developing the curriculum guides. While the careers of the two developers have taken different paths, they share similar backgrounds and work experiences. The list that follows applies to both developers and highlights the similarities.

- Masters of Education degree with an early childhood emphasis
- Instructors of early childhood courses
- Monitors, evaluators, supervisors and mentors in preschool classrooms
- Developers of curriculum for children from birth to five
- Registered trainers in the Arkansas Early Professional Development Registry (TAPP)
- Certified Pre-K ELLA trainers

Currently, Dot Brown, President of Early Childhood Services, Inc., focuses on the development of training materials. Beverly C. Wright is an adjunct instructor at the University of Arkansas at Little Rock. Both remain committed to making available to caregivers and teachers the support they need to provide high quality care and education for children from three to five.

The development of training materials that focus on the Cognitive/Intellectual Learning Strand and Mathematics Benchmarks from the Arkansas Early Childhood Education Framework Handbook will provide teachers the tools they need to help children from three to five achieve mathematical competence. This mathematical foundation will support children as they move from the preschool years to kindergarten and beyond. An understanding of mathematics will also give them the tools necessary for “later in life” everyday tasks such as spending and saving money and help them find jobs in tomorrow’s ever changing technological world.
TIPS AND TECHNIQUES

In the introduction, the five mathematics content standards were identified. For each of these standards, there are specific concepts and processes as follows:

**Number and Operations**
- Counting
- One-to-one correspondence
- Comparing numbers
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)
- Recognizing “how many” in sets of objects
- Writing numerals that represent quantities (how many)
- Demonstrating understanding of addition and subtraction
- Demonstrating understanding of fractions such as 1/2, 1/3 and 1/4

**Algebra**
- Sorting
- Classifying
- Ordering objects by observable attributes such as size, shape, number and other properties (sometimes referred to as seriation or sequencing)
- Patterning
- Comparing and relating

**Geometry (the spatial size of math)**
- Identifying shapes such as circles, rectangles, squares, and triangles; two and three dimensional shapes such as spheres (balls) and rectangular solids (boxes)
- Combining and taking apart shapes
- Describing positions and relationships among objects (spatial relationships)

**Measurement**
- Comparing and ordering objects on basis of attributes such as length, weight and capacity
- Linking a number and a unit (5 pounds, 2 hours)
- Using standard units such as inches, cups and pounds and standard tools such as rulers, thermometers, scales and measuring cups
- Using non-standard units such as hands, feet and paper clips
- Showing an awareness of the attributes of time such as sequence (ordering of events such as yesterday, today and tomorrow) and duration (length of time such as minutes, hours and days).

**Data Analysis and Probability**
- Posing questions and gathering data to answer questions about the children, their opinions and surroundings; for example “What does our graph tell us?”
- Applying knowledge of comparing, counting and sorting and classifying as they work with data and information
- Representing data with objects, pictures and symbols
Benchmarks

In the Arkansas Early Childhood Education Framework Handbook for Three and Four Year Old Children, Developmental Learning Strand 3 – Cognitive/Intellectual Learning, there are thirteen Benchmarks that specifically focus on mathematics. They are:

3.10 Classifies objects by physical features such as shape or color
3.11 Classifies objects conceptually (things that go together)
3.12 Recognizes patterns and can repeat them (patternning)
3.13 Demonstrates one-to-one correspondence
3.14 Demonstrates the ability to order and sequence
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)
3.16 Demonstrates an understanding of addition and subtraction, using manipulatives
3.17 Shows understanding of different relationships of objects in space (spatial relations)
3.18 Shows an awareness of time concepts
3.27 Uses numbers in daily activities
3.28 Describes the characteristics of both two-dimensional shapes and geometric solids
3.29 Manipulates and combines two-dimensional shapes
3.30 Participates in exploratory measurement activities

A quick comparison of the mathematics content standards and the benchmarks shows that the benchmarks include the standards of number and operations, algebra, geometry and measurement.

A review of the strategies and activities for three and four year old children in the Arkansas Early Childhood Education Framework Handbook gives specific examples of what teachers can do to help children understand the content standards and achieve the benchmarks.

ECERS-R Subscale and Items

In ECERS-R, Math/number is an Item under the Activities Subscale with Indicators that determine the score achieved. Indicators range from
1.1 No math/number materials available to
7.2 Materials are rotated to maintain interest (Ex. teddy bear counters replaced by dinosaur counters, different objects to weigh).

The curriculum guides that follow will support the content standards, the benchmarks, and the achievement of the higher ECERS-R scores. In addition, the guides will present the strategies and activities in a format that can be part of the classroom curriculum.
Using the Curriculum Guides

Each preschool program will decide how best to use the curriculum guides. Options to consider include:

- Integrating the guides into existing curriculum
- Using the guides as the primary curriculum, adding additional activities to enhance the learning experiences for children
- Combining the first two options

However programs choose to use the curriculum guides, children will be provided opportunities to achieve mathematical competence.

Assessing Children’s Achievement of Math Competence

At the beginning of each guide are math content standards with concepts and processes that will be covered in the guide. Benchmarks are also listed for many of the activities. At the end of each guide is a sectioned titled **Assessment Ideas**. In this section, specific activities and/or materials in the environment will be listed; activities and/or materials that can be used to determine a child’s progress in achieving competence in specific math concepts and processes and benchmarks.

Teachers are encouraged to involve children in the activities and to encourage and support them as they use the materials. Through your involvement, encouragement, support and observations, you can assess each child’s mathematical competence.

Create a Mathematics Environment in Your Classroom

Following is a list of materials to consider when creating a math environment in your classroom. Some of the items may be found in the center or in the home. Others can be purchased, and some can be made by the teachers. Be creative in looking for additional math items to add to the learning environment.

**Number and Operations**

- number puzzles
- pegs and pegboards (one-to-one correspondence)
- nuts and bolts (one-to-one correspondence)
- bear counters
- magnetic numerals
- number cubes (dice)

**Algebra**

- beads and laces (patterning)
- links (patterning)
- bear counters and sorting bowls
- unifix cubes
- sequencing pictures (growing flowers, creating a snack, retelling a story)
- attribute blocks and pattern cards

**Geometry**
- wood unit blocks
- tabletop wood blocks
- parquetry blocks and pattern cards
- geoboards
- geometric shapes
- 2 and 3 dimensional shapes
- hoops

**Measurement**
- pan balance scales
- ruler
- cloth tape measure
- timer
- clocks
- thermometer
- growth chart
- measuring cups and spoons
- unifix cubes

**Data Analysis and Probability**
- Activities such as graphing will be included in the guides.
- Questions that invite children to predict and to check their predictions will be included.

**Mathematics Materials in the Environment**

Consider the following three approaches to including mathematics in the learning environment:
- Providing a math center with the majority of available math materials in the center
- Including materials in various areas of the environment rather than in a math center
- Balancing materials by providing both a math center and the inclusion of math materials in various areas of the environment
## Connecting Literature and Math

### #1: *1, 2, Buckle My Shoe* by Anna Grossnickle Hines

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Many of us grew up chanting the Mother Goose rhyme, “One, two, buckle my shoe.” Anna Grossnickle Hines has taken this classic rhyme and created a picture book with quilts for illustrations. The result is a beautiful patchwork of counting fun with illustrations that invite the reader to reach out and touch each page.</th>
</tr>
</thead>
</table>
| **Content Standards and Benchmarks** | **Content Standard: Number and Operations**  
- Counting  
- One-to-one correspondence  
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)  
**Content Standard: Algebra**  
- Patterning  
**Benchmarks** will be identified for the activities in the guide. |
| **Materials to Collect and Make** | • Cut out construction paper circles of different sizes and colors for art center  
• Collect scraps of quilted material for art center  
• Make two-piece puzzles with numerals from one to ten and corresponding number of buttons. (See Attachment #1: Numeral Cards and Attachment #2: Counting Buttons)  
• Create an illustrated chart with the rhyme. (See photograph with activity and locate at A Story a Month on the Arkansas Better Beginnings website for patterns).  
• Create magnetic or felt figures for the rhyme. (See: A Story a Month for patterns).  
• Locate a small quilt that the children can use in dramatic play/home living area.  
• Locate a CD with the song, 1, 2, Buckle My Shoe on it; for example. We All Live Together Volume 3 by Greg and Steve.  
• Locate counting bears or plastic chips or collect plastic caps from milk jugs  
• Provide chart for families (See Attachment #3: 1, 2, Buckle My Shoe Small Illustrated Chart).  
• Collect rhythm sticks or 12” wooden dial sticks |
| **Story Presentation** | **Benchmarks: 3.1** Shows enjoyment of books and stories and discussion of them  
**3.5** Understands that print conveys a message  
**3.15** Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship  
**5.15** Participates in songs, finger plays, rhyming activities and games  
**Book:** *1, 2, Buckle My Shoe* by Anna Grossnickle Hines  
**First Reading of 1, 2, Buckle My Shoe**  
- Be familiar with the book, *1, 2, Buckle My Shoe*.  
- Take a CD player and the CD that contains the song, 1, 2, Buckle My Shoe, to the story reading area.  
- Begin to play the song as you invite children to join you in the story reading area.  
- Play the song again and invite children to join in the singing. |
• Explain to children that they will now hear a story about 1, 2, Buckle My Shoe
• Show the cover, give title and illustrator. (Explain that the illustrator is the person who creates the pictures.)
• Invite children to look at the cover and describe what they see.
• Explain to children that 1, 2, Buckle My Shoe is a Mother Goose rhyme and ask if any of them have ever heard the rhyme before.
• Read the story so all children can see the pictures in the book.
• Follow up the reading by inviting children to read the book with you.
• Show the pages with the numerals on them, point to the numerals and ask children to say them with you, then as you turn the page, say the rhyme.
• Ask children to stand and join you in singing the rhyme as you play the CD.
• Continue playing the song as children transition to the next activity.

Teacher Note: Include the song at other times during the day; for example during music time.

Second Reading of 1, 2, Buckle My Shoe
• Show the cover and invite children to read the title with you as you run your fingers under each of the words.
• Read the story so all children can see the pictures in the book.
• Follow up the reading by inviting the children to count the buttons on each page as you point to them.
• Comment after buttons are counted on each page, “That’s right. There are 3 buttons on this page” as you point to the numeral.”

Third Reading of 1, 2, Buckle My Shoe
• Take a small quilt or piece of quilted fabric to the book reading area. (If not available, skip the first four steps listed here.
• Show the quilt to the children and ask them if they know what it is. Listen to their comments and base yours upon their responses.
• Explain that this is a quilt or a piece of fabric to make a quilt. Allow children to touch the quilt and make comments about it.
• Show the book to the children and explain to children that the person who created the pictures in the book, Anna Grossnickle Hines, made a quilt for each page in the book, took a picture of each quilt, and put them together to make the book.
• Show the cover and ask children to recall the title of the book.
• Explain to children that they will read the book as you show the pages.
• Show each page, run your hand under each numeral and each rhyme and invite the children to say the words. Prompt them as needed.
• Follow up the reading by inviting children to stand and march in place as you chant the rhyme together.
• Repeat the march and chant activity at a faster pace.

Teacher Note: All of the story presentations are teacher guided activities.

| Additional Language Activities | Benchmarks: 3.5 Understands that print conveys a message  
5.1 Demonstrates phonological awareness (hearing and recognizing the sounds of language  
5.5 Participates in songs, finger plays, rhyming activities, and games |
Activity: 1, 2, Buckle My Shoe Chart

Materials: illustrated chart of the Mother Goose rhyme, 1, 2, Buckle My Shoe, Mother Goose rhyme book that contains the rhyme

Directions:
- Take the chart and Mother Goose rhyme book to group time.
- Show the chart and invite children to say the rhyme with you as you run your hand under the numerals and words.
- Invite children to say the rhyme without you. Prompt as needed.
- Explain to children that you will now say a word from the rhyme and they are to say the word that rhymes, or sounds like the word. Tell them that they must use their ears to listen and to hear the rhyming words.
- Point to and say “two” and point to and invite children to say “shoe.”
- Repeat this process with each part of the rhyme.
- Follow up by explaining to children that they will now say both rhyming words as you point to them.
- Point to 2 and shoe and continue through 10 and hen.

Extension Activity:
- Explain to children that you will read the rhyme from a Mother Goose rhyme book and that they are to listen carefully to determine if the words are exactly the same as on the chart. (See additional books for Mother Goose rhyme books containing the rhyme).
- Invite children to discuss the differences they heard in the rhyme in the book and the one on the chart. Read both again if children seem to need this to help them hear the differences.
- Explain to children that you will post the chart in the room (indicate where: music, library, dramatic play/home living) and they can read and say the rhyme to each other and that the Mother Goose rhyme book will be in the library.

Teacher Note: This is a teacher guided activity.

Benchmarks: 3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship
5.1 Demonstrates phonological awareness (hearing and recognizing the sounds of language)
5.5 Participates in songs, finger plays, rhyming activities and games

Activity: 1, 2, Buckle My Shoe Storytelling Figures

Materials: magnetic story figures of the Mother Goose rhyme, magnetic numerals (1-10) or numeral cards, magnetic board or cookie sheet that is magnetic

- Present the rhyme to the children using the storytelling figures and the magnetic numerals.
- Involve children in saying the rhyme as you place the figures on the board.
- Place the figures and board in the library area so children can use them on their
**Teacher Note:** This is a teacher guided activity.

**Benchmarks:** 3.12 Recognizes patterns and can repeat them (patterning)

**Activity:** Rhyme and Rhythm Sticks

**Materials:** rhythm sticks or 12” wooden dial sticks in a container; two for each child

**Directions:**
- Invite children to join you for a group activity.
- Pass the container around and ask each child to select two sticks.
- Discuss and practice with the children holding a stick in one hand and striking it with the stick they are holding in the other hand.
- Explain that they are to strike one stick with the other when you say each number. For example, as you say, “One”, strike once, then again as you say “two” as you repeat together, “One, two, buckle my shoe.” Continue with three and four to nine and ten.
- Invite children to tell you how many total times they hit the sticks. (10 times).

**Teacher Note:** This is a teacher guided activity.

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**Learning Environment**

**Art Center**
- Add circles of different sizes and colors.
- Add scraps of quilted material.

**Dramatic Play Center**
- Add a small quilt to the center.
- Consider using the quilt as a wall hanging, a cover for a doll, or as a table cloth.

**Library**
- Add a magnetic or felt storyboard.
- Add magnetic or felt figures for the rhyme.
- Add Mother Goose rhyme books and rhyme chart (if not posted in music center)

**Manipulatives (or Math Center)**
- Add the teacher-made two-piece numeral/number puzzle.
- Observe children to see if any of them need help with the activity.
- Invite children who seem to be ready for this to put the puzzles in order from one to ten.
- Add counting bears and invite children to put one bear on each button (one-to-one correspondence) or to put the correct number of bears on each numeral card.

**Teacher Note:** Know your children so that you will know those who are ready for which of the counting bear activities.

**Music Center**
- Post rhyme chart in music center.
- Add rhythm sticks to the center.
- Observe children to see if they say the rhyme as they look at the chart and/or use the rhythm sticks.
### Transition Activities

**Count and Move**
- Identify two children at a time to transition to the next activity.
- Say a line from the rhyme and invite the two children to act out the rhyme. For example, "Jonas and Rebecca, one, two, buckle my shoe." Children act out the rhyme and move to the next activity.
- Continue with this activity until all children have transitioned to the next activity.

### Family Connection

- Send home to families the illustrated chart with the rhyme (See Attachment #3: 1, 2, Buckle My Shoe Small Illustrated Chart).
- Invite families to say the rhyme with their children.
- Ask families who are familiar with the rhyme to talk with their children about how they came to know the rhyme.
- Suggest that families with Mother Goose rhyme books in the home check the book to see if the rhyme is included. If so, ask them to read the rhyme with their child.

### Additional Books

- **Baker, Keith.** *Big Fat Hen*
- **Carlstrom, Nancy White.** *Let’s Count It Out, Jesse Bear*
- **Crews, Donald.** *Ten Black Dots*
- **Hague, Kathleen.** *Numbears: A Counting Book*
- **Keats, Ezra Jack.** *Over in the Meadow*

**Mother Goose books containing 1, 2 Buckle My Shoe:**
- **dePaola, Tomie.** *Tomie dePaola’s Mother Goose*
- **Opie, Iona, illustrated by Rosemary Wells.** *Here Comes Mother Goose*

### Assessment Ideas

Refer to page 4 in this guide: **Learning Environment - Manipulatives (or Math Center)** for an activity to assess the following concepts and benchmarks.

**Content Standard: Number and Operations**
- Counting
- One-to-one correspondence
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)

**Benchmarks**
- 3:13 Demonstrates one-to-one correspondence
- 3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)

**To Assess:**
- Add the teacher-made two-piece number/numeral puzzle and counting bears to the center.
- Assess children’s competence by becoming involved with them in the activities, as they use the materials and by listening to their comments.
Connecting Literature and Math

#2: Feast for 10 by Cathryn Falwell

### Introduction

Join this affectionate African American family as they shop, cook and set the table for a feast for ten. Numbers are used to show how everyone in the family works together to create the family meal.

### Content Standards and Benchmarks

**Content Standard: Number and Operations**
- Counting
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)
- Recognizing “how many” in sets of objects

**Benchmarks** will be identified for the activities in the guide

### Materials to Collect and Make

- Make two-piece puzzles with numerals from one to ten and corresponding number of objects from the story. (See Attachment #1: Numeral Cards and Attachment #2: Story Counting Cards)
- Collect a set of magnetic numerals, from 1 to 10

### Story Presentation

**Benchmarks:**
- 3.1 Shows enjoyment of books and stories and discussion of them
- 3.2 Tells a story in sequence, following the pictures in the book
- 3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral)

**Book:** Feast for 10 by Cathryn Falwell

**First Reading of**
- Be familiar with the book, Feast for 10.
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who draws the pictures. In this book, the same person wrote the words and drew the pictures)
- Involve children in discussing what a feast is. Guide them to understand that a feast is a large meal, sometimes for a lot of people.
- Invite children to look at the cover and predict what they think this family is doing. Accept all answers. Then say, “Let’s read and find out if you are correct.”
- Show the first two double spread pages and ask children where they think the family is. Ask children if they were correct in their predictions about what the story is about.
- Call attention to the little girl who is next to her mother. Ask the children what they think is written on the yellow sheet of paper she has in her hand. (Probably a grocery list)
- Read the story so all children can see the pages in the book.
- Place your finger beside each numeral as you read it to the children. For example, place your finger beside the 1 as you read “one cart into the grocery store.”
- Continue reading until the story is complete.
- Pause at the end of the reading to allow children's honest reactions to the story.
- Follow up by inviting children to discuss their grocery shopping and food preparation experiences with their families.
Additional Benchmark: 5.8 Participates in group discussion

Second Reading of *Feast for 10* by Cathryn Falwell
- Show the cover, give title, author and illustrator.
- Read the story so all children can see the pages in the book.
- Invite children to help you count the number of items on some of the pages after you have read the page. For example, after you have read “two pumpkins for pie” ask them to count the pumpkins as you point to them.
- Continue reading until the story is complete.
- Follow up by showing each page and inviting children to say the number and the item on the page. Put your finger under each numeral. Assist children as needed.
- Show pages, one at a time, with 1 through 4 items and invite children to tell you “how many shopping carts they see”, “how many pumpkins”, “how many chickens” and “how many children.”

