Appendix 3

Stepping Stones Implementation Tool

ORIGO
STEPPING STONES 2.0
COMPREHENSIVE MATHEMATICS

GRADES 1-6

Implementation Tool

ORIGO
EDUCATION

Introduction and purpose

ORIGO Stepping Stones is a comprehensive elementary (K–6) mathematics program that makes learning mathematics meaningful, enjoyable, and accessible for all teachers and their students. *Stepping Stones* makes intentional use of:

- conceptually based instruction;
- language and discourse;
- critical thinking to apply mathematics in context;
- visual representations;
- strategy-based fluency development;
- coherent spaced teaching and practice; and
- the *Stepping Stones* suite of resources

to facilitate effective teaching and engaging learning to cultivate mathematically proficient teachers and students.

The purpose of the *Stepping Stones* Implementation Tool (SSIT) is to provide District and/or School Implementation Teams with an efficient measure of the extent to which school personnel are applying the core elements of the *Stepping Stones* program in classrooms.

This tool is intended to be used over time to guide implementation planning of the *Stepping Stones* program. This tool is not intended to be used to evaluate teacher performance but to inform the actions of District and/or School Implementation Teams.

Intended participants

Members of District and/or School Implementation Teams (see pages 4–6 of the *Stepping Stones 2.0 Implementation Handbook*) should complete the SSIT.

Administration

Teams complete the SSIT using a sampling of classrooms up to three times each year (fall/winter/spring). The teams use the data collected to set and monitor annual and quarterly implementation goals.

To complete the SSIT, District and/or School Implementation Teams review documents, including student work samples, conduct classroom observations, and interview teachers implementing the *Stepping Stones* program. Teams may use the Interview Protocol (Appendix A) and the Student Journal Review Protocol (Appendix B) to support data collection. Specific *Stepping Stones* resources that support the indicators are listed on the form. Teams use this information to rate each implementation indicator as "Fully in place," "Mostly in place," "Somewhat in place," or "Not yet in place" using a scale of 3, 2, 1, 0. To support the team, Appendix C provides a glossary of terms used in the SSIT.

This tool also provides examples of the types of evidence suggested for rating implementation indicators (for example, observations, lesson plans, teacher interviews). Teams are required to review at least one source of evidence before scoring each implementation indicator. They identify sources of evidence by placing a check mark or circling the types of evidence used for the rating.

Teams should look at aggregate data from across the school for each core component of the program. In this way, teams may identify areas of strength and need, set goals, and develop an action plan to improve implementation.

SSIT use

After the District and/or School Implementation Teams complete the SSIT, they set short-term and long-term goals to improve implementation levels across the district and/or school. Teams can use the action planning form provided in Part III of this guide as a resource when they develop their action plans.

Part I: *Stepping Stones* Implementation Tool

Classroom ID:	
School:	
Grade:	
Date:	
District:	

SSIT team members' names and roles:

_____

_____

_____

_____

_____

Notes:

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Section A: Curriculum

	Core component	Implementation Indicators	Type(s) of evidence (*check*)		Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
1	ORIGO model for teaching concepts CPA approach	**1.1** Understands and applies the concrete-pictorial-symbolic approach to develop conceptual understanding of mathematics.	Observations Lesson plans Teacher interviews	☐ ☐ ☐	Digital Teacher Edition *QUICKsteps* Student Journal				
	Language approach	**1.2** Understands and applies the language stages (student, materials, mathematical) to develop conceptual understanding of mathematics.	Observations Lesson plans Teacher interviews	☐ ☐ ☐	Digital Teacher Edition *QUICKsteps*				
2	ORIGO model for teaching skills	**2.1** Understands and applies the stages of strategy development (introduce, reinforce, practice, and extend) when teaching lessons related to strategy.	Observations Lesson plans Student work	☐ ☐ ☐	Digital Teacher Edition *QUICKsteps* Student Journal				

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Section A: Curriculum

	Core component	Implementation Indicators	Type(s) of evidence (*check*)	Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
3	Spaced teaching and practice	**3.1** Understands and applies spaced teaching and practice by teaching the modules and lessons in the order outlined in the *Stepping Stones* scope and sequence.	Lesson plans ☐ Teacher interviews ☐ District pacing guides ☐ Review of Student Journal ☐ Observations ☐	Digital Teacher Edition *QUICKsteps* Student Journal				
		3.2 Includes Maintaining concepts and skills during daily instruction.	Review of Student Journal ☐ Observations ☐ Lesson plans ☐ Teacher interviews ☐	Student Journal Practice (playlist) Maintaining concepts and skills (Student Journal) Problem solving Investigations Projectable fluency practice				

Notes:

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Section B: Planning

Core component	Implementation Indicators	Type(s) of evidence (*check*)	Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
4 Module planning	**4.1** Teachers plan modules collaboratively.	Observation of planning meetings ☐ Teacher interviews ☐ Meeting notes ☐	Module resources				
	4.2 Uses the supports in the **Mathematics** section to:						
	a. explore the depth and complexity of the standards to understand the module vocabulary and learning targets.	Observation of Planning Meetings ☐ Teacher interviews ☐	*MathEd* Research into practice Coherence Focus Common errors and misconceptions Sequence navigator Standards search				
	b. review the best practices for teaching the content within the module.	Observation of Planning Meetings ☐ Teacher interviews ☐	Steps in Action videos *ORIGO ONE* *MathEd* Research into practice Common errors and misconceptions ELL supports Vocabulary development				

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Section B: Planning

Core component	Implementation Indicators	Type(s) of evidence (*check*)		Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
4 Module planning	**4.3** Previews assessments within the module to:							
	a. determine what students need to know and do by the conclusion of the module.	Observation of planning meetings	☐	Module resources				
		Teacher interviews	☐					
	b. select and schedule assessments and plan record-keeping to use throughout the module.	Lesson plans	☐	Assessment recording tools				
		Observation of planning meetings	☐					
		Teacher interviews	☐					
		Assessment calendar	☐					
		Student assessment data	☐					
	4.4 Reviews and intentionally selects ORIGO resources in the More Math section to plan for reasoning, critical thinking and contextual problem solving.	Lesson plans	☐	Investigations Problem solving Enrichment Cross-curricula Thinking Tasks				
		Observation of planning meetings	☐					
		Teacher interviews	☐					

