Informational Books in the Preschool Classroom
Topic of Study: Building with Blocks

When I Build with Blocks by Niki Alling
Changes, Changes by Pat Hutchins

Introduction

In this guide children are engaged in activities that primarily support two domains in the *Arkansas Child Development and Early Learning Standards: Birth through 60 months:* **Emergent Literacy** and **Science and Technology.** The **Learning Goals** (with **Strands)** that precede each activity relate to specific areas of development and learning that are the focus of the activities.

While neither of the two featured books meet the formal definition of informational books, they do support the following:

Domain: Science and Technology
Domain Component: ST3. KNOWLEDGE OF SCIENCE CONTENT
Learning Goal: ST3.2 Uses tools and engineering practices to explore and solve problems
Strands: Knowledge and use of tools and Engineering practices and thinking

Teacher Notes:

- *This Building with Blocks guide is intended to be used throughout the year rather than as a topic of study for a specific period of time such as one or two weeks.*
- *It is suggested that you first review pages 5-8. This section of the guide outlines how the Block Center can support each Domain of Development and Learning, thus reinforcing the importance of having the center available for children each day.*
- *Throughout the year, plan to rotate props and accessories and loose parts and add new ones to reflect topics of study or themes, seasons, local events and especially children's interests.*

Connection to Adventures in Learning

This curriculum guide can stand alone or be used as a supplement to the following topic of study **in Adventures in Learning:**

- Focus Area: Communities – People Who Help Build Our Communities

This curriculum guide can also be used with similar topics of study from any curriculum.

Materials to Collect and Make

Teacher Note: *The developers of this guide recommend that you review the following resource that contains information on block play:*

Zoning in on Construction, a booklet that was printed and distributed for Arkansas Children's Week, April 12-18, 2015. Arkansas Children's Week – A State University – ACW Resource Books – 2015. This booklet provides in-depth information to support building with blocks. (http://asuchildhoodservices.org/#!chs_publications)

Teacher Note: *Refer to Early Childhood Environment Rating Scale (Revised* Edition or Third *Edition) for:*

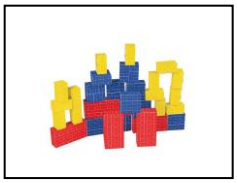
- *guidance in determining the types of blocks that are considered in the Blocks Indicators and the types of blocks such as interlocking blocks that are not considered.*
- *number of blocks*
- *storage of blocks*

Teacher Note*: Before reviewing the list of materials to collect and make, consider the following tips for creating a well-designed block center:*

- *Provide sufficient space for building. The space should be suitable for the type of blocks that are available for building and the number of children allowed in the Block Center.*
- *Provide a surface such as a low-pile rug on a hard floor*
- *Include a variety of types of blocks*
- *Add props/accessories that enhance and extend block play*
- *Add loose parts that enhance pretend play*
- *Provide open shelves for storage of blocks, props/accessories and loose parts.*
- *Store props/accessories and loose parts with blocks. Store them in containers such as bins and baskets.*
- *Allow sufficient time each day for children to use the block center*

Blocks

- Wooden unit blocks
- Plastic unit blocks
- Cardboard brick blocks
- Hollow blocks
- Tree blocks/tree cookies (homemade)
- Tree blocks (commercial)

Props/Accessories

- Vehicles (small cars and trucks, school buses, emergency vehicles, construction vehicles, tractors)
- Small people
- Animals (pets, farm, woods, wild, jungle)
- Road signs

Teacher Note: *Consider rotating the props/accessories to reflect the topic of study or theme, the season, events in the community such as the county fair, and children's interest.*

Loose Parts

- Cardboard tubes
- Boxes
- River rocks
- Wooden spools
- Sections of PVC pipe
- Wood cove molding (1¾ - 2 inch, cut in one, two, three, and four foot lengths)
- Small balls (rubber, textured, tennis, golf)

Pictures of Ramps (See Attachment: How Ramps are Used)

Teacher Note:

- *Review the Zoning in on Construction booklet (Ramps for Rolling, p. 21) referred to at the beginning section for information about cove molding.*
- *Wood cove molding can be found in most home improvement stores. Most of the stores will cut cove molding for you at no cost.*
- *Select a cover molding with a flat back and slightly rounded top.*

Definition: Loose parts are everyday open-ended materials that can be used to create something new. They offer children the opportunity to design, build, create and imagine. There are no directions or rules for using loose parts.

