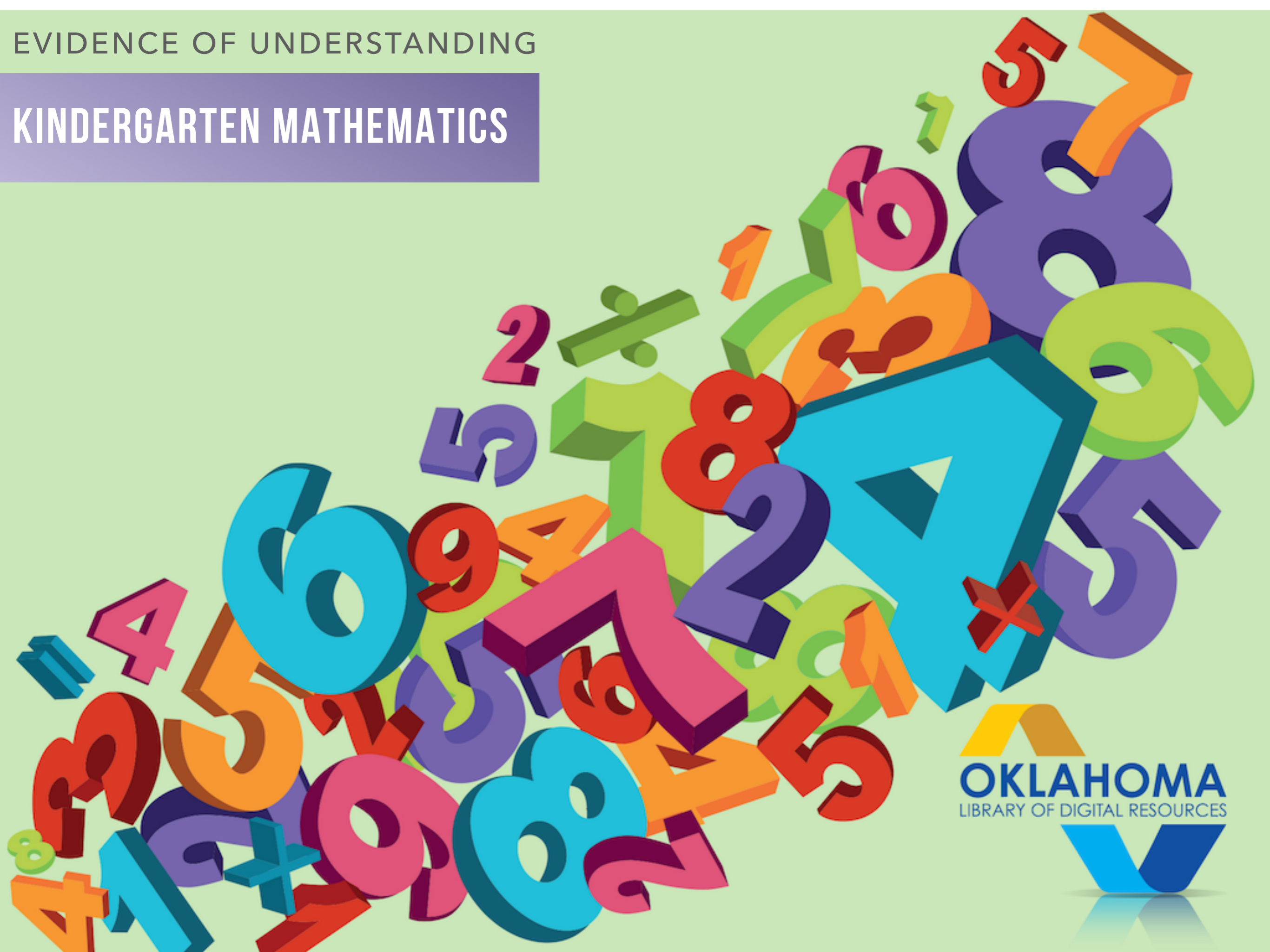# EVIDENCE OF UNDERSTANDING

KINDERGARTEN MATHEMATICS

The Oklahoma Library of Digital Resources is an innovative initiative to provide Oklahoma educators with high-quality, interactive teaching resources.
We appreciate our sponsors:

Thank you to the following educators for their work in curating digital resources:

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GETTING TO KNOW OKLDR

WHO IS OSSBA?

The Oklahoma State School Boards Association (OSSBA) works to promote quality public education for the children of Oklahoma through training and information services to school board members. The Association is a leader among leaders in Oklahoma education and a visible presence in the local school districts and throughout the state.