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Section B: Planning

	Core component	Implementation Indicators	Type(s) of evidence (*check*)	Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
5	Lesson planning	**5.1** Reads the lesson title and introductory section to focus on the intent of the lesson and specific learning target(s).	Observation of planning meetings ☐ Teacher interviews ☐	Digital Teacher Edition *QUICKsteps*				
		5.2 Reviews the steps of the lesson to plan for lesson delivery.	Observation of planning meetings ☐ Teacher interviews ☐	Digital Teacher Edition *QUICKsteps*				
		5.3 Reviews the support tabs to plan for differentiation.	Observation of planning meetings ☐ Teacher interviews ☐ Lesson plans ☐	Differentiation tab ELL supports Formative assessment Common errors and misconception				
		5.4 Reviews Maintaining concepts and skills to plan to implement spaced learning practices.	Observation of planning meetings ☐ Teacher interviews ☐ Lesson plans ☐	Digital Teacher Edition *QUICKsteps*				
		5.5 Completes Step 1 by planning and gathering resources necessary to deliver the lesson.	Observation of planning meetings ☐ Teacher interviews ☐	Digital Teacher Edition *QUICKsteps*				

Notes:

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Section C: Instruction

	Core component	Implementation Indicators	Type(s) of evidence (*check*)	Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
6	Instructional delivery	**6.1** Provides **at least** 60 minutes of continuous mathematics instruction daily.	Master schedules ☐ Teacher interviews ☐ Observations ☐					
		6.2 Communicates the learning target throughout the lesson. Instructional materials are tightly aligned to the learning target.	Observations ☐	Digital Teacher Edition *QUICKsteps*				
		6.3 Uses appropriate mathematics vocabulary throughout the lesson.	Observations ☐	Vocabulary development *QUICKsteps* Digital Teacher Edition *MathEd*				
		6.4 Teaches the full lesson (Steps 2–4) including the use of slides, projectables, and all other recommended resources.	Observations ☐ Lesson plans ☐	Digital Teacher Edition *QUICKsteps* Lesson playlist resources				
		6.5 Poses questions, including but not limited to those included in Steps 2–4, to facilitate student-to-student discourse.	Observations ☐ Lesson plans ☐	Digital Teacher Edition *QUICKsteps* Step In discussion				

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Section C: Instruction

	Core component	Implementation Indicators	Type(s) of evidence (*check*)	Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
6	Instructional delivery	**6.6** Guides students to complete Student Journal sections *Step In* (to summarize the lesson), *Step Up* (to check for individual understanding), and *Step Ahead* (to extend thinking) after Step 3 of the lesson is taught.	Observations ☐ Student Journals ☐	Student Journal				
		6.7 Uses Maintaining concepts and skills as a part of daily instruction.	Observations ☐ Teacher interviews ☐ Student work ☐	Student Journal pages (even lessons) Fluency practice (Lessons 1, 5, 9) Problem solving or Investigations (Lessons 3, 7, 11)				
		6.8 Provide feedback and differentiate instruction to meet the needs of each learner through the use of formative assessment data.	Observations ☐ Teacher interviews ☐ Lesson plans ☐ Student work ☐	Differentiation tab ELL supports Formative assessment Coherence Common errors and misconceptions				

Notes:

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Section D: Assessment

Core component	Implementation Indicators	Type(s) of evidence (*check*)		Related *Stepping Stones* resources	Fully in place (3)	Mostly in place (2)	Somewhat in place (1)	Not in place (0)
7 Progress monitoring	**7.1** Tracks student learning over time through systematically collecting and monitoring formative and summative data.	Student assessment data	☐	Assessment recording tools				
		Teacher data recording tools	☐					
		Observations	☐					
		Teacher interviews	☐					
	7.2 Uses formative data to inform module planning, lesson planning, and differentiation.	Observation of planning	☐	Pre-tests Observations and discussions Journals and portfolios Digital Student Assessment				
		Student portfolios	☐					
		Student assessment data	☐					
		Student work	☐					
		Teacher interviews	☐					
	7.3 Uses multiple and varied summative data sources to evaluate student learning.	Student assessment data	☐	Performance tasks Check-ups Interviews Quarterly tests Digital Student Assessment				
		Teacher records	☐					
		Teacher interviews	☐					
		Observations	☐					
		Lesson plans	☐					
		Assessment calendar	☐					

Notes:

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Part II: SSIT scoring guide

The SSIT generates scores reflecting the percentage of implementation for each core component of the program. Scores are determined by calculating the percentage of possible points awarded for items in each category of Curriculum, Planning, Instruction, and Assessment.

Category	Items	Points awarded/ possible points	Percentage of *Stepping Stones* implementation
Curriculum	1.1–3.2	/ 15	
Planning	4.1–5.5	/ 33	
Instruction	6.1–6.8	/ 24	
Assessment	7.1–7.3	/ 9	
Total	1.1–7.3	/ 81	

Across time, schools and/or districts monitor progress on *Stepping Stones* implementation by category. Simulated data for a district is depicted in Figure 1. The sample district used the SSIT to assess *Stepping Stones* implementation levels at three different points in time during the first year of implementation, known as the initial implementation stage.

