

**Description:** Children will make tall towers together by playing a game.

## Materials

- Lots of stackable blocks
- A number spinner or large die

## Set Up

- Set out the blocks on the floor along with the spinner or die.
- Each child will take turns spinning/rolling and then must stack that many blocks onto their tower.

## Head Start Early Learning Outcome Framework Alignment

- **Goal P-SCI 5.** Child plans and conducts investigations and experiments.

DEVELOPMENTAL PROGRESSION		INDICATORS
36 to 48 Months	48 to 60 Months	By 60 Months
With adult support, engages in simple investigations and experiments, such as building a "bridge" out of classroom materials and seeing how many dolls it will hold before it collapses. Records data with teacher assistance, mostly using pictures and marks on a page.	With increasing independence, engages in some parts of conducting complex investigations or experiments. Increasingly able to articulate the steps that need to be taken to conduct an investigation. Uses more complex ways to gather and record data, such as with adult support, makes a graph that shows children's favorite snacks.	<ul style="list-style-type: none"> <li>• Articulates steps to be taken and lists materials needed for an investigation or experiment.</li> <li>• Implements steps and uses materials to explore testable questions, such as "Do plants need water to grow?" by planting seeds and giving water to some but not to others.</li> <li>• Uses senses and simple tools to observe, gather, and record data, such as gathering data on where children's families are from and creating a graph that shows the number of children from different countries.</li> </ul>

● **Goal P-MATH 1.** Child knows number names and the count sequence.

DEVELOPMENTAL PROGRESSION		INDICATORS
<b>36 to 48 Months</b>	<b>48 to 60 Months</b>	<b>By 60 Months</b>
Says or signs some number words in sequence (up to 10), starting with one. Understands that counting words are separate words, such as "one," "two," "three" versus "onetwothree".	Says or signs more number words in sequence.	• Counts verbally or signs to at least 20 by ones.

These images have been adapted from: U.S. Department of Health and Human Services, Administration for Children and Families. "Head Start Early Learning Outcome Framework." *Head Start Early Learning Outcome Framework*, Office of Head Start. <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/elof-ohs-framework.pdf>

### Suggestions for Teaching

Depending on the age of the children, this activity will look different. This is an open ended and exploratory activity, there is no wrong way to do it! Keeping that in mind, here are some suggestions:

Here are some activity extensions and adaptations:

- Challenge the children to build towers with different numbers of blocks. Can they make a tower with two blocks? Five blocks? Ten blocks?
- Have the children sort the blocks into different categories before building their towers.
- Use the blocks to measure different items around the room. How many blocks tall are the tables? Chairs?

**Description:** Children will build roller coasters using problem-solving skills to move different balls!

## Materials

- Pool noodles cut in half-length wise.
- Variety of balls (ping pong, golf)
- Tape (painter’s tape if possible)

## Set Up

- Give the children roller coasters tracks (pool noodles) and a variety of balls. Feel free to let them tape tracks together or to walls or furniture for support.
- Encourage children to start building with the noodles and then test them out.

## Head Start Early Learning Outcome Framework Alignment

- **Goal P-SCI 2.** Child engages in scientific talk.

DEVELOPMENTAL PROGRESSION		INDICATORS
36 to 48 Months	48 to 60 Months	By 60 Months
Begins to use scientific vocabulary words with modeling and support from an adult. Sometimes repeats new words offered by adults.	Uses a greater number of scientific vocabulary words. Repeats new words offered by adults and may ask questions about unfamiliar words.	<ul style="list-style-type: none"> <li>• Uses scientific practice words or signs, such as observe, describe, compare, contrast, question, predict, experiment, reflect, cooperate, or measure.</li> <li>• Uses scientific content words when investigating and describing observable phenomena, such as parts of a plant, animal, or object.</li> </ul>

● **Goal P-SCI 4.** Child asks a question, gathers information, and makes predictions.

