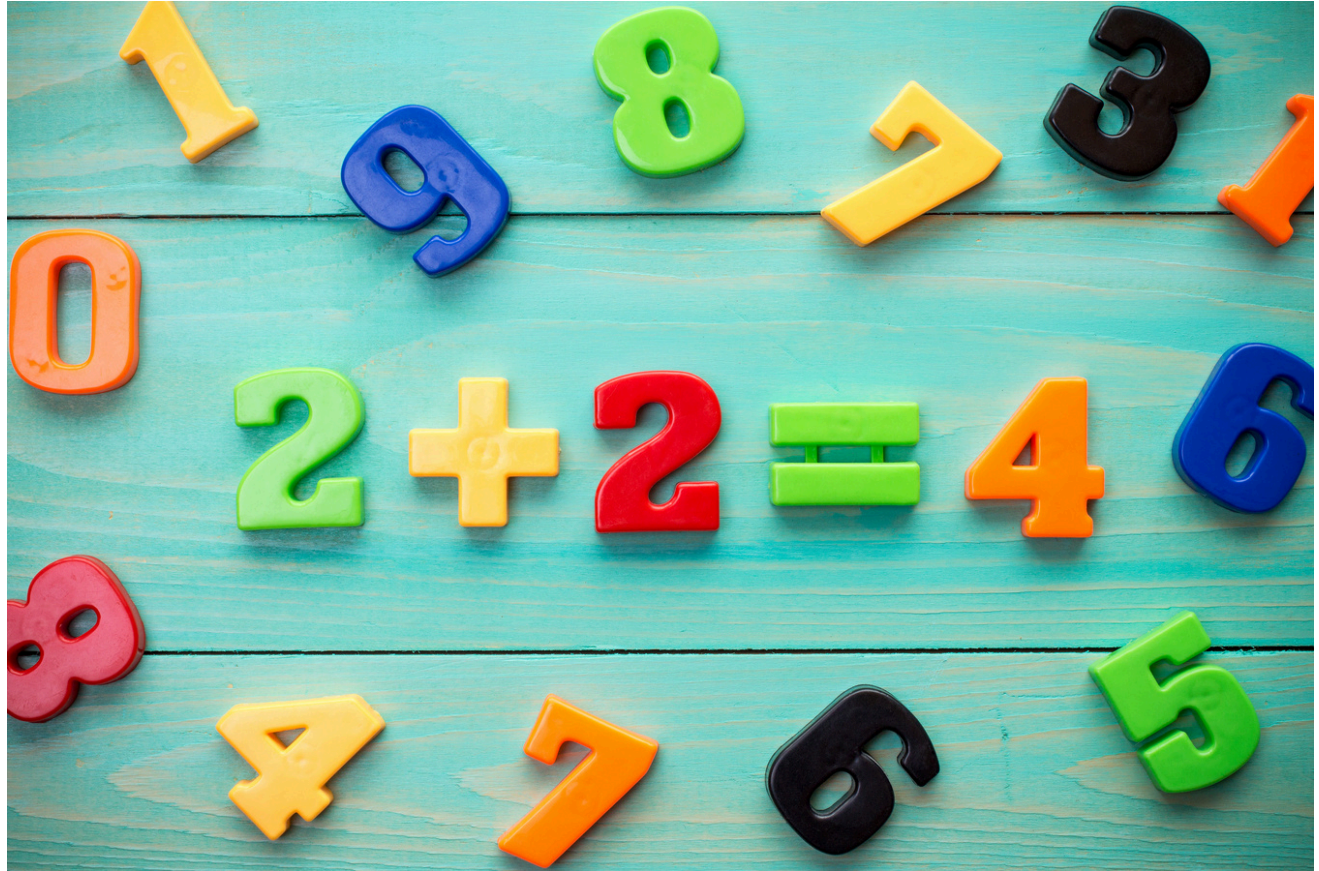


Early Learning Math



Mid-Valley
STEM-CTE HUB



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



Early Learning Math

The Early Learning Math STEAM Kit provides young learners with tactile, visual tools to explore math concepts through play. With Coogam Hexagon Puzzles, Pattern Blocks, a Bead Sequencing Set, Math Counters, and Towers of Hanoi, students develop foundational skills in patterning, sequencing, spatial reasoning, counting, and problem-solving. The kit encourages exploration, creativity, and mathematical communication, making it ideal for Pre-K through early elementary classrooms.