In this example, the District Implementation Team may notice that Assessment has been the lowest category of implementation throughout the initial implementation stage of the *Stepping Stones* program. To improve implementation, the team plans to offer professional development, resources, and additional coaching support related to SSIT indicators 7.1–7.3.
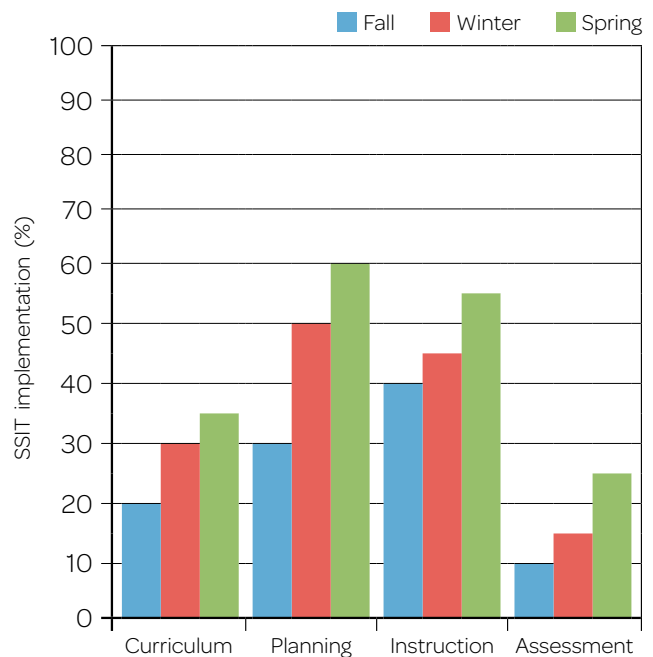

Figure 1. SSIT scores for one district across three administrations during initial implementation

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Goal setting

Goal setting is an effective way to keep teams on track and to set districts and schools up for small wins along their implementation journey!

Initial implementation

During the initial implementation stage, teachers are implementing the *Stepping Stones* program for the first time. Teams set specific, measurable, achievable, realistic, and time bound (SMART) annual and quarterly implementation goals for the first year of implementation of the new program. Annual goals are set based on projected levels of implementation. Quarterly goals are set to focus on specific priority areas based on data from the SSIT.

Sample annual implementation goal:

By the end of this school year, 50% of teachers will implement the *Stepping Stones* program at 80% fidelity according to the SSIT.

Sample quarterly implementation goal:

By March 30th, implementation of the Assessment category will increase from 15% to 25% according to the SSIT.

Full implementation

As districts and schools move into the full implementation stage, more teachers are implementing the *Stepping Stones* program as intended. Figure 2 illustrates how the sample district's implementation has improved in year two as they reach full implementation of the *Stepping Stones* program.

Sample annual implementation goal:

By the end of this school year, 75% of teachers will implement the *Stepping Stones* program at 85% fidelity according to the SSIT.

Sample quarterly implementation goal:

By November 30th, implementation of the Curriculum category will increase from 20% to 50% according to the SSIT.
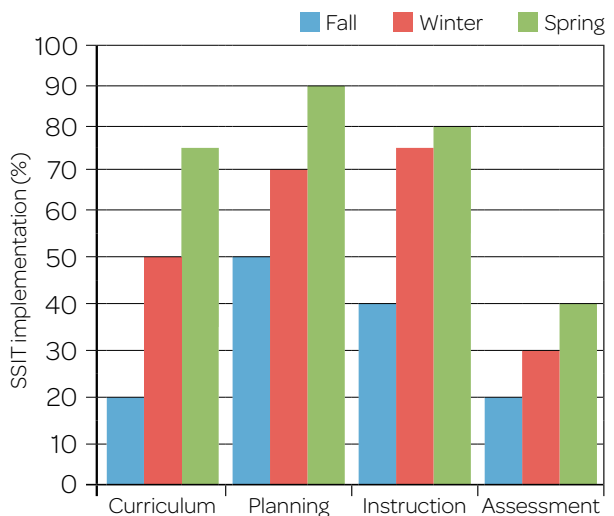

Figure 2. SSIT scores for one district across three administrations during full implementation

SSIT action planning

The SSIT is the basis for action planning. It is designed to facilitate the decision-making of District and/or School Implementation Teams as they identify (a) which categories will be the focus of implementation efforts for the coming quarter or year, known as the priority area(s), and (b) what the specific actions will be, who will lead in completing the action, when the teams expect each action to be completed, and a list of resources needed to complete the actions.

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Part III: SSIT action planning form

School system:			School:
Grade level(s):			Date:

Category	Implementation (%)	Priority area rank #1–4	Notes
Curriculum			
Planning			
Instruction			
Assessment			
Total			

Patterns and trends

Directions: As you analyze the SSIT data with your implementation team, identify any patterns or trends that you notice. Consider examining the data by grade level, by indicators, and/or trends over time. Make a bulleted list of any patterns and/or trends in the space provided.

Annual implementation goal:

Quarterly implementation goal:

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Implementation Tool

Directions: When the priority categories have been determined, teams should identify specific indicators of focus to develop an action plan.

Indicator(s) of focus	Actions	Who	When	Resources needed

Appendix A: Interview protocol

The purpose of this document is to provide a list of sample interview questions that can be used to obtain evidence to inform the ratings of the *Stepping Stones* Implementation Tool (SSIT) indicators. Interviewers may decide to ask additional questions based on the responses of the interviewees to prompt more information, if needed.

SSIT Indicator	Interview Question(s) to Elicit Evidence
Curriculum	
1.1	Explain the approach you use to develop conceptual understanding in your math class. How do you use the concrete-pictorial-symbolic model in your instruction?
1.2	How do you use the language stages to develop conceptual understanding of mathematics?
2.1	Explain the stages of strategy development that you use in math instruction?
3.1	How closely do you follow *ORIGO Stepping Stones* scope and sequence? How do you decide the order of the lessons that you teach?
3.2	How often do you use Maintaining concepts and skills? How do you incorporate spaced learning and practice in your instruction?
Planning — Module	
4.1	Do you plan mathematics collaboratively with your team? If so, how often? Who is involved?
4.2a	When planning for the next module, which *Stepping Stones* resources do you explore to understand the standards and learning targets you will be teaching?
4.2b	When planning for a *Stepping Stones* module, which resources do you review to understand and use best practices in your teaching?
4.3a	When planning a module, how do you determine what your students need to know and be able to do by the end of the module? How often do you preview assessments?
4.3b	How do you select and schedule the assessments for each module? How far in advance do you schedule assessments when planning for the module? What tools do you use to record assessment data?
4.4	When planning a module, which *Stepping Stones* resources do you plan to use? How often do you plan for using the Investigations, Problem solving, Enrichment, Cross-curricular, or Thinking Tasks?

