### **Grades K-6**



# ORIGO STEPPING STORES 2.0 CORE MATHEMATICS

Offers a unique and comprehensive print and digital mathematics curriculum

Builds conceptual understanding through rigorous problem-solving activities

Supports computational fluency with strategies and practice



## **Program Preview**

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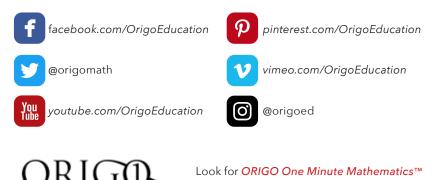
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### Learn more at:

origoeducation.com Web Phone 1-888-674-4601 1-888-674-4604 Fax

### **Contact Customer Service:**

Phone 1-888-674-4601 sales@origomath.com Email



on Vimeo and YouTube

### Introducing ORIGO Stepping Stones 2.0

### **ORIGO Stepping Stones 2.0** is a world-class K to 6 core mathematics program developed by a team of

comprehensive and flexible.



### For Teachers:

Teachers can access all content from all grade levels from any device to customize and differentiate teaching for all students. The program helps teachers transition to digital with an appropriate blend of print and interactive online resources.

### The Language of Mathematics Lays the Foundation

Concepts are first introduced to students using their natural language, which allows them to make real life connections to mathematical ideas. Students then utilize concrete materials to further contextualize topics. Mathematical language is introduced and developed, building on the understanding students have already acquired. This progression ensures that, when mathematical symbols are introduced, students have had ample opportunity and experience to make sense of them.

international writers, teachers, and mathematicians. This unique digital and print elementary program is

ORIGO Stepping Stones 2.0 includes resources for both teachers and students.

### For Students:

Students can access a rich, interactive learning experience that promotes problem solving and computational strategies, builds deep conceptual understanding, and fosters critical thinking skills. The program offers detailed lessons and small group activities in both English and Spanish.

### The Step In, Step Up, and Step Ahead

instructional design creates opportunities for student dialogue through:

- discussion
- writing
- constructing arguments •
- critiquing reasoning •

### **ORIGO Stepping Stones 2.0 Kindergarten is designed to**

offer the multiple experiences young learners need to foster their understanding and development of foundational mathematics concepts. *Stepping Stones* includes a variety of developmentally appropriate opportunities for meaningful discourse and engaging hands-on activities.

### 2.6 Number: Writing numbers just before and just after (up to 10)

In this lesson, students recognize and write numerals that come just before and just after one to nine. The following mathematical practices are developed:

· SMP3 — when students see various before and after number situations, they discuss their thought with a partner, and

 SMP6 — when students use and show understanding of precise language such as before, just before, and just after, and

· SMP8 — when students count, they show understanding of the stable order of number.

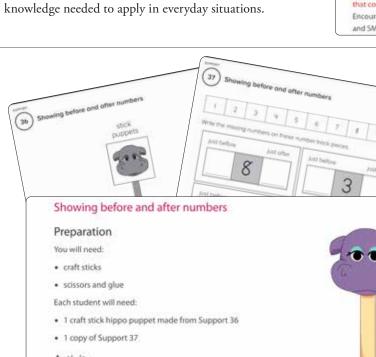
### Step 1 Preparing the lesson

### You will need.

- · ORIGO Big Book: Hip Hop Hippos
- Each student will need
- 10 connecting cubes in one color
- · 10 pale dot stickers
- Student Journal 2.6

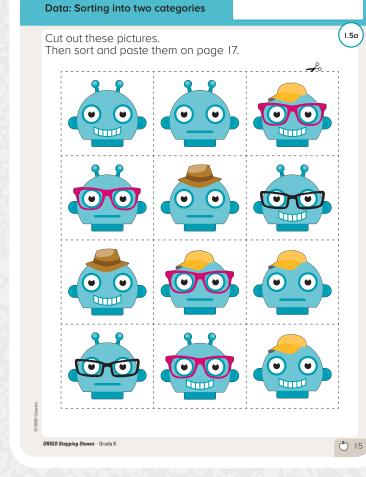
### Step 3 Teaching the lesson

- Direct the students to take turns to collect 10 connecting cubes of one color and join them to make a row, Give each student a strip of 10 pale dot stickers. Help the students write the numerals 1 to 10 in order on the dots and then place one dot on each connecting cube to make a number track.
- Read pages 10 11 of Hip Hop Hippos. Have the students act out the scene with their number tracks, Ask, What number comes just before 7? What number comes just after 7? Place emphasis on the word just. Ask, How is a number that comes before different from a number that comes just before? Allow time for students to discuss their before and after thought. Encourage them to use precise language, such as before, just before, after, and just after. (SMP3 and SMP6)



### **Building Fluency and Reasoning Skills**

Students further develop mathematical understanding through the activities provided in small group work. Every lesson has two small group activities that utilize concrete tools, visual models, games, and discourse to enhance the learning experience.