Teacher Note: Do this last activity without pointing to and counting the items. This will help you know if children can recognize “how many” in sets of objects.

Third Reading of *Feast for 10* by Cathryn Falwell
- Place either magnetic numerals or numeral cards (See Attachment #1 – Numeral Cards) from one to ten in a container and take it to the story reading area.
- Pass the basket around the group and ask each child to take one item.
- Show the cover and ask children to recall the title of the book.
- Give the author and illustrator and ask children if they remember what each does. Give them prompts if necessary.
- Review with the children the numeral they are holding. Begin with 1 and ask, “Who has the number 1?” Continue with one through 10. Assist children as needed.
- Explain to children that they will help you read the story by holding up their number when it is read in the story. If you think the children need help in understanding what to do, practice with a couple of numbers to help them understand. For example, read “one cart into the grocery store” and ask the child with the 1 to hold it up, then put it down.
- Read the story so all children can see the pictures in the book.
- Follow up by thanking the children for helping you read the story.
- Ask the children to give you the numerals in order from 1 to 10. For example, say “If you have the number 1, please put it in the basket.” “If you have the number 2, please put it in the basket.”

Note: If there are more than 10 children in your group, have duplicates of some of the numbers.

Note: All of the story readings are teacher guided activities.

Additional Language Activities

<table>
<thead>
<tr>
<th>Benchmarks:</th>
<th>3.5 Understands that print conveys a message</th>
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<tr>
<td></td>
<td>3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral)</td>
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</table>

Activity: Make a Grocery List

Materials: marker board and marker or chart sheets and marker
Directions:
- Explain to children that you would like their help in preparing a pretend feast for all of the children in the room.
- Invite them to help you count the number of people who will be enjoying the feast. When there is a total say, “We are going to have a feast for 12.”
- Involve them in discussing what they would like to have for their feast. Write the menu items on a piece of chart paper labeled Feast for 12.
- Say to the children, “Before we can begin to prepare the food for the feast, we have to go to the grocery store. I need your help in making a grocery list.”
- Recall with the children the items on the menu.
- Label a sheet of paper as follows: Grocery List
- Invite them to decide what is needed from the grocery store in order to prepare the food for the feast.
- Ask children to decide on “how many” is needed of each item and include this on the list. For example, if they say “potatoes” ask them how many potatoes are needed and write their response: 15 potatoes
- Continue this activity until the list is complete.
- Read the grocery list with the children, running your hand under each item as you read it.
- Post the menu and the grocery list in the home living/dramatic play area.
- Observe children as they play in the area. Do they “read” the items on the menu or the items on the grocery list? Do they pretend to cook any of the menu items? Do they set the table for the feast?

Teacher Note: This is a teacher guided activity.

Benchmarks: 3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship

Activity: Going to the Grocery Store

Materials: magnetic numerals from 1 to 10 or numeral cards, Story Counting Cards - based on Feast for Ten (See Attachment #2 – Story Counting Cards that are prepared with magnets on the back), storyboard or cookie sheet that is magnetic

Directions:
- Invite children to help you tell the story, Feast for Ten.
- Place the magnetic numeral or numeral card and the picture of the shopping cart on the board and involve children in saying, “One cart into the grocery store.”
- Continue this activity through ten.
- Follow up by inviting children to tell the story as you place the cards and pictures on the storyboard.
- Explain to children that the storyboard and cards will be in the library area and suggest that they tell the story to each other.

Teacher Note: This is a teacher guided activity.

Teacher Note: You may want to write the words from the story on the backs of the Story Counting Cards to help as you tell the story. For example, on the back of the picture of the shopping cart, write “one cart into the grocery store”.

Connecting Literature and Math – Feast for 10 - rev
<table>
<thead>
<tr>
<th>Learning Environment</th>
<th>Art Center</th>
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<tbody>
<tr>
<td></td>
<td>• Add skin-tone crayons or markers to the area</td>
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<tr>
<td></td>
<td>• Invite children to draw pictures of their families.</td>
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<td></td>
<td>• Ask children if they want you to write anything about their families on their picture or on a card to attach to the picture, or if they want to write something.</td>
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<tr>
<td></td>
<td>• Write the information the child dictates to you. For example, “Aaron has 4 people in his family.” or “This is Briana’s family”</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Dramatic Play Area</th>
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<tbody>
<tr>
<td>• Add the following items to the area:</td>
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<tr>
<td>Pad and pencil</td>
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<tr>
<td>Grocery store ads</td>
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<tr>
<td>Play money</td>
</tr>
<tr>
<td>Cash register</td>
</tr>
<tr>
<td>Placemats</td>
</tr>
<tr>
<td>Small shopping cart</td>
</tr>
<tr>
<td>Empty food boxes with prices on each one: for example, cereal, instant mashed potatoes, crackers, and cheese boxes (stuff the boxes with newspaper and secure with tape)</td>
</tr>
<tr>
<td>Telephone and small phone directory</td>
</tr>
<tr>
<td>Cookbook or recipe cards</td>
</tr>
<tr>
<td>• Observe children to see how they play with the materials.</td>
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<table>
<thead>
<tr>
<th>Library</th>
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<tbody>
<tr>
<td>• Place the storytelling cards, numerals and a magnetic board in the library area.</td>
</tr>
<tr>
<td>• Allow children to play with the materials independently.</td>
</tr>
<tr>
<td>• Observe to see if children use the cards and numerals to retell the story. Do they match the picture card with the correct numeral? Do they count items?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manipulatives (or Math Center)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide number puzzles</td>
</tr>
<tr>
<td>• Provide pegs and pegboards</td>
</tr>
<tr>
<td>• Provide nuts and bolts</td>
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<thead>
<tr>
<th>Transition Activities</th>
<th>Match and Move</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Have matching sets of number cards from 1 to 10.</td>
</tr>
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<td></td>
<td>• Keep one set of the cards and distribute the others to the children.</td>
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<tr>
<td></td>
<td>• Show a card and say, “I’m looking for someone who has this number.”</td>
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<tr>
<td></td>
<td>• Child with the matching card says the number and transitions to the next activity.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Family Connection</th>
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</thead>
<tbody>
<tr>
<td>• Invite families to send an empty cardboard food box that represents a food item that the family really enjoys. If a family has a home language other than English, encourage them to bring a box with words in their home language. Add a price to the item, and then place it in home living/dramatic play area.</td>
</tr>
<tr>
<td>• Suggest that when families take their children grocery shopping they name the items they are purchasing and the price of the item. For example, “Tomatoes are $1.50 a pound.” Children can count the number of bananas or the number of potatoes they are purchasing.</td>
</tr>
<tr>
<td>Additional Books</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Carlstrom, Nancy White. <em>Let’s Count It Out, Jesse Bear.</em></td>
</tr>
<tr>
<td>Crews, Donald. <em>Ten Black Dots.</em></td>
</tr>
<tr>
<td>Fox, Mem, illustrated. by Helen Oxenbury. <em>Ten Little Fingers and Ten Little Toes</em></td>
</tr>
<tr>
<td>Hague, Kathleen. <em>Numbears: A Counting Book</em></td>
</tr>
<tr>
<td>Jenkins, Emily. <em>Five Creatures.</em></td>
</tr>
<tr>
<td>Keats, Ezra Jack. <em>Over in the Meadow</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to page 4 of this guide: <strong>Learning Environment – Library</strong> for an activity to assess the following concepts and benchmark.</td>
</tr>
</tbody>
</table>

**Content Standard: Number and Operations**
- Counting
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)
- Recognizing “how many” in sets of objects

**Benchmark**
3.15: Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)

**To Assess:**
- Add the storytelling cards, numerals and magnetic board to the library area.
- Assess children’s competence by becoming involved with them in their activities, as they use the materials and by listening to their comments.
# Connecting Literature and Math

## #3: *Ten Red Apples* by Pat Hutchins

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Pat Hutchins uses rhythm, rhyme and colorful illustrations to make <em>Ten Red Apples</em> a counting book that children will ask for over and over again.</th>
</tr>
</thead>
</table>
| **Content Standards and Benchmarks** | **Content Standards: Number and Operations**  
- Counting  
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)  
**Content Standard: Data Analysis and Probability**  
- Posing questions and gathering data to answer questions about the children, their opinions and surroundings; for example “What does our graph tell us?”  
- Applying knowledge of comparing, counting and sorting and classifying as they work with data and information  
- Representing data with objects, pictures and symbols  
**Benchmarks** will be identified for the activities in the guide |
| **Materials to Collect and Make** | - Make two-piece puzzles with numerals from one to ten and corresponding number of apples from the story. (See Attachment # - 1: Numeral Cards and Attachment #2: Apple Counting Cards)  
- Make felt or magnetic figures for the story, The Round Red House (See Attachment #3: The Red Round House and Attachment #4: The Round Red House Characters)  
- Make the Apple Tree Counting Game |
| **Story Presentation** | **Benchmarks:** 3.1 Shows enjoyment of books and stories and discussion of them  
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral)  
**Book:** *Ten Red Apples* by Pat Hutchins  
**First Reading of *Ten Red Apples***  
- Practice reading the book aloud so that you can capture the rhythm and rhyme of the text.  
- Place a red apple in a feely bag or box and take to the book reading area.  
- Say to children, “I have something in this bag and I’m going to need your help in guessing what it is. I’m going to pass the bag around and ask you to reach inside and feel what I’ve placed in the bag. Then I want you to guess what it is.”  
- Pass the bag around the circle and allow each child to reach inside, feel the object, describe what they feel, and guess what it is. Accept all answers and state what each child has said. For example, say “Maria thinks it’s a ball.” or Angela says it feels smooth.”  
- Bring out the apple and state whether or not any children guessed correctly.  
- Say to children, “Now I’ll read a book to you about red apples.”  
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who draws the pictures. In this book, Pat Hutchins is both the author and illustrator.) |
• Invite children to look at the cover and describe who and what they see.
• Read the story so all children can see the pictures in the book.
• Follow up the reading by inviting children to help you read one certain sentence in
  the book: “Yippee, fiddle-dee-feel!” Show each page with that sentence on it, run
  your finger under the words and ask children to say the line with you. Continue
  this from the first page to the last.

Second Reading of  *Ten Red Apples*
• Show the cover, give title, author and illustrator.
• Recall with children that they helped you read the sentence, “Yippee, fiddle-dee-
  feel!” Invite them to say it with you.
• Explain that they will help you read the story by saying that sentence with you
  each time it appears in the story.
• Begin to read the story. Run your finger under the sentence each time it appears
  in the story and join children in saying “Yippee, fiddle-dee-feel!”
• Follow up the reading by inviting children to read with you the number of apples
  hanging on the tree. For example, read “Ten red apples hanging on the tree.
  Yippee, fiddle-dee-feel!” “Nine red apples hanging on the tree. Yippee, fiddle-dee-
  feel!”
• Invite children to count with you the number of apples on the page that begins,
  “More red apples hanging on the tree….”

Third Reading of  *Ten Red Apples*
• Show the cover and ask children to recall the title of the book.
• Say that Pat Hutchins is both the author and illustrator and ask children if they
  remember what each does. Give them prompts if necessary.
• Read the story so all children can see the pictures in the book.
• Follow up the reading by inviting children to pretend to be each animal that ate an
  apple off the tree. First, they will name the animal, then how the animal eats the
  apple, then the sound that the animal makes, followed by “fiddle-dee-fee.”
• Point to the horse and ask children to name the animal. Then model how the
  animal eats the apple and the sound the animal makes, and ask children to echo.
  For example: chomp, chomp, chomp, neigh, neigh, fiddle-dee-fee

**Benchmark: 3.1 Shows enjoyment of books and stories and discussion of them**

**Activity: The Round Red House**

**Materials:** magnetic or felt figures of the story, The Round Red House, (See Attachment
  #3: The Red Round House and Attachment #4: The Round Red House
  Characters), apple and knife in a bag

**Directions:**
• Make either felt or magnetic storytelling figures for the story.
• Be familiar with the story so that you can tell it rather than read it to the children.
  Memorize the key sentence that occurs throughout the story: *A round red house,
  with no windows and no doors, a chimney on top and a star inside.*
• Refer to the story for directions as to how to present the story.
• Use the storytelling figures to tell the story.
• Explain to the children that the storytelling figures will be in the library/book area
  for them to use.
• Demonstrate and discuss with the children the correct way to use the storytelling
  figures.
Benchmarks:  5.1 Demonstrates phonological awareness (hearing and recognizing the sounds of language
5.5 Participates in songs, finger plays, rhyming activities and games

Activity: The Apple Tree

Materials: Make an illustrated rhyme chart and laminate or cover with clear adhesive to preserve.

Way up high in an apple tree, (Hold hands above head, form circles with
Two red apples smiled down at me thumb & forefinger of each hand. Smile)
I shook that tree as hard as I could (Put hands out as if on tree and - shake)
And down came those apples, (Hands above head and lower to ground)
And Mmmmmmm were they good. (Rub tummy)

Teacher Note: Read from the chart with the children. Post the rhyme chart in the library/book area.

Learning Environment

Art Center
• Add red, green and yellow tempera paint to the center for painting at the easel

Library
• Post the illustrated rhyme chart, “Two Little Apples,” in the library area.
• Add storytelling figures for The Round Red House and a storyboard.

Dramatic Play Center
• Add a rolling pin, an aluminum pie pan and an illustrated recipe card for making apple pie.
• Add clean plastic containers for apple juice, apple sauce and apple butter.

Manipulatives (or Math Center)
• Place the apple numeral/number puzzles in the center.
• Apple Tree Counting Game: Prepare Apple Tree Counting boards by drawing trees on 8” X 10” poster board. Attach Green Felt for the tops of the trees and number the trees (1 to 10) on the trunks. Provide small red felt apples (or red felt circles to represent the apples) for the children to count and place on the trees.

• Provide number puzzles.
Group Time: Graphing Our Favorite Apple

Benchmarks: 1.1 Demonstrates ability to make choices
3.5 Understands that print conveys a message
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship
4.3 Tries new foods before deciding whether he/she likes them
4.4 Recognizes different types of foods

- Provide slices of two or three different kinds of apples, such as Red Delicious, and Granny Smith
- Provide a small plate and napkin for each child and adult.
- Sit at the table with the children and involve them in selecting and eating the apples.
- Enjoy the apples.
- Invite children to discuss the characteristics of the apples: color, texture, taste, for example.
- Follow up the snack by completing a graph about the children's favorite apple.
- Prepare a graph with columns for each apple. Use a picture or drawing of the apple with the name written on it.

Our Favorite Apple

<table>
<thead>
<tr>
<th></th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
<td></td>
<td>6</td>
<td></td>
<td>5</td>
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<td>4</td>
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<tr>
<td></td>
<td>Peyton</td>
<td></td>
<td>Beckett</td>
<td></td>
<td>Kennedi</td>
<td>Sarah</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td>Taylor</td>
<td></td>
<td>Lucy</td>
</tr>
</tbody>
</table>

- Write a summary story.

Our Favorite Apple

Five children like Red Delicious Apples the best. Three children like Granny Smith Apples the best.

Additional Benchmarks: 3.10 Classifies objects by physical features such as shape or color
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship
3.5 Understands that print conveys a message
**Group Time: Number March (tune of The Ants Go Marching 1 by 1)**

- Be familiar with the song, “Number March” from the Totally Math CD by Dr. Jean Feldman, or be prepared to sing it to the tune of “The Ants Go Marching 1 by 1.”
- Play or sing the song with children, asking them to listen the first time. Then play or sing it again and invite children to do the hand motions suggested.

**Teacher Note:** *Printable Lyrics can be found on Dr. Jean’s website. Click on the album, Totally Math.*

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### Food/Nutrition Experiences

**Benchmarks:**
- **3.21** Uses words to describe the characteristics of objects (scientific process: communicating)
- **3.22** Makes comparisons (scientific process: comparing)
- **4.3** Tries new foods before deciding whether he/she likes them

**Activity: Applesauce and Apple Butter**

- Provide a container of applesauce and container of apple butter that have labels on them.
- Show the jars to the children and ask if they know what is in each jar. Depending on children’s answers, label the food items as applesauce and apple butter.
- Discuss with children that both applesauce and apple butter are made from apples.
- Place applesauce in one serving bowl and apple butter in another.
- Give each child a small plate, a spoon, a plastic knife, and crackers.
- Have each child take a tablespoon of applesauce and put in on his/her plate and pass the serving bowl around the table so that each child has a serving of applesauce.
- Repeat this process with the apple butter.
- Ask children to spread the applesauce on one cracker and the apple butter on another cracker.
- Suggest that before eating each snack, they smell the applesauce and apple butter.
- Invite children to discuss the difference in the texture, color, smell and taste of applesauce and apple butter. Which do they like best?

**Activity: Apple Juice and Apple Cider**

- Provide a container of apple juice and container of apple cider that have labels on them.
- Show the containers to the children and ask if they know what is in each jar.
- Depending on children’s answers, label the items as apple juice and apple cider.
- Discuss with children that both apple juice and apple cider are made from apples.
- Assist children in pouring a small amount of apple juice in one cup or glass and a small amount of apple cider in another cup or glass.
- Suggest that before drinking the juice, children smell each one.
- Invite children to discuss the differences in the color, smell and taste of the apple juice and apple cider. Which do they like best?
### Transition Activities

**Activity: Kerplunk!**
- Use a small felt board, felt tree and 2 felt apples.
- Say, “One little apple, round and red, fell kerplunk on Christopher’s head.” Christopher transitions to the next activity
- Or say, “Two little apples, round and red, fell kerplunk on Josh and Arianna’s head.” Josh and Arianna transition to the next activity.

### Family Connection

- Suggest that families take their children grocery shopping for apples. Involve children in deciding which apples to purchase. Say to children the price per pound as they show them the printed price. Involve children in weighing the apples on the scales in the produce department and say how many pounds.
- Serve food items made from apples: applesauce, apple butter, apple juice, apple pie. Invite the children to discuss how they think applesauce or apple juice is made.

### Additional Books

- Carlstrom, Nancy White. *Let’s Count It Out, Jesse Bear*.
- Crews, Donald. *Ten Black Dots*.
- Franco, Betsy, illustrated by Shino Arihara. *Zero Is the Leaves on the Tree*.
- Walsh, Ellen Stoll. *Mouse Count*.
- Wood, Audrey, illustrated by Bruce Wood. *Ten Little Fish*.

### Assessment Ideas

Refer to page 3 of this guide: *Learning Environment – Manipulatives (or Math Center)* for activities to assess the following concepts and benchmark.

**Content Standard: Number and Operations**
- Counting
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)

**Benchmark**
3:15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)

**To Assess**
- Add the apple numeral/number puzzles and the Apple Tree Counting boards and small red felt apples to the center.
- Assess children’s competence by becoming involved with them in their activities, as they use the materials and by listening to their comments.
# Connecting Literature and Math

#4: *Quack and Count* by Keith Baker

## Introduction

*Quack and Count* is a counting book that features seven ducks that group themselves in all of the combinations that add up to seven. Children will enjoy Keith Baker’s rhyming text and the illustrations of cut paper collage.

