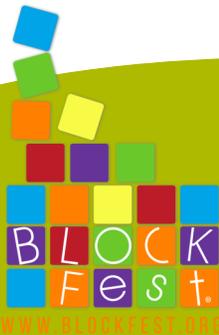




Twiga Foundation's BLOCK Fest<sup>®</sup> presents

# PLAYING AND LEARNING WITH BLOCKS!

From 8 Months to 8 Years  
A Handbook for Parents and Caregivers



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#### References

Parents as Teachers National Center (2002). *Born to Learn Curriculum: 3 Years to Kindergarten Entry*, St. Louis, Missouri. For research related to BLOCK Fest® go to [www.blockfest.org](http://www.blockfest.org).

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For more information about BLOCK Fest®  
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# Introduction



Building with blocks can be an excellent learning experience for your child. Some very wonderful things are happening as your child plays with blocks. **BLOCK Fest**<sup>®</sup> invites you to explore the world of blocks and how they benefit your child.



Children start learning from the day they are born. Each day babies and young children learn new skills they will use as they grow. Parents are right there from the start, helping their children learn.

## Young children learn about MATH while playing with blocks

Most preschoolers learn best by trying things out and by telling others about their ideas and discoveries. Here are some examples of how children learn **MATH** through block play:

- A child counts blocks and then asks a friend for 4 more. This child understands that a number means “how many” or quantity.
- A child sorts blocks by shape and size. This child is using concrete objects to represent sets.
- A child puts blocks away by matching the shape to a picture on the shelf. This child is learning one-to-one correspondence, a skill important in counting.
- A child tells a friend that her tower is bigger because she used more blocks. This child is using words to compare quantity (e.g. more, less, greater than, fewer, same).
- A child makes a “fence” by alternating square and rectangular blocks. This child shows an understanding of patterns.



*MATH Ideas: Counting, Estimating, Equality, Adding, Planning, Classifying & Volume.*

**MATH**

Asking these kinds of questions can encourage **MATH** learning during block play:

- How many more blocks will you need to make that fence?
- What's another way to build a bridge with these sort of blocks?
- I wonder if we have enough blocks to build a road all the way to the wall?

### MATH Words

Long  
Tall  
Narrow  
Order  
Top  
Square  
Less  
Curve  
Add  
Count  
Outside  
Triangle  
Lines  
Pattern

## Young children learn about **SCIENCE** while playing with blocks



Young children can learn about the world of **SCIENCE** through block play. Most preschoolers learn best by solving problems in their natural surroundings. Children are scientists from birth, constantly exploring with all their senses. Here are some examples of block play and **SCIENCE** learning:

- A young child carries blocks around in his hands and places them in a bucket. This child is learning about weight, mass and size.
- A child describes blocks as smooth, flat, and heavy. This child is exploring and using words to describe the characteristics of matter.
- A toddler builds a tower and gleefully knocks down the blocks. This child is experimenting. Will the blocks always fall down? (Cause and effect) How hard do I need to push? (Force) Why did the blocks fall? (Causality)
- Several 3-year-olds build a ramp with long blocks then roll cars down the ramp. These children are exploring mass, velocity, inclines and wheels.
- A child places one more block to balance a construct. This child is taking reasonable risks to learn more.

### SCIENCE Words

Rough  
Smallest  
Heavy  
Whole  
Bigger  
After  
First  
Next  
Balance  
Series  
Light  
System  
Hypothesis  
Weight

SCIENCE Ideas: Comparing, Predicting, Problem Solving, Weighing & Balancing.

Asking these kinds of questions can encourage **SCIENCE** learning during block play:

- What would happen if we put a round block on top of the tower?
- What's another way to make a block road?
- How is this tower like that building?
- Can you find another block that's as heavy as this one?

SCIENCE

## Young children learn LITERACY skills while playing with blocks

Young children learn skills for reading by talking with others, listening to word sounds, being read to, and seeing words in print. Here are some ways children develop **LITERACY** through block play:

- A young child who puts a rectangular block to his ear and “talks on the phone,” takes a big step in his ability to think and reason. If a block can be changed into another object, eventually shapes and lines on a page can become readable words and numbers. This child is using **symbolic thought**.
- A child writes “SV” on a paper and puts it on a block structure to let others know it is to be “saved.” This child is **paying attention to the sounds in words and letters and using writing to communicate ideas**.
- A child dictates a story to an adult about the princess in her block castle. This child is **learning that stories have a sequence and words can be represented in writing**.
- A child builds a city street by alternating square and rectangular blocks. This child is **demonstrating an ability to repeat and expand patterns**.



