

Bridges in Mathematics Grade 3

Implementation Guides

About These Guides

The Bridges in Mathematics Implementation Guides provide the support and structure teachers need to help one another as they prepare to teach each Bridges unit and Number Corner month.

These guides are designed to help a facilitator or team leader organize and lead grade-level meetings in which teachers will read and prepare to teach upcoming material. Each guide includes:

- A list of materials teachers should bring
- A list of materials the facilitator or leader should bring
- Instructions and ideas for leading each part of the meeting
- Helpful tips for preparing and teaching the upcoming material
- Links to resources that specifically support the upcoming material

Guides for Unit 2 and Units 4–8 are designed to help implement a two-hour meeting (or two one-hour meetings). The guide for Unit 3 contains information for two months of Number Corner and one unit of Bridges, so requires three hours total (spread across two or three meetings) to cover.

Note that the Unit 8 guide is designed with an emphasis on the Bridges unit rather than on the Number Corner material, as the Unit 8 activities require extra preparation and materials.

Planning Your Meeting

- Ideally, meetings should be held in a grade-level classroom so that the materials for that grade (such as calendar markers and manipulatives) are easily available. If you'll hold your meeting in a conference room, library, or other location, prepare to bring the needed materials to that location. You can find copies of curriculum and component masters on the Bridges Educator site (bridges.mathlearningcenter.org).
- Before each meeting, send a reminder to teachers about the time and place and the materials they will need to bring. Generally, teachers will need their Bridges and Number Corner Teachers Guide binders for the upcoming unit and month as well as sticky notes and pens or pencils. Access to computers or tablets is also required.
- Review the Materials and Preparation sections of the guide. Prepare copies or charts as needed.
- Prepare any giveaway items you choose to provide as described in the guide.

Questions?

For questions about using these guides or implementing Bridges and Number Corner, contact The Math Learning Center:

1 800 575–8130

www.mathlearningcenter.org

mlcsupport@mathlearningcenter.org

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Grade 3 Implementation Guide

Number Corner October

Bridges Unit 2

Materials

Teachers	Facilitator
<ul style="list-style-type: none">• Bridges Teachers Guide, Unit 2• Number Corner Teachers Guide, Volume 1• tabbed dividers (if not yet added to binders)• computer or tablet• highlighters in blue, green, and yellow	<ul style="list-style-type: none">• meeting agenda (see Preparation)• computer or tablet (with projector or display, if possible)• October Daily Planner (1 per teacher; see Preparation)• October Calendar Markers (optional)• Unit 2 Work Place materials and tubs (see Preparation)• giveaways (optional; see Preparation and sidebars)

Preparation

- Prepare an agenda using the bold headers in this guide. In one hour you can cover Number Corner October; in two hours (or in two 1-hour sessions) you can cover Bridges Unit 2 as well. Timing suggestions for each section are included in this guide.
- Print a Daily Planner for each teacher. You might laminate these so teachers can clean and reuse them. Or, use the customizable Excel format planners available from the Bridges Blog: bridges.mathlearningcenter.org/implementation/blog/customizable-number-corner-planner
- Prepare materials for the Work Places introduced in Unit 2 according to the Work Place Guides. Include the Work Place Guide and Instructions with each Work Place.
- Depending on your resources, you might prepare copies and charts for teachers as giveaways. We suggest the materials listed in the sidebars on page 4 and page 6 for this purpose.

Introduction & Agenda 5 minutes

- 1 Welcome everyone and display the agenda. Quickly get a sense of classrooms' progress in Bridges and Number Corner, as well as teachers' comfort with Bridges resources.
 - Who has made it to the end of Unit 1, Module 2?
 - Who has established a routine for all five Number Corner workouts in September? Who is using at least three of the workouts regularly?
 - Is everyone able to sign on to their Bridges Educator site account?
 - Who has sent the Unit 1 Family Overview home to families?
 - Who has used Digital Display Materials for Bridges or Number Corner?

You might share one or both of these posts about the Digital Display Materials, or display some of the materials themselves as an example.

- » **Digital Display Materials Tutorial Video** bridges.mathlearningcenter.org/implementation/blog/digital-display-materials-tutorial-video
- » **Digital Display Materials Information** bridges.mathlearningcenter.org/implementation/blog/digital-display-materials

October Number Corner Preview 50 minutes

- Have the teachers sign on to the Bridges Educator site. Then, share some Number Corner posts from the Bridges Blog while they follow along.

Help teachers with any account or sign-on issues as needed.

- **Number Corner Photos** *Photos of classroom displays for ideas and inspiration.*
bridges.mathlearningcenter.org/implementation/blog/number-corner-display-ideas-photo-gallery

- **Beginning Your Year: Number Corner Lesson Planning**
Tips for effective use of the Daily Planner.
bridges.mathlearningcenter.org/implementation/blog/beginning-your-year-number-corner-lesson-planning

- Ask teachers to turn to the October section of their binders.

- Remind them that each month begins with a Sample Display and Daily Planner. These provide a visual summary of the month's Number Corner workouts.
- Pass out blank copies of the planner (or ask teachers to open the customizable Excel planner). Using the school or district calendar, work together to fill in dates, resolving any differences in the number of actual teaching days.
- Note that September and October have 20 planned teaching days, while November and December have only 15 because of conferences and holidays.
- Encourage teachers to turn over the updates to their student helpers, so they can make time for the workouts scheduled each of the days in the month.

- Invite teachers to turn to the Introduction. The first page presents an overview and describes the activities for the month.

At the end of this month, students take the first of four quarterly Number Corner checkups. These checkups are designed to assess progress toward the standards named in the Skills/ Concepts Assessed chart. The chart shows learning targets for these two months.

- Divide the group into teams to read the workouts for the month, then have each team teach the group what they've learned.

- Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems) to each team.
- Give teams about 10 minutes to read their workout and prepare to teach the others. Assist any team with a workout they find confusing.
- Have each team give an overview of their workout's activities for the month.
- Fill in any additional information you feel might be helpful from the following notes.

Calendar Grid Two-Dimensional Shapes

- Students identify, investigate, and compare properties of polygons, including the number of sides and angles, types of angles, congruence, and symmetry. By presenting examples and non-examples, students come to understand what properties define quadrilaterals. Symmetry and congruence are not third grade standards, but this experience provides background knowledge for fourth grade.

Calendar Collector Collecting Liters & Milliliters

- Students estimate and measure milliliters and liters, deal with fractions, and solve addition and subtraction story problems about measurement. Teachers will need to collect a variety of quart and liter containers, a pitcher, tray, towel and drinking cups. See the materials list for this workout, including an optional funnel and food coloring.

Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the Resources section of the Bridges Educator site.