### Maintaining Concepts and Skills

Regular and meaningful practice is a hallmark of ORIGO Stepping Stones. The Practice Book features exercises directly related to previous modules, keeping students current with prior concepts and skills.

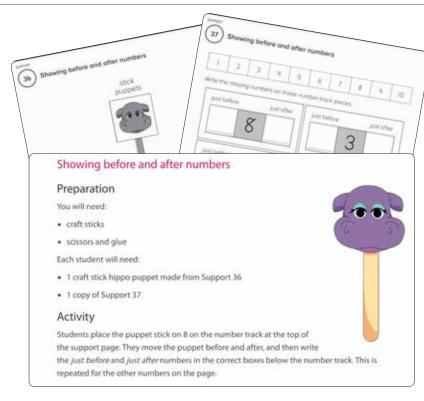
Experience

Student

 $\mathbf{\Sigma}$ 

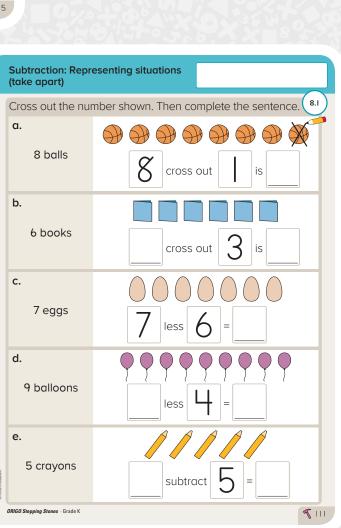
A Student's Experience

Throughout each lesson, students will be actively



### Strengthening Concepts and Skills

Perforated Student Journal pages allow students to remove them and cut out images for use in a variety of developmentally appropriate activities.



### ORIGO Stepping Stones 2.0 for Grades 1-2 is designed to

provide meaningful discourse and engaging, hands-on activities early elementary students need to authentically learn mathematics concepts and skills. *Stepping Stones* offers many opportunities for students to deepen mathematical understanding by using strategic language structures and visual models in a developmentally appropriate progression.

### 2.2 Number: Introducing number lines and representing numbers as lengths from zero

In this lesson, students are introduced to the number line, as related to the number track. Students use this representation to find the position of one- and two-digit numbers. The following mathematical practices are developed:

- SMP7 when students make use of their knowledge of the structure of number tracks to
  determine the position of unknown one- and two-digit numbers, and
- SMP8 when students find patterns and connections in one- and two-digit numbers through use of number tracks and lines.

### Step 1 Preparing the lesson

### You will need:

- 1 set of cards from Support 29
- container
- ORIGO Big Book: Jumping Jacks
- number line 1-100 from The Number Case
- number wire 1= too nom the number case
- puppets made from Support 30
   Each student will need:

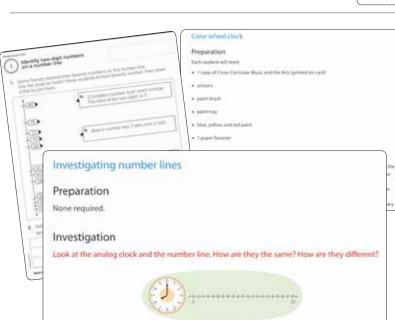
### Step 3 Teaching the lesson

Display the ORIGO Big Book: Jumping Jacks and read the title. Encourage volunteers to tell the
class what they know about kangaroos and to predict what the story might be about. Read the
story, pausing as appropriate and allowing students to respond to questions and make
predictions on where the characters will land on the number line (SMP8). Read the story a
second time, encouraging further comments and discussion as time allows.

