

Science, technology, engineering, art, and mathematics (STEAM) concepts are in the world all around us. Children learn to recognize and understand these concepts as they play. This comes both through their own experiences and through what child development theorist Lev Vygotsky termed “scaffolding” (“the actions teachers can take to help children reach the next level of possibility for their learning” – Deb Curtis and Maggie Carter, child educators and authors). As you know, our classroom has been exploring stacking with a variety of materials for several weeks now. The focus on height has morphed into experimenting with new more horizontal structures as well as building structures for use (like bridges for the obstacle course or boxes to hold items). There have been many opportunities to introduce and explore several different STEAM concepts.

STEAM Through Stacking

As Jax walks across his plank stack, some pieces jiggle when he gets too close to the edge. He gets off and readjusts them, moving them closer to the center of the plank. He is demonstrating **mathematical reasoning**, using math concepts to solve his problem.



Sometimes, the children will fill their structures with different materials. Milla drops some glass gems into a jar to use with her stacked structure. Kailey covers her ears and Jax says, “It’s too loud!” “Milla,” I say, “I see Kailey covering her ears and I heard Jax say that it was too loud for him.” Milla looks at them and responds, “Ok.” She then lowers her handful of gems slowly into the jar before releasing her grip. Here, Milla demonstrated an understanding of **cause and effect**.

Gianni lays blocks on top of the elevated wood plank that has been created for the obstacle course. He extends his hand, hoping for help to walk across his “bridge”. “Do you think it is safe? Will you fall?” I ask him. “No, it’s safe.” He carefully shuffles across the log. Through our dialogue he has had the opportunity to **make a prediction**, an important step in **scientific inquiry**.

Shape identification at the light table has led to other conversations in the classroom about shapes. At lunch, Alden holds up a rectangular piece of tofu. “Rectangle,” he says. “That *is* a rectangle,” I respond, “What other shapes do we see in our food?” Lake exclaims, “I have squares!” She points to her quartered sandwich. Jax holds up an angled Cheez-it. “Diamond.” “Here’s a triangle”, says Milla, showing us the inside of a halved strawberry. The preschoolers are **identifying common shapes** in their everyday environment, a **geometry concept**.

As Lake creates her flat structure using different shapes, she opts to use only blue tiles. In order to do this, she is **sorting and classifying objects** (an **algebra and functions** concept) as well as **comparing and contrasting** the similarities and differences of objects (part of the **scientific inquiry process**).