Calendar Grid

Observations Chart

Make and laminate blank charts with column headers and title as shown in the Teachers Guide for October Calendar Grid.

Alternatively, bring chart paper, markers, and a sample so teachers can prepare these charts during or after the meeting.

Number Corner

Checkup 1 (TM T8–T12)

1 class set per teacher

Right Angle Measures (TM T1)

2 copies on an overhead transparency. Cut the two angle measures apart and store them in an envelope.

Computational Fluency Frog Jump Multiplication

- The game Frog Jump Multiplication helps students determine the total distance traveled (the product) when there are a specific number of jumps, and each jump is the same length. This requires thinking in terms of groups using expressions such as 4×6 to refer to 4 groups of 6, or in the case of the Frog Jump game, 4 jumps of 6 along the number line.

Number Line Changing Endpoints

- Third graders explore what happens to a number line when the endpoints change.
- When the starting point is 0 and the endpoint is 1,000, the missing numbers are 100–900. But when the endpoint changes from 1,000 to 500, and then to 250, students reconsider the scale. Challenge students to consider what the missing numbers would be if the endpoint were 150 or 120. Teachers will need 12 sticky notes to cover the boxes on the teacher master for these fun activities.

Solving Problems Subtracting Two- and Three-Digit Numbers

- Problem strings focus on “friendly numbers” and “adding up to subtract” strategies on the open number line model. See this blog post for additional information on this practice: bridges.mathlearningcenter.org/implementation/blog/problem-strings-new-approach-building-computational-fluency-number-sense

6 **Once everyone has shared, discuss Number Corner assessments and Student Book pages.**

- Take a minute to examine the teacher masters for Number Corner Checkup 1. This assessment is given over two days and addresses multiplication concepts, adding and subtracting 2- and 3-digit numbers, solving story problems, estimating and measuring liquid volume, making and reading scaled graphs, and reasoning about two-dimensional shapes and their attributes.
- Number Corner Student Book pages provide independent practice with the skills students developed as a group. This gradual release of responsibility is characteristic of many Number Corner activities. The pages often provide the critical final step of independent practice for students.

7 **Depending on the needs of your group, you may want to spend additional time on the Key Questions, Literature Connections, or differentiation suggestions for each activity.**

- If you like, share this article for more ideas about using Key Questions: bridges.mathlearningcenter.org/implementation/blog/ask-great-question
- If teachers struggle with making ‘perfectionist’ Observations Charts for Calendar Grid, show them this post about making quick, easy, beautiful charts: bridges.mathlearningcenter.org/implementation/blog/number-corner-observation-charts

Break or Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

Tabbed Dividers

If teachers haven’t had time to add the tabbed dividers to their Number Corner Volume 1 binders, consider giving them a few minutes to do so now.

Bridges Unit 2 Preview 40 minutes

Introduction to Multiplication: Students make use of a variety of models including equal groups, arrays, number lines, and ratio tables to employ the associative, commutative, and distributive properties. These models and properties help students develop efficient, reliable, and generalizable strategies for multiplication. The Property Chart and Basic Multiplication Fact Categories Chart in the unit introduction are particularly worth noting.

- 8 Invite teachers to open their Bridges in Mathematics Unit 2 binder to the introduction for Unit 2 and quickly scan the Overview and Unit Post-Assessment. Note key details:
 - The first three modules are critical. Module 4 addresses story problems and interpreting data; although it is less essential, encourage teachers to complete all four modules.
 - The Unit 2 Pre-Assessment is scheduled during Module 1, Session 2. Two formative checkpoints are scheduled in Module 2, Session 1 and Module 3, Session 1.
 - Remind third grade teachers that students can reflect on their learning after the pre-assessment, setting their own learning goals for the unit. Checkpoints are also a good time to reflect on learning goals.
 - New Work Places are introduced in Module 1, Session 4; Module 2, Sessions 3 and 5; and Module 3, Session 5.
 - Home Connections are sent home two to three times a week.
 - Daily Practice pages are optional but recommended to differentiate homework and practice, and to use as formative assessments based on the standards correlated to the page. Discuss with teachers how they are using Daily Practice in the classroom.
- 9 Give teachers time to read the Unit 2 Introduction independently.
 - Invite teachers who finish early to spend the rest of this time skimming the first few sessions in Module 1.
 - Give teachers a few minutes to talk with their groups about what they've read.
- 10 Next, ask teachers to find and study the Skills Across the Grade Levels chart in the Unit 2 Introduction.
 - Ask: Which standards are introduced and developed in this unit? Are there any that must be mastered? [Yes: Understanding multiplication as repeated addition.]
Skills taught for introduction and development (noted with I and D in the chart) will be revisited in future Bridges units and months of Number Corner. At the end of this unit, some students will not yet be able to demonstrate proficiency in all these areas. Discuss with teachers how this information will inform their instruction.
 - Note the observational assessments and written assessments listed in the Assessments chart. Ask: Which standards are priorities? [Operations and Algebraic Thinking]
 - Finally, take a moment to reflect on the Differentiation chart and answer any questions teachers may have about differentiation in Bridges and Number Corner.
- 11 Divide the group into four teams. Have each team read one module, then share what they've learned with the whole group.

Bridges Giveaways

Unit 2 Family Overview

1 copy per teacher

Unit 2 Post-Assessment (Module 4 T2–T5)

1 class set per teacher

Stamps from countries around the world

Photos of oceanic animals and plants, the ocean floor, or coral reefs

Adding machine tape and cubes

See the Module 2 Materials Preparation chart.

Resources from the Bridges Educator site

The beginning of a unit is a good time to review the Resources section of the site for additional games, activities, children's literature and other teaching tools for differentiation and extension. Interactive whiteboard files are also included in this section.

If they have a class or school webpage or newsletter, teachers might opt to include a link to the "Support for families" page (www.mathlearningcenter.org/families), where these overviews are available to the public. The overviews are offered in English and Spanish.

Bridges Unit 2 Work Places 15 minutes

Make sure your prepared Work Places are available for the group to use during this activity.

- 12 Let teachers know that four new Work Places are introduced in Unit 2, and they'll explore these in pairs today. Two Work Places from Unit 1 continue to provide practice with place value concepts and computation, as needed.
 - Students develop grouping concepts and model multiplication on a number line and an array in Work Places 2A–2C. Work Place 2D works on strategies for times-3 and times-4 facts.
 - Teachers may remember Work Places 2A–2C from their Getting Started Workshops.
 - Let them know that they don't have to play a complete round or game of any of the Work Places—just enough to understand the general procedure of play.
 - When the group understands what to do, give them 10 minutes to pair up and play as many of the Work Places as they can.