**LITERACY**

*LITERACY Ideas: Sequencing, Letters & Printing, Retelling, Listening, Expanding & Elaborating.*

Asking these kinds of questions can encourage **LITERACY** learning during block play:

- What would happen if that train could fly?
- How will we know which building is the firehouse?
- Tell us a story about your castle and I'll write it down.

**LITERACY Words**

Higher  
Next  
Second  
Lower  
First  
Happy  
Ending  
Afraid  
Map  
Plan  
Setting  
Details  
Signs  
Lines

## Young children learn about PEOPLE & THINGS while playing with blocks



Every day young children learn new things about the **PEOPLE & THINGS** in their world. Each day they learn more about how things work, how people act, and the many groups and categories around them. Children learn by asking questions, talking about their ideas, and trying them out in play. Here are some examples of learning about **PEOPLE & THINGS** during block play:

- A child builds a fire station after a field trip. This child is exploring the many roles and functions of the fire station environment and its people.
- A child copies a complex pattern card with small blocks. This child is using color and order of the blocks to create designs and patterns.
- A young child wears a police hat and drives a wooden car around a block track while a friend builds an airport and parking garage. These children are learning about different types of transportation.
- A child agrees to build a zoo near a friend's school building. This child is participating in group problem solving.
- A child sorts blocks by shape and size. This child is learning to identify properties.

Words about  
**PEOPLE & THINGS**

Same  
Function  
Outside  
Hard  
Color  
Environment  
Shape  
Imagine  
Helpers  
Group  
Home  
Work

*PEOPLE & THINGS Ideas: Designing, Pretending, Neighborhoods, Jobs & Habitats.*

Asking these kinds of questions can encourage learning about **PEOPLE & THINGS** during block play:

- Who will take care of those animals?
- What kinds of houses do people in Alaska live in?
- There are no more triangle blocks. Are there other blocks we can use?

**PEOPLE  
& THINGS**

# STAGES OF BLOCK PLAY

Children go through various stages of block play. As they work through the learning of one stage they are ready to move on to the next stage of play. Watch how your child plays with blocks and see if he or she matches one of the stages below. As skills advance, it is typical for children to combine several stages. The stages are developmental—each one building on the last—but children advance at their own rate regardless of their age.



# 1

## DISCOVERING BLOCKS

A child will explore individual blocks and their physical qualities by carrying, pushing, feeling, tasting, holding and dropping them.

For more discovery, offer an assortment of block types and simple containers.



# 2

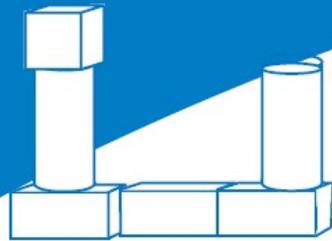
## STACKING BLOCKS

A child will stack 1-3 blocks. Children can stack them vertically or place them in a horizontal line. Beginning block builders often use a combination of stacking.

For more discovery, try a small assortment of the same type of blocks.



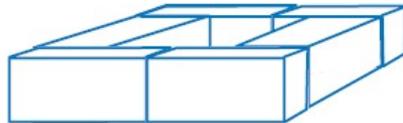
# STAGES OF BLOCK PLAY



## 3

### COMPLEX STACKING

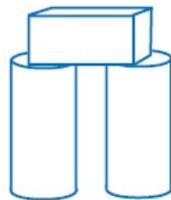
A child will combine vertical and horizontal stacks to create more complex patterns. A child may stack vertically and horizontally to make a 3-dimensional structure with no interior space. For more discovery, try providing pattern cards.



## 4

### MAKING ENCLOSURES

A child will make enclosures flat on the floor. A child begins to name the construction while building or when it is completed. For more discovery, offer toy farm animals, people, and cars.



## 5

### CREATING BRIDGES OR ARCHES

A child will place a block that spans the space between two supporting blocks. For more discovery, offer pictures of famous bridges or a piece of blue cloth and boats.



# STAGES OF BLOCK PLAY



## 6 COMBINING ENCLOSURES & BRIDGES

A child will make more complex buildings and use them as settings for dramatic play. They also begin to share ideas and build cooperatively with others.

