

Building Big and Small

An 8-week After-School Series for Grades 2-4 by Big Learning, Inc.

Overview

Packed with Big Learning: Kids release their inner builder in this creative hands-on series. Each child will build **toy-size** structures that they take home for imaginative play. They'll also collaborate with other kids on **full-size** temporary play structures such as tipis and forts – and then play in their structures! Kids will stretch their understanding of what makes structures strong, learn and apply geometry and measurement concepts, and learn new history, vocabulary, and craft skills.

No “cookie cutter” projects: Every task engages children’s creative energy, and every child’s project is unique. Design choices pull kids into the learning experience.



Kids grow real grass on their Green Roof structures

Class Outline



Castle with working drawbridge

1. What are we making, and why does it matter? (5-10 minutes). The class begins with a real-world-based discussion of the structures and building principles for that day. For example, before building castles, kids analyze photos of castles that are still standing around the world and discuss the function of castle parts.

2. New building techniques (5 minutes): Next, we demonstrate the techniques kids will use to build their structures.

3. Building, playful testing, and problem solving (45 minutes): Kids build their structures and test them by playing with them or playing inside them. They are guided in finding solutions to design challenges and building creative enhancements.

4. Cleanup (5 minutes)

5. What did we figure out? (5 -10 minutes): Kids share their work and discuss what they learned while they worked.

6. Going home (5 minutes): Teachers go over the take-home materials, which include a review of the day’s concepts and vocabulary, plus additional activities and resources for students to share with their families.



Tipi in a Classroom



Session Outline

Session	What we make	Big Learning
1	Big: Forest Lean-to. An emergency shelter any kid can build.	Characteristics of a good shelter, warm blooded animals, heating small spaces.
2	Small: Green Roof Building Kids design and build a frame structure and plant grass seeds on a terrarium rooftop.	Framing and sheathing, evaporation and condensation, conditions for sprouting seeds.
3	Big: Tipis. Students construct tipis, measure and cut out tipi covers, and decorate the covers with authentic Native American symbols.	Geometry of circles and cones, Great Plains geography, types of maps,, history and functional advantages of tipi-type dwellings.
3	Big: Toy Castles. Students build simple castles with authentic architectural features.	History of castles as fortifications; constructing pulleys and hinged mechanisms.
5	Small: Apartment Interiors. Students design and build scale models of new interiors for “gutted” apartments, including scale size furniture.	Scale and proportion concepts, measuring, real-life sizes of common objects and rooms, mathematical “nets” to make 3D folded shapes.
6	Big: Movie Sets. Students build free-standing set pieces and act their own movie scenes	Strength characteristics of triangles, measuring right angles, “false front” buildings.
7	Small: Plane-based Monuments. Students design and build monuments inspired by plane-based structures like the Vietnam Veterans Memorial.	Making structures from polygons, using tessellations, combining art and architecture, famous modern monuments.
8	Big: Chairs. Kids construct a comfy chair they can sit in.	Building for strength, building weight-bearing structures.