- 13 Reconvene the group and use copies of each Work Place Guide to discuss strategies for differentiation, including game variations, challenge and support. Are they getting to Work Places on a regular basis?
 - You might share this blog post about fostering healthy Work Place habits: bridges.mathlearningcenter.org/implementation/blog/fostering-healthy-work-place-habits
 - This one concerns getting ready for a substitute using Work Places: bridges.mathlearningcenter.org/implementation/blog/substitute

Wrap-Up 5 minutes

- 14 If you have extra time, invite teachers to look over each module's Materials Preparation chart and come up with a plan for dividing the work.

You might also stay for a few minutes to talk with teachers who have concerns and questions that weren't addressed during the meeting, or to share the following resources.

Seven Ways to Increase Student Engagement in the Classroom

This article describes five levels of engagement and offers tips for increasing it.

<http://www.readinghorizons.com/blog/seven-ways-to-increase-student-engagement-in-the-classroom>

About Think-Pair-Share

Think-Pair-Share is an instructional strategy used frequently in Bridges and Number Corner. See these blog posts for more information:

Think-Pair-Share Posters

mathlearningcenter.org/sites/default/files/documents/Resources/ThinkPairSharePosters.pdf

Think-Pair-Share (tips for using the routine in the classroom)

bridges.mathlearningcenter.org/implementation/blog/think-pair-share

- 15 Thank teachers for their participation and, if you will meet again, confirm the next meeting place, date, and time.

Consider asking teachers to write one thing they found useful about this meeting, as well as any additional questions or concerns they have, on an index card or slip of paper. Have them turn in cards as they leave, and use the cards to open discussion at your next meeting.

Work Place Sentence Frames

Consider printing a set of the Work Place Sentence Frames for the unit for each teacher. These tools that help students communicate their ideas and actions during Work Places are available in English and Spanish from the [Resources section](#) of the Bridges Educator site.

Tabbed Dividers

If teachers haven't had time to add the tabbed dividers to their Bridges Unit 2 binders, consider giving them a few minutes to do so now.

Grade 3 Implementation Guide

Number Corner November & December Bridges Unit 3

Materials

Teachers	Facilitator
<ul style="list-style-type: none">• Number Corner Teachers Guide, Volumes 1 and 2• Bridges Teachers Guide, Unit 3• Assessment Guide (digital or print)• computer or tablet• highlighters in blue, green, and yellow	<ul style="list-style-type: none">• meeting agenda (see Preparation)• computer or tablet (with projector or display, if possible)• November & December Daily Planners (1 per teacher; see Preparation)• November & December Calendar Markers (optional)• Unit 3 Work Place materials and tubs (see Preparation)• giveaways (optional; see Preparation and sidebars)

Preparation

- Prepare an agenda using the bold headers in this guide.
 - In one hour you can cover Number Corner November; in two hours (or in two 1-hour sessions) you can cover Bridges Unit 3 as well.
 - You'll need an additional hour for December Number Corner; you can do this in the same meeting, or later in the month if you prefer.
 - Timing suggestions for each section are included in this guide.
- Print a Daily Planner for each teacher. You might laminate these so teachers can clean and reuse them. Or, use the customizable Excel format planners available from the Bridges Blog: bridges.mathlearningcenter.org/implementation/blog/customizable-number-corner-planner
- Prepare materials for the Work Places introduced in Unit 3 according to the Work Place Guides. Include the Work Place Guide and Instructions with each Work Place.
- Depending on your resources, you might prepare copies and charts for teachers as giveaways. Suggested items are listed in sidebars on page 10, page 12, and page 14.

Introduction & Agenda 5 minutes

1 Welcome everyone and display the agenda.

- Assign a recorder and timekeeper if you'd like.
- Get a quick sense of classrooms' progress in Bridges and Number Corner.
 - » Who is finishing up Unit 2?
 - » What family resources have they shared?
 - » Who has established a routine for all five Number Corner workouts?
 - » Who has used Digital Display Materials for Bridges or Number Corner?

You might share one or both of these posts about the Digital Display Materials, or display some of the materials themselves as an example.

- » **Digital Display Materials Tutorial Video** bridges.mathlearningcenter.org/implementation/blog/digital-display-materials-tutorial-video
- » **Digital Display Materials Information** bridges.mathlearningcenter.org/implementation/blog/digital-display-materials

November Number Corner Preview 50 minutes

- Ask teachers to turn to the November section of their Number Corner Volume 1 binders and give them a few minutes to look at the sample display and review the introduction. Then have them locate the Target Skills section on page 2. Compare these to the Critical Areas of Focus in the Assessment Guide Overview.

You can also use the Achieve document, available from Achieve the Core and linked on the Math Coaches tab in the Implementation section of the Bridges Educator site.

http://achievethecore.org/content/upload/SAP_Focus_Math_3.pdf

- Ask: Which workouts are a priority for grade 3 students? Have teachers use colored highlighters to identify the standards that are major (green), supporting (blue) and additional (yellow).
 - Considering these priorities, which workouts should they be sure to address this month?
- Schedule the month's Number Corner activities.
 - Remind them that each month begins with a Sample Display and Daily Planner. These provide a visual summary of the month's Number Corner workouts.
 - Pass out blank copies of the planner (or ask teachers to open the customizable Excel planner). Using the school or district calendar, work together to fill in dates, resolving any differences in the number of actual teaching days.
 - Note that November and December have only 15 days of material to help accommodate conferences and holidays.
 - Divide the group into teams to read the workouts for the month, then have each team teach the group what they've learned.
 - Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems) to each team.
 - Give teams about 10 minutes to read their workout and prepare to teach the others. Assist any team with a workout they find confusing.
 - Have each team give an overview of their workout's activities for the month.
 - Fill in any additional information you feel might be helpful from the following notes.

November Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the [Resources](#) section of the Bridges Educator site.

Calendar Grid Observations Chart & Calendar Collector Record Sheet

Make and laminate blank charts with column headers and title as shown in the Calendar Grid and Calendar Collector workouts.

Alternatively, bring chart paper, markers, and a sample so teachers can prepare these charts during or after the meeting.

Small Number Charts (TM T1)

Classrooms will use these small individual hundreds grids during Calendar Grid Activities 2 and 3. For each teacher, print a half class set, then cut them apart so each piece contains one grid. Store them in a large envelope or zip-top bag.

Calendar Grid Multiplication Arrays

- This month's pattern features rectangular arrays. Students find the dimensions and area of each array, share observations about the emerging patterns, and make predictions about future markers. This exploration prepares students to work with the area model of multiplication. Later in this workout, they will use hundreds grids to decompose the area products into smaller known arrays and products.

