Glow Owlet Math Tool

Mid-Valley
STEM-CTE HUB

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

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Glow Owlet Math Tool

The Owlet Glow Math Tools STEAM Kit offers an interactive and visual approach to mastering foundational math concepts such as addition, subtraction, multiplication, division, and fractions. Designed for students in grades K–5, the Glow is a portable LED board that allows learners to manipulate dials and buttons to control light patterns, illustrating mathematical operations and equations. When paired with the GlowGrid, GlowPix, and Fractions apps, students receive immediate feedback, enabling them to visualize and understand mathematical operations concretely.

Grade Level

K - 5th

Group Size

1 - 2 per device

Time Duration

20 - 45 minutes

Content of Kits

Components

- 20 Owlet Cube Math Tools
  - Charging Cables
  - 5 overlays for the LED board
- Charging Station
- Teacher Guide

This kit requires:

- Chromebook
- Tablet
- Owlet apps (Links to download apps can be found at www.birdbraintechnologies.com)

Tablets and Chromebooks can be checked out through the Educator Lending Library. Apps are included with devices.

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Usage

Getting Started

1. **Unbox and Inspect Components -** Ensure all parts are present and undamaged. Familiarize yourself with the Glow LED board, overlays, and accessories.
2. **Set Up the Glow LED Board -** Place the Glow LED board on a stable, flat surface. Connect the USB charging cable and power on the device.
3. **Download and/or Launch the Apps -** On your tablet, Chromebook, or Mac, download the GlowGrid, GlowPix, and Fractions apps from the appropriate app store. Follow the on-screen instructions to pair the Glow LED board with the apps via Bluetooth.
4. **Begin Exploration -** Start with simple activities to familiarize students with manipulating dials and observing the corresponding light patterns. Encourage students to experiment with different combinations and observe the results.

Storage

- Store in a dry, dust-free environment to maintain functionality.
- Keep in the provided storage case to prevent loss and ensure easy access.
- Store USB charging cables labeled container to keep them organized.

Troubleshooting

- **Glow LED Board Not Powering On -** Ensure the USB charging cable is securely connected and the power source is functional.
- **App Not Connecting -** Verify Bluetooth is enabled on your device. Ensure the Glow LED board is within the Bluetooth range of your device. Restart the app and attempt to pair again.
- **Inaccurate Light Patterns -** Check that overlays are properly aligned and securely attached. Calibrate the Glow LED board through the app settings if necessary.

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Activity Guide

Beginner

Light Up Addition
Students will use the Glow LED board to model simple addition problems. By turning the dials to represent numbers and observing the corresponding light patterns, students can visualize the concept of addition. They will then combine the numbers to see the resulting sum, reinforcing their understanding of basic addition.

Intermediate

Fraction Fun
Students will explore fractions by using the Glow LED board to model various fractional values. By adjusting the dials to represent different fractions and observing the corresponding light patterns, students can visualize the concept of fractions. They will then compare and combine fractions to see how they relate to each other, enhancing their understanding of fractional values.

Advanced

Equation Exploration
Students will use the Glow LED board to write and solve mathematical equations. By manipulating the dials to represent numbers and operations, students can create equations and observe the corresponding light patterns. They will then solve the equations and verify their solutions, reinforcing their understanding of mathematical operations and problem-solving skills.

Extension Activities:

Creative Patterns
Students will use the Glow LED board to create and explore mathematical patterns. By adjusting the dials to represent numbers and operations, students can create repeating patterns and observe the corresponding light sequences. They will then analyze the patterns to identify the underlying mathematical principles, enhancing their understanding of pattern recognition and mathematical relationships.

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Learning Extensions

STEAM Connections: Math

Learning Objectives:

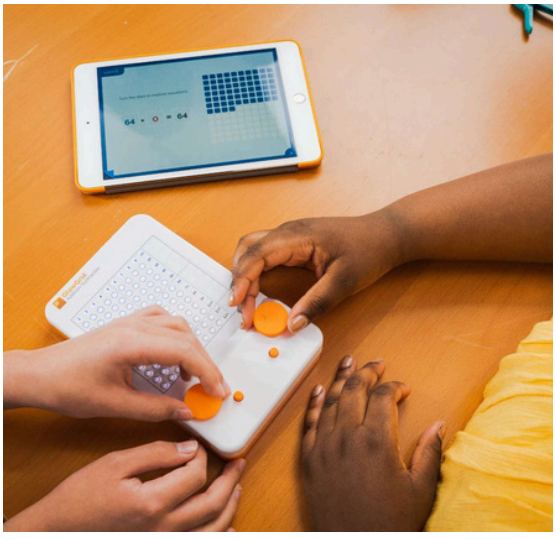
- Develop a concrete understanding of addition, subtraction, multiplication, division, and fractions.
- Enhance skills in creating and solving mathematical equations.
- Foster pattern recognition and number sense.
- Encourage collaborative problem-solving and mathematical reasoning.

Career Connections:

- **Mathematician -** Analyzes and interprets numerical data.
- **Financial Analyst -** Assesses financial data and trends.
- **Engineer -** Applies mathematical principles to design and problem-solving.
- **Educator -** Teaches mathematical concepts and fosters critical thinking.

Essential Employability Skills:

- Critical Thinking
- Collaboration
- Communication
- Adaptability



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Resources and Accessibility

Safety Guidelines

- Keep components in a safe, dry place when not in use.
- Use the Glow LED board and overlays as intended to prevent damage.
- Ensure students are supervised during activities to promote safe usage.

Accessibility

- Use tactile markers on dials to indicate values for students with visual impairments.
- Provide written instructions and visual cues for students with hearing impairments.
- Allow extended time for activities and assist as needed.
- Use simplified instructions and provide additional practice opportunities.

Library Catalog

Library Resources

Feedback

QR to feedback survey