



## Blocks: Construction/Stability Challenge

Children work and experiment with varied construction materials to build stable structures.

<p><b>Big Ideas</b></p>	<p>The process of design and construction includes imagining and being inspired, asking questions, researching, planning, creating, and improving our models. This process includes time to work alone and with others. Through using materials and interacting with them, people learn important concepts and gain skills relating to physical science, engineering and technology, and the arts.</p>
<p><b>Guiding Questions</b></p>	<p>What process helps you construct structures, ideas, and works of art?</p>
<p><b>Vocabulary</b></p>	<p><b>stable:</b> something stays up and doesn't fall down.  <b>challenge:</b> something really tricky to do  <b>perspective:</b> a way to see or think about things</p>
<p><b>Materials and Preparation</b></p>	<ul style="list-style-type: none"> <li>● chart with written challenge to present to children</li> <li>● <a href="#">engineering design process visuals</a></li> <li>● varied blocks including unit, foam, hollow, etc.</li> <li>● beautiful stuff</li> <li>● Ipad, or other technology to document</li> </ul> <p>Identify an engaging challenge for children. The challenge could be: construct a stable, two or three story building, a tall tower, or a playground structure. Write the challenge title and a short description on chart paper and bring this to Intro to Centers. Gather Beautiful Stuff to add to the Block Center.</p>
<p><b>Intro to centers</b></p>	<p><i>In the versions of the Three Little Pigs stories we have been reading, some of the pigs' houses seem unstable; we have talked about how people choose building materials carefully considering the</i></p>

	<p><i>environment and the purpose of their structure, and that straw can be a strong material when used in certain ways.</i></p> <p><i>This week in the Block Center, we have a challenge, something tricky, for you to do.</i></p> <p>Show children the chart paper and read the challenge.</p> <p><i>How would you build a stable structure like a tall tower or a 3 story building? Turn and talk to a friend about how you can solve this challenge. Share your perspective, you way of thinking, with each other</i></p> <p>Think, Pair, Share.</p> <p><i>You can refer to the steps for the Engineering Design process as you think about what to do just like engineers and architects would.</i></p> <p>Show the visuals steps and guide children through them:</p> <p><b>ASK:</b> What am I trying to accomplish? How have others approached it? Research.</p> <p><b>IMAGINE:</b> What are some solutions? Brainstorm ideas. Choose the best one.</p> <p><b>PLAN:</b> Draw a diagram. Make lists of needed materials.</p> <p><b>CREATE:</b> Follow the plan and create something. Test it out.</p> <p><b>IMPROVE:</b> What works? What doesn't? What could work better? Modify the design to make it better. Test it out.</p> <p><i>Start by asking yourself what you are trying to do, for example: How would we build a tall tower? Where could we get ideas for how to build it? Imagine how you would do it. Make a plan and create your structure.</i></p> <p>Model the steps.</p> <p><i>You can experiment with different kinds of blocks, Lego and Beautiful Stuff.</i></p> <p>Show the building materials.</p> <p><i>You can use the iPad to document your stability experiments. As you try your different perspectives for how to solve this challenge, we can document your ideas on this chart paper.</i></p> <p>Show the chart and model writing one of the ideas children shared.</p> <p><i>Work together as pairs and small groups as you figure out how to tackle this challenge. You can start by making a plan for your structure at Writing &amp; Drawing.</i></p>
<p><b>During centers</b></p>	<p>Remind children of the challenge and invite them to talk to each other about how they can address it. As they think about how to tackle it, guide them to use the steps in the Engineering Design Process.</p>

	<p>Check in occasionally to see if children have any questions or seem stuck. When a group has finished their work, debrief about the experience and write down their solutions on the chart paper. Encourage children to take pictures and videos of their process. Remind children they can use the plans they are working on in Writing &amp; Drawing to help with their structures.</p>
<b>Facilitation</b>	<ul style="list-style-type: none"> <li>● What ideas do you have about solving this challenge?</li> <li>● How can the design process help you as you work on this challenge?</li> <li>● How can you test your ideas out?</li> <li>● How will you work together to construct the best solution to this challenge?</li> <li>● How does making a plan help you solve this challenge?</li> <li>● What resources do you have to help you solve this challenge?</li> </ul>
<b>Standards</b>	<p><b>SL.1.K.a</b> Participate in collaborative conversations about kindergarten topics and texts with peers, and adults in small and larger groups.</p> <p><b>SL.2.K.b</b> Ask and answer questions in order to seek help, gather information, or clarify something that is not understood.</p> <p><b>SL.3.K.b</b> Add drawings or other visual displays to descriptions as desired to provide additional detail.</p> <p><b>L.6.K</b> Use words and phrases acquired through conversations, reading and being read to, and responding to texts.</p>

**Notes**