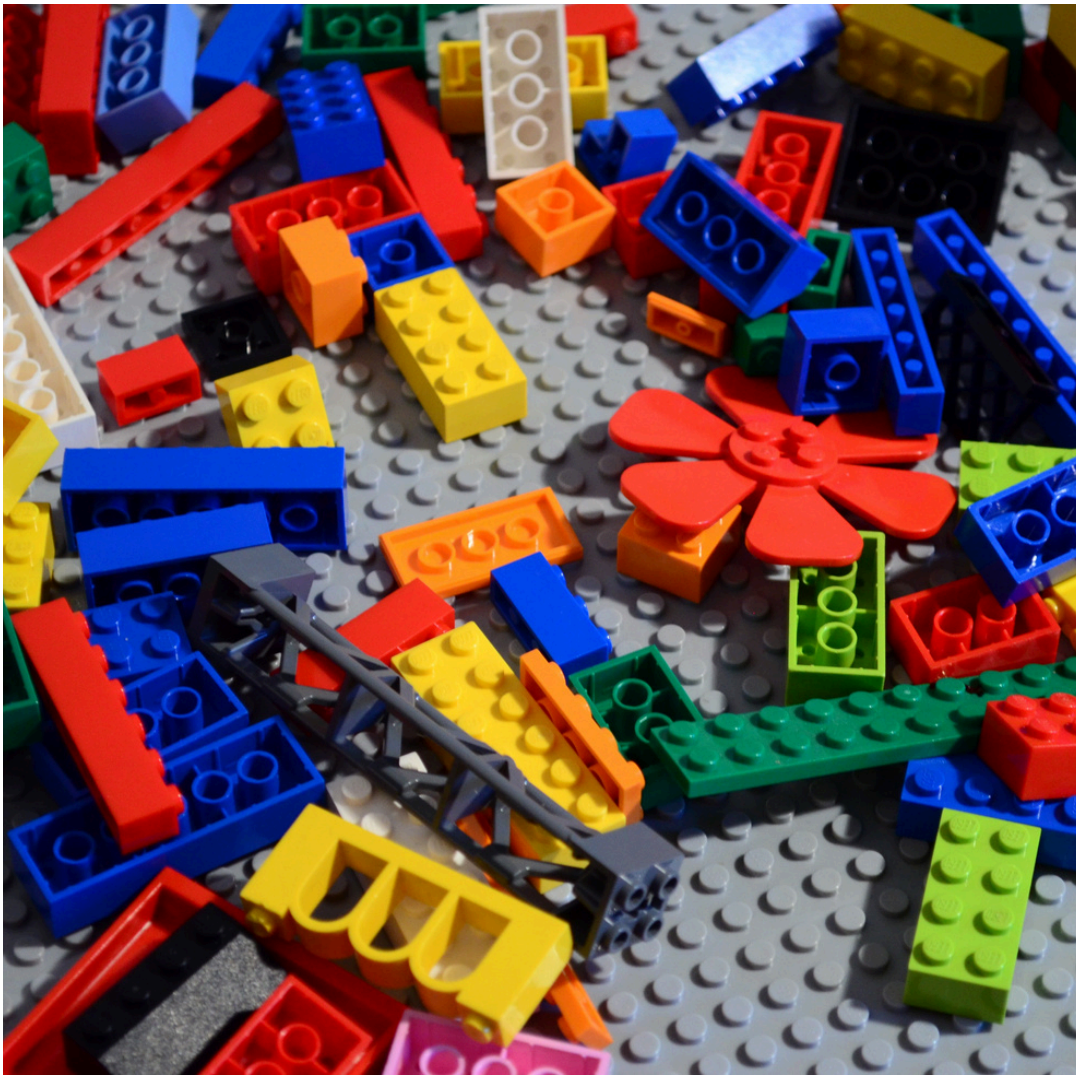
Bulk LEGO



Mid-Valley
STEM-CTE HUB

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

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Bulk LEGO

The Bulk LEGO Kit provides an open-ended, hands-on learning experience that encourages creativity, engineering, and problem-solving. With several gallons of assorted LEGO bricks and multiple build plates, students can explore architectural design, mechanical structures, and collaborative building challenges. This kit supports STEAM learning by fostering spatial reasoning, structural integrity, and storytelling, making it an excellent tool for engaging students in engineering, mathematics, and artistic expression.

