COMPREHENSIVE MATHEMATICS



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# Section 1: Introduction and overview

The ORIGO Stepping Stones 2.0 Implementation Handbook has been developed to assist schools and school systems with the process of implementing ORIGO Stepping Stones 2.0 across their sites. This handbook is based on research into best practices for implementation. The content is clearly organized to guide school system leadership throughout the process. This handbook should be used by teams at district and school levels who are responsible for leading the implementation of ORIGO Stepping Stones 2.0.

### Implementation research

In recent years, the education community has shifted its focus and expectations from research-based to evidence-based (or evidence-informed) programs and practices. While selecting evidence-based practices to improve outcomes for students is important, so is focusing on the research and best practice of *effective implementation* to produce consistent, sustainable, positive outcomes for students (see Figure 1). This means **what** schools are implementing is just as important as **how** they are implementing those practices to be successful.



Figure 1: Formula for success

Through a synthesis and meta-analysis of research findings and literature, the National Implementation Research Network (NIRN) has identified best practices and developed frameworks based on them.<sup>1</sup> Researchers found that effective interventions must be supported by effective implementation to have positive outcomes for students and families.<sup>2</sup>

The NIRN has summarized its findings into five frameworks for active implementation science:

- 1. Implementation Teams
- 2. Implementation Stages
- 3. Implementation Drivers
- 4. Usable Innovations
- 5. Improvement Cycles

The frameworks are not linear, but they can be used in unison to effectively implement evidence-based practices.<sup>1</sup>

# **Implementation Handbook**

Please note that this handbook is not meant to provide comprehensive knowledge of implementation science and instead uses this research as the foundation for the *ORIGO Stepping Stones 2.0 Implementation Handbook*.

# Navigating the handbook

Researchers emphasize that effective implementation takes between two and five years, and should be delivered in stages.¹ This handbook is organized around four of these stages: Exploration, Installation, Initial implementation, and Full implementation. Each stage includes key activities for teams to prepare for the next stage of the process.

# Section 2: Key personnel roles and responsibilities

This section outlines the roles and responsibilities of key personnel in *ORIGO Stepping Stones 2.0* implementation, including district math leadership, principals, math coaches, lead teachers, and the classroom teachers who will form implementation teams at the district and school levels. They will be directly involved in planning the implementation of the program. Districts should form a District Implementation Team (DIT), while each implementing site should have a School Implementation Team (SIT). These teams work collaboratively, forming communication and feedback loops to support effective implementation (see Figure 2). This section also provides recommendations for the composition of teams, the purpose and frequency of team meetings, and specific responsibilities of personnel involved.

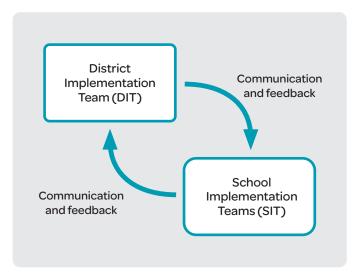


Figure 2: DIT and SIT communication and feedback loop

# **District Implementation Team**

### **Building a District Implementation Team**

The DIT consists of four to six members and is responsible for overseeing system-wide implementation. It is not an advisory group or committee. A district may consider having advisory groups or committees in addition to the DIT, but not in place of the team. **Note:** It is suggested that the DIT includes a math supervisor, elementary math specialists/coaches, key partners from other departments such as Special Education and/or Title I, and other personnel directly related to implementation. This team may also include representation from the Technology Department.

# The DIT's responsibilities

This team establishes the vision and mission for the project. They are actively engaged in planning the implementation, and are responsible for the following:

- Developing an annual professional learning plan for Stepping Stones leads and participating teachers.
- Creating a data collection plan to monitor student outcomes and implementation fidelity data on a monthly, quarterly, and annual basis.
- Participating in school-level collection of implementation fidelity data using the Stepping Stones Implementation Tool (SSIT).
- Resolving implementation barriers to support effective implementation at the school and classroom levels.
- Analyzing implementation data to identify implementation strengths and needs and planning for additional supports to improve implementation data.
- Developing a communication plan and establish feedback loops between the district and schools.
- Seeking feedback from teachers, math coaches, School Implementation Teams (SIT), and stakeholders to adjust and refine the implementation plan as needed throughout the year.

The DIT is responsible for making it all happen!

# Scheduling meetings

The DIT should meet at least monthly at a regularly scheduled time. The team may choose to meet more often during the initial stage of implementation (for example, weekly or twice a month).

# **Engaging stakeholders**

The DIT may seek feedback through a project advisory group including other stakeholders (for example, classroom teachers, math coaches, central office special education administrators, and parents). The team may meet quarterly with the advisory group to present progress updates and seek input on the implementation plan.

# **Principals**

# The principal's responsibilities

As with any school initiative, school-level implementation cannot succeed without the commitment of the principal. A principal should have, or be willing to work toward, a strong belief in building students' conceptual understanding of mathematics. They should believe that all students can learn mathematics at high levels if they are afforded a first-class curriculum, instruction, and assessment. Principals of schools selected to implement the *Stepping Stones* program should also:

- Honor programs and frameworks currently in place and communicate how *Stepping Stones* fits within those structures and initiatives.
- Be familiar with the SSIT and Stepping Stones Core Four (SSCF) tools to understand the effective use of the program.
- Identify a staff member to serve as the *Stepping Stones* lead for the school.

- Facilitate implementation through logistical planning. This could include scheduling time for the Stepping Stones lead to meet with teachers or grade-level teams, providing cover for teachers to observe a model lesson, and scheduling time for Stepping Stones professional development.
- · Identify barriers to school-level implementation and problem-solve to offer solutions.
- · Report any implementation barriers outside of the school's control to the DIT.
- Maintain the expectation that identified staff use *Stepping Stones* as intended (aligned to the district's expectations).
- · Meet with the SIT at least monthly to monitor progress and plan implementation activities.

# **School Implementation Team**

## **Building the School Implementation Team**

The SIT is responsible for overseeing the day-to-day implementation of *Stepping Stones* at the school level. The team should have at least three members, but no more than five. These can include the principal, assistant principal, *Stepping Stones* lead, and math coach or lead teacher (if applicable).

### The SIT's responsibilities

- Embed the implementation of *Stepping Stones* into the School Improvement Plan, specifically addressing mathematics-related goals and activities, as appropriate.
- Set goals for student outcomes and the implementation of *Stepping Stones* for the school year.
- Collaborate and communicate with the DIT to schedule implementation activities, such as school-level training and coaching opportunities.
- Use the SSIT to monitor implementation and plan for professional learning and coaching supports to improve implementation.
- Monitor and communicate the project's progress throughout the year.
- · Communicate progress and any barriers to the implementation to the DIT.

# **Scheduling meetings**

The SIT should meet at least monthly to review the project's progress. The team may choose to meet more often during the initial stage of implementation (for example, weekly or twice a month).

# **Stepping Stones Lead**

### Selecting the Stepping Stones lead

The Stepping Stones lead is chosen by the principal and is responsible for overseeing implementation of Stepping Stones at the school. This person should have a deep understanding of mathematics content and the SSIT, be able to provide professional development and coaching support to teachers, and have effective communication and collaboration skills. A math coach would be an ideal candidate for the Stepping Stones lead. For schools that do not have math coaches, principals should consider math specialists/resource teachers or lead teachers for the role. If a lead teacher is selected as the Stepping Stones lead, the principal should plan for substitute cover or informal release time to provide them with adequate time to support colleagues with implementing the program.