## Content Standards and Benchmarks

**Content Standard: Number and Operations**
- Counting
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)
- Recognizing “how many” in sets of objects
- Writing numerals that represent quantities (how many)
- Demonstrating understanding of addition and subtraction

**Benchmarks** will be included for each activity.

## Materials to Collect and Make

- Make two piece puzzles with numerals from one to seven and corresponding number of ducks from the story. (See Attachment #1: Numeral cards and Attachment #2: Duck Counting Cards or Attachment #3: Wild Duck Counting Cards)
- Collect or make 7 magnetic duck shapes, magnetic numerals from 1 to 7, magnetic storyboard
- Collect 7 rubber ducks, an aquarium fish net and counting mats for the water center. Make mats with 7 dinner size, waterproof or plastic disposable plates. Write a numeral 1-7 in the center of each plate
- CD or tape of dance tunes, player, numeral mats (purchased or teacher-made)

## Story Presentation

**Benchmarks:**
- 3.1 Shows enjoyment of books and stories and discussion of them
- 3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)
- 3.16 Demonstrates an understanding of addition and subtraction, using manipulatives

**Book:** *Quack and Count* by Keith Baker

**First Reading of Quack and Count**
- Be familiar with the book, *Quack and Count*.
- Show the pages of the book with copyright information before showing the cover and reading the title and invite children to count the duck feet with you (1 to 14). Then say, “There is a total of 14 duck feet.”
- Ask children two questions as follows:
  - “How many feet does each duck have?”
  - “So if each duck as 2 feet and there are 14 feet total, how many ducks do you think there are?”
- Accept all answers.
- Say to children, “Let’s count the ducks and see if you are correct.”
- Count the ducks and say, “There are 7 ducks and each duck has two feet, so that makes a total of 14 feet.”
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who draws the images.)
pictures. In this book, Keith Baker is both the author and illustrator.)

- Read the story so all children can see the pictures in the book.
- Follow up the reading by showing the pages and inviting children to count the ducks with you. Point to each duck as you count.

**Second Reading of *Count and Quack***

- Show the cover, give title, author and illustrator.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by inviting children to help you read the story again.
- Review each double-spread page and involve children in counting and adding the number of ducks. For example:
  1. **1st double-spread:** Count the 6 ducks on the left page and say, “6 plus ___” and have children say the number as you run your finger under the 6 and the 1.
  2. **2nd double-spread:** Involve children in counting the ducks on the left page and say “5 plus 2” as you and the children count the 2 ducklings on the right page.

- “Playing games of peekaboo.”
- Continue until all of the ducklings have been added.
- Read the final pages that end with FLY!
- Thank children for helping you read the story.

**Third Reading of *Quack and Count***

- Show the cover and ask children to recall the title of the book.
- Give the author and illustrator and ask children if they remember what each does. Give them prompts if necessary.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by inviting children to come up and be the 7 ducklings and explain to other children that they will help you count and add the ducklings.
- Stand behind the children and invite the audience to count the 7 ducklings as you put your hand on each child’s head.
- Move one child to your left so that there is space between the 6 children and the one child.
- Invite the audience to count the 6 ducklings plus 1 as you put your hand on each child’s head.
- Move one more child to your left and invite the audience to count the 5 ducklings plus the 2 ducklings as you put your hand on each child’s head.
- Continue this activity until all of the sets of ducklings have been counted.
- Invite the audience to stand and join the 7 ducklings as they pretend to fly in place.
- Thank the children for helping you add the ducklings.

**Teacher Note:** Repeat the follow up activity if other children want a turn to be ducklings

**Extension Activity:**

- Invite 7 other children to be ducklings.
- Explain that you will reread the story and they will form all of the different groups and to count and quack as they make their duck groupings.

**Fourth Reading of *Quack and Count***

- Form a small group of no more than 2 or 3 children.
- Show the cover, read the title and state the author and illustrator.
- Show the title page and invite children to find the 3 ladybugs on the page. Count the ladybugs with the children.
- Read the story so the children can see the pictures in the book.
- Follow up the reading by reminding children that they saw 3 ladybugs on the title page of the book, that these same ladybugs are on other pages and you need...
their help in finding them.

- Begin with the copyright pages and involve children in finding the 3 ladybugs.
- Continue this activity with each double-spread page.

**Teacher Note:** Repeat this activity with other small groups of children.

**Teacher Note:** Locate the ladybugs on each page before involving the children in the follow up activity.

### Additional Language Activities

| Benchmarks: 3.15 | Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration) |
|---------------------------------------------------------------|
| 3.16 Demonstrates an understanding of addition and subtraction, using manipulatives |

**Activity:** Adding Ducks

**Materials:** 7 magnetic duck shapes, magnetic numerals from 1 to 7, magnetic story board, book *Quack and Count*, container for duck shapes, numerals and book

**Directions:**
- Place the container of materials and the storyboard in the library area.
- Allow the children to explore and manipulate the materials
- Observe to see how children use the materials. Do they count the ducklings? Do they form groups of ducklings and count and add them? Do they use the magnetic numerals to indicate how many ducklings in a group?
- Join the children if you think they need the guidance.

| Benchmarks: 3.16 | Demonstrates an understanding of addition and subtraction, using manipulatives |
|---------------------------------------------------------------|
| 5.5 Participates in songs, finger plays, rhyming activities, and games |

**Activity:** Seven Little Ducks Went Out to Play

**Materials:** None

**Directions:**
- Involve children in singing this fun song and finger play.

*Seven little ducks went out to play (children hold up seven fingers)*  
*Over the hills and far away.*  
*Mother duck said, “quack, quack, quack, quack” (move hands in quacking motion)*  
*And six little ducks came running back. (hold up six fingers)*  

*Six little ducks went out to play (children hold up six fingers)*  
*Over the hills and far away.*  
*Mother duck said, “quack, quack, quack, quack” (move hands in quacking motion)*  
*And five little ducks came running back. (hold up five fingers)*

*Continue reducing the number of ducks until “no more little ducks came running back.”*
Last Verse

The sad mother duck went out to play (make sad face)
Over the hills and far away.
Mother duck said “quack, quack, quack, quack” (move hands in quacking motion
And all of her little ducks came back. (hold up seven fingers)

Extension Activity:
- Invite seven children to act out the song as you and the children sing it.
- Lightly tap one children on the head as you sing the first verse and that child moves away from the group.
- Continue this activity until there are no ducks in the group.
- Invite the seven children to come back as you sing the last verse.

Teacher Note: Form additional groups of seven if other children want a turn being ducks.

Benchmarks: 2.4 Participates freely in music activities
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)

Group Time: Number Dance

Materials: CD or tape of dance tunes, player, numeral mats (purchased or teacher-made)

Directions:
- Scatter the numeral mats in a large, open space.
- Explain to children that you will play a dance tune and they are to dance around the mats until the music stops. When the music stops, they are to put their hand on one of the mats and say the number when asked. State that more than one child can put his or her hand on the mat and they will say the number together.
- Begin to play a lively dance tune, stop the music and invite children to say the number they are touching.
- Continue this activity as long as children remain interested.

Teacher Note: Make mats by printing a different numeral, from 1 to 10, on cardstock, laminate and attach non-stick shelf/drawer liner on the back to prevent the mats from slipping when children put their hands on them.

Learning Environment

Water Play
- Place 7 rubber ducks, an aquarium fish net and counting mats in the center
- Make mats with 7 dinner size, waterproof or plastic disposable plates. Write a numeral 1-7 in the center of each plate
- Observe to see if children catch and count the correct number of ducks to place on the plate and if they make number combinations of $2 + 5 = 7$ or other combinations from the story.
<table>
<thead>
<tr>
<th><strong>Manipulatives (or Math Center)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Place the duck numeral/number cards in the center.</td>
</tr>
<tr>
<td>• Provide number puzzles</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>Library</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Place magnetic board and figures in the center</td>
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</table>

## Transition Activities

### Quack and Move
- Ask each child to quack a specific number of times (no more than four) and make quacking motion with hands as he/she transitions to the next activity.
- Say, “Josh, quack two times and get on your cot for rest time.”
- Continue this activity until all children have transitioned to the next activity.

### March and Quack
- Invite children to quack as they march to the playground, for example.

## Family Connection

### Family Count
- Suggest that families do counting activities with their children. For example, involve the child in counting the number of male and female family members. Ask child how many total people in the family as they count them together.
- Involve the child in counting the number of adults and the number of children in the family. Ask child how many total people in the family as they count them together.

## Additional Books

- Basaluzzo, Constanza, illustrator. *Five Green Speckled Frogs*
- Cronin, Doreen, illustrated by Betsy Lewin. *Click, Clack, Splish, Splash: A Counting Adventure*
- Fox, Mem, illustrated by Helen Oxenbury. *Ten Little Fingers and Ten Little Toes*
- Franco, Betsy, illustrated by Shino Arihara. *Zero Is the Leaves on the Tree*
- Jenkins, Emily. *Five Creatures*
- Keats, Ezra Jack. *Over in the Meadow*
- Walsh, Ellen Stoll. *Mouse Count*

## Assessment Ideas

Refer to page 3: **Additional Language Activities – Adding Ducks** for an activity to assess the following concepts and benchmarks.

### Content Standard: Number and Operation
- **Counting**
- Identifying numerals (3 and 4 are numerals) that represent quantities (how many)
- Recognizing “how many” in sets of objects
- Demonstrating understanding of addition and subtraction

### Benchmarks
- 3:15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)
- 3.16 Demonstrates an understand of addition and subtraction , using manipulatives

### To Assess:
- Add the container of materials and the storyboard to the library area.
- Assess children’s competence by becoming involved with them in their activities, as they use the materials and by listening to their comments.
### Connecting Literature and Math

#### #5: *The Gigantic Turnip* by Aleksei Tolstoy & Niamh Sharkey

<table>
<thead>
<tr>
<th>Introduction</th>
<th><em>The Gigantic Turnip</em> by Aleksei Tolstoy and Niamh Sharkey is a hilarious retelling of an old Russian folktale for children. The book is a fine combination of quirky illustrations and text with lots of repetition.</th>
</tr>
</thead>
</table>
| Content Standards and Benchmarks | **Content Standard: Number and Operations**  
- Counting  
- Recognizing “how many” in sets of objects  
- Demonstrating understanding of addition and subtraction  

**Content Standard: Measurement**  
- Comparing and ordering objects on basis of attributes such as length, weight and capacity.  
- Uses standard units such as inches, cups and pounds and standard tools such as rulers, thermometers, scales and measuring cups.  

**Content Standard: Data Analysis and Probability**  
- Posing questions and gathering data to answer questions about the children, their opinions and surroundings; for example “What does our graph tell us?”  

**Benchmarks** will be included for each activity |
| Materials to Collect and Make | - Make two sorting cards; one labeled *Gigantic* (letters really large) and one labeled *Small* (small letters). Add to the appropriate card a picture of the same object; one large and one small.  
- Collect objects in two sizes: balls, cars or trucks, blocks, drinking glasses, forks, for example.  
- Collect pictures of animals such as an elephant, whale, and giraffe that are large and pictures of animals such as a kitten, squirrel, bird, and mouse that are small. |
| Story Presentation | **Benchmarks:**  
3.1 Shows enjoyment of books and stories and discussion of them  
3.2 Tells a story in sequence, following the pictures in a book  
3.4 Demonstrates visual discrimination and visual memory skills  
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral)  
3.16 Demonstrates an understanding of addition and subtraction, using manipulatives  
5.3 Expands vocabulary  

**Book:** *The Gigantic Turnip* by Aleksei Tolstoy & Niamh Sharkey  

**First Reading of *The Gigantic Turnip***  
- Be familiar with the book, *The Gigantic Turnip*.  
- Place several turnips in a bag and take it to the book reading area.  
- Invite children to look at the cover and describe who and what they see.  
- Say, “The title of this book is *The Gigantic Turnip*”.  
- Invite children to discuss what they know about turnips. |
- Take the turnips out of the bag and allow children to examine them. Encourage them to comment about the turnips. Collect the turnips and return them to the bag.
- Explain to children that turnips can be eaten either raw or cooked.
- Repeat the title and ask children what they think the word “gigantic” means. (big, huge, enormous)
- Invite children to name other things that are gigantic. (elephant, whale, mountain)
- Ask children if they think the turnips they held were gigantic?
- Ask children to show with their arms how big they think a really gigantic turnip would be.
- Repeat the title, name the author and illustrator, and say “Let’s read and find out about the gigantic turnip.”
- Read the story so all children can see the pictures in the book.
- Explain words such as “sowed” to children. Say, “When we say someone sowed vegetables such as peas, that means they planted seeds.”
- Pause after reading about the old man heaving and pulling and yanking, but the turnip will not move. Ask the children how they think he is going to get the turnip out of the ground.
- Accept all answers and continue reading to the end of the story.
- Follow up by asking children to recall how they said the old man was going to get the turnip out of the ground. Were they correct?
- Read the pages where everyone, including the mouse, pulled and heaved and tugged and yanked and POP! That’s how the gigantic turnip came flying out of the ground.

**Second Reading of *The Gigantic Turnip***

- Cut up a turnip into small pieces, one for you and for each child in the group. Place the turnip pieces into a small bag and take to the book reading area.
- Give each child a small piece of turnip and suggest that they taste it and describe how it tastes. If a child does not want to taste the turnip, return the piece to the bag.
- Show the cover and invite children to recall the name of the book. Give author and illustrator.
- Read the story so all children can see the pictures in the book.
- Follow up the reading with these counting activities:
  - Show pages 2 and 3 and invite children to count with you the animals kept by the old man and the old woman: six yellow canaries, five white geese, four speckled hens, three black cats, two pot-bellied pigs, and one big brown cow.
  - Skip to the page where the old man and the old woman were unable to move the turnip and the old woman went to fetch the big brown cow.
  - Read the first paragraph and invite children to say which animal the old woman went to fetch. (the big brown cow)
  - Continue this activity as each set of animals is added to the story, inviting children to say which animal and how many are fetched: two pot-bellied pigs, three black cats, four speckled hens, five white geese, and six yellow canaries.
- Conclude the activity by skipping to the page where the old woman catches the mouse and invite children to recall what she did. Show the next three pages and invite children to describe what is happening.

**Third Reading of *The Gigantic Turnip***

- Form small groups of children, from 4 to 6, for this reading.
- Show the cover and ask children to recall the title of the book.
- Read the story so all children can see the pictures in the book.
- Follow up the reading as follows:
  - Explain to children that they will help you read the story again by “reading” some of

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**Connecting Literature and Math – The Gigantic Turnip - rev**

2
Begin by reading the first page to the children. On pages 2 and 3, where the animals are introduced, read “The old man and the old woman kept”, run your hand under “six yellow canaries” and ask children to read the words with you. Continue with “five white geese, four speckled hens, three black cats, two pot-bellied pigs, and one brown cow.” On the next two pages, continue to read the story and invite children to complete the sentence as follows: “They sowed ___ (peas) and ____ (carrots) and ____ (potatoes) and ____ (beans). Last of all they sewed ____ (turnips).” Point to each of the vegetables as they are presented in the story. Continue reading the story until you come to the pages where the animals are added. Pause and allow children to complete the sentences about each set of animals. For example, “So, the old woman went to fetch the _____ _____ ____ (big brown cow). “So the old man mopped his brow and went to fetch the ____ ____ ____ ____ (pot-bellied pigs).” Continue reading after all of the animals have been added until the end of the story.

- Thank children for helping you read the story about The Gigantic Turnip.

**Teacher Note:** Pausing to allow children to complete a sentence is called the cloze technique.

**Teacher Note:** Read the story to other small groups so that all children have an opportunity to be involved in the experience.

### Additional Language Activities

| Benchmarks: 5.5 Participates in songs, finger plays, rhyming activities and games |
| Activity: Vegetable Finger Plays |
| Materials: None |

#### One Turnip, Two Turnips
(Hold up appropriate number of fingers while counting)

One turnip, two turnips,  
Three turnips, four.  
Five turnips, six turnips  
Seven turnips, more  
Eight turnips, nine turnips, Where is ten?  
Now, we must count all over again.

#### Dig a Little Hole
(Make appropriate motions)

Dig a little hole,  
Plant a turnip seed.  
Pour a little water,  
Pull a little weed.

Give a little sunshine,  
And what do you know?  
Your seed will be a little plant,  
And grow, grow, grow.
<table>
<thead>
<tr>
<th>Learning Environment</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Discovery/Science Center</strong></td>
<td></td>
</tr>
</tbody>
</table>
| - Add to the center two sorting cards labeled **Gigantic** and **Small**.  
- Place the sets of large and small items with the cards.  
- Allow children to explore the items.  
- Observe to see if they sort the items by size.  
- Invite them to sort the items by size if they seem to need this prompt.  
- Place the sets of pictures of large and small items with the cards.  
- Observe to see if they sort the pictures by size.  
- Invite them to sort the pictures by size if they seem to need this prompt.  |
| **Teacher Note:** Observe your children so that you will know which ones are ready to sort concrete objects and which are ready to sort representations (pictures).  |
| - Add a pan balance scale and two turnips of different sizes.  
- Allow children to explore the items.  
- Observe to see if they weigh the items and comment about the results.  
- Invite them to place one turnip in one pan and the other turnip in the other pan and to decide which weighs the most. Ask them how they know this. (Pan that drops the lowest is the heaviest)  
- Add additional items that they might weigh and compare weights.  |
| **Group Time: Helping Others** |  |
| - Recall with children all of the animals in the story, *The Gigantic Turnip*, who helped the old man and the old woman pull the turnip out of the ground.  
- Show the book and pictures if children need prompts.  
- Ask children what they think would have happened if none of the animals had helped the old man and the old woman.  
- Allow children to express their thoughts about the question.  
- Say, “In the story, everyone worked together to get the turnip out of the ground. They helped each other. When we work together, we are cooperating.” Invite children to repeat the word “cooperating.”  
- Invite children to discuss how they can work together, or cooperate, in the classroom and outdoors. This means cooperating with each other as well as the teacher. Examples might include: Help pick up and put away toys. Rest quietly on cots/mats so that others can get to sleep. Listen to (name of teacher) when she is reading a book so everyone can hear the story.  
- Repeat children’s ideas and invite others.  
- Invite children to discuss how they can work together, or cooperate, at home.  |

<table>
<thead>
<tr>
<th>Transition Activities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Be a Gigantic Turnip</strong></td>
<td></td>
</tr>
</tbody>
</table>
| - Invite children to pretend to be gigantic turnips as they transition to the next activity. (Arms over head, making a large circle.)  
- Ask them to be small turnips as they transition to another activity. (Make circle with thumb and forefinger, also called index finger) |
## Family Connection

- Suggest that families point out turnips to children when they are in the grocery store.
- Invite families to let you know if they eat turnips at home and how they cook them.
- Suggest that families ask their children to recall the story of *The Gigantic Turnip* and explain how the turnip was finally pulled out of the ground.
- Suggest that families visit their local library and check out the book, *The Gigantic Turnip* by Aleksei Tolstoy & Niamh Sharkey, to read with their child. If this book is not available, similar books can be found about this same folktale and with the same title, *The Gigantic Turnip* or a similar title, *The Enormous Turnip*.

## Additional Books

- Allen, Pamela. *Who Sank the Boat?*
- Burningham, John. *Mr. Gumpy’s Outing*
- Galdone, Paul. *The Little Red Hen*
- Wood, Audrey, illustrated by Don Wood. *The Napping House*

## Assessment Ideas

Refer to page 4 in the guide: Learning Environment - Discovery/Science Center for activities to assess the following concepts and benchmarks.

### Content Standards: Measurement

- Comparing and ordering objects on basis of attributes such as length, weight and capacity
- Using standard units such as inches, cups and pounds and standardized tools such as rulers, thermometers, scales and measuring cups

### Content Standards: Data Analysis

- Posing questions and gathering data to answer questions about the children, their opinions and surroundings; for example, “What does our graph tell us?”