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Appendix A: Interview protocol

SSIT Indicator	Interview Question(s) to Elicit Evidence
Planning — Lesson	
5.1	When planning a *Stepping Stones* lesson, how do you determine the intent of the lesson?
5.2	What is your process for reviewing the lesson to plan for delivery?
5.3	When planning a *Stepping Stones* lesson, which resources do you review to plan for differentiation?
5.4	How do you plan for including Maintaining concepts and skills in your daily instruction?
5.5	After you develop your plan, what is your process for preparing for instruction? How far in advance do you gather resources?
Instructional Delivery These indicators are best rated through direct observation, but these questions may be used as supplemental information to support a rating.	
6.1	How many continuous minutes of math are your students receiving on a daily basis?
6.2	How do you know the intent of the lesson that you are teaching? How do you communicate the intent of the lesson to your students? At which point/s during the lesson do you communicate the intent? How do you align your instructional materials to the learning target?
6.3	How do you ensure that you are using appropriate math vocabulary during instruction?
6.4	How closely do you follow all of the lesson steps outlined in the plan and use all of the projectable resources during a *Stepping Stones* Lesson? If you don't, why do you deviate from the resources?
6.5	How do you encourage student discourse during instruction? How often do you use the questions provided in the teacher notes?
6.6	How do you use the Student Journal? Do you use all of the parts of the Student Journal? Why/why not?
6.7	How often do you use the Maintaining concept and skills work in the journal? How often do you use the projectable Fluency Practice? How often do you use Problem solving or Investigations?
6.8	What kind of feedback do your students receive during instruction? How do you use your observations during instruction to inform your differentiation? How do you use the differentiation resources for small group instruction?

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Appendix A: Interview protocol

SSIT Indicator	Interview Question(s) to Elicit Evidence
Assessment	
7.1	How do you record and monitor your students' assessment data?
7.2	What formative data do you collect? How does the data inform your instruction?
7.3	Which assessment resources do you use to collect summative data to evaluate your students' learning? Which *Stepping Stones* assessments, such as Performance Tasks, Check-ups, Interviews, and Quarterly Tests, do you use? How often?

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Appendix B: Student Journal review protocol

Introduction and Overview

The purpose of this document is to provide guidance for staff involved in the *Stepping Stones* Implementation Tool (SSIT) collection of data from a review of Student Journals. The Student Journal can provide valuable information about the level of implementation of the *Stepping Stones* program across a classroom, grade level, or school. The Student Journal Review Protocol is a method for collecting implementation data to measure the level of indicators on the SSIT. The following indicators can be measured through the review of Student Journals:

- 3.1: Understands and applies spaced teaching and practice by teaching the modules and lessons in the order outlined in the *Stepping Stones* scope and sequence.

- 3.2: Includes Maintaining concepts and skills during daily instruction.

- 6.4 Teaches the full lesson (Steps 2–4), including the use of slides, projectables, and all other recommended resources.

- 6.6: Guides students to complete the following sections in the Student Journal: Step In (to summarize the lesson); Step Up (to check for individual understanding); and Step Ahead (to extend thinking) after Step 3 of the lesson has been taught.

Journal reviewers should keep in mind that if portions of the journal are not completed, it does not mean that these practices are not being done. Teachers may be using manipulatives or other hands-on materials or activities to review these concepts. Reviewers should use teacher interviews or observations for information before making a final determination on the indicator ratings. The Student Journal review is one source of evidence to inform the ratings.

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Appendix B: Student Journal review protocol

Part I: Student Journal review protocol

Step 1: Sample size

The first step to prepare for the Student Journal review is to decide the sample size. This can affect the reliability of the data, because the larger the sample size, the more reliable the data. Depending on the capacity of the staff and the time available, there is a set of sample sizes that the team may decide on. Examples of sample sizes to consider include:

- 3–5 journals per classroom across all implementing grade levels.
- 5–10 journals from one classroom per grade level.
- All journals from targeted grade levels, for example, all Grade 2 journals.
- All journals from all students in all implementing grade levels.

Step 2: Data collection sheet

Add the following information to each data collection sheet (see Part II) for each classroom sample:

- School name
- Reviewer's name
- Date
- Grade level
- Classroom identifier (if applicable).

Step 3: Review Student Journals

Reviewers should go through the pages of each student journal in the sample to check for completion of the parts of the lesson (Step In, Step Up, and Step Ahead). Remember that the Step In may or may not be completed based on the direction of the classroom teacher. For example, when some teachers use the projectable discussion provided for the Step In, they ask students to keep their journals closed. This means they are not distracted from the lesson or tempted to go ahead. The primary sections to review and document are Step Up, Step Ahead, and Maintaining concepts and skills. For Maintaining concepts and skills, the reviewer should check that the pages with the grey header bar in the even numbered lessons have been completed.
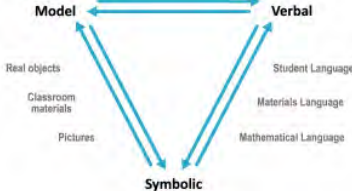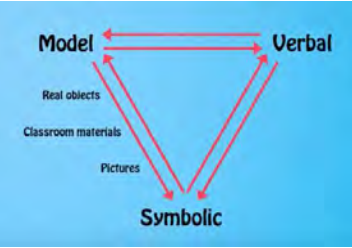
The following provides the scoring based on the completion of the pages within the Step Up, Step Ahead, and Maintaining concepts and skills:

3 points: >80%

2 points: 50–79%

1 point: 25–49%

0 points: <49%

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Appendix B: Classroom Student Journal Review Sheet (Form A)

Part II: Data collection forms

The following forms are examples of different methods for organizing the Student Journal data to be analyzed. The reviewer can use the Classroom Student Journal Review Sheet (Form A) to collect individual journal data during the initial collection. Individual data from classrooms can be summarized using the Grade Level Summary Sheet (Form B). The Grade Level Summary by Student Groups Sheet (Form C) allows this information to be further analyzed by student groups. This data should be shared with implementation team to inform the SSIT ratings.

