

Connecting Literature and Math – A Component of STEM Curriculum

#3: *Ten Red Apples* by Pat Hutchins

Introduction

Pat Hutchins uses rhythm, rhyme and colorful illustrations to make *Ten Red Apples* a counting book that children will ask for over and over again.

Teacher Notes about STEM

- *Early Childhood Educators are now linking together science, technology, engineering, and math into what is called STEM curriculum.*
- *CLAM focuses on Math, one of the components of a STEM curriculum.*
- *CLAM was developed to give preschool children foundations of mathematical understanding through concrete experiences; a foundation for life-long learning and school success in math.*

Arkansas Child Development and Early Learning Standards: Birth through 60 Months

Domain of Development and Learning: Mathematical Thinking

Domain Component: Number Concepts and Operations

Learning Goals:

MT1.1 Demonstrates number sense and an understanding of quantity (*number names and count sequence, connection of number, numeral and quantity*)

MT1.2 Explores combining and separating groups (numerical operations) (*changes in quantity, addition and subtraction*)

Learning Goals and Strands will be identified for all 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: [Numeral Cards](#) and Attachment: [Apple Counting Cards](#))
- Make felt or magnetic figures for the story, The Round Red House (See Attachment: [The Round Red House – Story](#) and Attachment: [The Round Red House - Characters](#))
- Make the Apple Tree Counting Game
- Purchase the CD, *Totally Math*, by Dr. Jean Feldman and print the Printable Lyrics

Story Presentation

Learning Goals:

LD1.1 Understands and responds to language (in child's home language) (*vocabulary and language comprehension*)

EL1.1 Shows interest in literacy experiences (*engagement with books and stories*)

EL1.2 Engages in read-alouds and conversations about books and stories (*engagement with books and stories*)

EL3.1 Responds to features of books and print (*book knowledge and print knowledge*)

MT1.1 Demonstrates number sense and an understanding of quantity (*number names and count sequence, connection of number, numeral and quantity*)

MT1.2 Explores combining and separating groups (numerical operations) (*changes in quantity, addition and subtraction*)

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-fee!" 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-fee!" 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-fee!"
- 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-fee!" "Nine red apples hanging on the tree. Yippee, fiddle-dee-fee!"
- 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

Additional Language and Literacy Activities

Learning Goals:

LD1.1 Understands and responds to language (in child’s home language) (*vocabulary and language comprehension*)

EL1.1 Shows interest in literacy experiences

Activity: The Round Red House

Materials: magnetic or felt figures of the story, *The Round Red House*, (See Attachment : [The Red Round House – Story](#) and Attachment: [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.

Learning Goals:

LD1.1 Understands and responds to language (in child’s home language) (*vocabulary and language comprehension*)

EL1.1 Shows interest in literacy experiences

EL2.1 Notices and manipulates the sounds of language (*rhyme*)

EL3.1 Responds to features of books and print (*print knowledge*)

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 and suggest that they “read” it and say the rhyme.*

Math Activities

Activity: Graphing Our Favorite Apple (Large Group)

Learning Goals:

SE3.1 Shows awareness of self as unique individual (*preferences*)

PH3.1 Demonstrates interest in engaging in healthy eating habits and making nutritious food choices (*exploration of food experiences and food knowledge*)

EL3.1 Responds to features of books and print (*print knowledge*)

MT1.1 Demonstrates number sense and an understanding of quantity (*comparison of quantity, connection of number, numeral and quantity*)

ST3.1 Demonstrates knowledge of the characteristics of living things, the earth's environment, and physical objects and materials (*physical objects and materials*)

Directions:

- 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

7		
6		
5	Peyton	
4	Beckett	
3	Kennedi	Sarah
2	Sam	Maria
1	Taylor	Lucy
	 Red Delicious	 Granny Smith

- Write a summary story.

Our Favorite Apple

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

Activity: Number March (tune of The Ants Go Marching 1 by 1) (Large Group)

Learning Goals:

LD1.1 Understands and responds to language (in child's home language) (*vocabulary and language comprehension, follows directions*)

MT1.1 Demonstrates number sense and an understanding of quantity (*number names and count sequence*)

CA1.1 Explores through listening, singing, creating and moving to music (*exploration of music and movement*)

Directions:

- 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.*

Food/Nutrition Experiences

Learning Goals:

SE1.2 Interacts with peers (*social skills*)

SE3.1 Shows awareness of self as unique individual (*preferences*)

PH2.2 Adjusts grasp and coordinates movements to use tools (*utensils*)

PH3.1 Demonstrates interest in engaging in healthy eating habits and making nutritious food choices (*exploration of food experiences, food knowledge*)

LD2.1 Uses increasingly complex vocabulary, grammar, and sentence structure (in child's home language)

EL3.1 Responds to features of books and print (*print knowledge*)

ST3.1 Demonstrates knowledge of the characteristics of living things, the earth's environment, and physical objects and materials (*physical objects and materials*)

Activity: Applesauce and Apple Butter

Materials: Labeled containers of applesauce and apple butter, serving bowls, and plates, spoons, plastic knives and crackers for each child.

Directions:

- 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, show and read the labels, applesauce and apple butter, with the children.
- 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

Materials: Labeled containers of apple juice and apple cider, small cups for each child

Directions:

- 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?

Learning Environment

Teacher Note: *As children are involved in learning centers listed here, they are engaged in activities that support the following Domains of Child Development and Early Learning:*

- *Emergent Literacy*
- *Mathematical Thinking*
- *Creativity and Aesthetics*

Art Center

- Add red, green and yellow tempera paint to the center for painting at the easel

Library

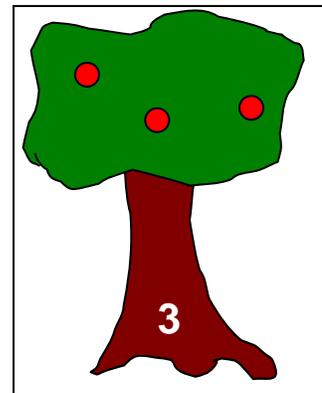
- Post the illustrated rhyme chart, “Two Little Apples,” in the library area.
- Add storytelling figures for The Round Red House and a storyboard.

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.



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 and Engagement

- 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.
- Make copies of the Apple Tree rhyme chart, send home with families, and suggest that they say the rhyme with their child.

Additional Books

Crews, Donald. *Ten Black Dots*.

Franco, Betsy, illustrated by Shino Arihara. *Zero Is the Leaves on the Tree*.

Litwin, Eric, illustrated by James Dean. *Pete the Cat and His Four Groovy Buttons*.

Walsh, Ellen Stoll. *Mouse Count*.

Wood, Audrey, illustrated by Bruce Wood. *Ten Little Fish*.

Assessment Ideas

Refer to page 6 of this guide: **Learning Environment – Manipulatives (or Math Center)** for activities to assess the following Learning Goals:

Domain Component: Number Concepts and Operations

Learning Goal:

MT1.1 Demonstrates number sense and an understanding of quantity (*connection of number, numeral and quantity*)

MT1.2 Explores combining and separating groups (numerical operations) (*changes in quantity, addition and subtraction*)

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.