Story Presentations

Learning Goals:

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

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

EL1.1 Shows interest in literacy experiences *(engagement in literacy experiences, variety of interests)*

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

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

Book: *When I Build with Blocks* written and illustrated by Niki Alling

- Prepare to read the book, *When I Build with Blocks.*
- Show the cover, give title, author and illustrator. (Explain that the author is the person who writes the story and the illustrator is the one who draws the pictures and that Niki Alling is both the author and illustrator).
- Invite children to look at the cover and describe what they see.
- Ask children if they build with blocks in the Block Center. What are some things they build?
- Invite them to predict what they think the child on the cover and the children in the story will build with blocks. Accept all answers.
- Say, "Let's read and find out what they build with bocks."
- Read the story so all children can see the pictures in the book.
- Allow comments by the children about what the children are building.
- Follow up the reading by asking if their predictions were correct. Did they predict some of the things the children would build?
- Show children the double-spread pages at the end of the book that shows the structures the children built. Run your finger under the name of each structure and invite children to read the name of the structure.

Second Reading of *When I Build with Blocks*

- Show the cover of the book, give the title, author and illustrator.
- Invite children to recall some of the structures the children in the story built.
- Read the story so all children can see the pictures in the book.
- Follow up the reading by explaining to children that they are now going to help you read the story.
- Read the first page as follows:
  It's time to make a choice of where we want to _____. Pause and invite children to fill in the missing word. (play)
- Continue this activity with the next page, and the pages after that. Sometimes pause and invite children to fill in the missing word on only one of the two pages.
- Thank children for helping you read the story.

Teacher Notes:

- *This process of allowing children to complete sentences is called the cloze technique.*
- *Call children's attention to the rhyming words if they do not notice and comment on this.*

Additional Learning Goal

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

Book: *Changes, Changes* by Pat Hutchins

- Prepare to read the book so you are familiar with it and can guide children through the process of looking at pictures and telling the story in this wordless book.
- Involve a group of four to six children in the reading of this book. This will better allow the children to see the illustrations and to discuss what is happening on each page.
- Place some unit blocks of different sizes and shapes in a box and take the box to the book reading area, keeping it out of sight until you have read the book with the children.
- Show the cover of the book, give the title.
- Invite the children to look at the cover and describe what they think the two people are doing.
- Explain to children that this is a wordless book, which means there are no words; that the illustrations or pictures tell the story and that Pat Hutchins is the illustrator which means that she drew the pictures.
- Show the first double-spread page and say to children, "There are no words on the page so you will have to tell the story about what the two people are doing."
- Continue this process as you go to the next double-spread page to the last page with the final illustration.
- Ask questions such as "What do you think will happen next?" before turning a page where the blocks are transformed into something else such as a fire truck.
- Follow up the reading by inviting children to discuss what they liked and did not like about this book with no words.
- Bring out the box of blocks and place them on the floor in front of the children.
- Invite children to explore the blocks. Ask questions such as, "What do you think you can build with the blocks?"
- Remind children that blocks will be in the Block Center for them to use for building.
- Present the story again if children request it.
- Explain to children that the book will be in the Library Center where they might like to look at it on their own or with a friend.

Teacher Notes:

- *Make sure that all children in your group have an opportunity to participate of the reading of this story.*

- *Consider forming the small groups so that there are at least a couple of very verbal children in the group and children who are less verbal. However, do make sure that less verbal children have an opportunity to contribute to the story.*

Promoting Language and Literacy in the Block Center

Consider these ideas for promoting language and literacy in the Block Center:

Enhance the environment

- Label open storage shelves and containers with pictures and words
- Add traffic signs
- Add a small basket with pencils, markers, tape and index cards and encourage children to make their own signs
- Display books related to construction
- Include magazines or postcards with pictures of buildings, roads and bridges

Interact with children in the Block Center

- Name the different types of blocks as children are building with them:
  - wooden unit blocks
  - plastic unit blocks
  - cardboard brick blocks
  - hollow blocks
  - tree blocks or tree cookies

- Refer to unit blocks by name as you observe children building with them.
  - half unit (square)
  - unit (rectangle – two squares make a unit)
  - double unit (long rectangle – two units or four half units make a double unit)
  - triangle
  - circle
  - half circle
  - column
  - arch
  - ramp