The following scale provides the scoring:

3 points: >80%

2 points: 50–79%

1 point: 25–49%

0 points: <49%

Journal #	Step Up	Step Ahead	Maintaining concepts and skills

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Appendix B: Grade Level Summary Sheet (Form B)

Grade level	Total number of journals reviewed	Step Up (%)	Step Ahead (%)	Maintaining concepts and skills (%)
1				
2				
3				
4				
5				
6				

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Appendix B: Grade Level Summary by Student Groups (Form C)

Grade level	Total number of journals reviewed	Special Education students (#)^			Tier 1 (#)			Tier 2 (#)			Tier 3 (#)		
		Step Up	Step Ahead	MCS*	Step Up	Step Ahead	MCS*	Step Up	Step Ahead	MCS*	Step Up	Step Ahead	MCS*

^Insert the number of students.   *Maintaining concepts and skills

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Appendix C: Glossary of Terms

Term	Description
ORIGO model for teaching concepts 	*ORIGO Stepping Stones* introduces symbols gradually and after students have had many meaningful experiences with models, including real objects, classroom materials, and 2D pictures, as shown on the left side of the diagram. Symbols are also abstract representations of spoken words, so students move through distinct language stages as depicted on the right side of the diagram. **Additional Resource:** https://youtu.be/pyZ0sO5W_XE
Concrete-pictorial-symbolic approach 	The concrete-pictorial-symbolic approach that *ORIGO* promotes is shown on the left side of the model above. *ORIGO Stepping Stones* introduces symbols gradually, after students have had many meaningful experiences with models, including real objects, classroom materials, and 2D pictures. **Additional Resource:** https://youtu.be/pyZ0sO5W_XE

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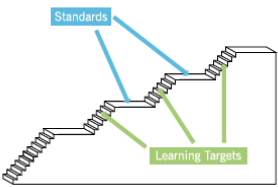
Appendix C: Glossary of Terms

Term	Description
Language stages 	Language is essential in helping students build an understanding of mathematical concepts. There are four stages of language development, and each is crucial to the development of deep understanding. The stages shown on the right side of the ORIGO model for teaching concepts and are detailed below. Student language In the first stage, the program is designed to leverage students' existing natural language to describe concepts. For example, students may use the words *eat*, *break*, *jump away*, *swim away*, or *spend* to describe situations involving subtraction. Teachers should use real-world stories and illustrations to encourage the use of this rich and meaningful language to help students build connections between their existing ideas and new concepts. Materials language In the second stage, the students' language broadens as they begin to act out stories and problems using classroom resources. This stage includes language that is exclusive to the resources being used. For example, new language such as *cover up* or *take away* may be introduced when using concrete, hands-on resources to act out subtraction stories. Similarly, if pictures are being used, the students may say *cross out* or *erase* in the context of subtraction. Mathematical language In the third stage, students begin to exhibit mathematical precision in their language. For example, in the context of subtraction, students will use the term *subtract*. In reference to two-dimensional shapes, they will start to say *vertex* to describe what they may have once called a pointy corner. At this stage, the language is often considered to be unique to mathematics. Symbolic language In the final stage, students are introduced to the symbols or notation of that concept. With subtraction, they learn that the subtraction symbol is an abbreviation for all the language used in the previous stages. It is important to note that students do not simply move through the stages. Rather, they begin by using their own natural language, then as the stories are acted out in the classroom, students add to their language and mental picture of the concept. More mathematical and, eventually, symbolic language is added to build a more comprehensive understanding of the concept. **Additional Resource:** https://youtu.be/6dmcQ1Z1FPo

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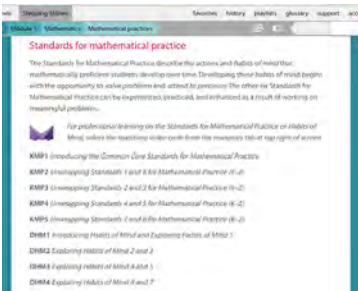
Appendix C: Glossary of Terms

Term	Description
ORIGO model for teaching skills 	ORIGO believes that students acquire skills over time as they engage in four distinctly different types of activities. Introducing In the first stage, students are introduced to the skill using contextual situations, concrete materials, and pictorial representations to help them make sense of the mathematics. Reinforcing In the second stage, the concept or skill is reinforced through activities or games. This stage provides the opportunity for students to understand the concepts and skills as it connects the concrete and pictorial models of the introductory stage to the abstract symbols of the practice stage. Practicing When students are confident with a concept or skill, they move to the third stage where visual models are no longer used. This stage develops accuracy and speed of recall. Written and oral activities are used to practice the skill to develop fluency. Extending As the name suggests, the fourth stage sees students extend their understanding of the concept or skill. For example, the use-tens thinking strategy for multiplication can be extended beyond the number fact range to include computation with greater whole numbers and eventually to decimal fractions. **Additional Resource:** https://youtu.be/UE0iaY5XMKk
Stages of strategy development 	The stages of strategy development are Introduce, Reinforce, Practice, and Extend, and are described above. **Additional Resource:** https://youtu.be/UE0iaY5XMKk

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Appendix C: Glossary of Terms

Term	Description
Spaced teaching and practice	The scope and sequence of learning experiences within *Stepping Stones 2.0* have been carefully designed to promote deep understanding of mathematical concepts and fluency of skills. Mathematics contains many concepts and skills that are closely interconnected. In *Stepping Stones 2.0*, the key ideas and skills within these topics have been identified and placed in smaller blocks to be learned over time. In the lessons, work is included to help students fully comprehend what is being taught alongside the other content development. Consequently, when students come to a new topic, it can be easily connected to previous work. Each of these learning experiences builds on what has been learned previously. It is during the interim, between the experiences, that students are engaged in appropriate practice to maintain concepts and skills. Because of this spaced learning approach, and the opportunity for practice in between, students exhibit better preparation and retention. This means they are better prepared to build on a topic when it is revisited. **Additional Resources:** https://youtu.be/d2l1JVQfkk https://www.origoeducation.com/research-and-case-studies/
Learning target(s) 	Standards are markers for student learning at the end of a given school year. During that time, assessment of more specific learning targets ensures students are progressing as required. Each lesson in *Stepping Stones 2.0* includes specific standards-driven learning targets to help teachers monitor how students are progressing toward the standard. The left-hand side of that continuum is where early learning takes place. As students progress in their development, they will move up and to the right on that continuum, as shown on the staircase illustration. **Additional Resource:** https://www.origoslate.com/html5/35109 **Note:** A Slate login is required.