Project slide 1 and discuss the points below:



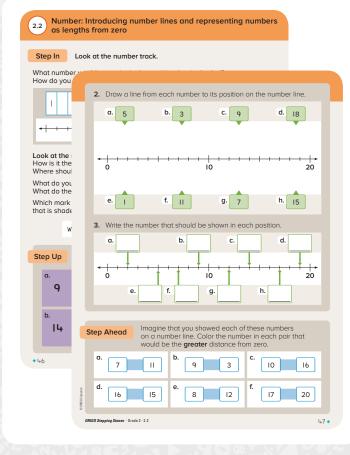
- What is happening in this picture?
- How do Jackle and Jack know what number they are on?
- a. What do you think this (pointing to the number line) is called



### Building Fluency and Reasoning Skills

Students further develop mathematical understanding through the activities provided in More Math, an online component of *Stepping Stones*. Every module includes options under the **Problem Solving**, **Investigations**, **Cross-curricula**, and **Enrichment** 

categories. These activities target learning and engagement outlined in the Standards for Mathematical Practice.



### Maintaining Concepts and Skills

Regular and meaningful practice is a hallmark of ORIGO Stepping Stones. Each module features exercises directly related to previous modules, keeping students current with prior concepts and skills by targeting computational practice, problem solving, ongoing practice, and preparation for the upcoming module.

A Student's Experience

resources for a balanced approach.

Learning Sequence:

situations.

For each lesson, students will learn through hands-on

whole group instruction, cooperative enrichment

Introduce, Reinforce, Practice, Extend

As students actively engage with the concepts and

skills of a whole group lesson, they build the deep

conceptual understanding, procedural fluency, and

application skills needed to use them in everyday

and extension activities, and online digital

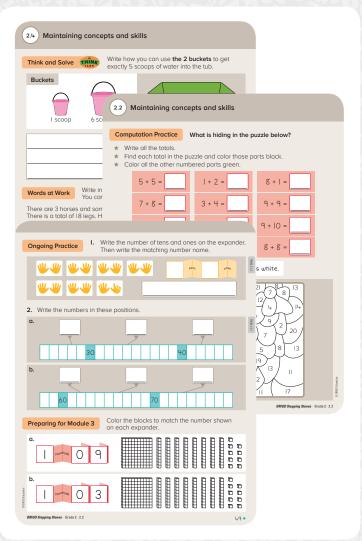
### Strengthening Concepts and Skills

For each lesson, students have an accompanying two-page spread in the **Student Journal** that anchors their understanding.

**Step In** generates classroom discourse through open-ended questions and meaningful problem-solving scenarios. This sets the stage for the lesson.

**Step Up** provides appropriate written problems and exercises. Students are able to show work and explain their thinking.

**Step Ahead** puts a twist on the lesson to foster higher order thinking skills and rigor.



### ORIGO Stepping Stones 2.0 for Grades 3-6 is designed to

continue the development and extension of mathematics concepts, including problem solving and computational strategies. *Stepping Stones* provides the rich, interactive learning experiences that foster deep conceptual understanding and critical thinking skills.

### A Student's Experience

The lessons in *Stepping Stones* provide a unique approach for students to develop their understanding of concepts. Big ideas for each grade are broken up into learning targets. Instruction of each concept's learning targets is spaced out across the school year.

- Project the picture of half pizzas (slide 2) and have the students count the number of halve with you. Point to each half as you count, 1 half, 2 halves, 3 halves, 4 halves, 5 halves, 6 halv There are 6 halves of pizza in the picture.
- Project the picture that shows fourths of a sandwich (slide 3) and say, These are from a sandwich that was cut into fourths along the diagonal. Let us count how many fourths there are. Point to each fourth as you count, 1 fourth, 2 fourths, 3 fourths, 4 fourths.
- Project the number line (slide 4) and say, We are going to skip count by unit fractions (SMP4).
   Write unit fraction on the board and explain that when common fractions have 1 as the numerator it is called a unit fraction. We will use this number line to keep track of adding the fractions as we skip count (SMP7).
- Draw an arrow that shows the jump from 0 to  $\frac{V_{d}}{4}$  as shown. Label the jump +  $\frac{V_{d}}{4}$  and then discuss the points below:



In this lesson, students use number lines to explore how common fractions are composed of unit fractions. Students consider what the numerator and denominator mean in this context. The following mathematical practices are developed:

- SMP4 when students use a number line to show the position of common fractions on a number line,
- SMP6 when students recognize that each common fraction represents a specific distance from 0 on a number line, and
- SMP7 when students recognize that common fractions are composed of a sum of unit
- fractions. For example,  $\dot{\gamma}_{\rm d}=\dot{\gamma}_{\rm d}+\dot{\gamma}_{\rm d}+\dot{\gamma}_{\rm d}$

### Step 1 Preparing the lesson

You will need: • counters or cubes Each student will need: • Student Journal 4.11



This approach allows students to process and internalize the smaller pieces more thoroughly over time. The understanding is deepened and broadened throughout the course of the year as students build on each idea and make connections to other concepts.

### Strengthening Concepts and Skills

Each lesson has an accompanying two-page spread in the **Student Journal** with activities that strengthen students' understanding.

**Step In** generates classroom discourse through openended questions and meaningful problem-solving scenarios. This sets the stage for the lesson.

**Step Up** provides appropriate written problems and exercises. Students are able to show work and explain their thinking.

**Step Ahead** puts a twist on the lesson to foster higher order thinking skills and rigor.

### Maintaining Concepts and Skills

Regular and meaningful practice is a hallmark of ORIGO Stepping Stones. Each module features exercises directly related to previous modules, keeping students current with prior concepts and skills by targeting computational practice, problem solving, ongoing practice, and preparation for the upcoming module.

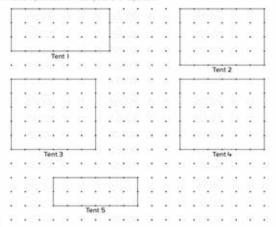
5.4 Maintaining concepts and skills		6.6	Ma	iinta	linin	g co	nce	ots
Think and Solve		Con	nputo	ation	Prac	tice	w	Vha
3 eggs make 5 omelets.		* Ci at	omple cove.	ete the Then	e equ write	ations the re	s. Finc emain	d ea iing
6 eggs make 10 omelets. 9 eggs make 15 omelets.		:	2 × 45	5 =				1
Complete these sentences.		!	55 × 2	2 =				2
a. 12 eggs make omelets.		:	2 × 85	5 =				I
<b>b.</b> eggs make 35 omelets.		:	2 × 51	=				Î
Words at Work Write about how the twos, facts are related.	ò	!	50 × 2	2 =				10
	-	:	2 × 43	3 =				7
	_	!	54 × 2	2 =				2
	_	:	2 × 72	2 =				
	_	*		N	E	R	R	C
	-		106 <b>O</b>	84 <b>R</b>	66 F	102 U	90 L	15 L
	-		64 E	76 C	30 C	128 E	142 P	ц; Т
	1		60	110	80	100	P 126	8
	-							
• 168	=	• 212	,					

### 3 Working with unit fractions

Children attending Hiowatha Summer Carlip have to share tents

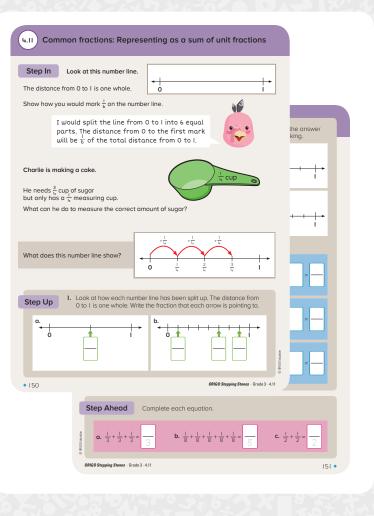
- Tent I holds 3 people. (Each person has  $\frac{1}{3}$  of the space)
   Tent 2 holds 4 people. (Each person has  $\frac{1}{3}$  of the space)
- Tent 3 holds 6 people. (Each person has  $\frac{1}{6}$  of the space.)
- Tent 4 holds 5 people. (Each person has  $\frac{1}{6}$  of the space)
   Tent 5 holds 2 people. (Each person has  $\frac{1}{6}$  of the space)

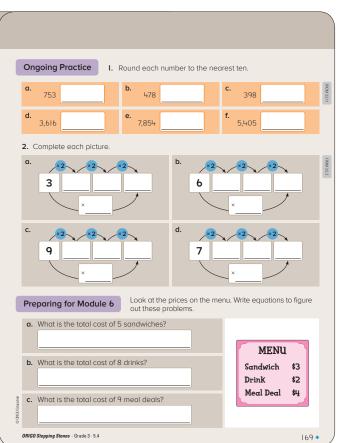
### Which tent provides the most space for one person



### **Applying Fluency and Reasoning Skills**

Students further develop mathematical understanding through the activities provided in More Math, an online component of *Stepping Stones*. Every lesson has three **Investigation** activities, four **Problem Solving** activities, as well as **Cross-curricula** and **Enrichment** activities that allow students to apply and extend their mathematical understanding to real world problems.