The OSSBA was created in 1944 to provide support for local school board members with a variety of information, assistance, and representation services. OSSBA reaches every school board member through training opportunities. It creates and encouraged effective leaders to promote public education and cultivates productive alliances with governing bodies. OSSBA trains school board members to participate in an effective and supportive manner to provide direction for educational innovation and improves public perception of education in Oklahoma by sharing strategies and tools with our member school districts to focus on the success of Oklahoma public education.

OSSBA works with school boards to demonstrate the impact they have on student achievement. We work to provide meaningful two-way communication of advocacy, services, and training activities to local boards of education and their stakeholders. Other services we provide that have a direct impact on student achievement include strategic planning and superintendent searches. Our legal team provides free legal information to the school districts.

WHY OKLDR?

In the summer of 2016, OSSBA set out on a journey assist teachers in the integration of technology into their classrooms. The Oklahoma Library of Digital Resources (OKLDR) became a collection of digital content resources selected by Oklahoma educators to support the Oklahoma Academic Standards. The resources were curated by teachers from school districts across Oklahoma. Each collection contained a variety of learning resources, such as videos, apps, pdf documents, and websites, and are designed so that teachers can then build their lesson plans. The resources helped bridge the digital equity gap among students while helping schools make the most of limited resources.

After collaborating with educators, school and district leaders for a couple of years, OKLDR has been enhanced in the following ways:

- Resources are now an Open Education Resource (OER) "book" format, making it easier to use and accessible on multiple devices.
- Resources map to ESSA expectations for evidence of student understanding and students' mastery of the academic standards.
- Tools are now agnostic and can be used on multiple devices.
- Lessons are now focused on student engagement through the use of technology. The first OKLDR version focused on teacher resources. **This is a major change**.
- To prioritize student learning, teacher resources are now located at the back of each book.

HOW TO USE THIS BOOK

The Oklahoma Academic Standards for this lesson are grouped together by key topics. Sometimes you will see only one standard, but other times you will see a grouping of standards.

Evidence of Understanding is the key. This is the concept you want your students to master that reinforces the standards. Mastery means deeper understanding, not just "skim the surface" learning.

Digital Tools are the recommended applications and/or tools for the lesson. Think of this element as the "supplies box."

In Practice is a suggested activity to engage the students to demonstrate mastery of the standard. You will notice that this is just one suggested lesson, and sometimes there might be a second lesson. The suggested lesson, developed by Oklahoma teachers, is meant to give you a starting point. You might decide to use the lesson or it might give you an idea of something else you could do to teach the concept.

MOVING FORWARD

As you can see the OKLDR book has been designed to inspire educators to have students demonstrate their understanding of the Oklahoma Academic Standards through the use of technology as a productivity tool. While educators have limited time in the day to plan and research high quality content, this book is a jumping off point, with suggested peer-reviewed activities and resources.

While you might encounter extra white space in the book, it is intentional for growth. As you integrate the activities into your lessons, you are encouraged to send us student work samples that might be included in the book, as well as additional activities and resources that could be included in future revisions.

Next Steps:

- We would love to add samples of student work to the activities, so please send the work to: okldr@ossba.org.
- If you would like to be involved in future course creation, or know teachers who would like to be involved, please contact us at: okldr@ossba.org.
- See anything that needs to be changed or enhanced? Contact us at: okldr@ossba.org.

NUMBERS AND OPERATIONS

WHOLE NUMBERS

K.N.1.1 Count aloud forward in sequence to 100 by 1's and 10's.

K.N.1.2 Recognize that a number can be used to represent how many objects are in a set up to 10.

K.N.1.3 Use ordinal numbers to represent the position of an object in a sequence up to 10.

K.N.1.4 Recognize without counting (subitize) the quantity of a small group of objects in organized and random arrangements up to 10. Clarification statement: Subitizing is defined as instantly recognizing the quantity of a set without having to count. "Subitizing" is not a vocabulary word and is not meant for student discussion at this age.

K.N.1.5 Count forward, with and without objects, from any given number up to 10.

K.N.1.6 Read, write, discuss, and represent whole numbers from 0 to at least 10. Representations may include numerals, pictures, real objects and picture graphs, spoken words, and manipulatives.

K.N.1.7 Find a number that is 1 more or 1 less than a given number up to 10.