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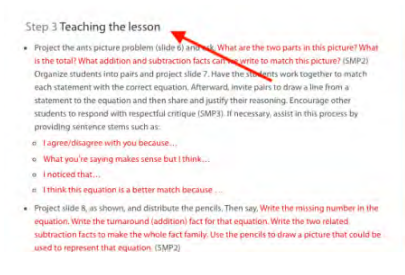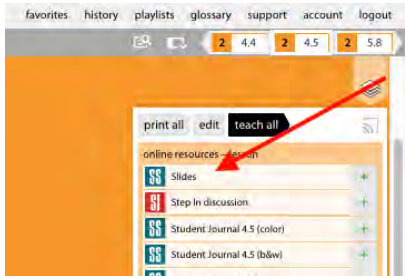
Term	Description
Standards for Mathematical Practice (SMPs) 	The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should strive to develop in their students. These practices rest on important *processes* and *proficiencies* that have longstanding importance in mathematics education. First are the NCTM process standards of problem-solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*. The strands are: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy.) **Additional Resource:** https://www.origoslate.com/html5/17145 **Note:** A Slate login is required.

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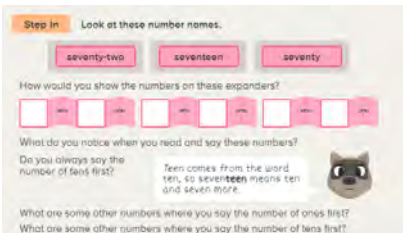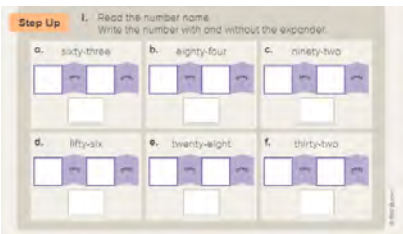
Term	Description
Digital Teacher Edition	The Digital Teacher Edition is delivered online to give teachers one central location to access all their lesson plans, student activity pages, and teaching tools. The Digital Teacher Edition gives instant access to all content for Grades K–6. One of the great benefits of a digital delivery platform is the ease with which *ORIGO Education* can immediately update content, offer updates, and/or provide enhancements.
QUICKsteps	*QUICKsteps* is an all-in-one printed teacher guide for each *Stepping Stones 2.0* module. This resource contains 13 books, one for each module of content as well as a Getting Started guide.
Lesson Step 1: Preparing the lesson	Step 1 lists the materials needed to teach the lesson.

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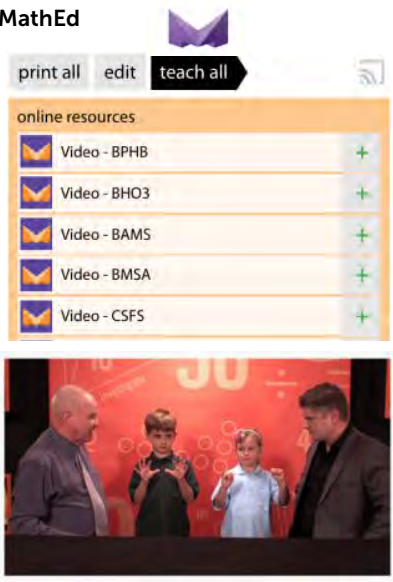
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Term	Description
Lesson Step 2: Starting the lesson 	Step 2 launches the lesson with the context of previous learning and appropriate questions to spark classroom discussion. This step often provides an activity that is appropriate for a number sense routine or number talk.
Lesson Step 3: Teaching the lesson 	Step 3 builds conceptual understanding through language-rich learning, visual representations, and engaging student-centered activities.
Step In discussion 	This step is in the last bullet of Step 3 in each lesson for Grades 1–6. It provides discussion points to summarize the lesson as students transition to individual practice. The projectable Step In discussion can be found under the Resources tab in the Digital Teacher Edition. Each point or question can be revealed and discussed with the class, one step at a time.
Lesson Step 4: Reflecting on the work	Step 4 consolidates student understanding and practice with intentional closure conversations.

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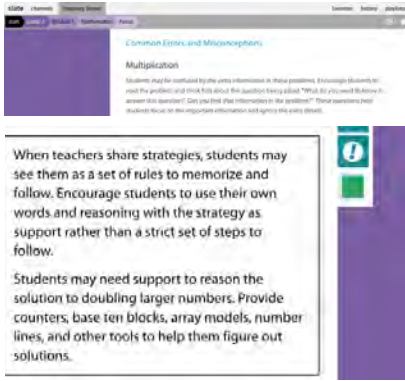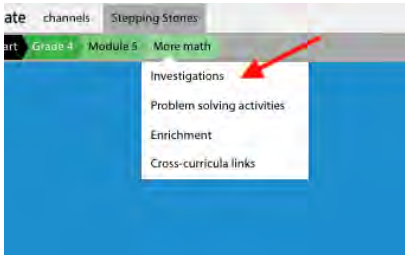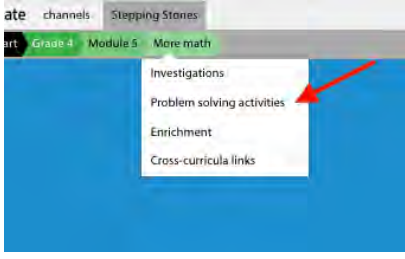
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Term	Description
Student Journal	Each lesson in *ORIGO Stepping Stones* Grade K is accompanied by one or two student journal pages. The pages for kindergarten students are perforated and printed on one side only. This provides a range of hands-on experiences that require students to cut out, arrange, and paste images. In Grades 1–6, there are two pages for each lesson. The parts of each journal are defined below.
Student Journal: Step in	The Step In provides teachers with guided discussion points to summarize the lesson. When the lesson is complete, it becomes a record of learning that students can access when they need help with future lessons.
Student Journal: Step Up	The Step Up provides work for students to complete independently or with guidance, based on the discussion generated in the Step In. When completed independently, the Step Up can provide a check for understanding, or an exit ticket to inform future instruction.