### ORIGO Stepping Stones 2.0 for Grades K-6 is designed to

provide engaging and interesting forms of learning to enhance a student's classroom experience. Alongside the comprehensive lesson notes provided, *Stepping Stones* also offers both online and printed resources for students to discover the beauty of mathematics.



### Enhancing Learning Through Technology

Students also have several opportunities to engage in online activities to reinforce and practice concepts and skills learned throughout the lesson.

- *Fundamental* games provide students with access to over 160 **interactive games** designed to reinforce and practice ideas related to number and computation.
- ORIGO Big Books & Tools\* allow students to hear mathematical language used in authentic literature. These opportunities are embedded throughout the modules to allow students to hear, speak, and model the mathematical language in a safe and supported way.
- *Flare* offers exciting interactive online teaching tools designed to enhance learning and facilitate discourse. Tools can easily be customized to meet a variety of needs.



*Stepping Stones* includes two or three differentiation activities for each lesson designed to provide additional support for learners.

- Extra Help for students who need additional support
- Extra Practice for students who need to solidify thinking
- Extra Challenge for students who are ready to deepen their understanding

On this number line, the	sistance from 0 to 1 is one whole	
•		
0		т::
Draw marks to split th	Exploring the Additive Nature of Common Fractions	
Now mony equal part Write the fraction being	<ol> <li>Look at how each number line has be Write the fraction that each arrow is p</li> </ol>	
tvan mode a pizza fo	a.	b.
He ate $\frac{5}{8}$ of the pizza		
On this number line, t		
Draw and label jumps	<ol><li>For each number line, the distance fro to each problem. Draw jumps on the r</li></ol>	
•	a. The track at Kate's school is $\frac{1}{h}$ of a mile long. If she wants to run $\frac{3}{h}$ of a mile, how many times will she run around the back?	•   +
Write the number of p	b. Chang cut a multin into sixtrs. He ate 4 of the multin. How many pieces did he have left?	+   -   -   -
	3. Write an addition equation to match th	te jumps on the number
		+-
	». • • • • • • • • • • • • • • • • • • •	+
		a later of Pactors



### Building Deep Conceptual Understanding

The visual representations and tools from *The Number Case* help students solidify their transition from concrete thinking, to pictorial, to abstract. Students are encouraged to select these tools and representations themselves to strengthen their problem-solving strategies.

### Extra practice

### Preparation

Each group of students will need:

- · improper fraction mix-and-match cards from The Number Case
- (Note: There are 20 unique fractions represented in 4 different ways with the mix-and-match cards. Select one type of picture card (area or number line) together with the mixed number numeral cards and sort them in pairs so that there is one card for every student.)

#### Activity

Shuffle the cards and give each student one card. Have them identify the fraction to themselves. Students can then walk around the classroom to find a partner to form matching pairs. Once a pair has been made those students can sit down, raise their arm, or give some other signal. Once every pair has been made, repeat with another set of cards.

#### Extra challenge

#### Preparation

Each group of students will need:

 Improper fraction mix-and-match cards showing mixed numbers as numerals from The Number Case

#### Activity

 Provide each student with a mixed number card. They then write equations to record the different ways to compose their number. One point is awarded for each addend in their equation. The winner is the student who accumulates the most points. For example, for 2 <sup>1</sup>/<sub>4</sub>, a student might write 1 + <sup>3</sup>/<sub>4</sub> + <sup>3</sup>/<sub>4</sub> + <sup>3</sup>/<sub>4</sub> = 2 <sup>1</sup>/<sub>4</sub> and score 4 points. The cards can be shuffled, redistributed, and the game played again as time allows.