- Talk with children about construction concepts:
  - ramp
  - curve
  - inside/outside
  - foundation
  - structure
  - building (as a noun or a verb)
  - enclosure
  - balance

- Describe the structures that children create and ask questions about them:
  - "You used more than ten blocks to make that highway."
  - "I see that you placed the arch on top of that building."
  - "You found out that two half circles make one circle."
  - "Look, your blocks enclose three spaces and you have one animal in each space."
  - "I wonder who lives in that building you just built?"
  - "Do you think another block shape might work here?"
  - "What do you think would happen if you used this block as the foundation for your building?"
  - "You added two more blocks to that tower to make it taller."

- Create a photo album or scrapbook showing children's block structures.
  - Take photos of children's block structures.
  - Allow a child to select the photo that he or she wants to include in the album.
  - Invite that child to tell you about the structure.
  - Write down on an index card what the child says and attach it to the photo.
  - Create a page in the album for each child and include the photo and their dictated statement.
  - Review the album with individual children and with the entire group.

Developing Math Skills in the Block Center

In the Block Center, children are offered many opportunities to learn and understand mathematical concepts in the four areas of mathematical thinking in the Arkansas Child Development and Early Learning Standards.

Number Concepts and Operations

- Talk about how many blocks a child used to build a structure: "Jada, you used two unit and two double unit blocks to enclose four spaces and you put one animal in each enclosure."
- Ask "How many blocks did you use to build that tall tower?"
- Say, "I need two more arches to finish my building."
- Ask "How many more unit blocks does Matthew need so that he has the same number of unit blocks that you have?"
- Say, "You gave Rolando two of your half unit blocks. How many do you have now?"

Algebraic Thinking

- Guide children to store all of the unit blocks on the shelf by shape and size and the tree blocks in a basket. (classification)
- Invite a child to make a pattern just like yours. "I'm making a pattern with half- unit blocks and triangles. Can you help me finish it?" (patterning)

Measurement and Comparison

- Add measuring tools to the Block Center: cloth tape measure, rulers, yard sticks, string.
- Involve children in measuring activities: the length of the blocks, the height of structures the children build, the length of the road a child builds,
- Ask "Will your car fit under the bridge you built? Do you think your truck will fit? What do you think you can do to make the bridge taller?""

Geometry and Spatial Sense

- Ask "Can you find two more square blocks like this one?"
- Say, "You created a circle when you put two half circles together."
- Ask, "Can you find a block with three sides? A block with four sides?"
- Say, "This block is called an arch. You put it on top of two unit blocks and made a tall bridge."

Introducing Science and Technology in the Block Center
Knowledge and Use of Tools
Engineering Practices and Thinking

Involve children in learning about ramps in the Block Center as a way to help them understand how to use tools and engineering practices to explore and solve problems.

- A ramp is a tool that aids in accomplishing a task.
- As children are involved in creating and rolling different objects down a ramp they are learning about
  - simple tools and machines
  - force and motion
  - the relationship between variables and outcomes (the steepness of a ramp is the variable and how fast a ball rolls down the ramp is the outcome)

