Buildzi

Mid-Valley
STEM-CTE HUB

www.midvalleystem.org
midvalleystemctehub@linnbenton.edu
Linn-Benton Community College
Albany Campus - CC-212

Buildzi

The Buildzi STEAM Kit turns stacking and building into a fast-paced, hands-on learning experience that fosters spatial reasoning, problem-solving, and collaboration. Each set includes uniquely shaped building blocks and activity cards that challenge students to build towers, replicate patterns, and solve engineering-style puzzles. Through open-ended and structured challenges, students strengthen visual perception, fine motor skills, and design thinking—all essential STEAM competencies.

Grade Level

K - 8th

Group Size

2 - 4 Students per Buildzi set

Time Duration

15 - 45 minutes

Content of Kits

Components

- 7 Buildzi sets
- 3 Buildzi challenge card sets

Usage

Getting Started

1. **Introduce the Buildzi Blocks & Activity Cards -** Show the unique block shapes and explain that students will build towers or patterns based on card prompts.

2. **Demonstrate a Sample Build -** Model a basic tower using one of the cards, highlighting how careful placement and strategy are required.

3. **Allow Free Play First -** Let students explore stacking the blocks freely to develop familiarity with balance and spatial relationships.

4. **Start with Basic Challenges -** Use beginner-friendly cards to ease students into structured builds before progressing to harder challenges.

5. **Encourage Discussion -** Ask students to explain why certain structures succeed or fail and what strategies they use to build stable designs.

Storage

- Store each Buildzi set separately
- Return all Buildzi sets and card sets to the provided storage bin between uses.

Troubleshooting

- **Blocks Tipping Easily -** Encourage students to build with a wider base or lower center of gravity, then progress to more challenging designs.
- **Students Struggling with Complex Builds -** Pair students or allow them to practice simpler builds before attempting more difficult card challenges.
- **Overwhelmed by Speed Challenges -** Provide an option for timed vs. untimed rounds so all students can participate comfortably.

Activity Guide

Beginner

Tower Building Basics
Students select beginner-level activity cards and attempt to replicate the tower design, focusing on accuracy and stability rather than speed.

Intermediate

Pattern Matching & Build Race
In pairs or small groups, students race to replicate patterns from Buildzi cards as quickly and accurately as possible, building teamwork and visual processing skills.

Advanced

Creative Engineering Challenge
Students design and build original tower structures or functional designs (bridges, arches) using all Buildzi blocks. They test for stability and height, revising as needed.

Extension Activities:

STEM Story Challenge
Students select a STEM-themed prompt (e.g., build a rocket tower, a castle, or a robot) and use Buildzi blocks to create a structure that matches the theme. They present their build and describe its features.

Free Build Exploration
Allow students time to choose their own challenge cards to complete.

Learning Extensions

STEAM Connections: Engineering - Math - Science

Learning Objectives:

- Develop spatial reasoning and pattern recognition.
- Strengthen fine motor coordination and visual-motor integration.
- Foster problem-solving through design challenges.
- Build collaboration and communication skills.
- Apply engineering principles of balance, stability, and iterative testing.

Career Connections:

- **Architect -** Uses spatial visualization and structural design principles.
- **Structural Engineer -** Designs and tests buildings for stability and performance.
- **Industrial Designer -** Prototypes physical products with visual and functional precision.
- **Construction Manager -** Oversees the assembly and balance of large-scale physical structures.
- **Game Designer -** Creates physical or digital puzzles that rely on spatial logic.

Essential Employability Skills:

- Creativity & Innovation
- Critical Thinking
- Collaboration
- Attention to Detail
- Communication
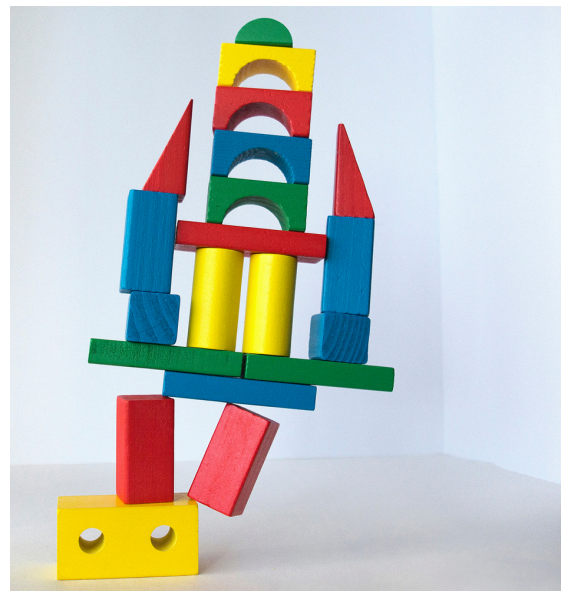
Resources and Accessibility

Safety Guidelines

- Store blocks away from the edges of desks or tables to prevent falling hazards.
- Wipe blocks regularly to maintain hygiene.

Library Catalog

Library Resources

Accessibility

- Allow flexible roles (builder, spotter, timer, recorder) so all students can participate meaningfully.
- Use larger or adapted pattern cards for students with visual impairments.
- Offer verbal building prompts for students with reading challenges.
- Permit collaborative builds where students can assist one another physically or conceptually.

Feedback

QR to feedback survey