DEVELOPMENTAL PROGRESSION		INDICATORS
36 to 48 Months	48 to 60 Months	By 60 Months
Asks simple questions. Uses adults as primary resources to gather information about questions. With adult support and modeling, makes simple predictions, such as "I think that the golf ball will be heavier than the ping pong ball."	Asks more complex questions. Uses other sources besides adults to gather information, such as books, or other experts. Uses background knowledge and experiences to make predictions.	<ul style="list-style-type: none"> <li>• Asks questions that can be answered through an investigation, such as "What do plants need to grow?" or "What countries do the children in our class come from?"</li> <li>• Gathers information about a question by looking at books or discussing prior knowledge and observations.</li> <li>• Makes predictions and brainstorms solutions based on background knowledge and experiences, such as "I think that plants need water to grow." or "I think adding yellow paint to purple will make brown."</li> </ul>

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### Suggestions for Teaching

Depending on the age of the children, this activity will look different. This is an open ended and exploratory activity, there is no wrong way to do it! Keeping that in mind, here are some suggestions:

Here are some activity extensions and adaptations:

- Challenge the children to make a roller coaster of different lengths using multiple pieces of pool noodles.
- Have children use different size balls and compare how far they go.
- Experiment with making the balls go different speeds. How can they make the balls go faster or slower?

**Description:** Design and build different shapes using colored tiles.

**Materials**

- Tangrams
- Picture Outlines

**Set Up**

- Encourage children to design and build different shapes or fill in the different pictures using the tiles.

**Head Start Early Learning Outcome Framework Alignment**

● **Goal P-SCI 3.** Child compares and categorizes observable phenomena.

DEVELOPMENTAL PROGRESSION		INDICATORS
36 to 48 Months	48 to 60 Months	By 60 Months
<p>Sorts objects into groups based on simple attributes, such as color. With support, uses measurement tools to quantify similarities and differences of observable phenomena, such as when a child scoops sand into two containers and with adult assistance, determines which container holds more scoops.</p>	<p>With increasing independence, sorts objects into groups based on more complex attributes, such as weight, sound, or texture. Uses measurement tools to assess the properties of and compare observable phenomena.</p>	<ul style="list-style-type: none"> <li>• Categorizes by sorting observable phenomena into groups based on attributes such as appearance, weight, function, ability, texture, odor, and sound.</li> <li>• Uses measurement tools, such as a ruler, balance scale, eye dropper, unit blocks, thermometer, or measuring cup, to quantify similarities and differences of observable phenomena.</li> </ul>

● **Goal P-MATH 3.** Child understands the relationship between numbers and quantities.

DEVELOPMENTAL PROGRESSION		INDICATORS
36 to 48 Months	48 to 60 Months	By 60 Months
<p>Begins to coordinate verbal counting with objects by pointing to or moving objects for small groups of objects laid in a line (referred to as one-to-one correspondence). Begins to understand that the last number represents how many objects are in a group (referred to as "cardinality").</p>	<p>Understands that number words refer to quantity. May point to or move objects while counting objects to 10 and beyond (one-to-one correspondence). Understands that the last number represents how many objects are in a group (cardinality).</p>	<ul style="list-style-type: none"> <li>• When counting objects, says or signs the number names in order, pairing one number word that corresponds with one object, up to at least 10.</li> <li>• Counts and answers "How many?" questions for approximately 10 objects.</li> <li>• Accurately counts as many as 5 objects in a scattered configuration.</li> <li>• Understands that each successive number name refers to a quantity that is one larger.</li> <li>• Understands that the last number said represents the number of objects in a set.</li> </ul>

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### Suggestions for Teaching

Depending on the age of the children, this activity will look different. This is open ended and there is no wrong way to explore Tangrams!

Here are some activity extensions and adaptations:

- Try sorting the tangrams by shape or color before designing different pictures.
- Encourage children to design patterns using the tiles.
- Make the designs three-dimensional. Stack the tangrams on top of each other.

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Developed by the Sciencenter for the Collaborative for Early Science Learning.

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