# The Stepping Stones lead's responsibilities

The Stepping Stones lead is the primary communication link between the school and the DIT. They will also:

- Develop a plan to offer professional development for teachers throughout the school year.
- Work with teachers in a non-evaluative manner. The lead can support teachers in a variety of ways, including disseminating Stepping Stones resources, co-planning lessons, co-teaching, modeling Stepping Stones lessons, and observing teachers to provide constructive feedback.
- Report on the implementation's progress and barriers to the DIT through established communication loops.
- · Participate in monthly SIT meetings.
- Collect data as requested by the SIT and/or DIT.
- Participate in Stepping Stones professional development.
- Conduct surveys to provide feedback to the DIT and ORIGO representatives.

### **Teachers**

### Selecting teachers (first implementers)

The district and/or principal chooses the teachers who will use the *Stepping Stones* program according to the guidance of the DIT. The DIT and/or principal can consider a variety of structures for selecting participating teachers. For example, a principal may select teachers across the same grade level, multiple teachers in each grade level, or one teacher per grade level. Principals can consult with the DIT when they are considering their selection. Teams should select teachers and/or grade levels based on a variety of factors but, ultimately, teachers and/or grade levels where successful implementation is most likely is a priority. Teachers who are resistant to change and the adoption of new practices will not be suitable as first implementers. Look for teachers who will work toward success and be able to share those stories and practices with others to support buy-in.

# The teachers' responsibilities

The teachers are responsible for consistently using the *Stepping Stones* program, aligned to the DIT implementation plan, during math instruction. They also:

- Provide high-quality mathematics instruction that is aligned to best practices.
- Participate in Stepping Stones professional development.
- · Are familiar with the SSIT.
- Collaborate with the Stepping Stones lead to plan and deliver instruction.
- Share student outcomes and implementation fidelity data with the principal, SIT, *Stepping Stones* lead, and DIT, as requested.
- Complete surveys to provide feedback to the DIT, SIT, Stepping Stones lead, and ORIGO representatives.

# **Section 3: Exploration**

The Exploration stage often happens when selecting a math curriculum or resource at the district level, so this section primarily pertains to the DIT. During this stage, the DIT is appointed to oversee the work, assessing the district's needs and analyzing *ORIGO Stepping Stones 2.0* to ensure a suitable fit within existing initiatives. The team should also examine the district's capacity to implement the program as intended, including staffing and resources. Teams may use the NIRN's Hexagon Tool<sup>3</sup> (see Appendix 1), or a similar exploration aid, to assist with this discussion and analysis. The DIT should also develop methods to promote buy-in and support the use of *Stepping Stones* at the school level.

# Goals for this stage

The leadership overseeing the Stepping Stones implementation should:

- · Organize the DIT and schedule monthly meetings for the school year.
- Assess the district's needs and analyze the *Stepping Stones* program to ensure a suitable fit with existing resources and requirements, and capacity to implement.
- Develop methods to promote buy-in for using Stepping Stones for mathematics instruction.

# Communicate early and often to promote buy-in

Clearly communicate any changes occurring before or early in the process. An open discussion about changes can have a significant impact on stakeholders' reactions to the information. Communication should include: Why the change is happening; how it will potentially affect schools, teachers, and students; and the key goals and objectives of implementing the *Stepping Stones* program. The DIT should establish and use a communication plan throughout the year to report on the implementation's progress and its success stories.

# Get buy-in from the top down

As well as encouraging teachers' support, consider including principals and key district-level staff in the change plans early on. Gaining support for the project from leaders at different levels in the district will make it stronger. It will also ensure leaders have time to prepare for any questions about the process that could be asked by the *Stepping Stones* leads and participating teachers.

### Share success stories

Change takes time, so not everyone will get on board at the same time. Identify early adopters, the teachers who are finding success with the program, and have them share their stories. Ask early adopters to present at district-wide professional development events. They can video their classroom instruction (with permission), or model lessons for teachers across other grade levels or at other schools. The more teachers share their positive *Stepping Stones* stories with other teachers, the better!

# Get input along the way

It is important for teachers to know their feedback and ideas are valued and acknowledged. Ensure every implementation plan incorporates a process for gathering input from stakeholders (known as the communication and feedback loop). After collecting feedback, the DIT should decide how to use the data as they adjust their implementation plan. Be sure to share how the team used teacher feedback and what specific changes were made based on their input.

# **Section 4: Installation**

NIRN research explains that the Installation stage focuses on developing the infrastructures that will support the implementation of the program or practice. This includes planning for ongoing training, coaching, and supervision. During this stage, implementation plans are made and include forming teams, organizing regular meeting times and schedules, and planning the logistics of the project. Decisions made at this stage include funding, resources, personnel, and sustainability of the project. The activities recommended during this section primarily concern preparations at the district level.

# Goals for this stage

The DIT/SIT overseeing the Stepping Stones implementation should:

- Acquire necessary resources.
- Define and communicate expectations and responsibilities to principals, *Stepping Stones* leads, and teachers.
- · Create an implementation plan.
- Develop a communication plan to describe the *Stepping Stones* implementation process (for example, activities, participants, timeline, and benefits) to key stakeholders.
- Create an annual training plan, including professional development and coaching supports, for Stepping Stones leads and teachers.
- Develop methods to promote communication and networking across the participating schools.
- Develop a data collection plan, including student outcomes and implementation fidelity.

# Resources for implementation

- Student Journals (printed; Grades K-6)
- Slate (digital Teacher Edition) or QUICKsteps (printed Teacher Edition)
- The Number Case (Grades K-6)
- ORIGO Big Books (Grades K-2; Tunes and teacher notes are on Slate)

# **Technology requirements:**

- · Slate login (direct or through single sign-on) for each teacher
- · Current version of Chrome, Firefox, or Safari

# The DIT's communication plan

The DIT should define the roles, responsibilities, and expectations of the implementing schools at one of the team's first meetings. This will also be an important step in the communication plan. As the team works to define the expectations, they should consider:

- What are the roles and responsibilities of the school staff, including the principals, *Stepping Stones* leads, and teachers?
- What data do we expect to collect from the schools throughout the year?
- · What additional professional development are the schools expected to participate in?
- · How should the teachers use the Stepping Stones program during mathematics instruction?
- Will the program scope and sequence be followed as intended, or will it be integrated into the current curriculum and pacing guide?

### Components of a communication plan

A communication plan celebrates successes, clears any misunderstandings (overcomes barriers), and builds the collective commitment of a diverse range of stakeholders. A communication plan should include:

- Mission and purpose What is the clear purpose and mission of the communication plan?
- Information or messages What needs to be communicated? How does the information change over time as the implementation progresses?
- **Methods** Are a variety of communication modes used (for example, presentations, meetings, websites, and emails)?
- Responsibility Who is responsible for the implementation? What is the role of the leadership?
- Communication and feedback loops Who is responsible for ensuring that feedback and information gathered through communications are used to inform practices, overcome barriers, and celebrate successes?
- **Audience** Who should be included in communications? How do these communications change to best be understood by different audiences?
- Frequency When and how often should the team communicate with stakeholders?
- Indicator of success What data is used and how often is it analyzed to determine the effectiveness of our communication plan?

### What should be included

The plan should include the team's vision for *Stepping Stones* implementation. As the DIT develops a vision statement, they should consider what a successful implementation would look like. The plan should also include the team members' names and roles, and a meeting schedule. Teams should also set an implementation goal for the school year. For example, consider assessing the percentage of participating teachers who use the program as intended, according to the SSIT. Teams should also think about other methods to measure implementation (for example, surveys, observations, teacher inteviews, and professional development evaluations). The implementation plan is also where the communication, training, coaching and data collection plans for the year can be documented. The *ORIGO Stepping Stones 2.0* Annual Implementation Plan Template (see Appendix 2) can support district and school teams as they develop implementation plans.

