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

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

- **MP2** — when students make use of their knowledge of the structure of number tracks to determine the position of unknown one- and two-digit numbers, and
- **MP5** — when students find patterns and connections in one- and two-digit numbers through use of number tracks and lines.

**Step 1: Preparing the lesson**

You will need:

- 1 set of cards from Support 29
- container
- ORIGO Big Book Jumping Jacks
- number line 1–100 from The Number Case
- puppets made from Support 30
Introduction

ORIGO Stepping Stones 2.0 is an innovative program that integrates print and digital technology to give educators a flexible and balanced mathematics solution. This world-class comprehensive instructional program has been developed for elementary teachers who are implementing college and career-readiness standards.

ORIGO Stepping Stones 2.0 balances the dimensions of rigor by:

- Developing **conceptual understanding** using a range of powerful visual models.
- Creating rich opportunities for classroom **discourse** and **language** development.
- Fostering **thinking skills** and **procedural fluency**.
- Providing opportunities to **apply** learning across real problems, open investigations, and enrichment activities.
- Offering **multiple methods to assess** deep understanding, fluency of skills, and applications of mathematics.

Digital Teacher Edition Quickstart Guide Contents

This guide will quickly get you started using ORIGO Slate, our online digital platform. The following pages will navigate you through the Stepping Stones 2.0 instruction, including the resources and support for differentiation, ongoing practice, and assessment.

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Navigating Stepping Stones 2.0....................................................................................2
Teaching a Stepping Stones 2.0 Lesson .......................................................................4
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Coherence: Navigating the Stepping Stones 2.0 sequence ....................................6
Maintaining Concepts and Skills ...............................................................................7
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System Requirements

- **Slate** works best in Google Chrome or Firefox.
- Clear your internet browser history/cache before you login to every Slate session. Search your internet browser's help section to find out how.
Digital Teacher Edition Quickstart Guide

Stepping Stones 2.0 is delivered online to give teachers one central location to access all their lesson plans, student activity pages, and teaching tools. Each Digital Teacher Edition gives instant access to all content for Grades K–6. One of the greatest benefits of a digital delivery platform is the ease with which ORIGO Education can immediately update content, offer updates, and/or provide enhancements.

THE ONLINE CONTENT IN STEPPING STONES 2.0 INCLUDES...

MATHEMATICS
Each module begins with the essential background information you need to get started. Included in each module are:
• mathematical focus
• research into practice
• learning targets
• mathematical practices
• English language learners
• language development
• newsletters for home

LESSONS
Included in each of the 12 modules are:
• 6 lesson plans, with small group activities (Grade K)
• 12 lesson plans (Grades 1–6)
• steps to teach each lesson
• differentiation activities for three levels (Extra Help, Extra Practice, and Extra Challenge)
• ongoing practice pages to maintain concepts and skills

ASSESSMENT
Multiple methods to assess understanding and skills are provided. These include:
• pre-tests
• in-class observations
• portfolio samples
• check-ups
• performance tasks (Grades 1–6)
• individual interviews
• quarterly tests

MORE...
Teachers looking to add to their math instruction can choose from the following:
• investigations (Grades 1–6)
• problem solving activities*
• cross-curricula links
• enrichment activities
* Starts in Module 5 for Grade K

Login Page

To access Stepping Stones 2.0 you must have a Slate account.

1. If you already have a Slate account, go to origoslate.com. Enter your username and password in the fields provided and click login. If appropriate, check the Remember Me box.

2. To create an account, go to origoslate.com, click on Create a FREE Slate Account and complete the form.
Navigating **Slate**

Once you have logged in, you can select the Stepping Stones 2.0 channel from the drop-down menu.

- **Channels**
  - access all online resources (all resources not grayed out are yours to explore).

- **Implementation Tab**
  - click to learn how to navigate and teach Stepping Stones 2.0.

Navigating **Stepping Stones 2.0**

Once you have selected the Stepping Stones 2.0 channel you are ready to review the program!