### Support for Home

Building positive study and practice habits is essential for students. *Step It Up!*\*\* provides the right balance of guided instruction with visual models to enhance understanding, and independent thinking and reasoning tasks to promote fluency of skills.

### **ORIGO Stepping Stones 2.0 for Grades K-6 Teacher Experience**

### **Digital Teacher License**

The Stepping Stones Digital Teacher License grants access to Slate, ORIGO's online platform. The license provides 24/7 access to all *Stepping Stones* instructional materials from any grade on any device — from smartphone to tablet to computer.

Stepping Stones 2.0 Digital Teacher License includes:

Complete Stepping Stones 2.0 instruction, differentiated resources, assessment for all grade levels, and more.

### 3.7 Multiplication: Solving word problems

In this lesson, students use the double-double strategy to solve multiplication word problems. The following mathematical practices are developed:

- SMP1 when students make sense of word problems involving multiplying by two or four and persevere to solve them.
- · SMP2 --- when students decontextualize word problems to represent them symbolically, and
- SMP8 when students use a hundred chart to make observations about counting sequence involving twos and fours.

### Step 1 Preparing the lesson

Each student will need:

· Student Journal 3.7

#### Step 2 Starting the lesson

Open Flare Number Board. Ask students to highlight the numbers that would be said if we were counting forward by four from zero, as shown. Ask the class to make observations about the pattern made (SMP8). Keep the hundred chart on display and have students stand in a circle and count by twos in a clockwise direction around the circle. Instruct students who also say a number that would be said if they were counting by fours to sit as they say their number. At the end of the game, ask for observations about the sequence with which students sat. Encourage responses

### Lessons

Each grade has 12 modules divided into lessons:

- Steps to teach each lesson
- Differentiation activities for three levels (Extra Help, Extra Practice, and
- Ongoing practice pages

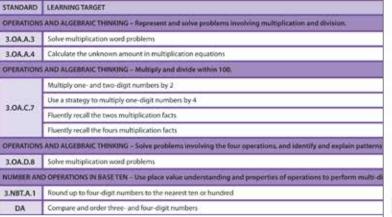
Extra Challenge)

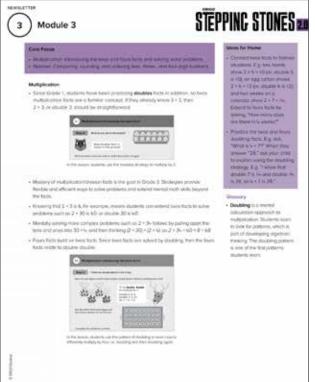


### **Mathematics**

Each module begins with the essential background information you need to get you started.

- Mathematical focus
- Learning targets
- Language development
- Correlations
- Newsletters to home
- Research into practice
- English Language Learners
- Mathematical Practices





### Assessment

Multiple methods to assess understanding and skills are included:

- Pre-tests
- In-class observations
- Portfolio samples
- Check-ups • Performance tasks
- Individual interviews



### **Professional Learning**

MathEd is an online professional learning library featuring videos focused on contemporary topics in elementary mathematics.

This invaluable digital resource gives unlimited access to over 70 math education videos (6-20 minutes in)length). These dynamic sessions will help develop the practical skills to inspire a deeper understanding in the classroom.

- 6 lesson plans
- for Kindergarten • 12 lesson plans for grades 1-6
- Embedded classroom video clips of key lessons

### Assessment overview

The chart below shows the options for assessing each learning target of this module. You can view and print all formative\* or summative\* options for this module from the resources tab.

Quarterly tests can be selected from the Assessment tab of Modules 3, 6, 9, and 12 of this grade.

STANDARD		FORMATIVE			SUMMATIVE			
	LEARNING TARGET	PRETEST	OBSERVATION/ DISCUSSION		CHECK-UP	PERFORMANCE TASK	INTERVIEW	
OPERATIONS	AND ALCERRAIC THINKING - Represe	ent and adv	e problema mend	whog multiple	atten and d	NRAHAMA.		
EAAD.E	Solve multiplication word problems	•	1.00		. 1			
3.04.4.4	Calculate the unknown amount in multiplication equations	•		•	1			
OPERATIONS	AND ALSEBRAICTHINKING - Multipl	y and divide	within 13d			a – 2		
	Multiply one- and two-digit numbers by 2	•	•	•			- 1-	
	Use a strategy to multiply one-digit numbers by 4	•	•	•	T.			
104.07	Fluently recall the twos multiplication facts	•						

### **Online Assessment**

The Online Assessment in Stepping Stones 2.0 focuses on preparation for exams with a comprehensive array of questions that align to standards and lessons. The problem types include technology-enhanced items such as drag and drop, multiple select, fill in the blank and more, so they mirror the format and style of state and national assessments.