### Benchmarks

- 3:10 Classifies objects by physical features such as shape or color
- 3.22 Makes comparisons (scientific process: comparing)
- 3:23 Shows awareness of cause-effect relationships

### To Assess:

- Add sorting cards, large and small items and pictures of large and small animals to the center.
- Add balance scale and two turnips of different sizes to the center.
- Assess children’s competence by become involved with them in their activities, as they use the materials and by listening to their comments.
Connecting Literature and Math

#6: *The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear*

by Don and Audrey Wood, illustrated by Don Wood

<table>
<thead>
<tr>
<th>Introduction</th>
<th>In this story that has been a favorite of children since 1984, discover all the strategies the little mouse uses in order to save his strawberry from the big hungry Bear, a bear that never appears in the book.</th>
</tr>
</thead>
</table>
| Content Standards and Benchmarks | **Content Standard: Number and Operations**  
  - Counting  
  - Writing numerals that represent quantities (how many)  
  - Demonstrating understanding of fractions such as ½, 1/3, and ¼.  

**Content Standard: Data Analysis and Probability**  
- Posing questions and gathering data to answer questions about the children, their opinions and surroundings; for example “What does our graph tell us?”  
- Applying knowledge of comparing, counting and sorting and classifying as they work with data and information  
- Representing data with objects, pictures and symbols

| Materials to Collect and Make | Create magnetic or felt figures for the story. See A Story a Month on the Arkansas Better Beginnings website for patterns.  
Print on cardstock, laminate and cut out Ways We Eat Strawberries Picture Cards (See Attachment #1: Ways We Eat Strawberries Cards)  
Print on cardstock, laminate and cut out Recipe Cards (See Attachment #2: Recipe Cards) |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Story Presentation | **Benchmarks:**  
  3.1 Shows enjoyment of books and stories and discussion of them  
  5.3 Expands vocabulary  
  5.8 Participates in group discussion  
  5.9 Uses language to problem solve

**Book:** *The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear* by Audrey and Don Wood, illustrated by Don Wood

**First Reading of**  
- Be familiar with the book, *The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear.*  
- Show the cover, give title, authors and illustrator. (Explain that the authors are the persons who write the words and the illustrator is the person who draws the pictures.)  
- Invite children to look at the cover and discuss what they think the little mouse is going to do with the red, ripe strawberry. Accept all answers, then say, “Let’s read and find out.”  
- Read the story so all children can see the pictures in the book.  
- Read the first page and ask the children what they think the little mouse is doing. Accept all answers.  
- Continue reading the story. When you come to the page with these words, “or…**
how it is disguised," invite children to look at the illustration and discuss what they think the word disguised means. (Changing the way you look so people won’t recognize you).

- Give prompts if necessary. For example, at Halloween, what do you do when you go trick or treating? Do you wear a mask, or disguise, so people won’t know who you are? How are the little mouse and the red ripe strawberry trying to disguise themselves?
- Ask the children if they think the big hungry bear would recognize the little mouse and the red ripe strawberry.
- Continue reading the story until the end.
- Follow up the reading by showing the appropriate pages and invite children to discuss how the little mouse tried to keep the big hungry Bear from getting the red ripe strawberry. (hiding it, guarding it, disguising it, cutting it in half and sharing it)
- Involve children in discussing who they think the little mouse shared the strawberry with. Accept all answers.

**Second Reading of The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear**

- Show the cover, give title, authors and illustrator.
- Read the story so all children can see the illustrations in the book.
- Follow up the reading by showing the pages where the little mouse is obviously showing specific feelings and emotions and invite children to discuss how they think the little mouse is feeling and why.
  For example, on the second page he seems to be happy/smiling.
  On the third page his face seems to show surprise and perhaps fear as he hears about the big hungry Bear.
  On the next couple of pages he seems to still be showing fear of the Bear.
  Continue with pages you think show specific feelings and emotions.
  On the page that reads, "and we’ll both eat it up. YUM!" ask children how they think the little mouse is feeling as he is eating the strawberry.
- Ask children if they ever saw the Bear in the story. If they cannot remember, show the pages and ask them to look for the Bear. Guide them to conclude that there is no bear in the story and to discuss why. Accept all answers

**Additional Benchmark: 5.6 Uses words to communicate ideas**

**Third Reading of The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear**

- Show the cover and ask children to recall the title of the book.
- Give the authors and illustrator and ask children if they remember what each does. Give them prompts if necessary.
- Read the story so all children can see the pictures in the book.
- Follow up by inviting children to help you read the story.
- For example, on the second page, run your hand under the words “red, ripe strawberry”, pause before you say the word “strawberry”, allowing children to complete the sentence.
  On the third page, pause after “big” and allow children to say “hungry Bear.”
  Continue this process on pages where it seems appropriate, especially where there are words that are repeated.
- Thank children for helping you read the story.

**Teacher Note:** Pausing to allow children to complete a phrase or sentence is called the cloze technique.

**Additional Benchmark: 3.5 Understands that print conveys a message**
**Additional Language Activities**

**Benchmarks:** 3.1 Shows enjoyment of books and stories and discussion of them

**Activity:** *The Little Mouse, the Red Ripe Strawberry and the Big Hungry Bear*

**Storytelling Figures**

**Materials:** magnetic or felt storytelling figures and a magnetic or felt board, the book

**Directions:**
- Show the book to the children and invite them to recall the name of the story.
- Explain to children that you are going to present the story in a different way.
- Use the storytelling figures to tell and present the story to a group of children.
- Follow up by inviting children to tell the story as you place the figures on the board.
- Follow up by giving one of the following storytelling figures to 5 different children: strawberry on plant, hidden, locked up, disguised and cut in half. Ask children to put their figure on the board as you describe it.
- Involve children in counting the figures where the strawberry is whole (4) and the figure where the strawberry is cut in half (1) and ask which group has the most.
- Invite children to discuss why there is no figure of the big, hungry Bear.

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**Benchmarks:** 3.5 Understands that print conveys a message
  3.11 Classifies objects conceptually (things that go together)
  3.5 Understands that print conveys a message
  5.8 Participates in group discussion

**Activity:** How Many Ways Can We Eat Strawberries?

**Materials:** pictures of strawberries in different forms: whole, pies, cakes, preserves, gelatin, popsicles, fruit salad, ice cream, strawberry shortcake, pop tarts,

chart sheet or marker board and marker pen

**Directions:**
- Write on the chart sheet or marker board the following: Ways We Can Eat Strawberries.
- Involve children in discussing the different ways we can eat strawberries and list the items on the chart sheet or marker board.
- Guide children to add additional food items that they may not have listed.
- Read with the children the items listed.
- Distribute the pictures of strawberries in different forms. As you read a food item from the list, invite the child to hold up his/her picture.
- Count with the children the number of food items on the list.
and write at the bottom of the list the following sentence: We can eat strawberries 6 (or the correct number) different ways.

- Post the chart sheet or place the marker board in the Dramatic Play area.

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**Learning Environment**

- **Dramatic Play Center**
  - Add illustrated recipe cards of food items made with strawberries. (See Attachment #2: Recipe Cards)
  - Add plastic glasses frame with fake nose attached.

- **Library**
  - Add storytelling figures for *The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear* and a storyboard
  - Observe and listen to children as they use the figures to retell the story. Do they tell the story in the correct order? Do they tell the story to each other?

- **Food/Nutrition Experiences**

  **Benchmarks:**
  - 3.21 Uses words to describe the characteristics of objects (scientific process: communicating)
  - 3.22 Makes comparisons (scientific process: comparing)
  - 4.3 Tries new foods before deciding whether he/she likes them

  **Activity:** Apples and Sandwiches
  - Provide enough apples and sandwiches so that each child has the required amount for snack.
  - Recall with children that the little mouse cut the strawberry in half in the story, *The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear*. Show the appropriate page in the book to the children.
  - Invite children to think of other foods that can be cut in half. (apples, oranges, bananas, sandwiches, for example)
  - Say to children, “Suppose there is only one apple and two people. How can we make sure each person has an equal part of the apple?” Allow children to respond. Then cut the apple in half and say what you are doing: “I’m cutting the apple in 1/2.”
  - Continue by saying, “Suppose we have four people and only one apple. How can we make sure each person has an equal part of the apple?” Allow the children to respond, then cut the apple in fourths and say what you are doing: “I’m cutting the apple in 1/4s.”
  - Repeat this process with one of the sandwiches.
  - Show picture of a whole pizza, cake, or pie. Ask children how we can make sure that each person has an equal amount of the food item. How many slices or sections do they think the pizza or cake or pie can be cut into?
  - Continue cutting the apples and sandwiches into required number of pieces and enjoy the snack together.

  **Extension: Activity:** Make a Sandwich Sharing Mat.
  - On the mat, include outlines of sandwiches (3 outlines in a row). Under sandwich #1 - silhouette of 1 child, under sandwich #2 - silhouettes of 2 children and under sandwich #3 - silhouettes of 4 children
  - Use the same outline of the sandwiches and make more sandwiches out of cardstock: 1 whole sandwich (not real sandwich), 1 sandwich cut in half and 1 sandwich cut in 4 (1/4)
  - Invite one or 2 children to join you in the Sandwich Sorting activity, to place the correct parts of sandwiches on the mat with the number of children that would share the sandwich.

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Connecting Literature and Math – *The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear* - rev
Activity: Fruit Salad

- Involve children in making a fruit salad for snack.
- Place in 3 bowls: strawberries cut in half, grapes cut in half, and mandarin orange sections. Provide a serving spoon for each bowl.
- Provide for each child a small bowl, spoon, crackers, and a napkin.
- Invite children in turn to take a spoonful of each fruit.
- Invite them to name the fruits that are cut in half and the one that is in sections.

Teacher Note: Be aware of children with food allergies. Are any allergic to strawberries?

Group Time: Graphing Our Favorite Berry

Benchmarks:  1.1 Demonstrates ability to make choices  
3.5 Understands that print conveys a message  
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship  
3.22 Makes comparisons (scientific process: comparing)  
4.3 Tries new foods before deciding whether he/she likes them  
4.4 Recognizes different types of foods

Directions:

- Provide three kinds of berries for tasting: strawberries, blueberries and raspberries, for example.
- Provide a small plate and napkin for each child in the group.
- Sit at the table with the children and involve them in selecting and eating the berries.
- Enjoy the berries.
- Invite children to discuss and compare the characteristics of the berries: size, color, texture, and taste, for example.
- Follow up the snack by completing a graph about the children’s favorite berry.
- Prepare a graph with a column for each berry. Use a picture or drawing of the berries with the name written on it.

Our Favorite Berry

<p>| | | |</p>
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<thead>
<tr>
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<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Peyton</td>
<td>Mary Elizabeth</td>
</tr>
<tr>
<td>4</td>
<td>Beckett</td>
<td>Sarah</td>
</tr>
<tr>
<td>3</td>
<td>Kennedi</td>
<td>James</td>
</tr>
<tr>
<td>2</td>
<td>Sam</td>
<td>Maria</td>
</tr>
<tr>
<td>1</td>
<td>Taylor</td>
<td>Lucy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Robert</td>
</tr>
</tbody>
</table>

- Write a summary story.

Connecting Literature and Math –
The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear - rev
Our Favorite Berry
Five children like Strawberries the best. Four children like Blueberries the best and three children like Raspberries the best.

Additional Benchmark: 3.10 Classifies objects by physical features such as size or color

Art Center
- Add red and dark blue tempera paint to the center for painting at the easel.

Discovery/Science Center
- Make strawberry scented playdough.

<table>
<thead>
<tr>
<th>No Cook Strawberry Playdough</th>
<th>Mix together the plain four, salt and unsweetened strawberry drink mix. Gradually add water and then oil as you knead together to make the dough. Add more flour if dough is sticky or more water if dough is stiff. Store in an air-tight container.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 cups plain flour</td>
<td>1 cup salt</td>
</tr>
<tr>
<td>1 pkg of unsweetened strawberry drink mix</td>
<td>¼ cup oil</td>
</tr>
</tbody>
</table>

Transition Activities

Activity: Splat!
- Use a small felt board, felt strawberry plant and 2 felt strawberries.
- Say, "One little strawberry ripe and red. fell and went SPLAT on Robert’s head. Robert transitions to the next activity.
- Or say, "Two little strawberries ripe and red, fell and went SPLAT on Monica and Adam’s head."
  Monica and Adam transition to the next activity.

Teacher Note: Cup your fingers together, then open them wide as you say SPLAT!

Family Connection

- Send home a note to families explaining that children will be reading a story about a red ripe strawberry. Invite them to involve their child in looking through magazines for pictures of strawberries and different food items made with strawberries and to bring them to the center. Explain that the pictures will be used in a learning activity.
- Send home the recipe for making strawberry scented playdough and suggest that families involve their child in making the playdough. Ask parents to have a certain place where children can play with the dough and provide a vinyl placemat for children to use when they are playing with the playdough. Also ask families to provide simple props for children to use as they are playing with the dough: such as small plastic knives, cookie cutters and small rolling pins or 6” lengths of a 1” dowel stick to use as a rolling pin. Keep playdough in airtight container when not in use.

Additional Books
Degen, Bruce. *Jamberry*
McMillan, Bruce. *Eating Fractions*
<table>
<thead>
<tr>
<th>Assessment Ideas</th>
<th>Refer to page 4 in the guide: <strong>Extension: Activity: Make a Sandwich Sharing Mat</strong> for an activity to assess the following concepts and benchmarks.</th>
</tr>
</thead>
</table>
| **Content Standards: Number and Operation** |  - Counting  
  - One-to-one correspondence  
  - Demonstrating understanding of fractions such as $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ |
| **Benchmark** | 3.13 Demonstrates one-to-one correspondence |
| **To Assess:** |  - Invite one or 2 children to join you in the Sandwich Sorting activity, to place the correct parts of sandwiches on the mat with the number of children that would share the sandwich.  
  - Assess children’s competence by observing them in the activity and listening to their responses as you ask questions and guide them in the activity. |
# Connecting Literature and Math

**#7: The Greatest Gymnast of All by Stuart J. Murphy, illustrated by Cynthia Jabar**

<table>
<thead>
<tr>
<th>Introduction</th>
<th>The rhyming text by Stuart J. Murphy and the spunky illustrations by Cynthia Jabar do more than tell a story, they combine to teach geometry, which is the spatial side of math. Join red headed, zipping, zooming Zoe as she assumes certain positions in space while demonstrating that she is truly The Greatest Gymnast of All.</th>
</tr>
</thead>
</table>
| Content Standards and Benchmarks | **Content Standard:** Geometry (the spatial side of math)  
- Describing positions and relationships among objects (spatial relationships)  

**Benchmarks** will be included for each activity in the guide |
| Materials to Collect and Make |  
- Create teddy bear puppets, one per child. Print on cardstock, laminate, cut out and attach to craft stick. (See Attachment #1: Teddy Bear Puppet)  
- Hoops  
- Crepe paper streamers  
- Plastic woven laundry baskets |
| Story Presentation | **Benchmarks:**  
3.1 Shows enjoyment of books and stories and discussion of them  
3.17 Shows understanding of different relationships of objects in space (spatial relations)  

**Book:** The Greatest Gymnast of All by Stuart J. Murphy, illustrated by Cynthia Jabar  

**First Reading of The Greatest Gymnast of All**  
- Be familiar with the book, The Greatest Gymnast of All.  
- Show the cover and say, “Meet Zoe. She is the greatest gymnast of all.”  
- Explain that a gymnast is a person who participates in gymnastics.  
- Invite children to discuss what they know about gymnastics. Some of them or their family members may participate in gymnastics.  
- Give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who draws the pictures.)  
- Show the title page and ask children what they think Zoe is doing in the picture. (the splits).  
- Read the story so all children can see the pictures in the book.  
- Allow children to make comments about what Zoe is doing as you read the story.  
- Follow up the reading by inviting children to tell you why Zoe is the greatest gymnast of all. |
| Second Reading of The Greatest Gymnast of All |  
- Show the cover and invite children to recall the name of the girl in the story.  
- Give title, author and illustrator, explaining what each does.  
- Read the story so all children can see the pictures in the book.  
- Show the last page which has these words, “I’m ZIPPING, ZOOMING ZOE – the greatest gymnast of all”, point to the trophy and the blue ribbons and invite children to discuss what they know about trophies and blue ribbons. Do they know anyone who has received a trophy or a blue ribbon? If so, what was it for?  
- Follow up the reading by showing the pictures and inviting the children to describe |
what Zoe is doing in each one.

- Help them with the action words such as swinging, jumping, turning a cartwheel, doing a roll, a flip, and swinging.

**Additional Benchmark: 3.2 Uses picture cues to tell a story**

**Third Reading of The Greatest Gymnast of All**

- Show the cover and invite children to recall the name of the story.
- Give title, author and illustrator and invite children to discuss what each does.
- Read the story so all children can see the pictures in the book.
- Follow up by showing specific pages in the book and involving children in naming the opposite words that describe Zoe’s actions:
  - on and off the mat
  - short and long leaps
  - inside and outside and over and under the hoop
  - forward and backward
  - high and low
  - up and down
  - near and far

**Additional Language Activities**

**Benchmarks:** 3.17 Shows understanding of different relationships of objects in space (spatial relations)
5.5 Participates in songs, finger plays, rhyming activities, and games

**Activity:** We’re Going on a Bear Hunt (Action Story)

**Materials:** none

#### We’re Going on a Bear Hunt

*Let’s go on a bear hunt. (Tap hands on thighs like walking)*

*All right, let’s go.*

*Oh-oh, there’s long, wavy grass.*

*Can’t go over it,*

*Can’t go under it.*

*Let’s go through it.*

*Swishy swashy!*  

*(Rub hands together like swishing through grass)*

*Swishy swashy! Swishy swashy!*  

*Oh-oh, there’s a deep, cold river.*

*Can’t go over it,*

*Can’t go under it.*

*Let’s go through it.*

*Splash, splosh, splash splosh, splash splosh!*  

*(Pretend to swim)*

*Oh – oh, there’s thick, oozy mud.*

*Can’t go over it.*

*Can’t go under it.*

*Let’s go through it.*

*Squelch, squerch!*  

*(Move hands up and down as though walking through mud)*

*Squelch, squerch! Squelch, squerch!*
Oh –oh, there’s a big, dark forest.
Can’t go over it.
Can’t go under it.
Let’s go through it.
Stumble trip! Stumble trip! Stumble trip!

Oh, oh, there’s a swirling, whirling snowstorm.
Can’t go over it.
Can’t go under it.
Let’s go through it.
Hooo wooo! (Pretend to shiver)
Hooo wooo!
Hooo wooo!

Oh, oh, there’s a narrow, gloomy cave.
Can’t go over it.
Can’t go under it.
Let’s go through it.
Tip toe! Tip toe! Tip toe! (Tip toe fingers)

Oh, oh, I feel a shiny wet nose!
I feel two furry ears!
I see two big, big eyes.
It’s a bear!
  (Retrace steps)
Whew! We made it.
Under the covers, safe in bed!