Grade Level

PreK - 3rd

Group Size

2 - 3 students per activity

Time Duration

10 - 20 minutes per activity

Content of Kits

Components

- 2 Coogam Hexagon Puzzle
- 1 Pattern Blocks
- 1 Bead Sequencing Set
- 1 Math Counters
- 4 Towers of Hanoi



Usage

Getting Started

1. **Unpack & Explore Materials** - Introduce the components and allow for brief open-ended exploration.
2. **Demonstrate Bead Sequencing** - Show how to follow or extend a pattern using the Bead Sequencing Set.
3. **Model Pattern Block Use** - Guide students to create simple patterns and discuss symmetry and shapes.
4. **Explain Towers of Hanoi** - Introduce the logic puzzle using 3–4 disks; demonstrate the movement rule (only move one disk at a time, a larger disk can't go on a smaller disk).
5. **Encourage Center-Based Play** - Set up each tool as a math station or center to encourage small-group exploration.

Storage

- Store each item (puzzles, blocks, beads, counters, Hanoi sets) in individual labeled containers.
- Keep small manipulatives (beads, counters) in resealable bags or boxes.
- Store Towers of Hanoi puzzles stacked carefully to avoid losing disks.

Troubleshooting

- **Students Struggling with Hanoi** - Start with 3-disk versions; allow students to model moves with verbal guidance.
- **Pattern Block Misuse** - Provide structure (task cards, pattern templates) to guide purposeful play.
- **Short Attention Spans** - Rotate activities frequently; 10-minute centers work well for early learners.



Activity Guide

Beginner

Pattern Builders

Students create AB, AAB, ABC, and other similar type patterns using Bead Sequencing Set, Pattern Blocks, and/or Math Counters. They identify, copy, extend, and create their own patterns.

Intermediate

Shape Explorers

Using Coogam Hexagon Puzzles and Pattern Blocks, students fill templates or create symmetrical designs. They record which shapes they used and describe how smaller shapes can combine to form larger ones.

Advanced

Hanoi Challenge

Students solve the Towers of Hanoi puzzle, starting with 3 disks and progressing to more. They track how many moves they used and reflect on strategies. Challenge: Can you find the minimum number of moves to solve each version?

Extension Activities:

Math Story Builders

Students create a short story or scene using Pattern Blocks, Counters, or Bead Sequences (ex: "I'm building a garden with these patterns"). They describe their creation using math language (colors, shapes, numbers, patterns).



Learning Extensions

STEAM Connections: Math

Learning Objectives:

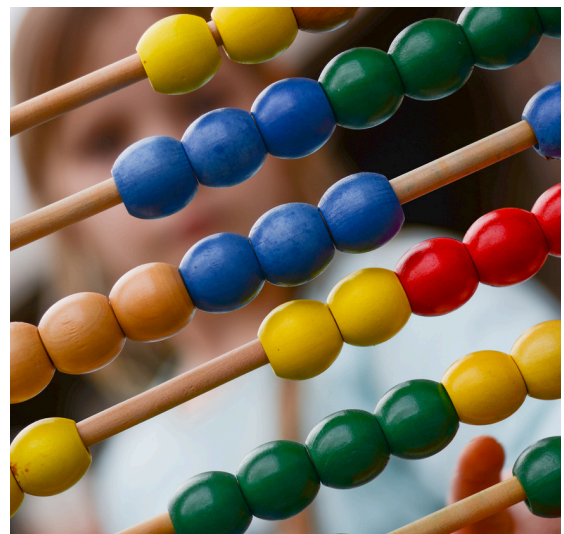
- Develop patterning and sequencing skills.
- Explore shape composition and spatial reasoning.
- Strengthen counting and one-to-one correspondence.
- Build logical thinking and problem-solving strategies.
- Communicate math thinking through language and design.

Career Connections:

- **Architect** - Uses spatial reasoning and pattern design.
- **Fashion Designer** - Applies patterning and sequencing in textiles.
- **Engineer** - Uses logic and spatial visualization in planning.
- **Artist** - Creates visual compositions using geometric shapes and color patterns.
- **Software Developer** - Applies sequencing and logical steps in programming.

Essential Employability Skills:

- Numeracy
- Critical Thinking
- Problem-Solving
- Creativity
- Communication





Resources and Accessibility

Safety Guidelines

- Supervise the use of small items (beads, counters, Hanoi disks) with younger learners.
- Store small parts securely to prevent choking hazards.
- Encourage gentle handling of puzzles and manipulatives to prevent damage.
- Wipe manipulatives regularly for hygiene, especially in shared-use environments.

Accessibility

- Provide larger, high-contrast versions of Pattern Blocks or templates.
- Offer verbal pattern prompts for students with reading challenges.
- Allow collaborative building with peer assistance for students with motor challenges.
- Adapt Hanoi puzzles with tactile disks or use simplified digital versions if needed.
- Provide extended time and flexible pacing for all students.

Library Catalog



Library Resources



Feedback

QR to feedback survey

