

Connecting Literature and Math - Component of STEM Curriculum

#9 – *Sort It Out*

By Barbara Mariconda, illustrated by Sherry Rogers

Sorting

By Henry Pluckrose

Introduction

In the storybook, *Sort it Out!*, children will relate to and enjoy reading about Packy the pack rat who has an ever-growing collection of favorite objects which his mother says he must sort out. Told in rhyme, the text encourages children to participate in the sorting process by categorizing Packy's piles of things according to like characteristics or attributes.

In the book *Sorting* from the Math Counts series, children are involved in sorting and classifying groups of like objects into sets based on attributes such as size, shape, color and use.

Teacher Note: *As you involve children in the activities in this guide, have them sort and classify concrete objects before using pictures of familiar objects.*

Definition

Attribute: a characteristic shared by the items you grouped together; characteristics such as color, size, shape and use

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 Component: MT2 Algebraic Thinking

Learning Goal: MT2.1 Uses classification and patterning skills (*classification*)

Learning Goals and Strands will be identified for all activities in the guide.

Materials to Collect and Make

Many of the materials found in your classroom can be used to involve children in sorting and classifying activities. For example:

- vehicles
- unit blocks
- table-top blocks of different colors
- vinyl animals (farm, woods and jungle)
- counting bears and other animals of different colors
- containers of the same color as the counting bears
- pegs and pegboards
- unifix cubes
- stringing beads
- play food items (vegetables and fruit)
- balls
- crayons, markers, pencils, colored pencils, child safety scissors, easel brushes, watercolor brushes, cookie cutters, small rolling pin, craft sticks
- spatulas, measuring cups and spoons, small rolling pin, whisk, potato masher
- spoons, forks, knives
- silverware container

Prepare the following:

- Builder's Tools cards (See attachment: [Builder's Tools](#))
- Classroom Tools cards (See attachment: [Classroom Tools](#))
- Cooking and Eating Tools cards (See attachment: [Cooking and Eating Tools](#))
- Animal Sorting and Classification Mat
- Builder's Tools, Classroom Tools and Cooking and Eating Tools Sorting Mat

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 in literacy experiences*)

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

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

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

MT2.1 Uses classification and patterning skills (*classification*)

Book: *Sort it Out!* by Barbara Mariconda, illustrated by Sherry Rogers

First Reading of *Sort it Out!*

- Take a collection of objects such as counting bears that are all the same size, but two different colors such as red and yellow to the book reading area. Have the 2 colors in separate containers and keep one container out of sight.
- Be familiar with the book, *Sort it Out!*
- Place the collection of red counting bears on the floor and invite children to name them and to say how they are all alike. (They are all bears, they are all the same size, and they are all red)
- Add the collection of yellow bears to the red bears and say to children, "I've placed more counting bears on the floor. They are all bears and they are all the same size. Can you tell me how the bears are different?" (Different colors).
- Sort the bears by color into two sets and say "Yes, you're right, the bears are different colors and I have sorted them that way. Now we're going to read a story about sorting the objects Packy the pack rat has collected."
- Show the cover, give title and illustrator. (Explain that the author is the person who writes the words and illustrator is the person who creates the pictures.)
- Invite children to look at the cover and name the objects they see.
- Say to children, "These are only a few of the objects that Packy the pack rat has collected. He has many more and his mother says he has to sort them out."
- Explain to children that a pack rat is someone who collects and keeps a lot of things.
- Say to children, "Let's read the story and see how he sorts his collection of favorite objects."
- Read the story so all children can see the pictures in the book.
- Allow time for children to see the pictures and name and make comments about the objects they see. Name objects that are unfamiliar to children.
- Follow up the reading by inviting children to name some of the items they collect and if they have some of the same objects that Packy collected.
- Show the last page of the book and ask children to identify the objects they see that were part of Packy's collection. Who do they think the person is who is pouring from the tin kettle and did they see her before and how do they think she got some of Packy's things.
- Invite children to join you in looking at the pictures, including the cover, to see when the items were taken. If children do not notice, call attention to the hand on the cover reaching for the ball of yarn.
- Continue looking at the pages and guiding children to locate the hand and the items being taken.

Second Reading of *Sort it Out!*

- Show the cover and invite children to read the title with you as you run your fingers under each of the words.
- Invite children to help you read the rhyming words that are written on a piece of paper on some of the pages. For example, read “The turtle, the clover, the skinny green bean, he placed in a pile made of things that are _____ (green).” Run your hand under the word to help children understand that print carries a message and can represent spoken language.
- Continue with this activity as you read the entire story to the children.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by reading the page where all of the items in Packy’s collection are listed in rhyme. Invite children to listen for the rhyming words as you read each two-line sentence, emphasizing the rhyming words.
- Thank children for helping you read the story.

Book: *Sorting* by Henry Pluckrose

- Gather a small group of four to six children for the reading of *Sorting*. This will allow children to more clearly see the objects in the photos and to be involved in answering the questions about sorting that are posed in the book.
- Take the books *Sort it Out!* and *Sorting* to the book reading area.
- Show children *Sort it Out!* and invite them to recall some of the ways Packy sorted his favorite objects.
- Show children the cover of *Sorting*, state the title and author and explain that this is another book about sorting and they will be involved in deciding how to sort the objects in the book.
- Show the first page and invite children to name the things they see.
- Read the text on the page and ask children to answer the question, “How could you sort it out?” Accept all answers.
- Continue to show the pages and read the text and involve children in answering the questions that are posed.
- Follow up the reading by showing some of the pages and involve children in answering some of the questions you pose. For example:
 - Page 10 – How are the pencils sorted? (by color)
 - Page 11 – Invite children to look carefully at the buttons and discuss how the set of buttons could be sorted into two sets. (buttons with four holes and buttons with two holes)
 - Page 12 – Ask children how the set of red things could be sorted into three sets. (cars, buttons and pencils)
 - Page 27 – Show the picture and ask children if they have ever seen a set of dolls like this. If so, where? Do they know what the dolls are called?
 - Explain to children that these are dolls from Russia which is a country far, far away from us. The dolls are called Babuska, Matryoska or Russian Nesting dolls. The dolls are almost identical to one another. Point to each doll on the shelf from left to right and explain that they decrease in size (get smaller and smaller) and fit one inside the other.
- Explain to children that they will have the opportunity to sort objects in some of the Learning Centers.