### K-6 Student Materials

For grades 1–6, the consumable Student Journals consist of two volumes. They include lessons and practice to make teaching easier throughout each grade. Kindergarten materials consist of a consumable Practice Book and separate Student Journal.

Each grade level provides 12 modules of instruction and includes a student glossary with written definitions, examples, and visual representations. With comprehensive lessons, instructional notes, differentiation resources, assessment, and more, teachers have all the tools needed to deliver an effective instructional experience with *Stepping Stones 2.0*.



### iHOLA! Bilingual Resource

### The Number Case

These hands-on visual resources are designed to support primary grade students as they develop their understanding of number.

There are multiple representations of number including five- and ten-frames, number tracks, number mats, and more.

Each grade level case is packed with over 200 ready-to-use resources that save teachers time and aid in solidifying these foundations and moving students from the pictorial to the abstract.

iHOLA! Bilingual Resource

### Step It Up!

Consistent opportunities to practice daily instruction are important for primary grades students. *Step It Up!* contains additional homework and practice aligned to *Stepping Stones* lessons. *Step it Up!* consists of 144 practice lessons per grade, 1–6, with each lesson consisting of two pages that mirror students' daily work for support and reference.

The first page provides guided instruction for parents to *step* their child through and review an idea that was taught in the classroom. The second page gives the student the opportunity to practice the concepts and skills independently to further reinforce the idea presented in the lessons.

· St	tachs to reach wach packer R	Just H
911		
Court H	P :	Smith
Allin	1 <u>9</u> 9	
2. Drow less to jun m		All Sold The Nets Police Hall Nove 11 Police
3+6+9		1 1-2+2
*+0+*		3+5=8
2+6+8		3 + H + H
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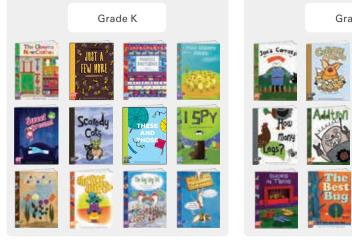
### **ORIGO Big Books**

Build on young students' natural love for stories to introduce key mathematical concepts through language and pictures.

Each large-format *ORIGO Big Book* has a specific mathematical focus, including:

- combinations of 10
- missing-addend subtraction
- multiplication (arrays)
- collecting and representing data
- unknown-addend subtraction

For a complete list of topics, visit: origoeducation.com/product/big-books



### **Digital Teacher Edition**

The *Stepping Stones 2.0* Digital Teacher Edition and online resources provide teachers flexibility, support, and choice. Through *Slate*, teachers can create customized instructional playlists to meet the needs of their students and classroom. The new *SlateCast* feature allows teachers to access their teacher notes and materials, while simultaneously projecting student content in the classroom.

Fundamentals

### Flare Honeypot



In addition, teachers can enhance their planning and instruction with ready-to-use digital tools, interactive whiteboard resources, games, and on-demand professional learning.

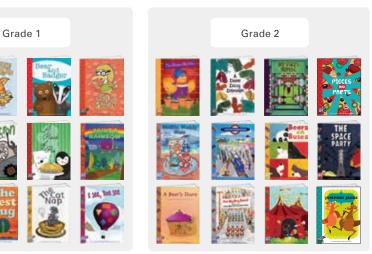
12

iHOLA! Bilingual Resource



### **Big Book Teaching Tools**

The *Teaching Tools* engage students in an online, interactive extension of the story where they can apply their own scenarios to the context of the book.





Now more than ever, new technologies are changing what it means to be mathematically literate. Children need a comprehensive curriculum that prepares them for their future careers and to be adaptive, productive thinkers, lifelong learners, and innovative members of society. *ORIGO Stepping Stones 2.0* has been developed to give students the best possible preparation for their years of learning mathematics in school and during their adult lives.

## We make learning *meaningful, enjoyable,* and *accessible* for all students.

# ORIGO EDUCATION

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