Calendar Collector Unit Fraction Race

- For each school day this month, students spin two spinners: one shows what size unit fraction to collect that day ($\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{8}$) and the other shows how many of that unit fraction to collect that day. Each kind of fraction is added to its own growing number line; halves on one, fourths on another, and eighths on another. As each collection grows, students compare them and in so doing, develop deeper understandings about fractions.

Computational Fluency Array Race

- Students play a game in which they roll a 1–6 die and a 4–9 die and multiply the results. They frame and shade in the results on a 10-by-10 grid and also write an equation for each turn. After three rounds, they find the sum of the products. Students first play the game as a class and then with a partner. Alternate versions offer differentiation suggestions.

Number Line Rounding to the Nearest Ten

- Students demonstrate their understanding of 2-digit numbers in the base ten system, rounding to the closest ten and thinking about the order of numbers from 0 to 100. The teacher introduces the idea of using an open number line as a tool to explore rounding numbers to the nearest ten.

Solving Problems One Step Story Problems with Equations

- Instead of working on problem strings this month, students solve story problems and write equations to represent the problems. They are introduced to a process of discussing and solving problems and then sharing and discussing their work, which is repeated throughout the year. They also work on writing equations with a variable standing for an unknown quantity. A post about helping students solve and represent story problems: [bridges.mathlearningcenter.org/implementation/blog/power-math-talk](https://mathlearningcenter.org/implementation/blog/power-math-talk)

5 Once everyone has shared, discuss the Student Book pages.

These pages provide independent practice with the skills students developed as a group. This gradual release of responsibility is characteristic of many Number Corner activities. The pages often provide the critical final step of independent practice for students.

6 Depending on the needs of the group, you might spend any remaining time on Key Questions, Literature Connections, or differentiation.

Break or Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

Bridges Unit 3 Preview 40 minutes

Multi-Digit Addition & Subtraction: Unit 3 extends and reviews students' thinking about place value, multi-digit addition & subtraction, and problem-solving. In the first module, students are introduced to the idea of rounding 2- and 3-digit numbers to the nearest ten and the nearest hundred. This skill is extended into the realm of computation, as students use rounding as a way to estimate and check the results of adding and subtracting multi-digit numbers. Along with reviewing and deepening their understandings of strategies learned in second grade, students are introduced to the standard algorithms for adding and subtracting multi-digit numbers toward the end of the unit. The standard algorithm is taught as another strategy students can use in grade 3.

7 Invite teachers to open their Bridges in Mathematics Unit 3 binder to the introduction for Unit 3 and quickly scan the Overview and Unit Post-Assessment. Note key details:

- In Module 1, the focus is on rounding 2- and 3-digit numbers to the nearest ten or the nearest 100. Two new Work Places (Round Ball Tens and Round Ball Hundreds) give students opportunities to practice this skill. In Module 2, they use problem strings, investigations, and math forums to explore different subtraction strategies, focusing on finding the difference and removal. Module 3 focuses on more rounding and using computational estimation to help them check their work.

Module 1 and the Work Places involving rounding are very important in setting the foundation for Module 3. In Module 4, teachers will introduce the standard algorithm for addition and subtraction. It is important teachers introduce the algorithm alongside the base ten manipulatives. Discussion in the session text describes how this is accomplished.

- Let teachers know that in Module 1, Session 5, they and their students will revisit the Addition Strategies Chart they made together in Unit 1, Module 4, Session 2. If teachers have put those charts away since then, they'll want to make a note to get them back out.
- The Unit 3 Pre-Assessment is scheduled during Module 1, Session 1. Two formative checkpoints are scheduled in Module 2, Session 1 and Module 3, Session 1. In Module 2, Session 4 student work on the final problem could be collected as a work sample. Then the post-assessment is scheduled in Module 4, Session 5. Remind teachers that students can reflect on their learning after the pre-assessment, setting their own learning goals for the unit. Checkpoints are also a good time to reflect on learning goals.
- New Work Places are introduced in Module 1, Sessions 2, 3 and 4; and Module 3, Session 1. However, teachers have opportunities to use Work Places during each session of Module 1; Sessions 3 and 5 of Module 2; and Sessions 1, 2, and 3 of Module 3.
- Home Connections are sent home two to three times per module or per week.
- Daily Practice pages are optional but recommended to differentiate homework and practice, and to use as formative assessments based on the standards correlated to the page. They can also be used as a reteaching tool. Discuss with teachers how they are using these pages in the classroom.

8 Give teachers time to read the Unit 3 Introduction independently.

Invite teachers who finish early to skim the first few sessions in Module 1. Then, give teachers a few minutes to talk with their groups about what they've read.

Bridges Giveaways

Unit 3 Family Overview

1 copy per teacher

Base Ten Strip-Mats

Module 3 T5

10 copies per teacher, trimmed and assembled to make a single, 1 × 10 strip-mat.

Unit 3 Assessments

Module 1 T1–T4

Module 4 T5–T8

1 class set per teacher

- 9 Next, ask teachers to find and study the Skills Across the Grade Levels chart in the Unit 3 Introduction.
- Ask: Which standards are introduced and developed in this unit? [3.OA.8 skills are developed in this unit.]
Skills taught for introduction and development are revisited in future Bridges units and months of Number Corner, when they are further developed or taught for mastery. At the end of this unit, some students will not yet demonstrate proficiency in all these areas. Discuss with teachers how this information will inform their instruction.
 - Ask: Are there any skills targeted for mastery in this unit? [Yes—3.NBT.1 and 3.NBT.2, as well as the 3.OA-supporting skill “Solve one-step story problems using addition and subtraction.”]
 - Note the observational and written assessments listed in the Assessments chart.
 - Using the Assessment Guide, together review the updated Support & Intervention section for Unit 3 (bridges.mathlearningcenter.org/view/br3-ag#101). Discuss how this information will inform teachers’ instruction.
- 10 Divide the group into four teams. Have each team read one module, then share what they’ve learned with the whole group.

Bridges Unit 3 Work Places 15 minutes

Make sure your prepared Work Places are available for the group to use during this activity.