Teacher Note:

- Plan to read this book after children have had an opportunity to sort and classify objects in Learning Centers. This will give them a foundation for the sorting activities featured in the story.
- If you have a set of the Babuska, Matryoska or Russian Nesting dolls, have children explore them during the discussion.

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

Additional Language and Literacy Activities

Learning Goals:

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

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

MT2.1 Uses classification and patterning skills (*classification*)

Activity: Animal Sorting and Classification

- Prepare an Animal Sorting Mat with three columns. Label the columns as Farm, Woods and Jungle. Add a picture clue beside the written label.
- Involve a small group of four to six children in this activity.
- Have a collection of the three types of animals. If animals are not available, use pictures.
- Invite children to name the animals and talk about what they know about them.
- Explain to children that some of the animals can be found on a farm, some in the woods, and some in the jungle and that they are to help the animals find their home.
- Read with children each of the headings on the mat and invite one child at a time to select an animal, place it in the correct column and explain why he or she placed it there.

Extension:

Activity: Builder's Tools, Classroom Tools, Cooking and Eating Tools

- Prepare a Tools Sorting Mat with three columns. Label the columns as Builder's Tools, Classroom Tools, and Cooking and Eating Tools. Add a picture clue beside the written label.
- Involve a small group of four to six children in this activity.
- Have a collection of the three types of tools. For example:
 - Builder's Tools: adjustable wrench, tape measure or ruler or folding ruler, nails, sets of nuts and bolts, carpenter's pencil
 - Classroom Tools: crayons, washable markers, child safety scissors, easel brushes, watercolor brushes
 - Cooking and Eating Tools: fork, spoon, spatula, measuring cups and spoons, whisk, potato masher
- Use pictures of the tools if real objects are not available. However, real objects are preferred.
- Explain to children that a tool is something that helps us accomplish a task.
- Involve children in examining the tools, naming them, and discussing how they are used.
- Read with children each of the headings on the mat and invite one child at a time to select a tool and place it in the correct column and explain why he or she placed it there.

Learning Environment

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

- *Emergent Literacy*
- *Mathematical Thinking*

Art Center

- Prepare containers for different colors of crayons. For example cover a container with blue paper and label it “blue crayons”, or use sturdy plastic cups of different colors. Repeat this with the other colors of crayons that are available.
- Observe to see if children store crayons in correct container. If not, talk with the children about how the containers are labeled to make it easier for them to select a color and to put the crayons away.

Dramatic Play Center

- Add a divided silverware container and silverware (spoons, knives and forks).
- Provide two containers such as baskets. Label the containers with words and a picture clue: one Fruit and the other Vegetables. Place play food in the correct container. Observe to see if children place the play food in the correct container.

Library

- Add the book *Sort it Out!*
- Add the book *Sorting*

Block Center

- Label the storage shelves with outlines of the different sizes and shapes attached to the surface of the shelves.
- Introduce children to the outlines and guide them to understand how blocks are to be stored. Assist them at clean-up time to store the blocks correctly.
- Provide vehicles of different colors.

Discovery Center

- Add the Sorting Mats and the corresponding objects or picture cards.
- Add the counting bears and containers of the same color as the bears.
- Observe to see what children do with the materials.
- Join children in the center if they seem to need guidance in using the materials and involve them in sorting activities

Manipulative Center

- Have available a variety of manipulatives such as pegs and pegboards, stringing beads, and unifix cubes.
- Comment about what you observe as children are involved with the materials. For example, say, “Gavin, I noticed that you put three red pegs and five yellow pegs in the peg board.”

Transition Activities

Activity: Tool Sorting

- Have two containers, one labeled Building Tools and one labeled Eating and Cooking Tools.
- Give each child a card representing one of the categories of tools.
- Invite one child at a time to hold up his or her card and say what it is and in which basket he will place it and transitions to the next activity.
- Continue this activity until all of the children have transitioned to the next activity.

Family Connection

- Explain to families that the children are learning about sorting and putting together things that are alike in some way. For example, all of the child's toy vehicles go together and the snap-together blocks go together.
- Consider providing containers such as plastic dishpans for each type of toy and have children put the toys in the correct container. Label the container with a picture of the type of toy.
- Allow your child put away clean silverware in a divided silverware container, putting all the spoons in one section, the forks in one, and the knives in another.
- Communicate to families that this is a basic math skill that lays the foundation for more advanced math skills.

Assessment Ideas

Refer to the Learning Environment section of this guide and select one or more of the following activities for assessment:

- Art Center – Sort crayons by color into the correct container
- Dramatic Play Center – Sort silverware into the divided silverware tray
- Discovery Center
 - Sort counting bears by color into correct container
 - On a mat, sort and classify builder's tools, classroom tools, and eating and cooking tools

Domain Component: MT2 Algebraic Thinking

Learning Goals:

MT2.1 Uses classification and patterning skills (*classification*)

To Assess:

- Involve children in the selected activity
- Assess children's competence by observing and listening to them as they are involved in the activity with you.
- Have children explain why they sorted objects as they did.