# Annual training plan

An annual training plan should be developed for both the *Stepping Stones* leads and the teachers. Because the leads will be responsible for supporting the teachers, they will need more in-depth training to support the teachers in planning and delivering math instruction using the *Stepping Stones* program. The teachers will need initial training in *Stepping Stones*, but much of the follow-up training and support should happen through job-embedded professional development (coaching) at the schools by *Stepping Stones* leads and ORIGO representatives.

# Data collection plan

The following should be considered when creating a data collection plan:

- · What data can be used to measure student outcomes?
- What data can be used to measure the implementation of Stepping Stones at the school level?
- Will pre- and post-module assessment data for Stepping Stones be collected to measure progress?
- Who will be responsible for data collection?
- How often will data be collected? (At least twice per school year is encouraged.)

# **Section 5: Initial Implementation**

# Manage change and expectations, improvement cycles, learn from mistakes, and celebrate progress

This is the most challenging stage of any implementation because practitioners are introducing a new program while changing their usual way of working. Best practice is implemented in selected schools, and District and School Implementation Teams use a *Plan, Do, Study, Act* cycle to monitor progress and adjust the process along the way. The DIT and SIT has a critical role identifying barriers and seeking solutions to changes in practice, while improving implementation efforts. This section includes steps for teams to follow in the first year to ensure benchmarks are reached.

### Benchmarks for the first month of school

- Stepping Stones leads provide coaching support to teachers as they begin using Stepping Stones.
- Stepping Stones leads focus on providing support to grade-level teams during scheduled team meeting time, and on working closely with early adopters.
- Survey teachers and *Stepping Stones* leads for feedback in preparation for *Stepping Stones* training sessions.
- · Identify early adopters and success stories that can help encourage teacher buy-in.
- Refine data collection plan and use data to inform next steps.

## Benchmarks for the school year

- Provide ongoing professional development and coaching with Stepping Stones.
- Provide opportunities for teachers and Stepping Stones leads from implementing schools to
  collaborate and communicate (for example, plan meetings or trainings with schools at the same
  place, date, and time, set up after-school virtual meetings, or create an online repository for
  resources and lesson sharing).
- Implement communication plans to inform stakeholders of launch dates and activities, and convey support.
- Develop communication protocols for identifying barriers and adaptive challenges, and for problem solving at each level (for example, use weekly or monthly team meetings or a shared spreadsheet to collect and identify reported issues, create plans, review results of past problem-solving efforts, and forward issues to the next level, as appropriate).
- Provide ongoing training and coaching to address teacher needs, based on implementation data.
- Collect implementation fidelity data using the SSIT (at least twice per year). The DIT/SIT and Stepping
  Stones leads use this data to plan professional development and coaching support for teachers and
  grade-level teams.
- Conduct surveys (at least twice per year) to collect feedback on successes and challenges from the initial implementation to improve the process for the following year.
- Revise the plan to prepare for full implementation.

# Section 6: Data collection and analysis

Data collection and analysis are key components of the implementation process, ensuring its effectiveness. Data analysis allows the DIT and SIT to identify areas of concern, inform training and coaching efforts, and identify schools and/or teachers that are effective in their practice. It is important to understand that during the initial implementation stage, the primary focus for data analysis should be implementation data since it is unreasonable to expect changes in student outcomes while teachers are just beginning to use these new practices.

# The data to analyze

Teams should analyze two types of data: student outcome data and implementation fidelity data. This should be done throughout the year to assess the project's progress.

### Student outcome data

Examples of student outcome data include diagnostic assessments, district assessments, Stepping Stones pre- and post-module assessments, and state assessments. Teams should consider which type of student outcome data will be the most sensitive and show incremental progress. This will give the team a clearer idea of how the implementation of Stepping Stones affects student outcomes.

Implementation fidelity data can be collected through the use of the SSIT (see Appendix 3). The purpose of the SSIT is to provide DITs and/or SITs 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 intended to be used not to evaluate teacher performance but to inform the actions of DITs and/or SITs. 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.

Classroom walkthroughs can also be used by district and school leadership to collect implementation data. The *Stepping Stones* Core Four (SSCF) tool is a classroom walkthrough tool that district- and school-level teams use to measure the implementation of the core features of the *Stepping Stones* program in the classroom (see Appendix 4). While the SSIT provides a comprehensive picture of implementation levels and takes thoughtful planning to complete, the SSCF tool provides a quick snapshot of implementation through 15–20 minute classroom walkthroughs. It focuses on the four key components of *Stepping Stones* implementation that can be assessed during a classroom observation. Data gathered across a sampling of classrooms at a school and/or district can inform the professional development and coaching plans to support teachers with implementation.

It is important that the SSIT and SSCF tool are shared with school-level teams, *Stepping Stones* leads, and teachers to ensure all stakeholders understand the case for best-practice use. The DIT and SITs should consider other methods to measure the effectiveness of their implementation plan, such as *Stepping Stones* usage reports, and surveys.

# Frequency of data analysis

Depending on the type of data, teams should analyze them on a monthly or quarterly basis. For example, teams should analyze formative data monthly to make in-the-moment adjustments to their implementation plan. Formative data could include surveys, professional development evaluations, and other types of qualitative feedback from the participating staff. Teams should collect and analyze student outcomes and implementation fidelity assessment data, such as the SSIT and SSCF tool, at least twice per year, but ideally three times per year: in the fall, winter, and late spring.

### Using the data

Implementation fidelity data becomes extremely important during the initial implementation stage. It can be used to make immediate adjustments to the implementation plan, and inform professional development and coaching needs. Data should provide information on the effectiveness of the teams' implementation efforts, and not be used to evaluate teachers' performance.

In addition, the DIT and SITs may analyze the relationship between the implementation fidelity data and student outcomes data. For example, teams might ask, "Are students making more academic progress in classrooms with higher levels of implementation fidelity, according to the SSIT and/or SSCF tool?"

# Section 7: Full implementation and scaling up Monitor outcomes, improvement cycles, and sustainability

Full implementation is reached when 50 percent or more of the intended practitioners are using an evidence-based practice with fidelity<sup>1</sup>. During this stage, the *Stepping Stones* program is being routinely implemented. The teachers are comfortable with the materials and core components of the program, and few changes are made to ongoing practice. The implementation teams continue to support the practices to ensure processes are maintained and constantly improved, even during changes in leadership and staff.

# Preparing for full implementation

Planning for full implementation should begin during the spring and continue through the summer of the initial implementation year. By using the data collected in the initial implementation stage, the DIT and SIT can make necessary adjustments to their plan for full implementation. The DIT and SITs can use The Planning for Full Implementation Guide (see Appendix 5), which can help them prepare for full implementation.

# Key activities for full implementation

- Training for new users and booster training for experienced teachers are provided.
- Coaching infrastructure is improved and refined to provide more coaching support during the full implementation stage.
- Implementation fidelity data is collected, analyzed, and reported using the SSIT and SSCF tool.
- The DIT and/or SIT elicits feedback from teachers and uses that information for action planning (for example, administrative support and policies are changed to facilitate best practices).
- Improvement processes address issues, identify challenges, develop plans for improvement, monitor execution, and assess results (PDSA cycles) until improvement occurs or processes are fully embedded.

# **Expanding to other sites**

The process is considered at *full implementation* when 50 percent of teachers are using the *Stepping Stones* program with 80 percent fidelity. The DIT and SITs will know when it is appropriate to include more schools, grade levels, and/or teachers when the expected practices are being used consistently as intended in the selected schools and teachers' classrooms. If practices are not being used consistently as intended, implementation efforts should continue into the next year until they are.

