Building With Blocks
You and your child combine blocks into a variety of shapes and structures.

STEM connections
Asking scientific questions
Recognizing patterns and relationships by talking about the blocks, their positions and their structures
Comparing and measuring
Using building materials in different ways
Noticing problems and coming up with possible design changes

What’s Needed
Building blocks and drawing materials

How To Do It
1. Put out all the blocks and together begin exploring and building.

2. Talk together about what your child is building:
   * Tell me about your building.
   * Why did you use this block here?
   * I noticed you used two rectangles. How many different kinds of blocks did you use?
   * What do you think would happen if...?

3. Take time to look at and discuss each other’s buildings. Ask:
   * Which building is tallest? Shortest?
   * How can we measure our buildings?

4. Make drawings of your buildings to display for others to see.

Another Idea to Try
You and your child can copy each other’s designs by placing and naming blocks and following directions. First, build a simple structure of three blocks and describe it as you add pieces. When you are finished, ask your child to make the same shaped structure. (The colors might not be the same depending on how many blocks you have available.) Take turns building and copying each other’s structures, using more blocks for more complex structures.

Try this more challenging activity.
Stand a book or a folder in front of where you are building to hide your structure from view. Build a structure and describe it as you build:
   * First I put down a rectangle block with a long side touching the table.
   * Next I place a cylinder on end in the middle of the rectangle.
   * Third I put a small triangle prism on top of the cylinder.
As you build and describe your building process, challenge your child to build this same structure without seeing it, only using the verbal directions. This can be much more difficult than using our eyes to see and copy a structure. Describing how to build a structure requires use of specific vocabulary relating to shape (square, triangle, etc.) and position (over, under, next to, etc.).

**Building Towers**
You and your child build towers as you combine and balance shapes.

**STEM Connections**
- Asking scientific questions like
- Recognizing patterns and relationships by talking about what you are building
- Comparing and measuring
- Designing and making models
- Noticing problems and coming up with possible design changes

**What’s Needed**
Building blocks and drawing materials:

**How To Do It**
1. Talk together as you build the towers.
   - *What shapes can we use to make a strong base?*
   - *How did you keep the tower from falling down?*
   - *What do you think will happen if….?*
   - *What do you think is the most important block in a tower?  Why?*
   - *How can we find out if the tower is strong?*

2. Measure your towers using standard and non-standard units and make a chart.
   - *How many paperclips tall is your tower? How many plastic spoons tall?  How many inches tall?*

3. Make drawings of your towers and display them with your measurements.

**Another Idea to try**
Build structures for a specific purpose such as a garage for a toy truck, a house for a giraffe, a house for a worm, etc. Talk together about why you are building a specific structure and about your design. Use a non-standard measuring tool to make comparisons among the structures.

Measuring, estimating and comparing are some of the math and science skills children practice when they explore and build with blocks.
- *How many blocks tall can I make this?*
- *Which tower is the tallest?  Which is the shortest?*
- *Is the house for the dog taller or shorter than the house for the giraffe?*
- *Will I need more or less straws for this bridge?*
- *How long is your bridge?*
- *Which bridge will hold the most pennies?*
Let’s measure our house with paper clips. How many paper clips tall is your house? Is it taller than mine?

Building Bridges
You and your child experiment with building bridges and make a record of how many objects each bridge can hold

STEM Connections
Exploring building materials
Designing and building
Noticing problems and coming up with possible design changes

What’s Needed
Drawings or photos of bridges, solid blocks or paper cups, 8”x11” sheets of paper, objects of equal weight (pennies or blocks) to test the strength of the bridges

How to Do It
1. Look at and talk about some drawings or photos of real bridges. Ask:
   Where do we use bridges? What shapes do you see in the bridge construction?

   A bridge can be as simple as a log across a stream or as complex as the interconnected towers and cables of the Golden Gate Bridge.

2. Use paper cups or columns of blocks to create the span of your bridge. Use a flat sheet of paper for your first bridge. Test its strength:
   How many objects (weight) can it hold?

3. Experiment building different bridges by arching the paper, pleating (multiple folds) the paper, using more than one sheet of paper. Test the strength of each bridge.
   How many objects can each bridge hold?
   Which bridge held the most weight?

Another Idea to Try
Brainstorm ways you could make a bridge even stronger. What materials, other than paper, might you use? Try out your ideas.

Building With Recycled (Non-Traditional) Materials
You and your child build with a variety of materials and explore their properties before you begin building a specific object or structure.

STEM Connections
Exploring how different building materials have different properties because of what they are made of and their size and shape
Designing and building with various materials
Noticing problems and coming up with possible design changes
What’s Needed
Recycled/found materials such as shoeboxes, paper towel tubes, paper cups, straws, egg cartons, cereal boxes, clean yogurt containers and lids, etc. Also provide paper, scissors, tape and glue for joining the materials.

1. Look at and talk about your materials. Compare and discuss the attributes (characteristics) of each material such as shape, size, strength and flexibility.

2. Ask children what they would like to build. Ideas might include a fire truck, a boat or a house or garage for a toy. Possibilities are unlimited!

3. Take time to explore the materials and test some ideas. When you have an idea of what you would like to build, talk about and collect the materials you will need.
   - Do we have enough lids for tires?
   - What can we use for a sail? How can we attach it to our boat?
   - What if we use paper towel tubes instead of these shorter tubes?
   - Why did you choose this material to build your ____?

4. Work together on your project. Encourage your child to do most of the material selection, connecting of materials and construction. Work together to solve construction problems.

5. If you have room, let your child take several days to work on an idea.

Another Idea to Try
Select one item from your materials, for example an egg carton. Talk about how it was designed for a specific purpose—to keep eggs from touching and breaking. Brainstorm together new and creative uses for the carton.

Do this with several different materials. Be creative and open to all suggestions.