- 11 Let teachers know that five new Work Places are introduced in Unit 3, and they’ll explore these in pairs today.
- Students develop rounding skills to the nearest ten and the nearest hundred in Work Places 3A and 3C. Work Place 3B works on rounding to the nearest ten then finding the sum of the actual numbers and the sum of the rounded numbers as well as finding the difference between the two sums. Work Place 3D works on the same skills as 3B except students will now round to the nearest hundred.*
- Let them know that they don’t have to play a complete round or game of any of the Work Places—just enough to understand the general procedure of play.
 - When the group understands what to do, give them 10 minutes to pair up and explore the Work Places.
- 12 Reconvene and use the Work Place Guides to discuss strategies for differentiation, including game variations, challenge and support. Encourage teachers to get to Work Place time on a regular basis.
- 13 If you have time, share some of these Bridges Educator site blog posts about Work Places:
- Rounding: bridges.mathlearningcenter.org/implementation/blog/rounding-opportunities
 - Fostering healthy Work Place habits: bridges.mathlearningcenter.org/implementation/blog/fostering-healthy-work-place-habits
 - Getting ready for a substitute using Work Places: bridges.mathlearningcenter.org/implementation/blog/substitute

Break or Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

Scope & Sequence

The Scope & Sequence documents available in the Curriculum section of the Bridges Educator site offer a “big picture” of skills development throughout the year.

Work Place Sentence Frames

Consider printing a set of the Work Place Sentence Frames for the unit for each teacher. These tools that help students communicate their ideas and actions during Work Places are available in English and Spanish from the [Resources section](#) of the Bridges Educator site.

December Number Corner Preview 50 minutes

- 14 Ask teachers to turn to the December section of their Number Corner Volume 2 binders and give them a few minutes to look at the sample display and review the introduction. Then have them locate the Target Skills section on page 2. Compare these to the Critical Areas of Focus in the Assessment Guide Overview.

You can also use the Achieve document, available from Achieve the Core and linked on the Math Coaches tab in the Implementation section of the Bridges Educator site.

http://achievethecore.org/content/upload/SAP_Focus_Math_3.pdf

- Ask: Which workouts are a priority for grade 3 students? Have teachers use colored highlighters to identify the standards that are major (green), supporting (blue) and additional (yellow).
- Considering these priorities, which workouts should they be sure to address this month?

- 15 Schedule the month's Number Corner activities.

Pass out blank copies of the planner (or ask teachers to open the customizable Excel planner). Using the school or district calendar, work together to fill in dates, making adjustments for the actual number of teaching days. Focus on the workouts that emphasize the priorities teachers have identified.

- 16 Divide the group into teams to read the workouts for the month, then have each team teach the group what they've learned.

- Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems) to each team.
- Give teams about 10 minutes to read their workout and prepare to teach the others. Assist any team with a workout they find confusing.
- Have each team give an overview of their workout's activities for the month.
- Fill in any additional information you feel might be helpful from the following notes.

December Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the [Resources](#) section of the Bridges Educator site.

Calendar Grid Observations Chart & Calendar Collector Record Sheet

Make and laminate blank charts with column headers and title as shown in the Calendar Grid and Calendar Collector workouts.

Alternatively, bring chart paper, markers, and a sample so teachers can prepare these charts during or after the meeting.

Calendar Grid Unit Fraction Squares

- Students explore fractions with this month's Calendar Grid pattern, which features halves, thirds, fourths, sixths, eighths, and twelfths. Each day another amount is added to a square until the square is complete. Students discuss and find equivalent fractions and equations for fractions and explore whole numbers as fractions and vice versa.

Calendar Collector Collecting Grams

- Each day of the month, students add an object from the classroom (or a group of the same kind of object), to a growing collection. Before adding the object(s), students find the mass in grams and record it on a record sheet. The challenge is to create a collection that is as close to 1,000 grams (1 kilogram) as possible. Because they do not keep a running total each day, students must use estimation strategies to gauge how close they are to meeting their goal. Periodically, they check their progress by finding the exact mass of the collection to a collection of objects that together weigh exactly 1 kilogram.

Computational Fluency Fact Fluency for Multiplying by Zero, One & Two

- Students review multiplying by 0, 1, and 2. They discuss patterns within each group of facts and consider how many of the 121 basic multiplication facts fall within these three fairly straightforward categories. At the end of the month, they complete a Scout Them Out page on which they identify facts in each category first and then solve them.

Number Line Rounding to the Nearest Hundred

- Students focus on practicing skills which help them round to the nearest hundred. They play an extension to the Round & Add game they learned last month. In this variation, they practice rounding to the nearest ten and hundred as a strategy for making reasonable computational estimates. See this post for additional information on rounding: <https://bridges.mathlearningcenter.org/implementation/blog/rounding-opportunities>

Solving Problems Multiplying with the Distributive Property

- In this short month, students complete two multiplication problem strings that focus on using the distributive property. One string features the number line and the other features the array model. Through discussion, modeling and solving problems, students become more efficient and adept at seeing patterns and solving problems efficiently.
- This post offers more information on ways the distributive property might be modeled: bridges.mathlearningcenter.org/implementation/blog/multiplying-11s-and-12s

- 17 Depending on the needs of the group, you might spend any remaining time on Key Questions, Literature Connections, or differentiation.

Wrap-Up 5 minutes

- 18 If you have extra time, invite teachers to look over each module's Materials Preparation chart and come up with a plan for dividing the work.

You might also stay for a few minutes to talk with teachers who have concerns and questions that weren't addressed during the meeting, or to share this post about challenge for high achievers:

bridges.mathlearningcenter.org/implementation/blog/tip-resources-high-achievers

Grade 3 Implementation Guide

Number Corner January

Bridges Unit 4

Materials

Teachers	Facilitator
<ul style="list-style-type: none">• Number Corner Teachers Guide, Volume 2• Bridges Teachers Guide, Unit 4• Assessment Guide (digital or print)• computer or tablet• highlighters in blue, green, and yellow	<ul style="list-style-type: none">• meeting agenda (see Preparation)• computer or tablet (with projector or display, if possible)• January Daily Planner (1 per teacher; see Preparation)• January Calendar Markers (optional)• Unit 4 Work Place materials and tubs (see Preparation)• giveaways (optional; see Preparation and sidebars)

Preparation

- Prepare an agenda using the bold headers in this guide. In one hour you can cover Number Corner January; in two hours (or in two 1-hour sessions) you can cover Bridges Unit 4 as well. Timing suggestions for each section are included in this guide.
- Print a Daily Planner for each teacher. You might laminate these so teachers can clean and reuse them. Or, use the customizable Excel format planners available from the Bridges Blog: bridges.mathlearningcenter.org/implementation/blog/customizable-number-corner-planner
- Prepare materials for the Work Places introduced in Unit 4 according to the Work Place Guides. Include the Work Place Guide and Instructions with each Work Place.
- Depending on your resources, you might prepare copies and charts for teachers as giveaways. Suggested items are listed in sidebars in this guide.

Introduction & Agenda 5 minutes

1 Welcome everyone and display the agenda.

Get a quick sense of classrooms' progress in Bridges and Number Corner.