# **Section 8: Conclusion**

The handbook is meant to be used by District and School Implementation Teams throughout the process. Change takes time and can be difficult. It is important for teams to anticipate challenges and leverage best practices in implementation research to assist the change process. It is essential that programs and practices are implemented as intended, since this will improve mathematics outcomes for all. Teams should focus as much on **what** they are implementing as on **how** they are implementing it to make a true difference for students and families.

# References

- 1. Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., and Wallace, F., *Implementation Research:*A Synthesis of the Literature. FMHI Publication No. 23. (Tampa, FL: University of South Florida,
  Louis de la Parte Florida Mental Health Institute, National Implementation Research Network, 2005).
- 2. Metz, A. and Bartley, L., "Active Implementation Frameworks for Program Success: How to Use Implementation Science to Improve Outcomes for Children," *Zero to Three*, (March 2012): 11–18.
- 3. Metz, A. & Louison, L. (2018) *The Hexagon Tool: Exploring Context.* Chapel Hill, NC: National Implementation Research Network, Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill. Based on Kiser, Zabel, Zachik, & Smith (2007) and Blase, Kiser & Van Dyke (2013).

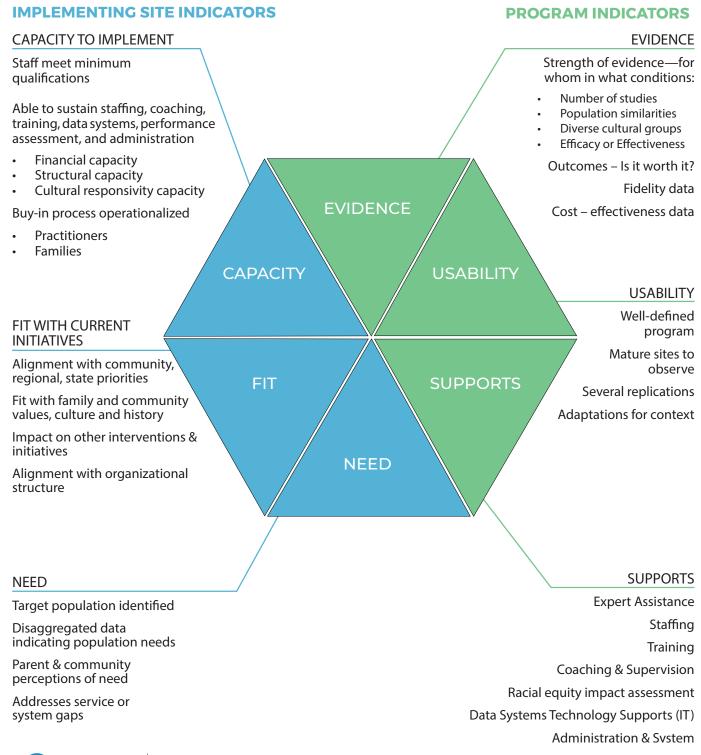
# **Appendix 1**

Hexagon Discussion and Analysis Tool

NATIONAL IMPLEMENTATION RESEARCH NETWORK

# The Hexagon: An Exploration Tool

The Hexagon can be used as a planning tool to guide selection and evaluate potential programs and practices for use.





# **Appendix 2**

ORIGO Stepping Stones 2.0
Annual Implementation Plan Template

ORIGO Stepping Stones Annual Implementation Plan:	[Insert Team Name]
School Year:	[Insert School Year Here]

# Vision

Describe what a successful implementation of  $Stepping\ Stones$  in your district or school would look like.

[Insert your vision here]

# Implementation Team Members

Roles	Names
[Insert roles here]	[Insert your team members' names here]
DIT Meeting Schedule: (dates, times, location)	Implementation Goal
[Insert established meeting schedule here]	[Insert annual implementation goal here]

# Communication Plan

How/What/When will you communicate with them?	[Insert details for communication plans for each stakeholder group here]
Who are the different stakeholder groups you will communicate with?	[Insert stakeholder groups here]

# **Training Plan**

Date & Time	Content	Audience	Facilitator
[Insert dates & times of trainings here]	[Insert training content here]	[Insert training audience here]	[Insert facilitator for each training here]

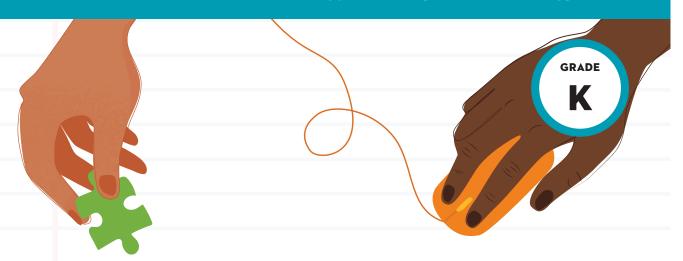
# Data Collection Plan

Data Source	Implementation Data or Student Outcome Data	Timeline	Person(s) Responsible
[Insert data source here]	[Write "Implementation" or "Student Outcome" data here]	[Insert timeline when you will collect data here]	[Insert person(s) responsible here]

# **Appendix 3**

**Stepping Stones Implementation Tool** 

**COMPREHENSIVE MATHEMATICS** 



Implementation Took







# **Implementation Tool**

### 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 men	nbers' names and roles:
Notes:	

# **Implementation Tool**

# **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	1.1 Understands and applies the concrete-pictorial-symbolic approach to develop conceptual understanding of mathematics.	Observations	Digital Teacher Edition QUICKsteps Student Journal				
	CPA approach		Lesson plans					
			Teacher interviews					
	Language approach	1.2 Understands and applies the language stages (student, materials, mathematical) to develop conceptual understanding of mathematics.	Observations	Digital Teacher Edition QUICKsteps				
			Lesson plans					
			Teacher interviews					
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	Digital Teacher Edition QUICKsteps Student Journal				
			Lesson plans					
			Student work					

# **Implementation Tool**

# **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	Lesson plans	Digital Teacher Edition QUICKsteps				
		modules and lessons in the order outlined in the Stepping Stones scope and sequence.	Teacher interviews	Student Journal Practice Book				
	■ 251/423		District pacing guides					
			Review of Student Journal					
			Observations					
		3.2 Includes Maintaining concepts and skills during daily instruction, and lessons for two	Review of Student Journal	Student Journal Practice (playlist)				
		and lessons for two days.	days.  Observations	Maintaining concepts and skills (Student Journal)  Problem solving  Projectable fluency practice				
			Lesson plans					
			Teacher interviews					
Z	otes:							

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# **Implementation Tool**

# 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	<b>4.1</b> Teachers plan modules collaboratively.	Observation of planning meetings	Module resources				
			Teacher interviews					
			Meeting notes					
		4.2 Uses the supports in the	e <b>Mathematics</b> section	n to:				
		a. explore the depth and complexity of the standards to understand the module vocabulary and learning targets.	Observation of Planning Meetings	MathEd  Research into practice  Coherence  Focus				
			Teacher interviews	Common errors and misconceptions Sequence navigator Standards search				
		b. review the best practices for teaching the content within the module.	Observation of Planning Meetings	Steps in Action videos  ORIGO ONE  MathEd  Research into practice				
			Teacher interviews	Common errors and misconceptions ELL supports Vocabulary development				