Ramps

- Consider a variety of ways that children can create ramps. For example:
  - A triangle shaped hollow block (one side is flat and one side is sloped)
  - A large piece (about one foot wide) of heavy cardboard, with one end elevated
  - The top side of the lid of a large storage box, with one side elevated
- Wooden cove molding which can be found in many building supply stores, with one end elevated to become a ramp. Cut molding in 1', 2', 3' and 4' feet lengths. Molding should be from 1¾" to 2" wide with a flat back and slightly rounded back.
- A variety of materials can be used as base supports for the ramp structure and to elevate the ramps:
  - Stacked unit blocks which are sturdy
  - Cardboard or soft blocks which are lighter and can fall easily.
  - Sponges
  - Recycles materials such as empty coffee cans
  - A bench or chair
- A variety of objects can be used to determine which will roll down the ramp and/or which can roll down the fastest, for example:
  - Pom-poms, ping pong balls, wooden balls, tennis balls, rubber balls, textured balls
  - Spool, bear counter, seashell, wooden cube, rock, plastic bingo chip, plastic egg, jar lid, rectangular block
  - Small cars
- Introduce ramps to children in a small or large group.
  - Show children pictures of ramps (See Attachment: How Ramps are Used) and involve them in discussing how the ramps are used.
  - Ask children if they have seen ramps, where they saw them and how they were being used.
  - Show children a picture of a ramp being used to load a riding mower onto a trailer for example, and ask them how they would get the mower onto the trailer if they didn't have a ramp.
- Put materials out in the Block Center and observe to see what children do with them.
  Involve children in predicting which of a group of objects will roll down a ramp and which will not.
  - Show children a collection of objects and invite them to predict which they think will roll down the ramp and which will not.
  - Record their predictions on a chart that is divided in two columns labeled: **Will Roll** and **Will Not Roll**
  - Invite children, one at a time, to select an object and see if it will roll down the ramp.
  - Place the objects in the correct column on the chart.
  - Compare their predictions with the outcome.
  - Ask children questions such as:
    - "Why do you think some objects rolled down the ramp and others did not?
    - "How are the objects that rolled down the ramp alike?"
- Involve yourself in children's play in order to scaffold their learning. For example, say to Zach who is repeatedly rolling a car down a block ramp, "Zach, I noticed that when you tilted the ramp, the truck went down the ramp faster. What do you think will happen if you use a longer ramp?"
- Incorporate technology into the Block Center by adding a toy phone, walkie-talkies and camera.

Teacher Notes:

- *Model safe use of the materials.*
- *Marbles are often used in articles about ramps. However, it is important to know your children before deciding whether or not to use marbles. If you do decide to use marbles, close supervision is needed.*

Including Social Studies in the Block Center

The Social Studies Domain can be supported in the Block Center in a number of ways:

- Family and cultural identity is introduced as multigenerational figures of families of different races and cultures are added to the center.
- Children become aware of the different roles of people in society through some of the props and accessories that are added. For example, through the addition of career figures and by adding hats for construction workers, police and firefighters
- By adding maps and community/town center rugs, children can become aware of familiar buildings in their community and begin to understand simple geography concepts.

Teacher Note: *Refer to the Informational Books Topic of Study: Map Making on the Better Beginnings website for ideas about including Social Studies in the Block Center.*

Encouraging Creativity in the Block Center

Creativity reigns in the Block Center as children are involved with the different types of blocks, the various props and accessories and loose parts that are in the Block Center. For example:

- Hats for construction workers, police and firefighters
- Animals
- People figures
- Vehicles
- Cardboard tubes
- Boxes
- River rocks

Social and Emotional, Cognitive and Physical Development and Health

Strategies for incorporating six of the nine Domains of Development and Learning in the Block Center have been included in this guide. However, the other three Domains are also supported as follows:

- **Social and Emotional Development**
  - Children make choice about the materials to use in the Block Center.
  - Children become more competent as they spend more time with the materials in the Block Center.
  - Children engage in cooperative play and demonstrate social skills as they interact with other children.

- **Cognitive Development**
  - Children explore and investigate the materials in the Block Center.
  - Children stay focused and complete block structures.
  - Children plan and solve problems.

- **Physical Development and Health**
  - Children are developing fine motor skills as they use utensils, writing and drawing tools and building tools.

Transition Activities

Learning Goal:
CD2.2 Shows flexibility in adjusting thinking and behavior to different contexts *(adjusting behavior to match context)*

Transitioning children from the block center

- Give children a five minute warning that cleanup time is coming.
- Allow extra time for clean-up in the block center.
- Be specific about what you want children to do. For example, "Jose, put the unit blocks on the outline of unit blocks on the shelf."
- Help children get started with clean-up.

Family Connection and Engagement

- Send home a note to families explaining that children have been learning about ramps and how they are uses. Include some of the examples of how ramps are used.
- Invite families to involve their child in looking for ramps being used in their neighborhood and community.

Additional Books

Block City by Robert Louis Stevenson, illustrated by Daniel Kirk.

Teacher Notes:

- *While bedridden with tuberculosis, Robert Louis Stevenson wrote what would become the best known and most beloved collections of children's poetry in the English language, A Child's Garden of Verses. Block City is taken from that collection.*
- *Consider reading this book with a child or children in your group who would benefit from a more challenging book reading experience.*
- *Prepare to read the poem to children so that you can help them understand words that may not be familiar to them; words such as kirk, castle, palaces, temples, docks, mill, harbor, vessel, pillar, and moored.*