- **Breadcrumb**
  - shows the path of your navigation. Each move along the path allows you to select grade, module, lesson, etc. Click any part of the breadcrumb to go back to that page or menu.

- **Sequence Navigator**
  - allows you to move back and forth along the topic sequence to access content from other lessons or grade levels (see page 6).
Navigating in a Lesson
Stepping Stones 2.0 contains a number of handy navigation features at your fingertips. The main features are explained below.

Resource Tab
In this tab you can display all digital resources for the lesson by selecting teach all, or select the resource individually to display one-by-one. Create your own personalized playlist of resources by clicking the edit button. You can also print the resources for the lesson by selecting the print button. Alternatively, to print an individual resource, select that resource, and then print from the viewer.

See page 5 to learn how to use the viewer.

Functions
- Sticky note – click to create a quick note that is saved permanently to the page
- Zoom in – click to zoom in on the page
- Zoom out – click to zoom out on the page
- Print – click to print the lesson notes
- Full screen – click to toggle between normal and full screen views
Teaching a Stepping Stones 2.0 Lesson

To effectively teach using the Stepping Stones 2.0 program, it is best practice to use the Digital Teacher Edition in conjunction with the student books. A Stepping Stones 2.0 lesson follows a clear structure.

DIGITAL TEACHER EDITION
Grade 2, Module 2, Lesson 2

a. Preparing the lesson – Teachers use this information before a lesson to ensure all materials required for the lesson are at hand.

b. Starting the lesson – Instructions for the teacher to either review previously learned content or launch the current lesson with students.

c. Teaching the lesson – Provides guidelines and suggestions for interactive discourse during a minds-on experience for students.
d. **Step In** – Provides teachers with guided discussion points that set the scene for the lesson. The Step In can be projected to the class and each point or question can be discussed with the whole class one step at a time. (Grades 1–6)

e. **Step Up** – Provides work for students to complete individually based on the discussion in the Step In. (Grades 1–6)

f. **Step Ahead** – Provides an additional task for students to develop higher-order thinking skills. (Grades 1–6)

g. **Reflecting on the work** – Provides teachers with discussion points and questions for the class to reflect on what they learned and understood from the lesson.

### Teaching a Stepping Stones 2.0 Lesson: The Viewer

Once you have selected a resource from the **Resource Tab**, it will be displayed in the **Viewer**. This can be projected on an interactive or standard whiteboard for whole-class discussion.

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**The SlateCast feature allows teachers to access the lesson notes while simultaneously projecting student content in the classroom.**

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**Click to navigate the pages of this resource.**

**Click to print the displayed resource.**

**Click to close the viewer.**

**Click to toggle between filling the entire screen with the viewer.**
Differentiating Instruction

Extra help, practice, and challenge

Differentiation activities are provided in every Stepping Stones 2.0 lesson. These are often provided at three levels: Extra Help, Extra Practice, and Extra Challenge.

More Math


Coherence: Navigating the Stepping Stones 2.0 sequence

The Stepping Stones 2.0 sequence navigator allows quick access to mathematical topics. Each Digital Teacher Edition provides access to all content for all grade levels making it easy to jump forward or back by topic to provide coherent instruction for student understanding.
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 have in order to meet the expected standards by the end of the school year.

**Projectable Tools**

In Grades 1–6, lessons 1, 5, and 9 provide a projectable tool specifically designed to develop and maintain fact fluency for the four operations. This tool is provided through Grade 6, even though students are expected to be fluent in all facts before then.

In Grade K, the projectable tools are specifically designed to develop fluency of counting and subitizing. In the later modules these also include basic fact practice. These tools can be found in lessons 1, 3, and 5.

**Student Journal Pages**

In Grades 1–6, the even-numbered lessons 2, 4, 6, 8, 10, and 12 provide two additional Student Journal pages. These pages offer practice to help students maintain previously learned concepts and skills and opportunities to prepare for the upcoming module.