# **Implementation Tool**

# 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	4.3 Previews assessments	within the module to:					
	planning	a. determine what students need to know and do by the conclusion of the	Observation of planning meetings	Module resources				
		module.	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	Problem solving (module 5 and beyond)  Enrichment  Cross-curricula				
			Observation of planning meetings					
			Teacher interviews					
		4.5 Reviews and intentionally plans to implement Small Group activities 1 and 2.	Small group 1					
			Small group 2					

# **Implementation Tool**

# 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 <i>QUICKsteps</i>				
		<b>5.2</b> Reviews the steps of the lesson to plan for lesson delivery.	Observation of planning meetings  Teacher interviews	Digital Teacher Edition QUICKsteps				
		<b>5.3</b> Reviews the support tabs to plan for differentiation.	Observation of planning meetings	Differentiation tab ELL supports Formative assessment Common errors and misconception Small group 1 and 2				
			Teacher interviews  Lesson plans					
		5.4 Reviews Maintaining concepts and skills to plan to implement spaced learning practices.	Observation of planning meetings	Digital Teacher Edition  QUICKsteps				
			Teacher interviews  Lesson plans					
		5.5 Completes Step 1 by planning and gathering resources necessary to	Observation of planning meetings	Digital Teacher Edition				
		deliver the lesson.	Teacher interviews	QUICKsteps				
N	otes:							

# **Implementation Tool**

# **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				
		<b>6.3</b> Uses appropriate mathematics vocabulary throughout the lesson.	Observations	Vocabulary development  QUICKsteps  Digital Teacher Edition  MathEd				
		<b>6.4</b> Teaches the full lesson (Steps 2–4) including the use of slides, projectables, and all other recommended resources.	Observations	Digital Teacher Edition QUICKsteps Lesson playlist				
			Lesson plans	resources				
		<b>6.5</b> Poses questions, including but not limited to those included in Steps 2–4, to facilitate student-to-student discourse.	Observations	Digital Teacher Edition  QUICKsteps				
			Lesson plans	Step In discussion				

# **Implementation Tool**

# **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 Journal				
			Student Journals					
		<b>6.7</b> Uses Practice Book as a part of daily instruction.	Observations	Practice Book Essential practice (every lesson)				
			Teacher interviews	Fluency, counting, and subitizing (Lessons 1, 3, 5)				
			Student work	Review Pages (end of module)				
		6.8 Provide feedback and differentiate instruction to meet the needs of each learner through the use of formative assessment data.	Observations	Differentiation tab  ELL supports				
			Teacher interviews	Formative assessment  Coherence  Common errors and misconceptions				
			Lesson plans					
			Student work					
No	otes:							

# **Implementation Tool**

## 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  Teacher data recording tools  Observations  Teacher	Assessment recording tools				
		7.2 Uses formative data to inform module planning, lesson planning, and differentiation.	interviews  Observation of planning  Student portfolios  Student assessment data  Student work  Teacher	Pre-tests  Observations and discussions  Journals and portfolios  Digital Student Assessment				
		7.3 Uses multiple and varied summative data sources to evaluate student learning.	interviews  Student assessment data  Teacher records  Teacher interviews  Observations  Lesson plans  Assessment calendar	Performance tasks Check-ups Interviews Quarterly tests Digital Student Assessment				
No	otes:							

# 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 <i>Stepping Stones</i> 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.

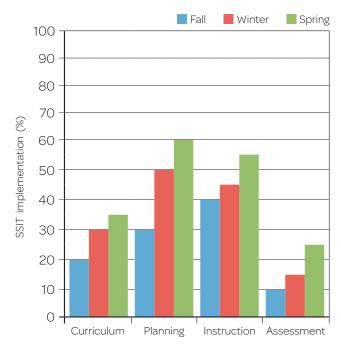


Figure 1. SSIT scores for one district across three administrations during initial implementation

# **Implementation Tool**

### 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.

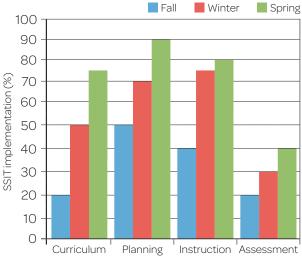


Figure 2. SSIT scores for one district across three administrations during full implementation

### 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.

## 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			

and trends
and
Patterns

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

Resources needed		
When		
Who		
Actions		
Indicator(s) of focus		

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### **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 <i>ORIGO Stepping Stones</i> 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 <i>Stepping Stones</i> resources do you explore to understand the standards and learning targets you will be teaching?					
4.2b	When planning for a <i>Stepping Stones</i> 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 <i>Stepping Stones</i> resources do you plan to use? How often do you plan for using the Investigations, Problem solving, Enrichment, Cross-curricular, or Thinking Tasks?					
4.5	When planning a module, how do you plan for the small group activities?					

### **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 <i>Stepping Stones</i> 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?				
	How do you know the intent of the lesson that you are teaching?				
6.2	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?				
	How closely do you follow all of the lesson steps outlined in the plan and use all				
6.4	of the projectable resources during a <i>Stepping Stones</i> Lesson?				
	If you don't, why do you deviate from the resources?				
6.5	How do you encourage student discourse during instruction?				
0.5	How often do you use the questions provided in the teacher notes?				
	How do you use the Student Journal?				
6.6	Do you use all of the parts of the Student Journal? Why/why not?				
	How often do you use the Maintaining concept and skills work in the journal?				
6.7	How often do you use the projectable Fluency Practice?				
	How often do you use Problem solving or Investigations?				
	What kind of feedback do your students receive during instruction?				
6.8	How do you use your observations during instruction to inform your differentiation?				
3.0	How do you use the differentiation resources for small group instruction?				

### **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?					

### **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.

### STEPPING STONES 2.0

### **Implementation Tool**

### **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%

### 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

### **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)

	MCS*				
Tier 3 (# )	Step Ahead				
	Step Up				
	MCS*				
Tier 2 (# )	Step Ahead				
	Step Up				
Tier1 (# )	MCS*				
	Step Ahead				
	Step Up				
tudents	MCS*				
Special Education students (# )^	Step Ahead				
	Step Up				
Total number of	journals reviewed				
Grade					

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\*Maintaining concepts and skills

^Insert the number of students.

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### Term ORIGO model for teaching concepts Model Real objects Classroom materials Pictures Symbolic Term ORIGO model for teaching concepts Student Language Materials Language Mathematical Language

ORIGO Stepping Stones introduces symbols gradually and after students have had many meaningful experiences with models, including real objects, classroom

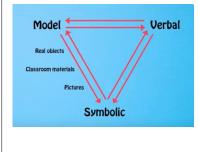
had many meaningful experiences with models, including real objects, classroom materials, and 2D pictures, as shown on the left side of the diagram. Symbols are also abstract representations of spoken words, so students move through distinct language stages as depicted on the right side of the diagram.