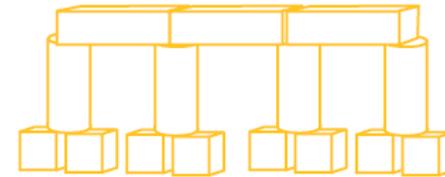
For more discovery, try supplying blank paper and pencils to make signs, photographs of famous buildings, and roofing materials.



## 7 BUILDING WITH PATTERNS & SYMMETRY

A child will plan structures that have patterns and symmetry with details such as ramps and doors. They may do this cooperatively with other children.

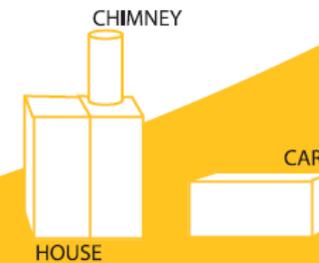
For more discovery, give children color cubes or planks and photographs of famous paintings.



## 8 BUILDING BLOCK STRUCTURES THAT REPRESENT OBJECTS FOR PRETEND PLAY

A child will plan and create structures in blocks and use them in role play situations. Buildings are often kept standing for several days.

For more discovery, try providing measuring tools, home building magazines, and dress up clothes.



## Learning to be a MATH THINKER through block play



The emergent level of math is key to learning to be a math thinker. It is a stage in math development where a child learns one-to-one correspondence. Just as a child first learns to recognize the sounds that individual letter symbols (a,b,c) make before actually reading a word or sentence, understanding the quantity that number symbols (1,2,3) stand for is key to understanding the language of math. Quantity recognition, an important key to math thinking, is learned through experience. Blocks can be used to give the hands-on experience that will help your child develop a sense of number or quantity during the emergent level.

Math thinkers must develop number sense, an understanding of:

**SYMBOLS** 1 2 3 4 5 6

**WORDS** uno dos tres four five six

**QUANTITY** threeness fourness fiveness

Try This: Using one inch cube blocks begin with level 1 and progress to level 4 as your child applies the concept of 1:1 correspondence to numbers 1-6 and up to six cubes.

**LEVEL 1: Learn and practice 1 to 1**

Here is a picture of a block. Place one of your blocks on my block in the picture to make it look the same.



**LEVEL 2: Practice recognizing quantities and 1 to 1**

Place blocks in the empty space to make it look the same as the picture. Let's count them together. (Model touching each block as you count them.)



**LEVEL 3: Learn to associate quantities & number symbols**

Look at the number and the picture on this card. It tells us to place 2 blocks on the card. Place one of your blocks on each of the blocks in the picture to make it look the same. Let's count them together. (Model touching each block as you count them.)

2



**LEVEL 4: Practice associating quantities & number symbols**

Look at the number on the card. It tells us to place 5 blocks in the space. Let's count together. (Model touching each block as you place them.)

5

**ONE-TO-ONE CORRESPONDENCE** is the ability to match one object or word to another object. When your child gives one cupcake to each party guest, or places one napkin on each plate, he is practicing one-to-one correspondence. Another example of one-to-one correspondence is when a child touches a block and calls it "one" or "uno," then touches another block and calls it "two" or "dos."

Actual "counting" takes place when a child learns how much that word or symbol stands for ("2" means I have this many cookies). In block play, your child is counting when she touches and names each of four blocks, and can answer the question "How many blocks are there?"

Download a complete set of the cards illustrated at the left at [www.BlockFest.org](http://www.BlockFest.org)

# THE ADULT'S ROLE IN BLOCK PLAY

**MAKE TIME AND SPACE FOR BLOCKS.** Two-year-olds may build for only 10 minutes, while older children may play for an hour or more. Find an out-of-the-way spot to build so children can add to their structure over two or three days. If you can't save it, take a photo or draw a picture of the construction.

**SAVE HOUSEHOLD MATERIALS FOR BUILDING.**

Objects such as small empty boxes, scrap wood, empty milk cartons, and paper towel tubes can be used for building.

**FOLLOW YOUR CHILDREN'S LEAD IN**

**BLOCK PLAY.** Support their project by showing interest and pointing out the details, such as, "Look how tall your tower is!"

**ASK OPEN-ENDED QUESTIONS ABOUT THE BUILDING PROCESS.**

As an example, "Tell me about what you are building. What animals live in your barn?" Open-ended questions don't have one correct answer; rather, they expand the possibilities. Questions like Why? How? or What if? invite children to talk about their understanding of the world.