In Grade K, every lesson has one or two pages that provide essential practice of skills such as the writing of numerals. In the later modules, these pages also provide practice for number facts.

**Application of Concepts and Skills**

In Grades 1–6, students can apply their knowledge of the concepts and skills they learn by engaging in the Investigations and Problem Solving Activities provided for each module.

In addition to the **Practice Book** pages for each lesson, Grade K offers a review page at the end of each module. The review pages practice two big ideas from the lessons in the module. These activities can be used inside or outside the classroom.
Assessment

Assessment provides teachers with valuable information about student performance. Stepping Stones 2.0 provides both formative and summative assessment options as shown below.

Formative Assessment

Formative assessment is used to help teachers make informed decisions to guide instruction. These decisions range from reviewing content and reteaching concepts, to providing additional work for students who require extra assistance or challenges. Formative assessment can occur informally during lessons with observations of students, or formally with written instruments such as journal entries. Stepping Stones 2.0 includes three different options for formative assessment. Look out for the eye and folder icons within lessons and activities to help identify what should be observed or where work samples should be generated.

Pre-test – an optional assessment component designed to inform you of what students already know and can do before instruction begins.

Observations and discussions – provides suggestions for teachers on which lessons and activities are better suited to observe how students’ understanding of concepts and skills is developing.

Journals and portfolios – provides suggestions for teachers on which lessons and activities are better suited for generating work samples as evidence of the learning that has occurred.
Summative Assessment

Summative assessment generally takes place at planned intervals after instruction. If used wisely, summative assessment can also serve a formative role to modify future instruction. Stepping Stones 2.0 includes three different options for summative assessment.

**Check-ups** — provide questions that require the student to select the correct answer or to provide a short written response. These assessments often parallel the pre-tests and can be used to determine what the student has learned as the result of instruction.

**Performance tasks (Grades 1-6)** — offer a deeper measure of understanding of one or two learning targets. A rubric accompanies each performance task, which provides you with examples of student responses and how they would score on the rubric.

**Interviews** — are used to assess certain concepts and skills such as the fluency of rote counting or mental computation that are more difficult to assess solely from paper-and-pencil methods.

**Quarterly Tests**

Quarterly tests are used at the end of each quarter to assess key learning targets taught in the three modules of that quarter. This information can help you know how well students are maintaining concepts and skills. Quarterly tests can be found in the assessment tabs for Modules 3, 6, 9, and 12.
Program Map

MATHEMATICS

• Focus
• Research into practice
• Learning targets
• Mathematical practices
• English language learners
• Vocabulary development
• Newsletters

LESSONS

• Lessons 1-12 (Grades 1-6)
• Lessons 1-6 with small groups (Grade K)

Steps

• Preparing the lesson
• Starting the lesson
• Teaching the lesson
• Step In discussion (Grades 1-6)
• Step Up (Grades 1-6)
• Step Ahead (Grades 1-6)
• Reflecting on the work
• Maintaining concepts and skills

Differentiation

• Extra Help*
• Extra Practice*
• Extra Challenge*
*Not included in every lesson.

OVERVIEW

• Stepping Stones 2.0 structure
• Stepping Stones 2.0 approach to teaching concepts
• Stepping Stones 2.0 approach to teaching skills
• Stepping Stones 2.0 language approach
• Online components for the teacher
• Print resources for the teacher
• Print resources for students

ASSESSMENT

• Overview
• Formative
• Summative
• Quarterly tests
• Recording

LESSONS

MATH RESOURCE OVERVIEW

MORE MATH

• Investigations (Grades 1-6)
• Problem solving activities (Starts in Module 5 for Grade K)
• Enrichment
• Cross-curricula links
• Thinking tasks (Grades 3-6) modules 3, 6, 9, 12

ASSESSMENT

• Pre-test
• Observations and discussions
• Journals and portfolio
• Check-ups
• Performance tasks (Grades 1-6)
• Interviews

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