Description

### 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

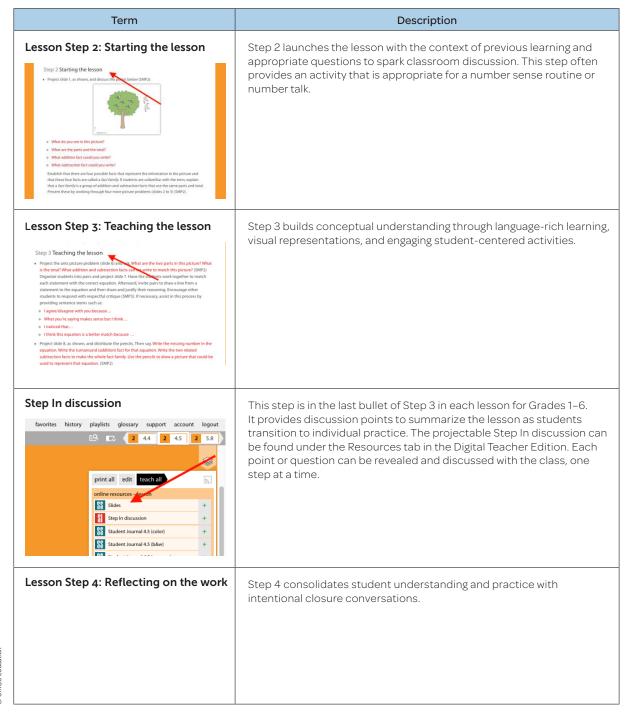
### Term Description Language stages Language is essential in helping students build an understanding of mathematical concepts. There are four stages of language development, and each is crucial to the development of deep understanding. The stages shown on the right side of Student the ORIGO model for teaching concepts and are detailed below. Materials Student language In the first stage, the program is designed to leverage students' existing Mathematical natural language to describe concepts. For example, students may use the words eat, break, jump away, swim away, or spend to describe Symbolio 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

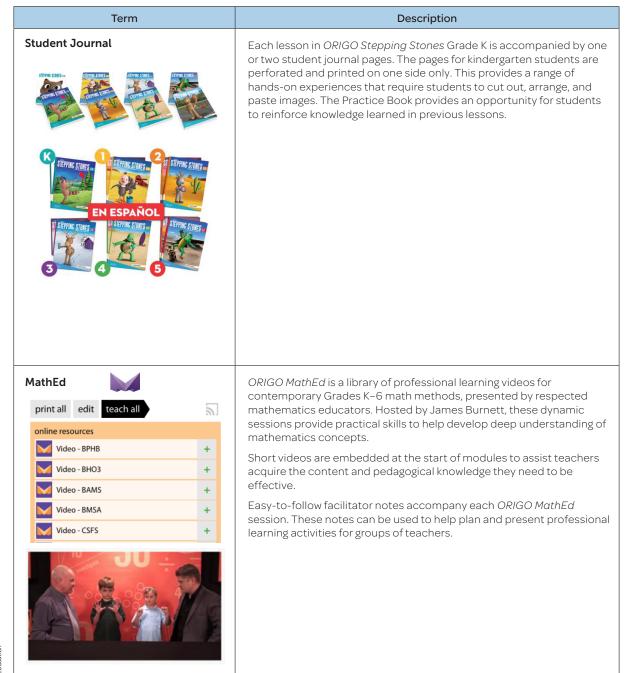
Term	Description
ORIGO model for teaching skills  Introduce Reinforce Practice Extend	ORIGO believes that students acquire skills over time as they engage in four distinctly different types of activities.  Introducing In the first stage, students are introduced to the skill using contextual situations, 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/UEOiaY5XMKk
Stages of strategy development  Introduce  Reinforce  Practice  Extend	The stages of strategy development are Introduce, Reinforce, Practice, and Extend, and are described above.  Additional Resource: https://youtu.be/UE0iaY5XMKk

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  Learning Targets	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.

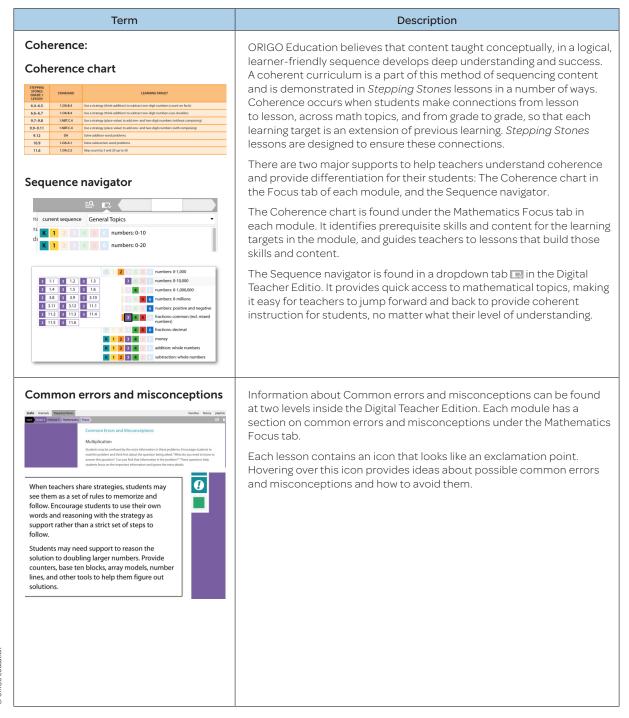
### Term Description Standards for Mathematical The Standards for Mathematical Practice describe varieties of expertise Practice (SMPs) that mathematics educators at all levels should strive to develop in their students. These practices rest on important processes and proficiencies that have longstanding 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.

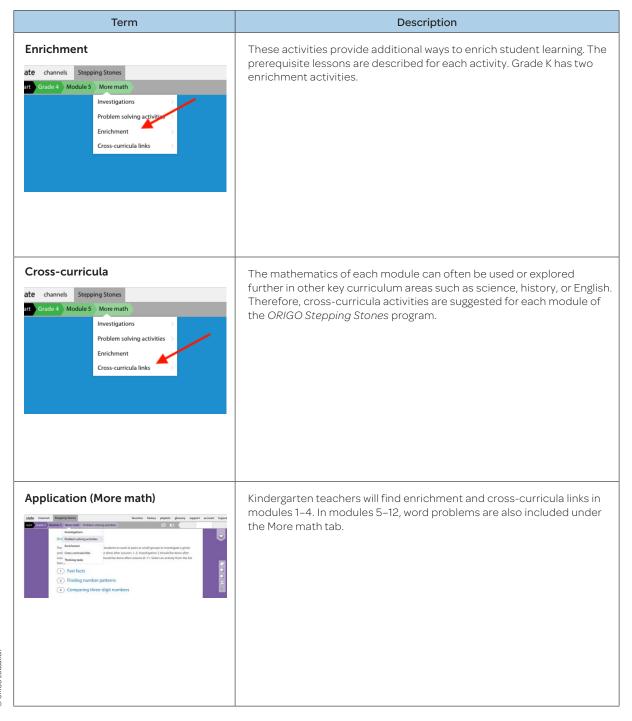
Term	Description
Digital Teacher Edition   The second of the	The Digital Teacher Edition is delivered online to give teachers one central location to access all their lesson plans, student activity pages, and teaching tools. The Digital Teacher Edition gives instant access to all content for Grades K–6. One of the great benefits of a digital delivery platform is the ease with which <i>ORIGO Education</i> 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.
QUICKSTEPS QUICKSTEPS  QUICKSTEPS QUICKSTEPS	
Lesson Step 1: Preparing the lesson  4.5 Subtraction: Writing fact families (count-on facts) In this lesso, students write addition and subtraction equations to form fact families for the count-on facts. The fillibering mathematical practices are developed:  5.502 — when students with equations to match a picture, and dawn a picture to represent an equation, and  5.502 — when students justify their a party and give feedback to others.  Step 1 Preparing the lesson  Each student will need:  1 red and blue color pencils  5 student Journal 4.3	Step 1 lists the materials needed to teach the lesson.