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**Benchmarks:** 3.17  Shows understanding of different relationships of objects in space (spatial relations)
5.5  Participates in songs, finger plays, rhyming activities, and games

**Activity:** Rhymes

**Materials:**  none

**Directions:**
- Involve children in saying the following rhymes while making accompanying motions:

  **Teddy Bear**

  Teddy bear, teddy bear, turn around.
  Teddy bear, teddy bear, touch the ground.
  Teddy bear, teddy bear, reach up high.
  Teddy bear, teddy bear, touch the sky.
  Teddy bear, teddy bear, jump up and down.
  Teddy bear, teddy bear, turn around.
  Teddy bear, teddy bear, sit right down.
Itsy Bitsy Spider

The itsy-bitsy spider
Climbed up the water spout
Down came the rain
And washed the spider out

Out came the sun
And dried up all the rain
And the itsy-bitsy spider
Climbed up the spout again

Benchmarks: 3.11 Classifies objects conceptually (things that go together)
3.17 Shows understanding of different relationships of objects in space (spatial relations)
5.9 Uses language to problem solve

Activity: A Game of Opposites


Directions:
- Introduce the concept of opposites to the children by showing the page in the book, The Greatest Gymnast of All, where Zoe is inside the hoop and then outside the hoop. Say, “Inside and outside go together because they are opposites.”
- Continue this activity by saying, “If I say big, what is the opposite?” Guide children to respond by saying small or little or tiny.
- Involve the children in saying other opposites. Examples include: over and under, in and out, up and down, high and low, short and long, fast and slow, on and off, inside and outside, near and far, backward and forward.

Extension Activity:
- Locate pictures that illustrate opposites.
- Involve a small group of children in this activity.
- Keep one half of each set of opposites and give children the other half of each set.
- Show your picture and say, “This is high. Who has the opposite of high?”
- Guide the child to show picture and say, “This is low.”

Learning Environment

Dramatic Play Center
- Basket Weaving
  Provide plastic woven laundry baskets and crepe paper streamers. Encourage the children to weave the streamers through the holes in the basket. Describe what the children are doing: “You’ve weaving the streamer in and out of the holes.”
Manipulatives (or Math Center)
- Lacing cards

Games - Bean Bag Toss and Hoops
- Bean Bag Toss
  Provide a bean bag and a box. Use masking tape to create a throw line.
  Invite children to stand behind the line and toss the beanbag into the box.
  Ask children to describe where the bean bag lands: in the box, outside the box, in
  front of the box, in back of the box, on the side of the box.
- Hoops
  Place several hoops on the floor, spacing them so that children have room for
  movement.
  Invite one child per hoop to walk around the hoop, step inside the hoop, step
  outside the hoop, hop into the hoop, hop outside the hoop.
  Continue this activity until all children have had an opportunity to play the game.

Group Time: Music and Movement
- Involve children in Hokey Pokey or Looby Loo

  Hokey Pokey
  
  You put your right foot in,
  You put your right foot out,
  You put your right foot in
  And you shake it all about.
  You do the Hokey Pokey
  And you turn yourself around,
  That's what it's all about.

  You put your left foot in,
  You put your left foot out,
  You put your left foot in,
  And you shake it all about.
  You do the Hokey Pokey
  And you turn yourself around,
  That's what it's all about.

  You put your right hand in,
  You put your right hand out,
  You put your right hand in
  And you shake it all about.
  You do the Hokey Pokey
  And you turn yourself around,
  That's what it's all about.

  You put your left hand in,
  You put your left hand out,
  You put your left hand in,
  And you shake it all about.
  You do the Hokey Pokey
  And you turn yourself around,
  That's what it's all about.
You put your head in,
You put your head out,
You put your head in,
And you shake it all about.
You do the Hokey Pokey
And you turn yourself around,
That's what it's all about.

You put your whole self in,
You put your whole self out,
You put your whole self in
And you shake it all about.
You do the Hokey Pokey
And you turn yourself around,
That's what it's all about.

Looby Loo

Here we go looby loo
Here we go looby light
Here we go looby loo
All on a Saturday night
You put your right hand in
You take your right hand out
You give your hand a shake, shake, shake
And turn yourself about

Here we go looby loo
Here we go looby light
Here we go looby loo
All on a Saturday night
You put your left hand in
You take your left hand out
You give your left hand a shake, shake, shake
And turn yourself about

Here we go looby loo
Here we go looby light
Here we go looby loo
All on a Saturday night
You put your right foot in
You take your right foot out
You give your right foot a shake, shake, shake
And turn yourself about

Here we go looby loo
Here we go looby light
Here we go looby loo
All on a Saturday night
You put your left foot in
You take your left foot out
You give your left foot a shake, shake, shake
And turn yourself about

Here we go looby loo
Here we go looby light
Here we go looby loo
All on a Saturday night
You put your whole self in
You take your whole self out
You give your whole self a shake, shake, shake
And turn yourself about

**Group Time: Where’s the Teddy Bear?**

- Provide one bear puppet per child. (See Attachment #1: Teddy Bear Puppet)
- Begin the activity by putting the teddy bear over your head and say, "My bear is **over** my head. Can you put your teddy bear over your head?"
- Continue by placing the bear in different positions and asking the children to do the same:
  - Over my head
  - Under my chin
  - In front of my face
  - In back of my head
  - On my knee
  - Between my knees
  - Behind my knee
- Change up the game by holding the teddy bear in a position and ask, “Where’s the teddy bear?” Children respond by giving the location shown by you.

**Inside Obstacle Course**

- Create an indoor obstacle course that includes some of the following: low balance beam or taped line on the floor, rope on floor to jump over, table to crawl under, chair to walk around, box to move through on stomach, hoop or circle of yard to hope into and out of.
- Involve children in the Going on a Bear Hunt action story or read the book, *We’re Going on a Bear Hunt* by Michael Rosen, illustrated by Helen Oxenbury, to the children.
- Involve children in discussing some of the obstacles they had to go through on their bear hunt. If necessary, help children understand that an obstacle is something that gets in the way of where you want to go.
- Explain to children that you have created an obstacle course that they will have to travel through to get back to their home (carpet square or personal space marker in area designated for group time).
- Give children directions for traveling through the obstacle course by letting one child model the correct way to travel as you describe the directions.

**Outdoor Activities**

- Outdoor Obstacle Course
  Create an outdoor obstacle course for children to travel through: walk around the climbing structure, crawl through a box or large snap together cube, walk on a balance beam or timber that encloses fall zone material, zigzag around cones or two-liter bottles weighted with sand or rocks.
**Outdoor Obstacle Course for Tricycles**
Create an obstacle course for children to steer tricycles through. Use cones or two-liter bottles weighted with sand or rocks to create the course.

**Fence Weaving**
Let the children weave crepe paper streamers through the links on a chain link fence.

**Teacher Note:** Describe what the children are doing as they travel the obstacle course, ride their tricycles through the obstacle course or weave streamers.

**Transition Activities**

<table>
<thead>
<tr>
<th>What Do You Say?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Involve children in a game of opposites by having them name the opposite of what you say.</td>
</tr>
<tr>
<td>• Say to an individual child, “Logan, if I say high, what do you say?” That child says low and transitions to the next activity. Continue this activity with other opposites until all children have transitioned to the next activity. Opposites include: over and under, in and out, up and down, high and low, short and long, fast and slow, on and off, inside and outside, near and far, backward and forward.</td>
</tr>
</tbody>
</table>

**Family Connection**

| • Send home to families a copy of the action story, We’re Going on a Bear Hunt, and invite them to involve their child in saying the story with them. Suggest that if they need assistance, ask their child’s teacher to demonstrate how to do the story. |
| • Send home a note to families explaining that children have been learning about opposites and give them examples: in and out, up and down, inside and outside, over and under, high and low, fast and slow, big and small. Suggest that they involve their children in activities that help their child understand about opposites. For example, ask your child to: sit in a big chair, then a small chair, walk fast, then slow, stand up, then sit down, reach up high, then bend down low. |

**Additional Books**

Hoban, Tana. *Exactly the Opposite*
Maestro, Betsy & Giulio. *Traffic: A Book of Opposites*
McMillan, Bruce. *Becca Backward, Becca Forward*
Rosen, Michael, illustrated by Helen Oxenbury. *We’re Going on a Bear Hunt*

**Assessment Ideas**

Refer to page 5 of this guide: *Games – Bean Bag Toss and Hoops* for activities to assess the following concepts and benchmark:
<table>
<thead>
<tr>
<th>Content Standard: Geometry (the spatial side of math)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Describing positions and relationships among objects (spatial relationships)</td>
</tr>
<tr>
<td><strong>Benchmark</strong></td>
</tr>
<tr>
<td>3:18 Show understanding of different relationships of objects in space (spatial relations)</td>
</tr>
<tr>
<td><strong>To Assess:</strong></td>
</tr>
<tr>
<td>• Involve children in the two games: <strong>Bean Bag Toss and Hoops</strong></td>
</tr>
<tr>
<td>• Assess children’s competence by observing them as they describe where the bean bag lands and as they follow your directions with the hoop.</td>
</tr>
</tbody>
</table>
# Connecting Literature and Math

## #8: Mouse Shapes by Ellen Stoll Walsh & Color Zoo by Lois Ehlert

<table>
<thead>
<tr>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>This curriculum guide features two books, <em>Mouse Shapes</em> by Ellen Stoll Walsh, and <em>Color Zoo</em> by Lois Ehlert. Both books focus on the concept of shapes. In <em>Mouse Shapes</em>, the author celebrates shapes, colors and creativity with three mice as the main characters, while in <em>Color Zoo</em>, shapes and colors are introduced with illustrations of shapes that form animal faces when placed on top of one another.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content Standards and Benchmarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Standard: Number and Operations</strong></td>
</tr>
<tr>
<td>• Counting</td>
</tr>
<tr>
<td><strong>Content Standard: Geometry (the spatial side of math)</strong></td>
</tr>
<tr>
<td>• Identifying shapes such as circles, rectangles, squares, and triangles; two and three dimensional shapes such as spheres (balls) and rectangular solids (boxes)</td>
</tr>
<tr>
<td>• Combining and taking apart shapes</td>
</tr>
</tbody>
</table>

**Benchmarks** will be included for each activity

<table>
<thead>
<tr>
<th>Materials to Collect and Make</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide pattern blocks and pattern activity cards</td>
</tr>
<tr>
<td>• Provide attribute blocks and attribute block activity cards</td>
</tr>
<tr>
<td>• Provide geometric shapes (solid forms)</td>
</tr>
<tr>
<td>• Provide shape puzzles</td>
</tr>
<tr>
<td>• Provide colors and shapes bingo</td>
</tr>
<tr>
<td>• Make a Shapes and Colors Lotto game (See Attachment #1: Lotto) Make two copies of each page on cardstock, laminate and cut out. Use one set as the playing card for each person. Cut the other set into individual cards to use for calling cards.</td>
</tr>
<tr>
<td>• Make Lollipop Shapes (See Attachment #2: Lollipops) Copy on cardstock, laminate and cut out. Attach each lollipop to a craft stick. Make as many sets as needed for your class.</td>
</tr>
<tr>
<td>• Make Shape and Color Cube(s) (See Attachment #2: Lollipops). Carefully fill an empty cube shaped tissue box with crumpled newspapers. Use several sheets of paper because this will make your cube more durable. Cover the cube with colored paper. Copy Lollipops on cardstock, laminate and cut out. Use these circles with shapes to attach to each side of the cube.</td>
</tr>
<tr>
<td>• Make shapes templates by using an exacto knife to cut out shapes in a plastic lid from a butter tub, for example. Cut out one shape per lid.</td>
</tr>
<tr>
<td>• Collect square and long scarves</td>
</tr>
<tr>
<td>• Collect a basket of fabric cut into shapes such as circles, squares, triangles that are 2 to 3 feet in size</td>
</tr>
<tr>
<td>• Cut out shapes from different colors of construction paper: circle, square, triangle, rectangle, oval, diamond, heart, star, octagon, hexagon</td>
</tr>
<tr>
<td>• Purchase or make a geoboard to use in the Manipulative or Math Center. (See Attachment #3: Geoboard for directions on how to make a geoboard)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Story Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmarks:</strong> 3.1 Shows enjoyment of books and stories and discussion of them</td>
</tr>
<tr>
<td>3.10 Classifies objects by physical features such as shape or color</td>
</tr>
</tbody>
</table>
**Book:** *Mouse Shapes* by Ellen Stoll Walsh

**First Reading of Mouse Shapes**
- Be familiar with the book, *Mouse Shapes.*
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who creates the pictures. In this book, Ellen Stoll Walsh is both the author and illustrator)
- Invite children to look at the cover and describe what they see. If children do not mention that they see shapes, ask them if they see any shapes they know.
- Show the title page and invite children to identify the shapes and colors they see, also the size of the two circles.
- Explain to the children that the story is about three mice named Violet, Martin, and Fred, and how they use shapes to trick a sneaky cat.
- Read the story so all children can see the pictures in the book.
- Pause at the end of the story and allow children’s honest reaction to it.
- Follow up the reading by showing the pages where the mice made things with shapes and invite children to identify the objects: house, tree, sun, wagon, fish, cat, 3 mice, and Swiss cheese.

**Second Reading of Mouse Shapes**
- Show the cover, give title, author and illustrator.
- Invite children to recall what the story is about.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by inviting children to look at the pages and recall what is happening. Prompt as needed.
- Involve children in an in-depth discussion about the shapes and number of shapes (by counting how many) the mice used to make the different things in the book. For example:
  1 triangle and 1 square to make a house,
  1 triangle and 1 rectangle to make a tree
  1 circle to make a sun
  2 circles and 1 rectangle to make a wagon
  2 diamonds to make a book
  1 oval, two circles, and 8 triangles to make a fish
  3 circles and 7 triangles to make a cat
- Invite children to only name shapes for 3 mice and for the Swiss cheese.
- Explain to children that there will be opportunities in the art center for them to use shapes to make things.

**Additional Benchmark:** 3.16 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship

**Teacher Note:** Consider presenting the second reading of Mouse Shapes with a small group of children (4 or 5) so children can more clearly see the illustrations and be involved in the counting of shapes.

**Book:** *Color Zoo* by Lois Ehlert

**First Reading of Color Zoo**
- Show the cover and give title, author and illustrator. Explain to children that Lois Ehlert is both the author and illustrator of this book. She wrote the words and she created the pictures.
• Invite children to look at the cover and describe what they see. Ask them why they think the title of the book is Color Zoo. If they do not correctly name the animal on the cover as tiger, ask them what animal they see. Say, “Let’s read and find out more about Color Zoo.”
• Read the rhyming text on the first page.
• Show the next page, name the animal, and remind children that this is the same animal that is on the cover. Show the cover again and ask if they were correct when they named the animal on the cover. Did they say “tiger?”
• Continue showing each page and involve children in trying to name the animal. State the name of the animal if children do not recognize it.
• Follow up by showing the pages and inviting children to name the animals.

Second Reading of Color Zoo

• Invite a small group of 3 to 5 children to join you in reading Color Zoo.
• Have a set of the 10 shapes featured in the book. The shapes can be made from laminated poster board or card stock.
• Invite children to explore the shapes, discuss with them the characteristics of each and guide them to see how they are alike and different:
  - circle is round; it has no sides
  - square has 4 sides; all 4 sides the same length
  - rectangle has 4 sides; 2 sides the same length and other 2 sides the same length
  - triangle has 3 sides
  - oval is like a flattened circle
  - diamond has 4 sides, but isn’t a square or a rectangle
  - octagon has 8 sides (count sides with children, starting with the top side and continuing in a clockwise counting)
  - hexagon has 6 sides (count sides with children, starting with top side and continue counting in a clockwise counting)
  - star is different, it is like no other shape; it is not round and it has no sides
  - heart is different, it is like no other shape; it is not round and it has no sides
• Explain to children that the book, Color Zoo, is about all of these shapes and the animals they make.
• Show the cover and invite children to recall the title of the book.
• State that Lois Ehlert is both the author and illustrator because she wrote the words and created the pictures.
• Show the page with the star and the words COLOR ZOO in the middle.
• Read the title and invite children to name the color of the star. (red) Then turn the page and ask children “What color is the star now?” (green)
• Read the rhyming text on the first page.
• Show the next page and invite children to name the animal.
• Invite children to name the shapes that make up the tiger’s face.
• Turn the page, call children’s attention to the shape on the left-hand page, and ask them to name the shape (circle) and identify the color of the shape.
• Continue with this pattern of naming the animal, the shapes that make up that animal, then turning the page and naming the shape and the color of the shape on the left-hand page.
• Follow up the reading by inviting children to place each shape on the corresponding shape on the page containing all of the white shapes in 3 rows.
### Additional Language Activities

**Benchmarks:**
- 3.10 Classifies objects by physical features such as shape or color
- 5.5 Participates in songs, finger plays, rhyming activities, and games

**Activity:** *Where is the Shape? (Tune of Are You Sleeping?)*

**Materials:** Lollipop Shapes (See Attachment #2: Lollipops)

**Directions:**
- Provide each child with a lollipop shape, insuring that at least 4 children in the group have the same shape.
- Ask children to hold their lollipop shapes by their sides until they hear it in the song, then they will hold it up and wave it.
- Have a set of the shapes for yourself.
- Begin to sing the song.

*Where Is the Shape?*
(Sing to the tune of Are You Sleeping?)

Where is square?  
Where is square?  
Here I am. Here I am. (You and children hold up square and wave it)  
How are you today, square?  
Very well, I thank you. (shake square again)  
Run away, run away (put square behind back)

- Continue this activity using all of the shapes that children have been given.

**Teacher Note:** *Do this activity with children at other times; changing the shapes they are given.*

**Teacher Note:** *Discontinue modeling the correct shape when children are familiar with all of the shapes.*

**Teacher Note:** *If you have purchased the Totally Math CD by Dr. Jean, use Shape-A-Loo from the CD for this activity.*

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**Benchmarks:**
- 3.10 Classifies objects by physical features such as shapes or color
- 5.5 Participates in songs, finger plays, rhyming activities, and games

**Activity:** *Shape and Color Lotto*

**Materials:** Teacher-made Shape and Color Lotto (See Attachment #1: Shape and Color Lotto)

**Directions:**
- Invite 4 to 6 children to play this game with you.
- Give each child a lotto card.
- Show a shape and color card and ask, “Who has the blue circle?”
- Guide children to respond with a complete sentence. For example, “I have the blue circle.”
- Hand the child the blue circle to put over the blue circle on his/her board.
- The game is over when all children cover their board.
• Allow all children to play the game at other times.

Teacher Note: There is no need to refer to a winner or loser, the children will enjoy the time spent playing the game.

Benchmarks: 3.20 Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)
3.21 Uses words to describe the characteristics of objects (scientific process: communicating)
5.9 Uses language to problem solve

Activity: Feel the Shape

Materials: feely box or bag, star, circle, square and triangle cut from cardstock or poster board

Directions:
• Invite a small group of children, from 4 to 6, to join you for the activity.
• Show the children the 4 shapes and invite them to identify each one and to describe the characteristics of each. For example, the circle is round and has no sides, the square has 4 sides, the triangle has 3 sides, and the star has points.
• Place the 4 shapes in the box or bag and invite a child to reach into the bag, feel one of the shapes, describe it and name it.
• Child brings shape out of the bag and group decides if the child was correct in identifying the shape.
• Return the shape to the bag and invite other children in the group to follow the same procedure.
• Continue this game as long as children remain interested.

Benchmarks: 3.20 Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)
3.21 Uses words to describe the characteristics of objects (scientific process: communicating)
5.9 Uses language to problem solve

Activity: Shape and Color Cube

Materials: Shape and Color Cube (See Materials for directions)

Directions:
• Make a “Shape and Color” cube.
• Help the children name all of the shapes and colors on the cube.
• Ask a child to toss the cube and name the shape and color on the top.
• Continue with each child having a turn to toss the cube.
• Involve children in looking for the shapes around the room.