- Who is finishing up Unit 3?
- What family resources have they shared?
- Who has used Digital Display Materials for Bridges or Number Corner?
- Who's made use of any of the free apps available from The Math Learning Center? (See catalog.mathlearningcenter.org/apps for a list and download links.)

January Number Corner Preview 50 minutes

- 2 Ask teachers to turn to the January section of their Number Corner Volume 2 binders and give them a few minutes to look at the sample display and review the introduction. Then have them locate the Target Skills section on page 2. Compare these to the Critical Areas of Focus in the Assessment Guide Overview.
 - Ask: Which workouts are a priority for grade 3 students? Have teachers use colored highlighters to identify the standards that are major (green), supporting (blue) and additional (yellow).
 - Considering these priorities, which workouts should they be sure to address this month?
- 3 Schedule the month's Number Corner activities.

Pass out blank copies of the planner (or ask teachers to open the customizable Excel planner). Using the school or district calendar, work together to fill in dates, resolving any differences in the number of actual teaching days.
- 4 Divide the group into teams to read the workouts for the month, then have each team teach the group what they've learned.
 - Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems) to each team.
 - Give teams about 10 minutes to read their workout and prepare to teach the others. Assist any team with a workout they find confusing. Fill in any additional information you feel might be helpful from the following notes.

Calendar Grid Equivalent Fractions

- This month's calendar markers feature fractions represented as parts of a whole rectangle, square, hexagon, or circle. In their search for patterns, students make observations about equivalent fractions and will compare different fractions of the same whole.
- There is a repeating pattern in the shapes: hexagon, circle, rectangle, square; and in the colors: purple, green gold, pink, aqua, and orange. The fractions also repeat: 1 , $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{6}$, and $\frac{1}{8}$. Each fraction is represented in a variety of ways so that students have the opportunity to recognize equivalent fractions, for example $\frac{1}{4} = \frac{2}{8}$. The color pattern supports the repeating fraction, so that, for example, every marker that depicts $\frac{1}{2}$ is also green.

Calendar Collector Collecting Minutes & Hours

- This month's workout focuses on time concepts. Students practicing telling time, determining elapsed time and solving story problems about time. By simply collecting a bit of time each day, students practice and make familiar many important skills and concepts.
- Students roll two dice numbered 1–6, multiply the two numbers shown, and then add that number of minutes (between 1 and 36 minutes) to a clock face. They track the total number of minutes on a record sheet.
- *Elapsed time* will most likely be a new term for students. This refers to the time that passes between two moments in time. For example, sprinters calculate the elapsed time between the starting point and the finish line. Being able to budget time wisely and stick to a schedule requires an estimation of reasonable amounts of time needed to complete certain tasks.
- Check out this resource for clocks: www.visnos.com/demos/clock

January Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the [Resources](#) section of the Bridges Educator site.

Calendar Grid Observations Chart & Calendar Collector Record Sheet

Make and laminate blank charts with column headers and title as shown in the [Calendar Grid](#) and [Calendar Collector](#) workouts.

Alternatively, bring chart paper, markers, and a sample so teachers can prepare these charts during or after the meeting.

Number Corner Checkout 2 (T12–T16)

1 class set per teacher

Computational Fluency Fact Fluency for Multiplying by Five & Ten

- This month students focus on multiplying by 10 and by 5. First, they consider what they know about multiplying by 10, and then they use that knowledge to multiply by 5: The product of any number and 5 is half the product of that number and 10. With solid place value understandings, many students find it fast and easy to multiply by 10 and then to divide the resulting number in half. The strategy involving first multiplying by 10 and then dividing in half is not only efficient, but also generalizable, meaning it can be used to multiply *any* number by 5.
- Students continue to use the Multiplication Table to keep track of the categories of multiplication facts they have studied and to consider patterns and relationships among those facts.
- Consider the Literature Connections teachers can use as read-alouds this month— *Lots of Ladybugs: Counting by Fives* and *Toasty Toes: Counting by Tens* by Michael Dahl.

Number Line Benchmark Fractions on a Number Line

- Students begin with a number line labeled 0 to 1. They look at several fractions (halves, quarters, sixths, and eighths) one at a time and determine how many fit on a 0 to 1 number line. They are shown an unidentified fractional amount and asked to imagine how many of those pieces fit on the number line. They then add the pieces to the number line one at a time to see how many fit.
- In the second and third workouts, Freddie the Fraction Frog is introduced and helps the class play a game. Freddie lands on the number line and students have to figure out exactly what fraction Freddie landed on. If a student guesses incorrectly, the teacher can respond only by saying the location is higher or lower than the guess.
- Students can use their number lines to help them figure out Freddie’s exact location.
- Remind teachers to save the poster they create with the class during this workout to use during February’s workout.

Solving Problems Multi-Step Problems & Equations

- Students solve multi-step problems and explore how such problems can be represented by equations in which a letter stands for the unknown quantity.
 - » Though they typically require what might look like two steps to adults, we call them multi-step problems. Students may have a variety of interpretations for what a step is. For example, some might consider the initial reading of the problem a step. Others might solve “one step” of the problem with a strategy that requires more than one step.
- Teachers can use the Key Questions to guide and facilitate students’ thinking and discussions. Questions such as “What is the problem asking?”, “What do you need to do to answer the question?” and “What are the problems within the problems you need to solve?” become standard throughout Number Corner as well as Problems & Investigations. (Look for Key Questions as a sidebar in the Teachers Guide. In addition, ready-to-print layouts of the Key Questions are available from the [Resources section](#) of the Bridges Educator site.)

5 Once everyone has shared, discuss Number Corner Checkup 2.

- Number Corner Checkup 2 is designed to give teachers more information about students’ current skills with factors and multiples, place value, reading and writing multi-digit numbers, rounding, multiplication, adding fractions, recognizing equivalent fractions, and story problems dealing with multiplication, fractions, and measurement. Plan for two 20-minute periods.
- See the Assessment Guide sections for Unit 4 and January Number Corner for Bridges Intervention volumes and modules recommended by concept or skill.

6 Spend any remaining time discussing Key Questions or differentiation, or by sharing this second-grade post about updating Number Corner.

bridges.mathlearningcenter.org/implementation/blog/updating-number-corner

Break or Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

Strategy Posters

Encourage teachers to download and post multiplication strategy posters if they haven’t already done so. The Math Learning Center offers sets of posters for each operation in English and Spanish. Find them in the [Resources Section](#) of the Bridges Educator site.

Assessment Tools

If your teachers use Excel (or software that can work with Excel files) for recording grades, remind them of the Excel scoring guides located in the Assessment Tools sidebar of the Implementation section of the Bridges Educator site.