K.N.1.8 Using the words more than, less than or equal to compare and order whole numbers, with and without objects, from 0 to 10.

Evidence of Understanding

Students will be able to use digital tools to read, write, discuss, represent, and count whole numbers up to10 and write numbers from 0-10 represented in pictures.

Digital Tools

- *Content Application -* Math Slide: Tens & Ones Counting in the Kitchen

- Digital Camera

- *Digital Portfolio -* Seesaw Google Classroom

- Interactive white board - Showbie, Realtimeboard, Simple Whiteboard, Explain EDU, Jamboard, ShowMe

In Practice

- Students will use the whiteboard application to create and count whole numbers. For example, students can use the whiteboard application to create tally marks and label the amount or identify a given number of objects.

- Students will use Math Slide: Tens & Ones to evaluate their understanding using ten frames with numbers and symbols, or counting in the kitchen to practice skills.

- Students will develop a video with their device camera counting to 100 to transfer into a digital portfolio.

SOLVE ADDITION AND SUBTRACTION

K.N.2.1 Compose and decompose numbers up to 10 with objects and pictures.

Evidence of Understanding

Students will be able to demonstrate how to compose and decompose numbers up to 10 using a digital tool.

Students will use a content application to develop skills on adding and subtracting.

Digital Tools

- *Video Editor*-Video Recording/Editing: Clips, WeVideo, Flipgrid, iMovie, Loom, PowerDirector, Clips, Do-Ink, Storyblocks, Majisto, Adobe Spark Video,

- *Content Application-* Add,Subtract, Count, and Learn

In Practice

- Students will be given different amounts of 2 different colored objects, a pre-made ten frame, and index cards labeled 1-10 as well as a +,-, and = card.

- Students will use a video editor to video themselves collaborating with others to fill a math equation (example __ + __=10) and demonstrate on the ten frame using the different colored objects provided.

DEVELOP FOUNDATIONAL IDEAS FOR FRACTIONS

K.N.3.1 Distribute equally a set of objects into at least two smaller equal sets.

Evidence of Understanding

Students will be able to use a digital portfolio and video editor to formulate equal group when given objects.

Digital Tools

- *Content Application-* Curious George Fair Share

- *Digital Portfolio -* Seesaw Google Classroom

- Video Recording/Editing: Clips, WeVideo, Flipgrid, iMovie, Loom, PowerDirector, Clips, Do-Ink, Storyblocks, Majisto, Adobe Spark Video,

In Practice

- Students will use a digital portfolio and video editor to record themselves formulating models of various equal sets with objects and transfer the video to their digital portfolio when complete.

- Students will use Curious George Fair Share to assess their understanding of making equal sets.

IDENTIFY COINS AND THEIR VALUES

K.N.4.1 Identify pennies, nickels, dimes, and quarters by name.

Evidence of Understanding

Students will be able to differentiate coins, as well as evaluate the correct value of various coins using digital tools.

Digital Tools

- Video Editor- Clips, WeVideo, Flipgrid, iMovie, Loom, Majisto

- Content Application -Saving with Piggy, Peter Pigs Money Counter, Break the Bank

- *Digital Portfolio- Seesaw Google Classroom*

In Practice

- Students will use a video editor to record themselves identifying coins and transfer to a digital portfolio.

- Using a content application, students will differentiate between the different types of coins.

ALGEBRAIC REASONING AND ALGEBRA

IDENTIFY PATTERNS

K.A.1.1 Sort and group up to 10 objects into a set based upon characteristics such as color, size, and shape. Explain verbally what the objects have in common.

K.A.1.2 Recognize, duplicate, complete, and extend repeating, shrinking and growing patterns involving shape, color, size, objects, sounds, movement, and other contexts.

Evidence of Understanding

Students will be able to identify, create, and complete patterns with quantity, numbers and shapes using a video editor and a content application then transfer into their digital portfolios.

Digital Tools

- *Video Recording/Editing: Clips, WeVideo, Flipgrid, iMovie, Loom, PowerDirector, Clips, Do-Ink, Storyblocks, Majisto, Adobe Spark Video,*

  - *Content Application - Pattern Shapes - Math Learning Center*

In Practice

- Students will use a video editor to create a video of patterns of various objects or symbols in the classroom.

- For additional practice, students will use Pattern Shapes Math Learning Center to identify, create and complete patterns of various shapes.

GEOMETRY AND MEASUREMENT

TWO AND THREE DIMENSIONAL SHAPES

K.GM.1.1 Recognize squares, circles, triangles, and rectangles.