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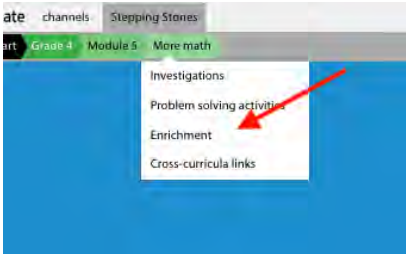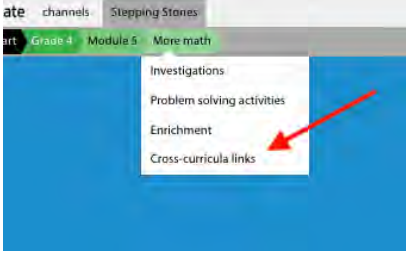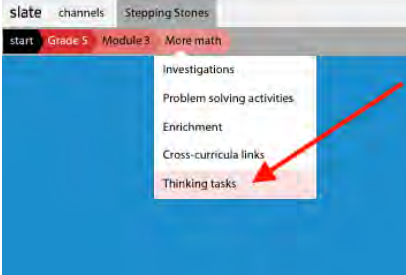
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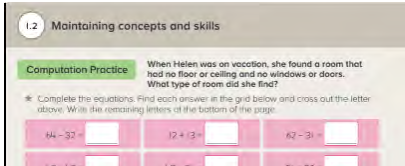| Term	Description
MathEd 	*ORIGO MathEd* is a library of professional learning videos for contemporary Grades K–6 math methods, presented by respected mathematics educators. Hosted by James Burnett, these dynamic sessions provide practical skills to help develop deep understanding of mathematics concepts. Short videos are embedded at the start of modules to assist teachers acquire the content and pedagogical knowledge they need to be effective. Easy-to-follow facilitator notes accompany each *ORIGO MathEd* session. These notes can be used to help plan and present professional learning activities for groups of teachers.
Coherence: **Coherence chart** **Sequence navigator** 	ORIGO Education believes that content taught conceptually, in a logical, learner-friendly sequence develops deep understanding and success. A coherent curriculum is a part of this method of sequencing content and is demonstrated in *Stepping Stones* lessons in a number of ways. Coherence occurs when students make connections from lesson to lesson, across math topics, and from grade to grade, so that each learning target is an extension of previous learning. *Stepping Stones* lessons are designed to ensure these connections. There are two major supports to help teachers understand coherence and provide differentiation for their students: The Coherence chart in the Focus tab of each module, and the Sequence navigator. The Coherence chart is found under the Mathematics Focus tab in each module. It identifies prerequisite skills and content for the learning targets in the module, and guides teachers to lessons that build those skills and content. The Sequence navigator is found in a dropdown tab in the Digital Teacher Editio. It provides quick access to mathematical topics, making it easy for teachers to jump forward and back to provide coherent instruction for students, no matter what their level of understanding.

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Term	Description
Common errors and misconceptions	Information about Common errors and misconceptions can be found at two levels inside the Digital Teacher Edition. Each module has a section on common errors and misconceptions under the Mathematics Focus tab. Each lesson contains an icon that looks like an exclamation point. Hovering over this icon provides ideas about possible common errors and misconceptions and how to avoid them.
Investigations	Each module in *ORIGO Stepping Stones* Grades 1– 6 includes three micro investigations. These give the students the opportunity to apply the mathematics they have learned. These activities are open-ended in nature and often require the students to collect, represent, and analyze data.
Problem solving	Each module in *ORIGO Stepping Stones* Grades 1–6 has at least three problem-solving activities. Teachers can use these when they deem appropriate.

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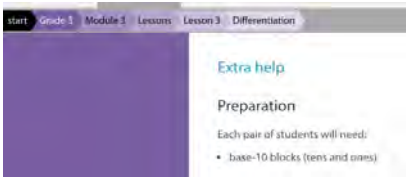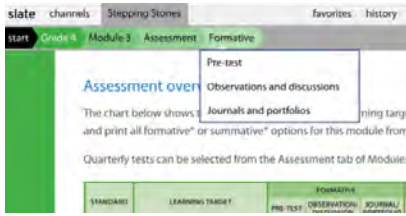
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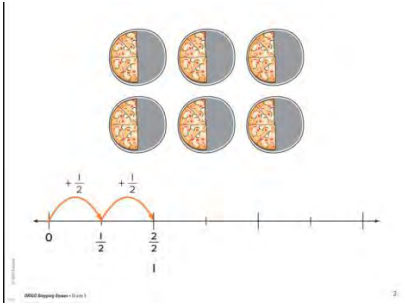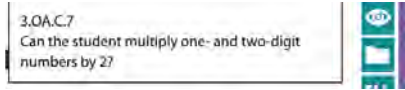| Term	Description
Enrichment	These activities provide additional ways to enrich student learning. The prerequisite lessons are described for each activity. Grade K has two enrichment activities. Each module in Grades 1–6 has three enrichment activities.
Cross-curricula	The mathematics of each module can often be used or explored further in other key curriculum areas such as science, history, or English. Therefore, cross-curricula activities are suggested for each module of the *ORIGO Stepping Stones* program.
Thinking tasks	Thinking tasks pose real-world problems that engage students' thinking in Grade 3–6. Each task increases in difficulty as students progress through the questions. The tasks are available in modules 3, 6, 9, and 12, and are found under the More math tab. They are designed to create a culture that engages and inspires learners while developing their confidence and perseverance in the face of challenging problems. Thinking task rubrics provide depth of knowledge levels for each question.
Application (More math)	In Grades 1–6, students can apply their knowledge of the concepts and skills by engaging in the investigations, problem solving, enrichment, and cross curricula links activities provided for each module. From Grade 3, Thinking tasks are also included in More math. Kindergarten teachers will find enrichment and cross-curricula links in modules 1–4. In modules 5–12, word problems are also included under the More math tab.