Bridges Unit 4 Preview 40 minutes

This unit begins with measurement skills and concepts. Students tell time to the minute and solve elapsed time problems. The class discusses the need for measuring by reading a book about the biggest, tallest, and fastest animals in the world. At the end of the first module, students estimate, measure, and compare the masses of different objects. In the second module, students work with volume and solve measurement-related story problems. The third module introduces them to fractions, using several different models to build, compare, and investigate the relationships among unit and common fractions. A short project at the end of the unit brings it all together, as students measure lengths to fractions of an inch and display measurement data on line plots.

7 Invite teachers to open their Bridges in Mathematics Unit 4 binder to the introduction for Unit 4 and quickly scan the Overview. Note key details:

- Take special note of the Materials Preparation chart for each module. For example, several special items are required for Module 1, such as a rock with a mass of about 1 kilogram, several books with a mass of approximately 1 kilogram, objects with a mass greater than 1 kilogram, and several items with a mass of less than a gram. Most items can be easily found within the classroom but should be gathered before the sessions.
- Module 1 also addresses elapsed time, the focus of January Calendar Collector. This post touches on elapsed time:
bridges.mathlearningcenter.org/implementation/blog/elapsed-time-number-line
- Module 2 requires liquid containers of different sizes, which might require a note to families asking them to save plastic water bottles of different sizes as well as eight different beverage containers of varying capacity. Again, please take special note of the Materials Preparation chart at the beginning of the module.
- There are two math forums in Module 2. Measurement Problems in Session 4, and More Measurement Problems in Session 5. Consider solving the prompts with teachers, reviewing the Forum Planner and discussing possible student strategies.
- The Unit 4 Pre-Assessment is scheduled during Module 1, Session 1. Two formative checkpoints are scheduled in Module 2, Session 1 and Module 3, Session 1. The post-assessment is scheduled for Module 4, Session 4.
 - » Third grade students can reflect on their learning after the pre-assessment, set their own learning goals for the unit, and reflect on their learning after the post-assessment. Checkpoints are also a good time to reflect on learning goals.
- New Work Places are introduced in Module 1, Session 2, Module 2, Sessions 2 and 3, and Module 3, Session 3. Teachers might consider using an additional day before the Post-Assessment for Work Places to give students practice with the concepts and skills they are developing.

8 Give teachers time to read the Unit 4 Introduction independently.

Invite teachers who finish early to skim the first few sessions in Module 1. Then, give teachers a few minutes to talk with their groups about what they've read.

9 Next, ask teachers to find and study the Skills Across the Grade Levels chart in the Unit 4 Introduction.

Ask: Which standards are introduced and developed in this unit? Are there any skills that must be mastered? [Yes, 3.MD.2. This standard was also part of December Number Corner, continues through February Number Corner, and returns in Unit 8.]

10 Divide the group into four teams. Have each team read one module, then share what they've learned with the whole group.

If time allows, share this post about story problem structures; although it was inspired by a first grade standard, it is helpful for all grade levels.

bridges.mathlearningcenter.org/implementation/blog/story-problem-structures-simplified

Bridges Giveaways

Unit 4 Family Overview

1 copy per teacher

Unit Pre- and Post-Assessment and Checkpoint

Module 1 T1–T3
Module 2 T10–T11
Module 3 T1–T9

1 class set per teacher

Ping-pong balls

For Module 1, Session 4, teachers need a single ping-pong ball. These can be purchased at a discount store for a minimal price and would make a nice giveaway.

Scope & Sequence

The Scope & Sequence documents available in the Curriculum section of the Bridges Educator site offer a “big picture” of skills development throughout the year.

Bridges Unit 4 Work Places 15 minutes

Make sure your prepared Work Places are available for the group to use during this activity.

- 11 Let teachers know that four new Work Places are introduced in Unit 4, and they'll explore these in pairs today.
 - Let them know that they don't have to play a complete round or game of any of the Work Places—just enough to understand the general procedure of play.
 - When the group understands what to do, give them 10 minutes to pair up and explore the Work Places.
- 12 Reconvene and use the Work Place Guides to discuss strategies for differentiation, including game variations, challenge and support. Encourage teachers to get to Work Place time on a regular basis.

If you have a few minutes to spare, share these posts about this month's Work Places and the Digital Display Materials:

- bridges.mathlearningcenter.org/implementation/blog/life-sized-work-places
- bridges.mathlearningcenter.org/implementation/blog/digital-display-materials

Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

- 13 If you have extra time, invite teachers to look over each module's Materials Preparation chart and come up with a plan for dividing the work.

You might also stay for a few minutes to talk with teachers who have concerns and questions that weren't addressed during the meeting.

Work Place Sentence Frames

Consider printing a set of the Work Place Sentence Frames for the unit for each teacher. These tools that help students communicate their ideas and actions during Work Places are available in English and Spanish from the [Resources section](#) of the Bridges Educator site.

Grade 3 Implementation Guide

Number Corner February

Bridges Unit 5

Materials

Teachers	Facilitator
<ul style="list-style-type: none">• Number Corner Teachers Guide, Volume 2• Bridges Teachers Guide, Unit 5• Assessment Guide (digital or print)• computer or tablet• highlighters in blue, green, and yellow	<ul style="list-style-type: none">• meeting agenda (see Preparation)• computer or tablet (with projector or display, if possible)• February Daily Planner (1 per teacher; see Preparation)• February Calendar Markers (optional)• Unit 5 Work Place materials and tubs (see Preparation)• giveaways (optional; see Preparation and sidebars)

Preparation

- Prepare an agenda using the bold headers in this guide. In one hour you can cover Number Corner February; in two hours (or in two 1-hour sessions) you can cover Bridges Unit 5 as well. Timing suggestions for each section are included in this guide.
- Print a Daily Planner for each teacher. You might laminate these so teachers can clean and reuse them. Or, use the customizable Excel format planners available from the Bridges Blog: bridges.mathlearningcenter.org/implementation/blog/customizable-number-corner-planner
- Prepare materials for the Work Places introduced in Unit 5 according to the Work Place Guides. Include the Work Place Guide and Instructions with each Work Place.
- Depending on your resources, you might prepare copies and charts for teachers as giveaways. Suggested items are listed in sidebars in this guide.

Introduction & Agenda 5 minutes

1 Welcome everyone and display the agenda.

Get a quick sense of classrooms' progress in Bridges and Number Corner.

- Who is finishing up Unit 4?
- Who has established time and space for all five Number Corner workouts?
- What family resources have they shared?
- Who has used Digital Display Materials for Bridges or Number Corner?
- Who's made use of any of the free apps available from The Math Learning Center? (See catalog.mathlearningcenter.org/apps for a list and download links.)