K.GM.1.2 Sort two-dimensional objects using characteristics such as shape, size, color, and thickness.

K.GM.1.3 Identify attributes of two-dimensional shapes using informal and formal geometric language interchangeably.

K.GM.1.4 Use smaller shapes to form a larger shape when there is an outline to follow.

K.GM.1.5 Compose free-form shapes with blocks.

K.GM.1.6 Use basic shapes and spatial reasoning to represent objects in the real world.

Evidence of Understanding

Students will be able to develop, identify, and decompose various shapes using a drawing application and transfer into their digital portfolio.

Digital Tools

- *Content Application -* Pattern Shapes - Math Learning Center, Shapes 3D

- *Sketch Application-* Sketches School, Notes, ibis, Absolute Board, Google Draw, Auto Draw, Do-Ink, Paper by 53

- Digital *Portfolio -* Seesaw Google Classroom

In Practice

- Students will use a content application to differentiate, compare and match shapes.

- Students will use a sketch application to replicate what the teacher has drawn, and continue to work independently to create and reorganize shapes into categories.

- Students will transfer their final sketches to a digital portfolio.

LENGTH AND VOLUME CAPACITY

K.GM.2.1 Use words to compare objects according to length, size, weight, position, and location.

K.GM.2.2 Order up to 6 objects using measurable attributes, such as length and weight.

K.GM.2.3 Sort objects into sets by more than one attribute.

K.GM.2.4 Compare the number of objects needed to fill two different containers.

Evidence of Understanding

Students will be able to compare objects by length, size, weight, position, or location using a digital tool.

Digital Tools

- *Digital Portfolio -* <u>Seesaw</u> <u>Google Classroom</u>

- Video Recording/Editing: <u>Clips, WeVideo, Flipgrid,</u> <u>iMovie, Loom, PowerDirector,</u> <u>Clips, Do-Ink, Storyblocks, Majisto, Adobe Spark Video</u>,

In Practice

- Students will use a digital portfolio or video editor to record themselves comparing various objects by length, size, weight, position, or location and explain their reasoning. (ex: paperclips, crayons, etc).

TELL TIME

K.GM.3.1 Develop an awareness of simple time concepts using words such as yesterday, today, tomorrow, morning, afternoon, and night within his/her daily life.

Evidence of Understanding

Students will be able to distinguish the difference between morning, afternoon, and night using a sketch application and digital portfolio.

Digital Tools

- *Sketch Application-* Sketches School, Notes, ibis, Absolute Board, Google Draw, Auto Draw, Do-Ink, Paper by 53

- *Digital Portfolio-* Seesaw Google Classroom

- Video *Editor-* Clips We Video

In Practice

- Students will use a sketch application to formulate 3 images: one of morning, one of afternoon and one of night.

- Students will use a video editor to record themselves distinguishing and explaining the differences between the sketches. Students will transfer the video and sketches to a Digital Portfolio.

DATA AND PROBABILITY

CATEGORICAL AND NUMERICAL DATA

K.D.1.1 Collect and sort information about objects and events in the environment.

K.D.1.2 Use categorical data to create real-object and picture graphs.

K.D.1.3 Draw conclusions from real-object and picture graphs.

Evidence of Understanding

Students will be able to collect, sort, organize, and interpret data in various categories, pictures, and picture graphs using digital tools.

Digital Tools

- *Interactive Whiteboard* -Explain EDU, Jamboard, ShowMe Sketches School

- Video Recording/Editing: Clips, WeVideo, Flipgrid, iMovie, Loom, PowerDirector, Clips, Do-Ink, Storyblocks, Majisto, Adobe Spark Video,

- *Content*- Create Graphs

In Practice

- Students will use the Create Graphs content application to formulate picture graphs.

- Using a video editor students will be able to develop a recording of themselves collecting data (ex: favorite fruit, sport, etc) from their peers.

- Students will use an interactive whiteboard to create picture graphs with images previously loaded by the teacher and evaluate the results of their collected data using video editor or transfer into a digital portfolio.

RESOURCES

TEACHER

- Count and Graph

- One More One Less

- Ways to Make 1 and 2

- Our Journey Westward

- Which Coin is Which

- Pattern Lesson

- 2D Shape Sorting

- Day Time Night Time

STUDENT

- [10 Frame](#)

- [Subtraction Game](#)

- [Learning Coins](#)

- [Math Tappers](#)