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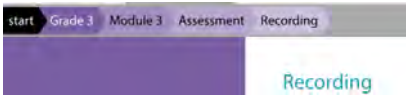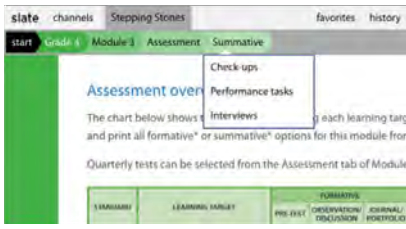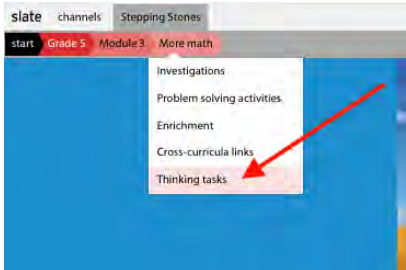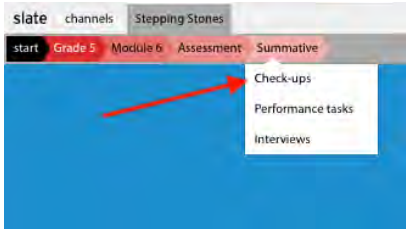| Term	Description
Maintaining concepts and skills 	Ongoing practice is an essential element of the scope and sequence of *Stepping Stones 2.0*. It is an integral part of the learning experiences students need to meet the expected standards by the end of the school year. Opportunities for practice are provided after every lesson. In Kindergarten, daily practice opportunities are provided in the Practice Book. A projectable tool in Lessons 1, 3, and 5 of each module provides additional practice. These are found under the Resources tab. In Grades 1–6, Lessons 1, 5, and 9 provide a projectable practice tool under the Resources tab. The even numbered lessons in Grades 1–6 include two additional journal pages for Maintaining concepts and skills. These pages offer practice opportunities for previously learned concepts and skills, as well as activities to prepare for an upcoming module.
ELL supports 	The *Stepping Stone*s program provides a language-rich curriculum where English Language Learners (ELL) can acquire mathematics in a natural second-language progression by listening, speaking, reading, and writing. Each lesson includes accommodations to be aware of when teaching the lesson to ensure scaffolding of content, and misconceptions of language are addressed. Since there may be several stages of language development in your classroom, you will need to use your professional judgement to select which accommodations are best suited to each learner. ELL advice is provided for each lesson in the Digital Teacher Edition. Find these supports by hovering over the ELL icon. ELL suggestions are also provided in *QUICKstep*s.

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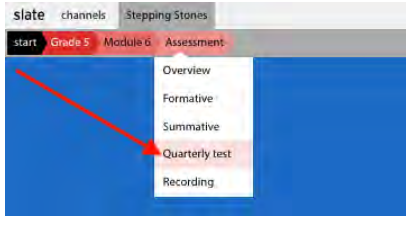| Term	Description
Differentiation tab 	Each lesson in the *ORIGO Stepping Stones* program also includes differentiation activities up to three levels: Extra Help, Extra Practice, and Extra Challenge.
Formative assessment 	Formative assessment is used to make informed decisions to guide instruction. These decisions could range from reviewing content, reteaching concepts, or providing additional work for students who require extra assistance or challenges. Formative assessment can occur informally during lessons with observations of students working and their discourse, or formally with written instruments such as pre-tests or journal entries..
Resources tab: Lesson playlist 	The Resources tab is found on each page of the Digital Teacher Edition. When additional resources are needed for a lesson or activity, they can be found by clicking on the Resources tab, which also provides links to digital resources specifically designed to support the lesson.

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Term	Description
Projectables 	Instead of drawing images or writing problems on the board, the Digital Teacher Edition includes projectable resources, embedded where they are needed. A wide variety of projectables can be found under the Resources tab for each lesson, as well as in other areas such as Differentiation and More math.
Journals and portfolios 	Lessons and activities help to identify learning, as is evidenced by work samples or through observing discussions or other student behavior. Two icons within lessons offer suggestions for assessing formatively through journals and portfolios. The eye-shaped icon has a suggestion for observation, while the folder icon provides suggestions for portfolio assessment. Ideas for journals and portfolios can also be found under the Assessment tab for each module.
Digital Student Assessment (DSA) **Digital assessment reporting tools** 	*ORIGO Stepping Stones 2.0* provides online student assessments for each instructional quarter in Grades 1–5. Each assessment offers a variety of technology-enhanced item types, such as open response and multiselect. Digital Pre-tests and Check-ups are also available for each module, Grade 1–5. Digital Assessment reports are downloadable and can be viewed in various formats. There is a whole-class report designed with a traffic light reporting format so teachers can quickly see which question each student responded to correctly or not. Reports can be sorted by standard, by domain, or by cluster. Teachers can also view individual student reports and see how long it took a student to respond to each question.

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Term	Description
Print assessment reporting tools	*Stepping Stones 2.0* provides nine options for recording student progress in each module. There is also a downloadable tool to record student progress by standard over the course of a year.
Summative assessment	Summative assessment generally takes place at planned intervals after instruction. It is used to sum up what students know. Used wisely, summative assessments can also serve a formative role and help guide instruction. Formal *ORIGO Stepping Stones* print summative assessments include check-ups, performance tasks, and interviews.
Performance tasks	These tasks offer a deeper measure of understanding of one or two learning targets in Grades 1–6.
Check-ups	These provide questions that require the student to select the correct answer, or to write a short response. These assessments can be used to determine what the student has retained from a lesson, and will usually parallel the pre-test.

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Term	Description
Interviews 	Interviews are used to assess a student's understanding of certain concepts and skills, such as the fluency of rote counting, or mental computation, which are more difficult to assess solely from paper-and-pencil methods.
Quarterly tests 	Quarterly tests are provided with modules 3, 6, 9, and 12. They assess key learning targets taught in the three modules of that quarter. The information can show how well students are maintaining concepts and skills.

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