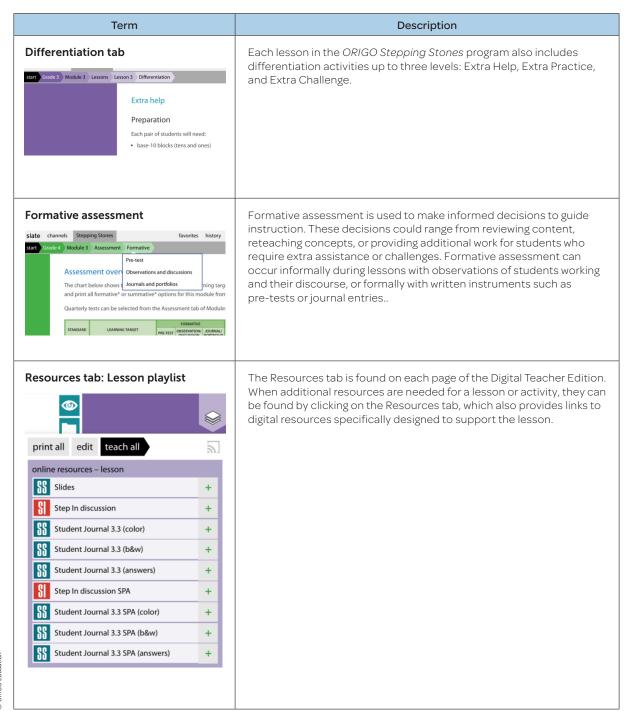
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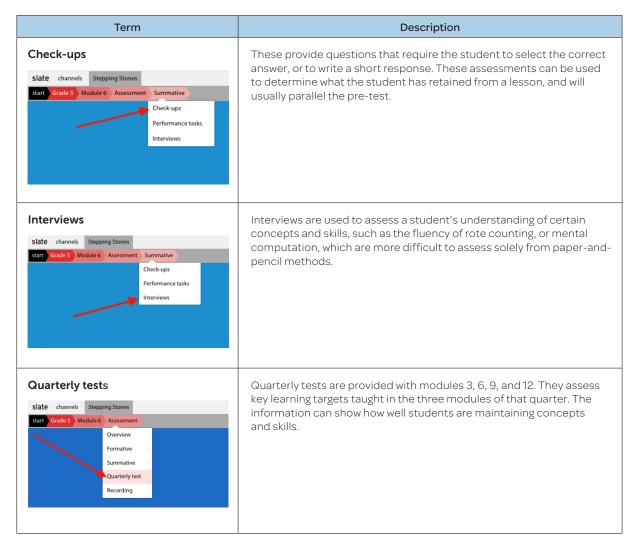


### Term Description Maintaining concepts and skills Ongoing practice is an essential element of the scope and sequence of Stepping Stones 2.0. It is an integral part of the learning experiences I.2 Maintaining concepts and skills students need to meet the expected standards by the end of the school 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. **ELL supports** The Stepping Stones program provides a language-rich curriculum where English Language Learners (ELL) can acquire mathematics in a slate channels Stepping Stones natural second-language progression by listening, speaking, reading, start Grade 3 Module 8 Mathematics and writing. Each lesson includes accommodations to be aware of when teaching the lesson to ensure scaffolding of content, and ORIGO misconceptions of language are addressed. Since there may be several Research into practice stages of language development in your classroom, you will need to use Learning targets your professional judgement to select which accommodations are best suited to each learner. English language learners Vocabulary development 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 QUICKsteps. ELL 8.7 Common fractions: Identifying improper fractions on a ln Step Step 1 Preparing 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  3.OA.C.7 Can the student multiply one- and two-digit numbers by 2?	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.
Print assessment reporting tools  start Grade 3 Module 3 Assessment Recording  Recording	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  slate channels Stepping Stones favorites history  start Grade 4 Module 3 Assessment Summative  Check-ups  Assessment over Performance tasks Interviews geach learning targ and print all formative* or summative* options for this module from Quarterly tests can be selected from the Assessment tab of Module  STANDAND LEARNING TARGET FORMATIVE PRETEST OBSERVATION JOHNNAU DISCUSSION PORTIFICAD	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.



### **Appendix 4**

Stepping Stones Core Four Tool

### **Stepping Stones Core Four Tool**

The Stepping Stones Core Four (SSCF) tool is designed to help an observer understand the extent to which school personnel are applying the core elements of the Stepping Stones program in classrooms during brief classroom walkthroughs. Using this tool, observers gather data on the Core Four: components of the Stepping Stones program that are look-fors. Observers then give educators feedback and identify and summarize needs for professional development to improve the implementation of the Stepping Stones program. This tool is not intended to be used to evaluate teacher performance.

### Administration

Administrators and coaches assess program implementation during 15–30 minute classroom observations. Before observers conduct a walkthrough using the SSCF tool, they should review the lesson plan for the *Stepping Stones* lesson they will be observing. They may also consider a preconference with the teacher to better understand the lesson. During the classroom walkthrough, observers use the SSCF tool to identify specific components of the *Stepping Stones* program in use. After the observation, and before making the final rating, observers post-conference with the teacher to ask any clarifying questions and inquire about any of the Core Four Look-fors they did not observe during the lesson.

### Scoring

Each Look-for is scored on a rating scale giving a total of 12 possible points per classroom observation.

O	1	2	3	N/A
NO	INITIAL	SOME	STRONG	CANNOT BE
EVIDENCE	EVIDENCE	EVIDENCE	EVIDENCE	DETERMINED
This Look-for is not in place and teacher responses do not indicate this Look-for occurs with any degree of fidelity.	Conversations with teachers or observations of the classroom show initial evidence that this Look-for is occurring irregularly.	Some evidence of this Look-for was observed during the classroom walkthrough. Teacher responses indicate this Look-for occurs with some degree of frequency.	Strong evidence observed indicates this Look-for is in place. Teacher responses indicate this Look-for occurs frequently and is routinely practiced in the classroom.	Look-fors may be in place, but this could not be determine during the classroom walkthrough.

School and/or District Implementation Teams use the aggregate scores from the SSCF tool across a sampling of classrooms to monitor progress on the implementation of *Stepping Stones*. (See the *Stepping Stones 2.0 Implementation Handbook* pages 13–14 for additional information about how to use this data.) The SSCF tool generates scores reflecting the implementation percentage for each of the Core Four Look-fors of the program. For example, from the SSCF data an administrator or coach may notice that a grade-level team is scoring mostly zeros on Look-for 3 – Poses purposeful questions. They will then plan professional learning or coaching support to address this need.

## Stepping Stones Core Four Tool

Total score:		12				
Overall comments:				3 N/A		3 N/A
			Notes:	8	Notes:	2
		puə			lo N	
Date:	Stepping Stones lesson:	middle	Teaches the full lesson.  Uses all recommended resources, as described in Step 1.  Look-fors (check those you observe):  Student Journal  Practice Book  Small group 1 and 2 activities	-	Uses all elements in the Student Journal. (Browse Student Journals if students are not working in them during the observation.) <b>.ook-fors</b> (check those you observe):  □ Practice Book	-
	Stepping St	ing	es the full lesson.  Ill recommended resources, as c  fors (check those you observe);  Student Journal  Practice Book  Small group 1 and 2 activities	0	in the Student Juistudents are mation.) those you obser Book	0
		):   beginning	Look-for 1: Teaches the full lesson.  Uses all recommended resources, as c  Look-fors (check those you observe):  Student Journal  Practice Book  Small group 1 and 2 activities		Look-for 2: Uses all elements in the Student Journal. (Browse Student Journals if students are not working in the during the observation.)  Look-fors (check those you observe):  □ Practice Book	
name:	Classroom:	Time into the lesson:			Poo	
Observer name:	Classi	Time into	Uses Student Journal and Practice Book	Score:	Uses Student Journal	Score:

## Stepping Stones Core Four Tool

bulary:			3 N/A	W V
Questions/vocabulary:			2	Notes:
Look-for 3: Poses purposeful questions, such as those included in Steps 2-4, to facilitate student-to-student discourse about the mathematics of the lesson. (List questions/vocabulary you hear.)  Look-fors (listen for and reflect upon)::  Teacher talk  Questions  Student talk  Mathematical vocabulary	Teacher-focused talk  Teacher-focused talk  ▲	Talk is primarily Student talk is Mix of student-to- Primarily teacher to student, directed toward student talk and student-to-little to no student talk the teacher student-to-teacher talk student talk	1 0	Look-for 4: Uses formative assessment data to provide feedback and differentiate instruction to meet the needs of each learner.  Look-fors (check those you observe):  Differentiation activities  Common errors and misconceptions  Maintaining concepts and skills (Student Journal or non-Student Journal components, depending on the lesson)  ELL strategies, where appropriate
Poses purposeful questions	Teache	Talk is teach∉ little tc	Score:	Provides targeted instruction

### **Appendix 5**

Planning for full implementation:
A guide for district and school implementation teams

## ORIGO Stepping Stones 2.0 District Implementation Team Planning for Full Implementation Guide

Directions: The District and School Implementation Teams should use this guide to reflect on their successes and challenges during initial implementation in order to plan for full implementation. Teams should reflect on each key feature of effective implementation by responding to guiding questions. Teams may make notes or use this as a discussion tool to facilitate planning.

District/school	District/school         [Insert district/school name here]
Date	Date     [Insert today's date here]
Implementation Team Members	mplementation         [Insert team members' names here]           Team Members

### **Implementation Teams**

Reflect	
How well did your implementation team work together this year to support Stepping Stones implementation on a scale of 1-5? Why? Did you meet on a regular basis? Were your meetings valuable?	Notes:
Plan	
Will the team remain the same or change next school year? What changes can you make to improve team functioning for the following school year?	Notes:

## Implementation Drivers

### a. Competency

Reflect	
What training and coaching did you provide? Was the training and coaching effective? How do you know?	Notes:
Plan	
What training and coaching supports do the current S <i>tepping</i> Stones users need during next school year? How will new staff learn how to use the program?	Notes:

### b. Organization

	Reflect	
ORIGO Stei	How do you provide support to the school implementation teams? Has the work environment been adjusted at the school level (e.g. scheduling, materials, time) to support the use of <i>Stepping Stones?</i> Does your team use data to drive decision making?	Notes:
opina	Plan	
Stones 2.0 Imple	What support will you provide to school implementation teams and teachers next school year as you move into full implementation? What adjustments will need to be made related to the work environment at the school level for teachers to effectively use <i>Stepping Stones</i> as intended (e.g. scheduling, materials, time)?	Notes:

### c. Leadership

Dan The Control of th	
How will your team plan to identify, address, and manage challenges and barriers as you move to full implementation?	Notes:
d. Fidelity	
Reflect	
How do you know that the program is being used as intended? What data has been collected to measure implementation (e.g. SSIT, SSCF tool, surveys, and comfort scales)?	Notes:
Plan	
Next school year, what data will be collected to measure Stepping Stones implementation? How often will you collect and analyze implementation data?	Notes:
e. Reliable benefits/consistent use	
Reflect	
How many students are benefitting from the <i>Stepping Stones</i> program? What data tell you they are benefitting?	Notes:
Plan	
Next school year, what data will you collect to determine if students are benefitting from S <i>tepping Stones?</i> How often will you collect and analyze it?	Notes:

## Implementation Stages Reflection: Where Are We?

Stage Related Activities for: Exploration & Installation	In Place (2)	Initiated or Partially In Place (1)	Not Yet In Place (0)	Notes
1. Form implementation team or repurpose or expand a current group				
2. Select "first practitioners" (e.g. schools, teachers, S <i>tepping Stones</i> lead)				
3. Training of first cohort of implementers				
4. Develop training, coaching, and support plans for teachers				
5. Establish communication links to report barriers to District Implementation Team				
Total	[Insert total # points here]	ooints here]		

 $\ \ What are the "right next steps" to engage or revisit Exploration ad Installation activities?$ 

Stage Related Activities for: Initial Implementation School Year	In Place (2)	Initiated or Partially In Place (1)	Not Yet In Place (0)	Notes
1. Implementation team meets regularly (at least once per month) to discuss <i>Stepping Stones</i> implementation				
2. Implementation data is collected at least twice per year using the SSIT. Data is used to plan professional development and coaching supports				
<ol> <li>Communication protocols developed and implemented to communicate with stakeholders and identify implementation barriers</li> </ol>				
4. Ongoing training and coaching of first cohort of implementers				

Plan	What might we do to further strengthen our Initial Implementation? Are there activities that we need to revisit? What are the "right next steps" to engage or revisit Initial Implementation activities?	Planning for Full Implementation	Notes:
	What might we do to further strengthen our Initial Implementation? Are there activit What are the "right next steps" to engage or revisit Initial Implementation activities?		What data do you need to collect before the end of this school year related to student benefits and Stepping Stones implementation to inform planning forfull implementation?
oing	Stones 2.0 Implem	enta	

Planning for Full Implementation	Defore the end Notes:	this spring/summer Notes:	de to your Notes:	oother schools, Notes:	y, what are the areas Notes: splementation of the Il you use this data to	
	What data do you need to collect before the end of this school year related to student benefits and Stepping Stones implementation to inform planning forfull implementation?	What activities will take place in this spring/summer to prepare for full implementation?	What adjustments need to be made to your implementation plan?	Are you ready/able to "scale-up" to other schools, grade levels, teachers, etc.?	According to implementation data, what are the areas of strength and weakness in the implementation of the Stepping Stones program? How will you use this data to plan for full implementation?	Additional Notes:

### **Resources and References**

- Blase, K., van Dyke, M., & Fixsen, D. (2013). "Stages of implementation analysis: Where are we?" National Implementation Research Network. Chapel Hill, NC: Frank Porter Graham Child Development Institute. University of North Carolina. Retrieved from <a href="https://nirn.fpg.unc.edu/sites/nirn.fpg.unc.edu/files/resources/NIRN-Education-StagesOfImplementationAnalysisWhereAreWe\_0.pdf">https://nirn.fpg.unc.edu/sites/nirn.fpg.unc.edu/files/resources/NIRN-Education-StagesOfImplementationAnalysisWhereAreWe\_0.pdf</a>
- Fixsen & Blase (2013). "Implementation stages." National Implementation Research Network. Chapel Hill, NC: Frank Porter Graham Child Development Institute. University of North Carolina,. Retrieved from <a href="https://nirn.fpg.unc.edu/module-4/topic-1-implementation-stages-overview">https://nirn.fpg.unc.edu/module-4/topic-1-implementation-stages-overview</a>
- Fixsen, D. L., Blase, K. A., Naoom, S. F., & Duda, M. A. (2013). "Implementation drivers." National Implementation Research Network. Retrieved from https://nirn.fpg.unc.edu/module-2/implementation-drivers
- Fixsen, D. L., Blase, K. A., Naoom, S. F., & Wallace, F. (2009, September). "Core implementation components." Research on Social Work Practice, 9(5), 531-540.
- Fixsen, D. L., Blase, K. A., Timbers, G. D., & Wolf, M. M. (2001). "In search of program implementation: 792 replications of the Teaching-Family Model." In G. A. Bernfeld, D. P. Farrington, & A.W. Leschield (Eds.), Offender rehabilitation in practice: Implementation and evaluating effective programs (pp. 149–166). London, UK: Wiley.
- Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). "Implementation research: A synthesis of the literature." Tampa, FI: University of South Florida, Louis de la Parte Florida Mental Health Institute, National Implementation Research Network. (FMHI Publication No. 231).



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