Grade Level

K - 12th grades

Group Size

Accomodates up to 25 students

Time Duration

30 minutes - 2 hours

Content of Kits

Components

- Large bin of assorted LEGO bricks and accessory pieces
- Build plates
- LEGO challenge cards

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Usage

Getting Started

1. **Introduce Free-Building** – Allow students to freely explore the LEGO pieces to spark creativity and familiarize themselves with different brick types.
2. **Set a Simple Challenge** – Start with a quick build prompt, such as creating a bridge, tower, or favorite animal, to encourage problem-solving.
3. **Incorporate Collaboration** – Have students work in pairs or small groups to design and build a shared structure while promoting teamwork and communication.
4. **Connect to STEAM Concepts –** Introduce discussions on stability, symmetry, and engineering principles by analyzing how different designs function.

Storage

When not in use, please break down all LEGO creations and return them to the storage bin with the lid clamped on.

Troubleshooting

If LEGO pieces are not clicking together, make sure the studs on top of the bricks are intact and that no foreign objects are obstructing the open spaces on the bottom of the bricks.

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Activity Guide

Beginner

Basic Structures
Students will build simple structures such as towers, bridges, or houses to explore stability, balance, and basic engineering concepts. This activity introduces fundamental design principles and encourages creativity.

Intermediate

Collaborative Build Challenge
Students will work in small teams to create a shared LEGO project, such as a city, a theme park, or a futuristic habitat. Each team member is responsible for designing a specific part, encouraging teamwork, communication, and cooperative problem-solving.

Advanced

Architectural and Engineering Challenges
Students will create complex structures inspired by real-world architecture or engineering feats, focusing on stability, load distribution, and intricate design elements. This activity encourages precision, planning, and structural integrity analysis.

Extension Activities:

STEAM-Themed Design Challenges
Provide students with STEAM-related design prompts, such as building a model of a sustainable city, a bridge that can hold weight, or a famous landmark. This activity applies engineering, math, and creative problem-solving.

Storytelling Through LEGO
Encourage students to create a LEGO scene or model that tells a story. They can build characters, settings, and events, then present their narratives to the class. This integrates literacy, communication, and artistic expression with hands-on learning.

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Learning Extensions

STEAM Connections: Structural Engineering - Geometry

Learning Objectives:

- Develop spatial reasoning and problem-solving skills through hands-on building.
- Explore engineering concepts such as balance, stability, and weight distribution.
- Enhance creativity and innovation open open-ended design challenges.
- Improve collaboration and communication skills through group projects.
- Apply STEAM principles in real-world-inspired construction and problem-solving.

Career Connections:

- **Architecture –** Develops skills in structural design, spatial reasoning, and model creation.
- **Engineering –** Encourages problem-solving and structural design, fundamental for civil and mechanical engineering careers.
- **Industrial Design –** Introduces prototyping, product development, and functional design thinking.
- **Urban Planning –** Encourages exploration of city planning, infrastructure development, and sustainable design.
- **Animation & Set Design –** Provides experience in model building and storytelling, relevant to animation, game design, and theatrical set creation.

Essential Employability Skills:

- Critical thinking
- Collaboration
- Creative problem-solving
- Communication
- Attention to detail
- Project management
- Innovation

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Resources and Accessibility

Safety Guidelines

- **Avoid Small Parts with Young Children** – Keep LEGO pieces away from young children who may put them in their mouths, as they pose a choking hazard.
- **Keep Workspaces Clear** – Encourage students to build on flat surfaces and keep loose pieces contained to prevent tripping hazards.
- **Store Pieces Safely** – Keep LEGO pieces away from young children who may put them in their mouths, as they pose a choking hazard.
- **Promote Gentle Handling** – Encourage students to use a brick separator instead of forcefully pulling pieces apart to prevent injuries.

Accessibility

- **Provide Tactile and Visual Cues** – Offer build plates or contrasting-colored bricks to assist students with visual impairments.
- **Encourage Verbal Collaboration** – Have students describe their building process and work in pairs or small groups to support those who benefit from auditory learning.
- **Incorporate Alternative Building Methods** – Allow students to create structures based on touch or pre-sorted categories rather than strictly following visual instructions.

Library Catalog

Library Resources

Feedback

QR to feedback survey