Art Center
• Add shapes cut from different colors of construction paper or textured wall paper and encourage children to create a geometric collage.
• Provide construction paper scraps so that children can create own shapes.
• Cut sponges into a variety of shapes. Add a clothespin to each sponge for children to hold as they print shapes. Pour a thin layer of tempera paint into a flat
dish, encourage children to dip sponges into the paint and print designs on butcher paper or drawing paper.

- Provide a limited number of large cardboard or textured wallpaper cutout shapes such as a star, diamond, square, triangle, and circle. Encourage children to place the cardboard or wallpaper under a piece of paper and rub a crayon to create a rubbing.
- Cut out large triangles, circles and squares from butcher paper for children to place on the easel for painting. Add tempera paint and brushes.
- Provide plastic lids, coasters, and bottle lids for children to trace around.
- Cut out large triangles, circles or squares from grocery bags, wall paper, or butcher paper. Cut out a number of similar small shapes and invite children to glue the small triangles on the large triangle
- Provide shape cookie cutters for children to use with play dough.
- Add templates for tracing that have been created out of the presence of children.

### Manipulatives (or Math Center)

- Add pattern blocks and pattern block cards
- Add parquetry blocks and parquetry block cards
- Add geometric shapes (solid forms)
- Add table top wood blocks
- Add shape puzzles
- Add colors and shapes bingo
- Add shapes and colors lotto
- Add geo boards and rubber bands (boards can either be purchased or made. (See Attachment #3: Geoboards for how to make directions)

### Block Center

- Provide wood unit blocks of different shapes (solid forms)
- Secure a corresponding shape to storage shelves for each shape of block in the center (this guides children to recognize and store blocks where they belong). Smaller blocks should be placed on the top shelf with larger blocks on the bottom of the shelving unit. Begin placing the smallest blocks on the left side of the self adding larger blocks in sequence of size as you place blocks towards the right of the shelf.
- Add traffic signs
- Add boxes of different sizes. Stuff boxes with newspaper, tape securely, and cover with self-adhesive paper

### Dramatic Play Center

- Add square and long rectangular scarves
- Add a basket of fabric cut into different shapes

### Music Center

- Add the shapes lollipops
- Add the CD, Totally Math, by Dr. Jean

### Food/Nutrition Experiences

- Provide shape crackers for snack and encourage children to identify the shapes of their crackers.

### Transition Activities

- **Shape Transition**
  - Have lollipop shapes in a container such as plastic icing tub or plastic cup.
  - Give each child a lollipop shape and you have a set of the same shapes.
Hold up a shape and ask children with that shape to state the name of the shape, place it in the container and transition to the next activity.

**Teacher Note:** This activity not only helps move children in an orderly fashion, but can also be used to determine if children have achieved **Benchmark: 5.10 Follows directions in sequence.**

### Shape and Color Cube for Transition
- Give each child a turn to toss the shape and color cube.
- Ask child to name the color and shape on top of the cube, and go to the next activity.
- Continue with this activity, giving each child a turn.

### Family Connection
- Send home a note to families explaining that the children have been learning about shapes and suggest ways they can extend that learning into the home. For example, play “I Spy” with their children. Say to children “I spy something that is a rectangle. We come into the house through it.” (door)
- Call attention to the traffic signs as you are driving around and invite children to identify the shape of the sign.
- Send home a list of books about shapes and suggest that families visit their local library and check out some of the books to read with their children.

**Note:** Consider sending home with the children drawings of the different shapes you have been studying. Write the name of each shape under the drawing of that shape.

### Additional Books
- Grifalconi, Ann. *The Village of Round and Square Houses*
- Hoban, Tana. *Shapes, Shapes, Shapes*
- McDonald, Suse. *Sea Shapes*

### Assessment Ideas
Refer to page 6 of this guide: Activity – **Shape and Color Lotto** for an activity to assess the following concepts and benchmarks:

**Content Standard: Geometry (the spatial side of math)**
- Identifying shapes such as circles, rectangles, squares, and triangles, two and three dimensional shapes such as spheres (balls) and rectangular solids (boxes)

**Benchmark**
3:10 Classifies objects by physical features such as shape or color

**To Assess:**
- Involve a small group of children in playing Shape and Color Lotto with you.
- Assess children’s competence by using a check sheet to note which shapes individual children can identify without assistance.
## Introduction
Meet Titch, the main character in a book with the same name, by Pat Hutchins. Titch is littler than his brother and sister. Everything they have is bigger than the things that Titch has. Discover what happens when Titch plants a tiny seed.

### Content Standards and Benchmarks

<table>
<thead>
<tr>
<th>Content Standard: Algebra</th>
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<tbody>
<tr>
<td>• Classifying</td>
</tr>
<tr>
<td>• Ordering objects by observable attributes such as size, shape, number and other properties (sometimes referred to as seriation or sequencing)</td>
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<tr>
<td>• Comparing and relating</td>
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<td>• Describing change</td>
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<tr>
<th>Content Standard: Measurement</th>
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<tr>
<td>• Showing an awareness of the attributes of time such as sequence (ordering of events such as yesterday, today and tomorrow) and duration (length of time such as minutes, hours and days).</td>
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</tbody>
</table>

**Benchmarks** will be included for each activity.

### Materials to Collect and Make
- Hand mirror. Prepare blank *Our Eye Color Graph*
- Gather materials to plant a flower: flower pot, potting soil, flower seed or bulb, small shovel, watering can, paint paddle
- Make size sequence mat and size sorting cards (See Attachment #1 – *Size Sorting Cards* and Attachment #2 – *Size Sorting Mat*). Copy on cardstock, laminate and cut apart size sorting cards
- Make sequence Cards and Sequence Mat. (See Attachment #3 – *Sequence Cards* and Attachment #4 – *Sequence Sorting Mat*) Copy on cardstock, laminate and cut apart sequence cards
- Collection of mittens/gloves and container

**Benchmarks:**
3.1 Shows enjoyment of books and stories and discussion of them
3.5 Understands that print conveys a message
3.14 Demonstrates the ability to order and sequence
5.8 Participates in group discussion

**Book:** *Titch* by Pat Hutchins

**First Reading of *Titch***
- Be familiar with the book, *Titch*.
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who draws the pictures. In this book, Pat Hutchins is both the author and illustrator)
- Invite children to look at the cover and describe who and what they see.
- Expect that some children may say Titch is a girl and some may say Titch is a boy.
- Say, “Let’s read and find out if Titch is a girl or a boy and what Titch is doing in the story.”
- Read the story so all children can see the pictures in the book.
- Read the second page: “His sister was a bit bigger.” and ask children if Titch is a
**Boy or a Girl.**

- Follow up the reading by involving children in discussing their siblings. Ask if their brothers and sisters are bigger or littler than they are and some things they can or can’t do that their bigger or littler brothers and sisters can do.

### Second Reading of *Titch*

- Show the cover, give title, author and illustrator.
- Show the title page and invite children to look at the clothes hanging on the line.
- Invite them to identify which clothes belong to Mary, to Pete and to Titch and to explain their answer. Refer to the pictures in the book if children need prompts.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by inviting children to help retell the story.
- Show each page and invite a different child to tell what is happening on that page.

### Third Reading of *Titch*

- Show the cover and ask children to recall the title of the book.
- Give the author and illustrator and ask children if they remember what each does. Give them prompts if necessary.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by involving children in a discussion about things that can change and things that can’t.
- Show the picture in the book of Pete on his great big bike. Ask children if they think the size of Pete’s bike will change and to explain their answers.
- Continue by asking the same question about Mary’s bike and Titch’s bike.
- Show the pages where Pete is holding the board and saw, Mary is holding the hammer and Titch is holding the nails.
- Involve children in discussing whether or not Pete will stay the same size or will he grow and to explain their answers.
- Continue by asking the same question about Mary and about Titch.
- Invite children to discuss their growth. For example, have they always been the same height they are now, or have they grow since they were babies? Will they continue to grow?
- Invite children to name other things that grow: flowers, trees, animals.
- Conclude by stating that some things such as bicycles and tricycles remain the same size, while children, animals, flowers and trees grow taller.

**Additional Benchmark: 5.9 Uses language to problem solve**

### Additional Language Activities

| Benchmarks: | 3.5 Understands that print conveys a message  
|            | 3.14 Demonstrates the ability to order and sequence  
|            | 3.18 Shows an awareness of time concepts  
|            | 5.8 Participates in group discussion |

**Activity:** Review and Record the Events of the Day  
**Materials:** marker board or chart sheet and marker  
**Directions:**  
- Select a time each day to review the major events of the day in order of occurrence. This will usually occur in the afternoon before children start going home.
• Involve children in reviewing the events in order and recording them on a chart sheet. Date the chart
• Read the chart back with the children.
• Post the chart where parents can see it when they come to pick up their children.
• Suggest that parents read the chart and discuss some of the events with their child on the way home.
• Review the chart with the children the next day as a reminder of what they did yesterday.

What we did today:
First we read the book, The Very Hungry Caterpillar.
Then we dug for worms in the Discovery Center. Later when we went outside, we looked for worms.

Benchmarks:  3.10 Classifies objects conceptually (things that go together)
            3.26 Identifies self as a boy or girl
            5.9 Uses language to problem solve

Activity: Classmate Classification

Materials: piece of rope or strip of masking tape

Directions:
• Place a piece of rope or strip of masking tape on the floor.
• Choose a boy to stand on one side of the rope or tape and a girl to stand on the other side.
• Involve children in discussing what is different about the two children. If needed, guide children to recognize that one is a boy and one is a girl.
• Invite children one at a time to state where he or she should stand and to stand on that side of the rope.
• Count the number of girls and the number of boys and invite children to state which group has the most.

Extension Activity: Color of Eyes

Directions:
• Create a chart to graph eye color of the children in the classroom.
• Bring a hand-held mirror to group time and have each child look in the mirror and say color of their eyes.

Our Eye Color

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<th>Our Eye Color</th>
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<tr>
<td>Brown</td>
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Connecting Literature and Math – Titch - rev  3
- Designate a place in the room for each color of eyes of the children in the room.
- Place a sign in that area with the color of eyes written with that color marker.
- Invite each child to go to the appropriate area of the room.
- Count the number of children in each area of the room and invite children to state which group has most and which group has the least.
- Write a summary story.

**Our Eye Color**

Five children have brown eyes. Three children have green eyes. Four children have blue eyes.

**Additional Benchmark: 3.5 Understands that print conveys a message**

**Benchmarks:**
- 3.20 Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)
- 3.22 Makes comparisons (scientific process: comparing)

**Activity: Planting a Flower**

**Materials:** flower pot, potting soil, flower seed or bulb, small shovel, watering can, paint paddle

**Directions:**
- Involve children in planting a seed or bulb.
- Begin by showing the children the pages in the book, *Titch*, that involve the spade, the flower pot, the tiny seed, and the growing plant.
- Allow each child to add soil to the pot.
- Place the paint paddle in the pot, near the outer edge.
- Explain to children that the paddle will be used to determine if the flower is growing.
- Place the seed or bulb in a hole in the soil and cover it with soil.
- Explain to children that the seed will need water and sun to grow.
- Decide how much water is needed and how often to water and explain this to the children.
- Develop a chart with each child’s name and the date they are to water the plant. Add to the chart how much water to use. Mark the amount on a plastic measuring cup and place it near the pot.
- Involve children in checking the chart to determine watering days and the person who is to water the plant that day.
- Check the plant each week and involve children in helping you mark on the paint paddle the height of the plant. Call attention to how much the plant has grown.

**Teacher Note:** Consider conducting this activity outdoors and have several pots for planting. Children can not only measure the growth of each plant, but compare the growth of the plants in each pot. This will also add an area of interest to the playground.
Benchmarks:  3.14 Demonstrates the ability to order and sequence  
5.10 Follows directions in sequence

Activity:  Simon Says

Materials:  none

Directions:
• Play the “Simon Says” game in which Simon (teacher) tells children to move different parts of their body in sequence. For example:
  Blink your eyes and wiggle your nose
  Smack your lips and touch your ears
  Swing your arms and bend your elbows
  Slap your knees and stomp your feet
  Shrug your shoulders and scratch your back
• Add 3 commands in sequence as children are ready.

Teacher Note: With 3 and 4 year old children always say “Simon Says” because most of them are not ready to understand they are not to move unless “Simon Says.”

________________________________________________________________________

Benchmarks:  3.14 Demonstrates the ability to order and sequence  
5.10 Follows directions in sequence

Activity:  Size Sorting Cards and Sorting Mat

Materials:  Size Sorting Cards and Size Sorting Mat (See Attachment #1 – Size Sorting Cards and Attachment #2 – Size Sorting Mat)

Directions:
• Place size sorting cards in individual zip lock bag (small) and place in a larger bag with sorting mat.
• Allow children to explore and experiment with the cards.
• Observe them with the materials. Do they place each set on the mat in sequence?
• Ask questions and guide them in the activity. For example, “Can you tell me how these 3 bicycles are different? Can you show me how to place them on the mat from smallest to largest?”

________________________________________________________________________

Benchmarks:  3.14 Demonstrates the ability to order and sequence  
5.10 Follows directions in sequence

Activity:  Sequence Cards and Sorting Mat

Materials:  Sequence Cards and Sequence Sorting Mat (See Attachment #3 – Sequence Cards and Attachment #4 – Sequence Sorting Mat)

Directions:
• Place sequencing cards in individual zip lock bag (small) and place in a larger bag with sequencing mat.
• Allow children to explore and experiment with the cards.
• Observe them with the materials. Do they place each set on the mat in sequence?
• Ask questions and guide them in the activity.
### Learning Environment

#### Art Center
- Add paper shapes of different sizes and colors
- Add lids of 3 different sizes for tracing around.

#### Dramatic Play
- Add at least 3 plates and 3 cups of different sizes to the center.
- Add a basket of socks or mittens, each with a mate in the basket, but not together.

#### Manipulatives (or Math Center)
- Add a container of nuts and bolts of different sizes, each bolt with a matching nut, but not together.
- Add Size Sorting Cards and Sorting Mat.
- Add Sequence Cards and Sorting Mat.

#### Block Center
- Place 3 different lengths of unit blocks in center: unit, double unit, and quadruple unit.
- Place at least 3 empty paper towel or wrapping paper tubes, each a different length, in the center. Tubes can be cut into sections to make 3 different lengths.

**Teacher Note:** Observe children as they play with the blocks and tubes. Make comments and ask questions that encourage them to compare and put in order the different sizes of the objects. For example, “I see you are building with the short and long blocks. Can you use the middle size block as you build?”

### Transition Activities

#### Mitten Match
- Use either real mittens or paper mittens, each pair different in color and/or design.
- Keep one of each pair in a container for yourself and distribute the other half of each pair to the children.
- Take one of the mittens from the container and ask the child with the matching mitten to transition to the next activity.
- Continue this activity until all children have transitioned.

### Family Connection
- Suggest that families plant flowers with their children and observe their growth.

### Additional Books
- Dunbar, Joyce. *Very Small.*
- Miller, Margaret. *Big and Little.*
- Miller, Margaret. *Now I’m Big.*

### Assessment Ideas
Refer to page 5 in this guide: Activities – **Size Sorting Cards and Sorting Mat** and **Sequence Cards and Sorting Mat** for activities to assess the following concepts and benchmarks:

**Content Standard: Algebra**
- Ordering objects by observable attributes such as size, shape, number and other properties
<table>
<thead>
<tr>
<th><strong>Benchmark</strong></th>
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<tbody>
<tr>
<td>3:14 Demonstrates the ability to order and sequence</td>
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**To Assess:**
- Invite individual or small groups of children to join you in the Size Sorting and Sequencing activities.
- Assess children’s competence by observing them in the activities and by listening to their responses as you ask questions and guide them in the activities.
# Connecting Literature and Math

## #10: The Biggest Boy by Kevin Henkes, illustrated by Nancy Tafuri

### Introduction

In The *Biggest Boy* by Kevin Henkes, illustrated by Nancy Tafuri, Billy is a growing boy who can do many things for himself. He declares that he will be the biggest boy in the world and begins to imagine all of the big things that will be smaller than he is.

### Content Standards and Benchmarks

**Content Standard: Algebra**
- Classifying
- Describing change

**Content Standard: Measurement**
- Using standard units such as inches, cups and pounds and standard tools such as rulers, thermometers, scales and measuring cups

**Benchmarks** will be included for each activity

### Materials to Collect and Make

- Make a Big and Little Sorting Mat (See Attachment #1: Big and Little Sorting Mat). Copy on cardstock, laminate and cut out.
- Make a Feely Box using an empty oatmeal box (or plastic container similar to that size) and an adult sock. Pull the sock completely over the container. Place items for the children to feel inside the container.
- Collection of big and little objects and container
- Adding machine tape
- Measuring tape
- Make two signs and place in block center: Park Big Cars and Trucks Here and Park Little Cars and Trucks Here. (See Attachment #2 – Park Big & Little Cars and Trucks Here) Copy on cardstock, laminate and cut out.

### Story Presentation

**Benchmarks:**
3.1 Shows enjoyment of books and stories and discussion of them
3.5 Understands that print conveys a message
5.8 Participates in group discussion

**Book:** The *Biggest Boy* by Kevin Henkes, illustrated by Nancy Tafuri

**First Reading of The Biggest Boy**

- Be familiar with the book, The *Biggest Boy*.
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who draws the pictures.)
- Invite children to look at the cover and describe who and what they see. What do they think the boy is doing?
- Read the story so all children can see the pictures in the book.
- Follow up the reading by rereading the first 3 pages that describe things that Billy can do. Invite children to discuss some of the things they can do. Can they do all of the things that Billy can do? Can they do even more things than Billy can do?
**Second Reading of The Biggest Boy**

- Show the cover, give title, author and illustrator.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by showing the pages and allowing children to retell the story by looking at the pictures.

**Additional Benchmark:** 3.2 Uses picture cues to tell a story

**Third Reading of The Biggest Boy**

- Show the cover and ask children to recall the title of the book.
- Give the author and illustrator and ask children if they remember what each does. Give them prompts if necessary.
- Read the story so all children can see the pictures in the book.
- Follow up by inviting children to discuss what they could do if they were the biggest boy or the biggest girl in the world.

**Additional Benchmark:** 5.6 Uses words to communicate ideas

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**Additional Language Activities**

**Benchmarks:**
- 2.10 Explores and manipulates art media
- 3.4 Understands that print conveys a message

**Activity:** Create a Biggest Boy and Biggest Girl Book

**Materials:** paper (1 sheet per child and 1 sheet for cover), felt tip marker, hole punch and rings, ribbon or yarn for binding

**Directions:**

- Write at the bottom of each child’s page the following: __________(name of child) said, “If I were the biggest boy” or “If I were the biggest girl” in the world I could ______________________________.

