LEGO STEAM Park

Mid-Valley
STEM-CTE HUB

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LEGO STEAM Park

The LEGO® STEAM Park Kit invites early learners to explore foundational STEAM concepts through creative, hands-on play. Designed for preschool and early elementary students, this set includes colorful DUPLO® bricks, gears, pulleys, slides, and figures that let students build their own amusement park rides and scenes. As students tinker, test, and imagine, they develop early skills in cause and effect, problem-solving, sequencing, and storytelling—all while engaging with math, science, and engineering in a playful, age-appropriate way.

Grade Level

PreK - 2nd

Group Size

2 - 4 students

Time Duration

20 - 45 minutes

Content of Kits

Components

- 1 complete LEGO STEAM Park kit

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Usage

Getting Started

1. **Start with Free Play Exploration -** Allow students time to freely explore the DUPLO® pieces to get familiar with the gears, wheels, and characters.

2. **Introduce a Theme or Prompt -** Guide students with simple, imaginative prompts like “Build a ride that spins!” or “Design a slide for two people.”

3. **Demonstrate Moving Parts -** Show how gears and wheels work by creating a simple merry-go-round or cart—then let students rebuild it their way.

4. **Incorporate Storytelling -** Encourage students to create characters, assign them roles, and build parts of the park that support their stories.

5. **Use Clear Group Roles -** Assign simple roles like “builder,” “tester,” “brick finder,” or “storyteller” to help organize teamwork and engagement.

Storage

- **Use the Storage Tub -** Place all components back into a large, labeled plastic tub with a lid for easy storage and transport.

Troubleshooting

- **Pieces Missing or Mixed -** Do a group "brick hunt" at the end of each session and review bin labels or tray layouts to help kids sort correctly.

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Activity Guide

Beginner

Spin & Slide Adventure
Students build a small ride with a spinning element (like a carousel or swing) and a slide. They experiment with how pushing or turning gears causes parts to move. This introduces basic motion and hands-on discovery.

Intermediate

Park Planner Challenge
In teams, students design a section of the park with at least three rides or attractions. They use basic math to count pieces, create symmetry, or balance ride placement, then explain their design to classmates.

Advanced

Ride Redesign
Students build a ride (e.g., a seesaw or spinning wheel), test how it works, and then modify it to improve stability, speed, or capacity. They record what changed and why it made the ride better, learning about optimization and design.

Extension Activities:

STEAM Park Story Builders
Students build a park scene, then create a simple narrative featuring characters, problems, and solutions (e.g., a broken ride gets fixed, or a new invention is unveiled). They present their story using their builds as props, integrating creativity with engineering thinking.

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Learning Extensions

STEAM Connections: Engineering - Science - Design

Learning Objectives:

- Understand basic engineering concepts such as motion, force, and simple machines.
- Develop sequencing and spatial reasoning through structured and creative building.
- Practice problem-solving by testing and improving functional builds.
- Strengthen communication and storytelling through group collaboration and presentations.
- Foster early design thinking by building purposeful, imaginative park features.

Career Connections:

- **Mechanical Engineer –** Designs and tests systems involving motion, gears, and mechanical parts.
- **Architect –** Plans and models functional, people-centered spaces like amusement parks or public spaces.
- **Theme Park Designer –** Combines engineering, storytelling, and design to create interactive entertainment experiences.
- **Early Childhood Educator –** Facilitates hands-on, exploratory learning using creative play.
- **Set Designer or Builder –** Constructs immersive environments for theater, events, or media based on story and purpose.

Essential Employability Skills:

- Creativity & Innovation
- Teamwork
- Problem-Solving
- Communication
- Initiative

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Resources and Accessibility

Safety Guidelines

- **Supervise Small Parts Use –** While DUPLO® is generally safe for young children, always supervise use to prevent chewing or throwing pieces.
- **Keep Build Areas Clear –** Encourage students to keep pieces off the floor to avoid tripping or stepping on bricks.
- **Check for Clean Hands –** Have students wash or wipe hands before use to keep pieces clean and long-lasting.

Accessibility

- **Incorporate Movement Breaks –** For learners with attention or sensory needs, add structured movement or transition activities between builds.
- **Adapt Roles for Strengths –** Allow students to participate as storytellers, planners, or testers if physical building is difficult.
- **Provide Large, Flat Work Surfaces –** Use trays or accessible-height tables for students using wheelchairs or needing extra space to build.

Library Catalog

Library Resources

Feedback

QR to feedback survey