- Recall with children some of things Billy said he could do if he were the biggest boy in the world.
- Explain to children that you will visit with each of them while they are in learning centers and invite them to help write a story about what they would do if they were the biggest boy or girl in the world. Ask them to be thinking about what they want to write on their page.
- Visit with each child and invite them to write their name (if they are able) and then complete the sentence on his/her page.
- Read the sentence back with the child.
- Suggest that each child take his or her page to the art center and draw a picture to illustrate the story. Remind them that the illustrator is the person who draws the pictures in the book.
- Collect pages and put them together to create a book. Bind the book by punching holes and fastening with rings or tie with yarn or ribbon.
- Read the book with the all of the children; inviting each child to help you read his or her page.
- Place the book in the library center.
Activity: My How I Have Grown

Materials: adding machine tape, marker, measuring tape

Directions:
- Ask families to let you know the height of their child at birth.
- Prepare strips of adding machine tape approximately 6" longer than the child is tall (one strip per child).
- Tape the strip of tape vertically to the wall.
- Involve children in writing his or her name on the tape.
- Invite children to show you with their hands how tall they think they were when they were born.
- Involve children in using the measuring tape to measure their height at birth and mark that height on their individual strip of adding machine tape. Add the date of the child’s birth.
- Use the measuring tape and help children measure his or her height. Record the child’s height next to the mark. Add the date.
- Invite children to talk about why they think they have grown. Guide them to include nutritious foods (name some), rest/sleep, exercise, play, people who take care of them, and medical care.
- Send home a note to each family with the following information: (Child’s name) was ______” long at birth. He/she is now ______” tall. My, how he/she has grown.

Teacher Note: Do not compare the children’s heights.

Benchmarks: 3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship
3.22 Makes comparisons (scientific process: comparing)

Activity: Simon Says

Materials: none
Directions:
- Play the “Simon Says” game in which Simon (teacher) tells children to take steps in different sequences. For example:
  Simon says, “Take 2 giant steps and 1 tiny step.”
  Simon says, “Take 1 tiny step and 3 giant steps.”
  Simon says, “Take 4 giant steps, then stop.”
- Add 3 commands in sequence as children are ready. For example:
  Simon says, “Take 2 giant steps, turn around and take 1 baby step.”
  Simon says, “Take 1 tiny step, 2 giant steps, and 2 tiny steps.”

Teacher Note: Consider playing this game outdoors where there may be more room for movement.

Teacher Note: With 3 and 4 year old children always say “Simon Says” because many of them may not be ready to understand they are not to move unless “Simon Says.”

Benchmark: 3.10 Classifies objects by physical features such as shape or color

Activity: Sorting Big and Little Objects

Materials: Big and Little sorting mat (See Attachment #1: Big and Little Sorting Mat), assortment of big and little objects: 1 big and 1 little shell, 1 big and 1 little cup, 1 big and 1 little glove/mitten, one big and one little sock, 1 big and 1 little book

Directions:
- Place the sorting mat and the assortment of big and little objects in a container.
- Involve a small group of children (3 to 5) in this sorting activity.
- Place the mat on the floor or table facing the children.
- Allow the children to explore the big and little objects. Listen for their comments. Do they talk about the little shell and the big shell?
- Select a pair of the items, show them to the children and ask them what they notice about the items. If they need prompting, ask “Are they the same size?”
- Place the big and the little items on the appropriate mat, explaining what you are doing. Read the words on the mat.
- Invite children, one at a time, to select two items from the container, one big and one little, and to place them on the mat where they belong and to explain why they did this.

Extension Activity: Sorting Cards
- Have an assortment of cards with big and little objects on them; for example, a big house and a little house, a big ball and a little ball.
- Using the sorting mats, involve a small group of children in sorting the cards just as you did with the concrete objects.

Teacher Note: Begin with concrete objects for sorting, then add the sorting of pictorial representations of objects.

Teacher Note: Involve children in additional classification activities such as objects that are hard and soft.

Teacher Note: Involve all of the children in the group in these activities.
Benchmarks:  3.10 Classifies objects by physical features such as shape or color
3.20 Uses senses to learn about the characteristics of objects
   (scientific process: observing)

Activity: Big and Little Feely Box/Bag

Materials:  (See Attachment #1: Big and Little Sorting Mat, feely box or bag, an
   assortment of big and little objects, such as: 1 big and 1 little shell, 1 big and 1
   little ball, 1 big and 1 little block, and 1 big and 1 little rock.

Directions:
- Place the assortment of big and little objects in a container.
- Involve a small group (3 or 4) of children in this activity.
- Invite children to explore the objects. Listen to their comments. Do they talk about
  the big shell and the little shell?
- Select a pair of the objects and ask them what they notice about them? If they
  need prompting, ask “Are they the same size?”
- Explain to children that you are going to put the objects in the bag and they will
  take turns reaching in the bag and feeling an object and saying what it is. Then
  they will bring the object out of the bag. Were they correct?
- Ask the child to name the object and say whether he or she thinks it is the little or
  the big shell, for example and place it on either the little or big sorting mat.
- Have the child to again reach into the bag and find the matching object and bring
  it out of the bag. Was the child correct in what he or she said about the size of the
  first shell brought out of the bag?
- Invite the child to place the objects on the correct sorting mat.
- Continue this activity, giving each child a turn.
- Explain to children that the game will be placed in the Discovery/Science Center
  for them to use when they are in learning centers.

Teacher Note: Involves all of the children in the group in this activity.

Learning Environment

<table>
<thead>
<tr>
<th>Art Center</th>
<th>Add markers and colored pencils</th>
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<tbody>
<tr>
<td>Discovery/Science Center</td>
<td>Add Big and Little sorting mats and cards</td>
</tr>
<tr>
<td></td>
<td>Add Big and Little sorting mats and objects to sort</td>
</tr>
<tr>
<td></td>
<td>Add Feely Box</td>
</tr>
<tr>
<td>Block Center</td>
<td>Add big and little vehicles</td>
</tr>
<tr>
<td></td>
<td>Make two signs and place in block center: Park Big Cars and Trucks Here and Park Little Cars and Trucks Here. (See Attachment #2 – Park Big &amp; Little Cars and Trucks Here)</td>
</tr>
<tr>
<td>Dramatic Play</td>
<td>Place big and little dolls, cups and plates in the center.</td>
</tr>
<tr>
<td>Music Center</td>
<td>Place big and little drums in the center.</td>
</tr>
<tr>
<td>Transition Activities</td>
<td></td>
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<tr>
<td>-----------------------</td>
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<tr>
<td>• Involve the group in using giant steps or tiny steps as they transition as a group to the playground, for example.</td>
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</tr>
<tr>
<td>• Involve children in holding the moon in their hands as they transition individually to the next activity, or transition as a group to and from the playground, for example.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Invite families to let you know the length of their child at birth.</td>
</tr>
<tr>
<td>• Send home the “My How I Have Grown” note. Suggest that families discuss the note with the child.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional Books</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dunbar, Joyce. <em>Very Small.</em></td>
</tr>
<tr>
<td>Miller, Margaret. <em>Big and Little.</em></td>
</tr>
<tr>
<td>Miller, Margaret. <em>Now I’m Big.</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to page 5 of this guide, <strong>Activity – Big and Little Feely Box/Bag</strong> for an activity to assess children in the following concepts and benchmarks:</td>
</tr>
</tbody>
</table>

**Content Standard: Algebra**
- Classifying
- Relationships – comparing and relating

**Benchmarks**
- 3:10 Classifies objects by physical features such as shape or color
- 3:20 Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)

To assess:
- Invite a small group of children to join you in the **Big and Little Feely Box/Bag** activity.
- Assess children’s competence by listening to their comments and responses to your questions and your directions
# Connecting Literature and Math

**#11: Today is Monday** illustrated by Eric Carle & **Chicken Soup with Rice** by Maurice Sendak

## Introduction

Through two books, *Today is Monday* illustrated by Eric Carle, and *Chicken Soup with Rice* by Maurice Sendak, children are introduced to the sequential order and the duration or length of time – days and months. Children sing about the days of the week in *Today Is Monday* and are introduced in rhyme to the months of the year in *Chicken Soup with Rice*.

## Content Standards and Benchmarks

**Content Standard: Measurement**
- Showing an awareness of the attributes of time such as **sequence** (ordering of events such as yesterday, today and tomorrow) and **duration** (length of time such as minutes, hours and days).

**Content Standard: Algebra**
- Patterning

**Benchmarks** will be included for each activity

## Materials to Collect and Make

- Make *Today is Monday* cards (See Attachment #1: *Today is Monday Cards*). Copy on cardstock, laminate and cut out.
- Make daytime/nighttime art paper by cutting white and black sheets of construction paper in half. Tape one sheet of white paper to one sheet of black paper.

<table>
<thead>
<tr>
<th>White paper</th>
<th>Black paper</th>
</tr>
</thead>
</table>

- Hickory Dickory Dock poster (teacher-made or purchased)
- Make *Chicken Soup with Rice* illustrated charts – 1 per month
- *Chicken Soup with Rice* in big book format (Although hard to find, this was originally published by Scholastic. Check online sources from all book sellers for availability)
- Camera and chart labeled Our Day to complete with photos of children

## Story Presentation

**Benchmarks:**
- 3.1 Shows enjoyment of books and stories and discussion of them
- 3.5 Understands that print conveys a message
- 3.18 Shows an awareness of time concepts
- 5.3 Expands vocabulary

**Book:** *Today Is Monday* by Eric Carle

**First Reading of Today Is Monday**
- Be familiar with the book, *Today is Monday*.
- Show the cover, give title and illustrator. (Explain that the illustrator is the person who draws the pictures.)
• Invite children to look at the cover and describe who and what they see. What do they think the cat is doing?
• Sing or read the story so all children can see the pictures in the book.
• Follow up by showing each double-page spread and involve children in naming the animal and the food that animal is eating. Name the animals that are unfamiliar to children.

Second Reading of The Today Is Monday

• Take pictures of each food item to the reading area. Have duplicates so that each child has a picture.
• Show the cover, give title and illustrator.
• Sing or read the story so all children can see the pictures in the book.
• Follow up the reading by giving each child a picture of the food items in the book. Review with them the names of the food items.
• Explain to children that you will read the story again and they are to hold up their pictures as they hear that food item in the story.

Third Reading of Today Is Monday

• Take a sheet of construction paper, half white and half black, to the reading area, keeping it out of sight of children until the end of the story. See materials for directions.
• Show the cover and ask children to recall the title of the book.
• Give the illustrator and ask children if they remember what the illustrator does. Give them prompts if necessary.
• Sing or read the story so all children can see the pictures in the book.
• Invite children to join in as you read/sing the story.
• Follow up by showing the last double-spread where the children are eating the foods included in the story. Allow children time to look at the pages.
• Point to the different animals at the top of the page and invite children to name them.
• Call attention to some of the food items on the table and involve children in discussing whether or not they like that food; spaghetti, chicken and fish, for example.
• Ask them if they eat certain food items in the daytime or at night; for example, “When do you like to eat spaghetti? In the daytime or at night? Chicken? Fish?”
• Invite them to discuss other things they like to do in the daytime (when it is light) and at night (when it is dark).
• Show children the white and black construction paper (see materials for directions) and explain that there will be paper like this in the art center as well as chalk and crayons.
• Ask children which half represents daytime and which represents nighttime.
• Suggest that when children go to the art center, they draw on the divided sheet a picture of things they like to do in the daytime and things they like to do at night.

Book or Poster: Chicken Soup with Rice

First Reading of Chicken Soup with Rice

• Use either a big book version or a poster of Chicken Soup with Rice so that
children can see the illustrations and words. See materials for suggestions.

- Read the appropriate page for the current month at the beginning of that month. For example, read the January poem at the beginning of January as a way to introduce the concept of months.
- Say to children, “Our new month is January and we are going to read a poem about what happens in that month.”
- Show the month of January on a calendar if you have one in the area. Run your fingers under the word “January” on the calendar and in the book or on the chart.
- Read the poem with the children. Follow up by inviting children to join in as you reread the poem, especially when you read “chicken soup with rice.”
- Read the poem at least once a week with the children during the week of January.
- Repeat this activity at the beginning of each month.
- Involve children in acting out some of the words in the poem.

**Additional Language Activities**

**Benchmarks:**
- 3.4 Understands that print conveys a message
- 3.14 Demonstrates the ability to order and sequence
- 3.18 Shows an awareness of time concepts
- 5.10 Follows directions in sequence

**Activity: Picture Our Day**
(photo-illustrated, pictures with times and words that show daily schedule)

**Materials:** photos of daily events

**Directions:**
- Take photos of the children involved in major events of the day.
- Invite a small group of children to join you during learning center time to review and discuss the photos.
- Begin by asking the children to name some of the things they do in the classroom each day. Record these on a sheet of paper or marker board and read them back with the children.
- Say, for example, “When we come into the classroom in the morning, this is called arrival time. Find me the picture that shows arrival time.”
- Continue with other activities in order of occurrence.
- End up with a photo of child waving “goodbye” to teacher and say, “Find the photo that shows going home.”
- Explain to children that you are going to use the photos to create a daily schedule that shows what we do each day. Say, “You will be able to look at the chart to see what we do next.”
- Post the chart at child’s eye level so they can easily refer to it throughout the day.
- Show and discuss the completed chart with children.
- Observe to see if children refer to the chart and talk about what comes next.
- Refer to the chart when children ask questions such as, “When do we go outside?”

**Teacher Note:** *Do this activity with all of the children in your group*

**Teacher Note:** *Some teachers may want to put times on the chart.*

**Teacher Note:** *Each classroom will have a different time schedule depending on length of day and other factors unique to each program.*
Extension Activity:
- Have duplicate photos of the children involved in the major events of the day.
- Make individual cards that are duplicates of the chart.
- Laminate the cards and place them in a self-closing storage bag.
- Invite individual children to put the cards in order. Assist children as needed
- Allow children to refer to the posted chart

Teacher Note: Be aware of each child’s ability and limit the number of cards for children who may not be ready to sequence the entire day’s events.

<table>
<thead>
<tr>
<th>Our Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival</td>
</tr>
<tr>
<td>Group Time</td>
</tr>
<tr>
<td>Center Time</td>
</tr>
<tr>
<td>Outdoors</td>
</tr>
<tr>
<td>Story Time</td>
</tr>
<tr>
<td>Lunch</td>
</tr>
<tr>
<td>Rest</td>
</tr>
<tr>
<td>Snack</td>
</tr>
<tr>
<td>Outdoors</td>
</tr>
<tr>
<td>Center Time</td>
</tr>
</tbody>
</table>
Benchmarks: 2.4 Participates freely in music activities
2.5 Enjoys singing games, dramatizing songs and moving to music
3.18 Shows awareness of time concepts
5.5 Participates in songs, finger plays, rhyming activities and games

Activity: This Is the Way

Materials: none

Directions:
- Discuss with children some of the things they do in the morning before coming to school. Talk about what you do first, next, and so on.
- Invite children to join you in singing about the activities.
- Sing “This Is the Way” and act out the events.

This Is the Way
(Sing to tune of Here We go Round the Mulberry Bush)

This is the way we get out of bed,
Get out of bed,
Get out of bed.
This is the way we get out of bed,
So early in the morning.

- Add other verses with events such as: wash our face, brush our teeth, comb our hair, put on our clothes, put on our shoes, eat our breakfast.

Teacher Note: Sing the verses in usual sequence of events. Invite children to add other events and sing about them.

Benchmarks: 3.18 Shows awareness of time concepts
5.5 Participates in songs, finger plays, rhyming activities, and games

Activity: Monday Is My Clapping Day

Materials: none

Directions:
- Sing or chant in rhythm the following verses, adding the appropriate movements:
Monday Is My Clapping Day

Monday is my clapping day, (clap hands)
Clapping day, clapping day.
Monday is my clapping day,
All day long.

Tuesday is my snapping day (snap fingers)

Wednesday is my walking day (walk in place)

Thursday is my stomping day (stomp feet in place)

Friday is my jumping day (jump up in place)

Saturday is my bending day (bend forward and backward)

Sunday is my swaying day (sway from side to side)

Teacher Note: Invite children to add other activities for the different days of the week.

Benchmarks: 3.5 Understand that print conveys a message
3.14 Demonstrates the ability to order and sequence
3.18 Shows an awareness of time concepts

Activity: Recipe for Chicken Soup with Rice

Materials: sheet of paper for each child, markers and/or crayons

Directions:

• Read to children the poem from the book or the poster, Chicken Soup with Rice, for the current month (January, for example)
• Create a master page by writing: Recipe for Chicken Soup with Rice.
• Explain that you are going to interview each of them individually and invite them to tell you how they would make chicken soup with rice.
• Visit individual children while they are in learning centers and invite each child to tell you how he or she would make chicken soup with rice. Ask questions such as “What is the first thing you would do?”, “How long do you think you will have to cook the soup and rice?” and “What do you do next?”
• Record each child’s dictated recipe and read it back with him or her.
• Invite each child to sign his or her name and draw a picture to illustrate the recipe.
• Make a copy of each child’s dictated recipe to send home to that child’s family.
• Add a cover and bind the individual recipes into a book. Bind the book by punching holes and fastening with rings or tie with yarn or ribbon.

Recipes for Chicken Soup with Rice
• Read the recipes back to the group.
• Place the recipe book either in the library or home living area.

Benchmarks: 3.4 Demonstrates visual discrimination and visual memory skills
            3.5 Understands that print conveys a message
            3.12 Recognizes patterns and can repeat them (patterning)
            3.14 Demonstrates the ability to order and sequence
            3.18 Show an awareness of time concepts
            5.10 Follow directions in sequence

Activity: Match *Today Is Monday* Cards

Materials: *Today is Monday* Cards (See materials for directions and see Attachment #1 *Today is Monday* Cards), the book, *Today Is Monday*

Directions:

- Make *Today is Monday* Cards. Each set will have 1 card with the day of the week, 1 card with the animal for that day, and 1 card for the food item for that day.
- Invite a small group of children, 4 to 5, to join you for a matching game.
- Show the children the book, *Today is Monday*, and recall with them that for each day of the week there was a different animal and a different food item.
- Place the cards in a random order on the table or the floor. Put the book beside the cards with it opened to the first page.
- Select the Monday card, place it on the table facing the children and say, "This card says Monday. Josh, can you find the animal that goes with this card and put it under the Monday card. Now can you find the food card and put it under the animal card." Allow the child time to look at the array of cards. Assist as needed.
- Turn the page of the book to Tuesday, show the Tuesday card and place it beside the Monday card and invite a child to add the food and the animal card. Continue with Wednesday and so on, giving each child a turn until all of the sets are matched.
- Review the days and food in sequence by pointing to the Monday card and inviting children to say with you, “Monday, green beans, Tuesday, spaghetti”, and so on.
- Explain to children that the book and the cards will be placed in the Discovery/Science Center for them to use independently.

Teacher Note: *Do this activity with all of the children in your group.*

Teacher Note: *By placing the days of the week beside each other and reviewing the order, children can see the sequence of the days.*

Teacher Note: *Involve children who are ready for this in matching the cards without the book.*

Benchmarks: 3.18 Shows an awareness of time concepts
            5.5 Participates in songs, finger plays, rhyming activities and games

Activity: Hickory Dickory Dock

Materials: nursery rhyme book and/or rhyme chart, clock with minute and hour hands
Directions:
- Say the nursery rhyme, Hickory Dickory Dock, with the children, reading from either a nursery rhyme book with large pictures, or a teacher-made or purchased illustrated chart of the rhyme.
- Invite children to repeat the rhyme with you.
- Show children a clock with the hands at 1:00 o’clock. Discuss with them that a clock tells us what time it is; the big hand tells us the hour, like 1 or 2 or 3 o’clock and the small hand tells us the minutes.
- Hang the clock where children can easily see it.
- Post the chart at child’s eye level in an area where children can easily see it; for example, in the library or large group area.

Hickory Dickory Dock

Hickory dickory dock,
The mouse ran up the clock.
The clock struck one,
The mouse ran down,
Hickory dickory dock.

Teacher Note:  Make an interactive chart by adding a string that runs in a circle through a hole in the top and bottom of the clock. (See the black line). Attach a mouse to the string. When you pull, the mouse can “run” up the clock and then back down again.

Teacher Note:  Set time limits with the children and use the clock as the timer. For example, say “We have 5 more minutes before we have to clean up the room and go to the playground. The big hand is now on 5. When it is on 6, we need to begin cleaning up.”

Teacher Note:  Use a kitchen timer to time an activity. For example, if there are new props in the dramatic play area or a new computer game that everyone wants to use, say “I know everyone wants to go to the dramatic play area and try on the new vests and bandanas, but we have to take turns. If you want to play in the center, sign up and I’ll set the timer for 15 minutes for the first 4, then when the timer goes off, the next four can go there.” The timer is not intended to move children from one center to the next on a rotation basis. Children should have the freedom to move themselves within the guidelines that have been established.

Art Center
- Add sheets of daytime/nighttime art paper (See materials), chalk and crayons

Discovery/Science Center
- Add the book, Today Is Monday, and the Today is Monday Cards

Library
- Add the book, Chicken Soup with Rice (not the big book format)
Dramatic Play Center

- Add calendar with special activities noted on appropriate dates
- Add empty boxes of different types of rice (stuff containers with newspaper and tape for durability)
- Add the class book, “Recipes for Chicken Soup with Rice”

Transition Activities

- Have laminated cards with the days of the week and the different foods from the book, *Today is Monday*. Have duplicates of the food cards so that each child has a card.
- Keep the days of the week cards and distribute the food cards to the children.
- Hold up a card and say, “Today is Monday” and invite the children with the green beans card to stand up and reply, “Monday, green beans” and transition to the next activity.

Teacher Note: *Children must be familiar with the story in order to be successful with this activity. If they are not ready for this, simplify it by holding up a day of the week card and say, “Today is Monday. Who has the green beans for us to eat on Monday?”*

Teacher Note: *Have laminated cards with the days of the week and the different animals from the book, *Today is Monday*. Have duplicates of the animal cards so that each child has a card. Do this transition activity in the same way you did the previous one.*

Family Connection

- Send home to families their child’s dictated recipe for making chicken soup with rice and invite them to read the recipe with their child.
- Suggest that families serve chicken soup with rice for a family meal.
- Send home a note explaining to families that the children are learning about time and suggest to families that they discuss with their children upcoming events, using time words such as tomorrow, Sunday, this afternoon, and tonight. Talk about birthdays, including the month and date.

Additional Books

Carle, Eric. *The Very Hungry Caterpillar*
dePaola, Tomie. *Pancakes for Breakfast*
Gray, Libba Moore. *Miss Tizzy*
Ward, Cindy, illustrated by Tomie dePaola. *Cookie’s Week*

Teacher Note: *You can find lyrics and music to purchase for reasonable prices for Chicken Soup with Rice and on You Tube a video presentation when Chicken Soup with Rice - lyrics-Carole King was searched. You can find lyrics, music and different versions of the folk song Today is Monday online. Also several You Tube presentations are available.*

Assessment Ideas

Refer to page 3 and 4 of this guide, *Activity - Picture Our Day* for activities to assess children in the following concepts and benchmarks:

Content Standard: Measurement

- Learning the attributes of time such as sequence (order of events such as yesterday, today and tomorrow and morning, afternoon and evening and so on) and the duration (length of time such as a long time, a short time, seconds and minutes and so on)
### Benchmarks
3:14 Demonstrates the ability to order and sequence  
3:18 Shows an awareness of time concepts

### To Assess:
- Follow up the **Picture Our Day** small group activity by involving individual children in the **Extension activity**.
- Assess children’s competence by observing them as they put the cards in order from arrival to departure.
- Prompt them as needed and encourage them to look at the posted chart for help.
## Connecting Literature and Math

### #12: *Inch by Inch* by Leo Lionni & *Actual Size* by Steve Jenkins

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Through two books, <em>Inch by Inch</em> by Leo Lionni, and <em>Actual Size</em> by Steve Jenkins, children are introduced to measurement. Leo Lionni uses the sharp definition of cutouts against white space to illustrate <em>Inch by Inch</em>, a story of an inchworm who is proud of its ability to measure anything under the sun. Through collages of cut and torn paper, Steve Jenkins illustrates animals both large and small in <em>Actual Size</em>, an information book.</th>
</tr>
</thead>
</table>
| Content Standards and Benchmarks | **Content Standard: Number and Operations**  
- Counting  
**Content Standard: Measurement**  
- Comparing and ordering objects on basis of attributes such as length, weight and capacity  
- Linking a number and a unit (5 pounds, 2 hours)  
- Using standard units such as inches, cups and pounds and standard tools such as rulers, thermometers, scales and measuring cups  
- Using non-standard units such as hands, feet and paper clips  
**Benchmarks** will be included for each activity |
| Materials to Collect and Make |  
- Provide measuring tools: ruler, metal measuring tape, cloth measuring tape, yard stick  
- Provide cardboard or card stock, marker and Unifix cubes  
- Provide balance scale, rocks of different sizes and weights  
- Make a Purple Cow recipe chart  
- Provide grape juice (plastic jar), frozen vanilla yogurt, cups, spoons (one per child), 2 or more measuring cups (1/4), 2 or more liquid measuring cups with the ¼ cup measure clearly marked |
| Story Presentation | **Benchmarks:**  
3.1 Shows enjoyment of books and stories and discussion of them  
3.5 Understands that print conveys a message  
3.20 Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)  
3.21 Uses words to describe the characteristics of objects (scientific process: communicating)  
3.22 Makes comparisons (scientific process: comparing)  
5.3 Expands vocabulary  
5.8 Participates in group discussion  

**Book:** *Inch by Inch* by Leo Lionni  

**First Reading of *Inch by Inch***  
- Prepare to read the book, *Inch by Inch*.  
- Show cover; give title, author and illustrator. (Explain that author is the person who writes the book and the illustrator is the person who draws the pictures.)  
- Ask children to look at the cover and predict what the story is about. Call attention to the inchworm and say, “This is an inchworm. Let’s read and find out what
happens to the inchworm in the story.”

- Read the story so all children can see the pictures in the book.
- Follow up by showing pictures and inviting children to help you name the different birds that the inchworm met and which parts of each bird’s body the inchworm measured.

**Second Reading of Inch by Inch**

- Bring measuring tools to story time: ruler, metal measuring tape, cloth measuring tape, yard stick. Keep them out of sight of the children until you have read the story to them.
- Prepare to read the book, Inch by Inch.
- Show cover, give title, author and illustrator.
- Ask children why they think the title of the book is Inch by Inch.
- Ask children to show how big they think an inch is.
- Read the story so all children can see the pictures in the book.
- Follow up the second reading by showing the children the measuring tools. Allow them to examine the tools.
- Ask children to find the numeral 1 on their tool. Explain that this means one inch. Help children find the numeral. Children may notice other numerals on the tools. Explain that the 2 means two inches and so forth.
- Place the book on the floor and turn to the page where the inchworm is at the top of a plant looking at the nightingale. Use one of the measuring tools to measure the inchworm and say, “This inchworm is one inch long.”
- Invite children to suggest other objects in the room they might measure.
- State that some of the measuring tools will be placed in learning centers for children to use for measuring.
- Place measuring tools in Block Center and in Discovery/Science Center, for example.

**Third Reading of Inch by Inch**

- Prepare to read the book Inch by Inch.
- Show cover and invite children to recall the title. Give name of author and illustrator.
- Involve children in discussing the objects in the room they measured. “How many inches long was _____?” (objects they measured)
- Read the story so all children can see the pictures in the book.
- Follow up the third reading by asking children why the inchworm could not measure the nightingale’s song. (Inchworm measures things, not songs) How did the inchworm keep the nightingale from eating him? (He inched out of sight of the nightingale).

**Book: Actual Size by Steve Jenkins**

**First Reading of Actual Size**

- Be familiar with the book, Actual Size.
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the words and the illustrator is the person who creates the pictures. In this book, Steve Jenkins is both the author and illustrator)
- Show the cover and invite children to discuss what they see. Accept all comments. If they say they see a hand, ask whose hand they think it might be. Say, “There are some really interesting animals in this book. Let’s read and find out about them.”
- Read the story so all children can see the pictures in the book.
• Show the first page and allow children to comment about what they see, then read the text on both pages.
• Call attention to the dwarf goby at the bottom of the page and invite children to show you with their fingers how small it is.
• Continue reading and allowing children time to see and discuss the pictures.
• Comment about some of the sizes and illustration. For example, call attention to the eye of the squid, say it is 12 inches across and invite children to show you with their hands 12 inches.
• Continue reading the book and encourage children to comment about the animals and their sizes.
• Show the pages with the gorilla’s hands and the pygmy mouse lemur, ask if they have seen this picture before. Show the cover so children can see that the two illustrations are of the same two animals; a gorilla and a pygmy mouse lemur.
• Invite children to notice that both the huge gorilla and the pygmy mouse lemur have hands a lot like ours.
• Follow up the reading by showing the pages of the book and inviting children to name the animals and/or their body parts and to discuss what they remember about them.

Teacher Note: As you are reading the story, if it seems appropriate, explain that words such as giant and goliath mean something is really big, while words such as dwarf and pygmy mean something very small.

Second Reading of Actual Size
• Bring a cloth measuring tape and a ruler to story time. Keep them out of sight until you have read the story.
• Invite a small group of 3 to 5 children to join you in reading Actual Size.
• Recall with children some of the animals they saw in the book.
• Read the story so all children can see the pictures in the book.
• Allow children time to see and discuss the pictures.
• Follow up by showing children the measuring tape and ruler.
• Ask if any of them know what they are and what they are used for.
• Explain that one is a measuring tape and one is a ruler.
• Allow children time to explore the tape and ruler.
• Ask children to find the numeral 1 on their measurer. Explain that this means one inch. Children may notice other numerals. Explain that the 2 means 2 inches and so forth.
• Involve children in measuring the pygmy shrew on the title page, the wingspan of the atlas moth, the dwarf goby, and the eye of the giant squid.

Teacher Note: For a child who seems to really be interested in the various animals in the book, spend time discussing some of the in-depth information at the end of the story. Know the children and judge how much of the information to share.

Additional Language Activities

<table>
<thead>
<tr>
<th>Benchmarks:</th>
<th>3.5 Understands that print conveys a message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.15</td>
<td>Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)</td>
</tr>
<tr>
<td>3.20</td>
<td>Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)</td>
</tr>
<tr>
<td>3.21</td>
<td>Uses words to describe the characteristics of objects (scientific process: communicating)</td>
</tr>
<tr>
<td>3.25</td>
<td>Applies information or experience to a new context (scientific process: applying)</td>
</tr>
<tr>
<td>3.27</td>
<td>Uses numbers in daily activities</td>
</tr>
</tbody>
</table>
### Activity: Measuring with Our Feet

**Materials:** cardboard or card stock, marker, note paper or index cards, pencils

**Directions:**
- Recall with children that in the book, *Inch by Inch*, the inchworm used its body to measure the birds. We can use our feet for measuring things.
- Help children trace around a foot on a piece of cardboard or card stock. Have them cut out the foot.
- Demonstrate how to use the cardboard foot to measure the length of a table or a storage shelf.
- Suggest that children use their foot to measure other items in the room.
- Provide note paper or index cards and pencils so children can “write” down the measurements of the items they measure or ask you to record the information.
- Read back with the children the recorded information. For example, “The table in dramatic play is 6 of my feet long.”

**Benchmarks:**
- **3.5** Understands that print conveys a message
- **3.15** Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)
- **3.20** Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)
- **3.27** Uses numbers in daily activities

### Activity: Measuring Our Feet with Unifix Cubes

**Materials:** cardboard or card stock, marker, Unifix cubes

**Directions:**
- Help each child trace around one of his or her feet on a piece of cardboard or card stock.
- Allow children to write their name on their cardboard feet.
- Invite each child to predict how many Unifix cubes he or she thinks will fit into the length of his or her feet.
- Allow children to use Unifix cubes to fit into the length of their individual feet.
- Involve each child in counting the number of Unifix cubes he or she used. Ask if the number is more or less than predicted.
- Write on each child’s foot outline the following: Elena’s (child’s name) foot is ____ (how many) Unifix cubes long.
- Invite each child to read to the group the sentence about his or her feet.

**Teacher Note:** If a child can/wants to write his or her own name and the numeral, allow him or her to do so.

**Teacher Note:** Make sure that children understand what is meant by the “length” of their feet.

**Benchmarks:**
- **3.5** Understands that print conveys a message
- **3.15** Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)
- **3.18** Shows an awareness of time concepts
- **3.20** Uses senses to learn about the characteristics of the environment and to collect data (scientific process: observing)
- **3.22** Makes comparisons (scientific process: comparing)
5.8 Participates in group discussion  
5.9 Uses language to problem solve

Activity: Measuring Shadows

Materials: cloth measuring tape, index card, marker or pencil

Directions:
- Choose a sunny day for this activity.
- Measure each child’s height at arrival and record it on an index card as follows:
  Today is _________ (month, date and year). _____’s (child’s name) is _____ inches tall.
- Show children the time on the clock, take children outdoors, measure each child’s shadow and record the information on the index card as follows: At 9:00 o’clock ______’s (child’s name) shadow is _____ inches tall.
- Involve children in discussing if their shadows are the same height as they are, longer or shorter.
- Repeat this at least two more times during the day. Try to make one of the times as close to noon as possible.
- Gather children together, preferably in small groups, and read with them the information on their cards.
- Invite children to discuss why they think their shadows were not always the same length, or number of inches tall. Accept all answers.

Teacher Note: Children will probably not understand that the position of the sun causes their shadows to be different lengths.

Benchmarks: 3.10 Classifies objects by physical features such as shape or color  
3.22 Makes comparisons (scientific process: comparing)  
3.23 Shows awareness of cause-effect relationships  
3.25 Applies information or experience to a new context (scientific process: applying)  
3.9 Uses language to problem solve

Activity: Weighing Rocks

Materials: balance scale, rocks of different sizes and weights

Directions:
- Take the balance scale and some of the rocks to group time.
- Show the scale to the children and invite them to tell what they know about it.
- Explain to children that you will be in the Discovery/Science Center with the scale and the rocks and invite them to join you to experiment with the scale and the rocks.
- Allow children to explore the rocks. Involve them in discussing what they notice about the rocks. Which rock is the heaviest? Which is the lightest?
- Explain that they can find out by weighing the rocks.
- Ask them to put one rock in one balance pan and another rock in the other balance pan. What do they notice about the pans?
- Involve them in discussing why they think one pan is lower than the other? Guide them to discover that the heaviest rock causes the pan to be lower than the other.
- Allow children to experiment with weighing the rocks. Can they balance the rocks on the scale?
- Suggest that children look for other objects they can weigh.
Benchmarks:
3.5 Understands that print conveys a message
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)
4.3 Tries new foods before deciding whether he/she likes them
4.6 Coordinates eye and hand movements to complete tasks

Activity: Purple Cow

Materials: Purple Cow recipe chart, grape juice (plastic jar), frozen vanilla yogurt, cups, spoons (one per child), 2 or more measuring cups (1/4), 2 or more liquid measuring cups with the ¼ cup measure clearly marked

Directions:
- Develop a poster with the Purple Cow recipe.
- Invite children to sit at the table and say with them the poem that is written below.
- Explain that the children will now make a “Purple Cow” for snack.
- Read the recipe with the children.
- Help each child add ¼ cup frozen vanilla yogurt into a cup and pour ¼ cup grape juice on top.
- Eat with a spoon and enjoy.

Purple Cow
I’ve never seen a purple cow,
I never hope to see one.
But if by chance I ever do,
I’d rather see than be one.

Teacher Note: Allow children to do as much of this food experience as possible.

Teacher Note: Teachers and children should always wash hands before participating in a food experience.

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**Purple Cow Recipe Chart**

<table>
<thead>
<tr>
<th>Wash</th>
<th>1/4 Cup Frozen Vanilla Yogurt</th>
<th>1/4 Cup Grape Juice</th>
</tr>
</thead>
</table>

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Learning Environment

**Manipulatives (or Math Center)**
- Unifix cubes
- Ruler

**Block Center**
- Add rulers (6 inch and 12 inch), cloth measuring tape, basket with index cards and markers and pencils
- Provide wood unit blocks
| **Dramatic Play** | • Add plastic measuring spoons and cups with measurements clearly marked.  
• Add 3 sizes of mixing bowls or plastic containers |
| **Sand and Water** | • Add plastic measuring cups and spoons, plastic containers in different sizes |
| **Discovery/Science Center** | • Add balance scale  
• Add objects such as rocks to weigh  
• Add measuring tools such as rulers and cloth measuring tape |
| **Library** | • Add the book, *Actual Size*  
• Add rulers |
| **Transition Activities** | • Have the children’s outlines of their feet.  
• Show an outline of a foot and ask “Whose foot is this?” When child identifies his/her foot, child transitions to next activity. |
| **Family Connection** | • Send home the cutout cardstock foot of their child’s foot with a note explaining that the children have been learning about measuring and how the cardstock foot was used to measure things in the classroom.  
• Suggest that families help their child measure items in the home such as the dining table or the height of a cabinet door. |
| **Additional Books** | Allen, Pamela. *Who Sank the Boat?*  
Stevens, Janet. And Susan Stevens Crummel. *Cook-a-doodle-doo!*  
Tompert, Ann, illustrated by Lynn Munsinger. *Just a Little Bit*  
Wellington, Monica. *Mr. Cookie Baker* |
| **Assessment Ideas** | Refer to page 4 in the guide: Activity – *Measuring Our Feet with Unifix Cubes* for an activity to assess the following concept and benchmarks.  
**Content Standards Number and Operations**  
• Identifying numerals (3 and 4 are numerals) that represent quantities (how many)  
• Writing numerals that represent quantities (how many)  
**Content Standards Measurement**  
• Linking a number and a unit (5 pounds, 2 hours)  
• Using non-standard units such as hands, feet and paper clips  
**Benchmark:**  
3.15 Demonstrates an understanding of number (how many) and numeral (3 is a numeral) relationship (numeration)  
**To Assess:**  
• Work with each child individually to complete this activity.  
• Assess children’s competence by observing and listening to them as they count the Unifix cubes they used and as they “read” to the group the sentence about their feet. |
Connecting Literature and Mathematics
References and Resources


Selected Musical Recordings

Dr. Jean (2006), Totally math. Seabrook Island, SC: Jean Feldman

Raffi (1976) Singable songs for the very young. Song: Five Little Frogs,

Raffi . Favorites. Song: Five Little Monkeys Jumping in the Bed,


Resources from the Division of Childcare and Early Childhood Education

These materials are available online at the Arkansas Better Beginnings website or on CD from the Division of Child Care and Early Childhood Education

P. O. Box 1437, Slot S 160
Little Rock, AR 72203-1437
Phone: 501.682.9699  1.800.445.3316   Fax: 501.682.4897

A Story a Month
Adventures in Learning – A Curriculum for Children from 3 to 5

INDEX Training

INDEX, Investigate Discover and Explore: Math and Science for Young Children, is a 30 hour training program for teachers of preschool children with a focus on math and science for children. Check the DCCECE Professional Development Registry for classes in your area.

National Council of Teachers of Mathematics – check the website for valuable information