February Number Corner Preview 50 minutes

- 2 Ask teachers to turn to the February section of their Number Corner Volume 2 binders and give them a few minutes to look at the sample display and review the introduction. Then have them locate the Target Skills section on page 2. Compare these to the Critical Areas of Focus in the Assessment Guide Overview.

You can also use the Achieve document, available from Achieve the Core and linked on the Math Coaches tab in the Implementation section of the Bridges Educator site.

http://achievethecore.org/content/upload/SAP_Focus_Math_3.pdf

- Ask: Which workouts are a priority for grade 3 students? Have teachers use colored highlighters to identify the standards that are major (green), supporting (blue) and additional (yellow).
- Considering these priorities, which workouts should they be sure to address this month?

- 3 Schedule the month's Number Corner activities.

Pass out blank copies of the planner (or ask teachers to open the customizable Excel planner). Using the school or district calendar, work together to fill in dates, resolving any differences in the number of actual teaching days.

- 4 Divide the group into teams to read the workouts for the month, then have each team teach the group what they've learned.

- Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems) to each team.
- Give teams about 10 minutes to read their workout and prepare to teach the others. Assist any team with a workout they find confusing. Fill in any additional information you feel might be helpful from the following notes.

Calendar Grid Investigating Area & Perimeter

- Students calculate the area and perimeter of each rectangle and complete challenges involving area and perimeter of rectangles. They develop their own strategies for calculating area and perimeter and also learn formulas for calculating the area and perimeter of any rectangle.
- The following patterns will become evident on the Calendar Grid this month:
 - » The dimensions (height and width) of the rectangles increase in a predictable pattern.
 - » The areas increase in a predictable manner as a result of the increasing dimensions.
 - » The colors repeat in this sequence: red, orange, yellow, green, blue, indigo, and violet.

Calendar Collector Collecting Fractions of a Dollar

- Students create three separate collections this month. They represent each kind of coin as a fraction of a dollar and keep track of the growing total. At the end of the month, they practice using these skills by completing a Number Corner Student Book.
- For the first seven days of school, students collect dimes each day (either 1, 2, 3, or 4 dimes). For the next seven, they collect quarters, and for the third seven school days, they collect half dollars. Students determine what fraction of a dollar each kind of coin represents, and then use that information to determine what fraction the different numbers of coins represent. They compare the three collections, which gives them an opportunity to think about fractions, whole numbers, mixed numbers, and the relative sizes.

February Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the [Resources section](#) of the Bridges Educator site.

Calendar Grid Observations Chart

Make and laminate blank charts with column headers and title as shown in the Calendar Grid workout.

Alternatively, bring chart paper, markers, and a sample so teachers can prepare these charts during or after the meeting.

Literature Connections

You might consider any of these books, which complement the Calendar Grid workout, as a door prize or giveaway this month.

- All the Colors of the Rainbow by Allan Fowler
- Spaghetti and Meatballs for All by Marilyn Burns
- A Rainbow of My Own by Don Freeman

Fractions of a Dollar Record Sheets (T2)

3 per teacher

Dollar Grids (T3)

18 per teacher on light green paper, trimmed.

Tenths, Fourths, & Halves Pieces (T4–T6)

Several copies of each page per teacher, cut apart.

Computational Fluency Fact Fluency for Multiplying by Three, Four & Eight

- Students review what strategies they know to multiply by 3, 4, and 8. They use the multiplication table to consider patterns among these multiplication facts and complete Scout Them Out activities.
- Discuss the literature connections recommended as read-alouds for this month:
What Comes in 2s, 3s and 4s? by Suzanne Aker Dahl
One Is a Snail, Ten Is a Crab by April Pully Sayre & Jeff Sayre

Number Line Comparing Fractions

- Students locate fractions on the number lines and use them to play a game called Find the Fraction, in which they compare fractions with the same denominator and different numerators, and then fractions with the same numerator and different denominators. In Unit 4, students worked with unit fractions, which built the foundation for their fraction work this month. At the end of the month, they use the number line model to identify fractions that are equal to different whole numbers.
- Last month, students iterated fractions to build number lines from 0 to 1 marked in halves, fourths, eighths, thirds, and sixths. This month, they use those number lines as a reference for marking 0–1 number lines with fractions only. They compare fractions with the same numerator but different denominators repeatedly and then begin to generalize if two fractions have the same numerator.

Solving Problems Data Problems

- Students examine, interpret, compare, and construct graphs. A key part of this workout involves understanding scale. After studying various graphs and answering one- and two-step questions about them, students participate in a class survey and then construct their own graphs.
- Working with data is an important and relevant area of mathematics. Students need to learn to identify, interpret, compare, and construct graphs. In this workout, students will deal with scale, focusing in particular on a 1:10 ratio. Dealing with a scale of 10 is not only usually manageable for students, it also deepens their understanding of what happens when you multiply and divide numbers by 10.
- Continue using the Key Questions during this workout to guide and facilitate students' thinking and discussions. Questions such as: "What do you notice about this graph?" and "What are some of its features?"

5 Spend any remaining time discussing differentiation.

Look for opportunities noted in the month's workouts to support or challenge students, as well as suggestions for ELL students. Discuss any additional ideas teachers might have.

Break or Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

Strategy Posters

Encourage teachers to download and post multiplication strategy posters if they haven't already done so. The Math Learning Center offers sets of posters for each operation in English and Spanish. Find them in the [Resources Section](#) of the Bridges Educator site.

Bridges Unit 5 Preview 40 minutes

Unit 5 returns to the study of multiplication, especially as it relates to division. Students again build arrays, but use them to model and solve division as well as multiplication problems. Story problems play a major role in the first two modules, helping students to connect their everyday experiences with division to more formal mathematical concepts. As they solve and pose story problems, students encounter two different interpretations of division – sharing and grouping – and have numerous opportunities to build understandings of both. Much of the work in Modules 2 and 3 revolves around fact families, while Module 4 features an introduction to area, a topic revisited in Unit 6.

6 Invite teachers to open their Bridges in Mathematics Unit 5 binder to the introduction for Unit 5 and quickly scan the Overview. Note key details:

- Take special note of the Materials Preparation Chart for each module. For example, a class set plus extras of 4" × 4" squares of white construction paper and creating a Fours Chart from 36" × 48" piece of butcher paper is needed for Module 1.
- Module 3 recommends a copy of *One Hundred Hungry Ants* by Elinor J. Pinczes, which can be borrowed from Grade 2 Bridges classrooms.
- Module 4 requires significant paper cutting. As always, take special note of the Materials Preparation Chart in the introduction of each module.
- There are two math forums: the Division Story Problems Forum in Module 2, Sessions 1 and 2; and the Sharing & Grouping Forum in Module 3, Sessions 1 and 2. Consider solving the prompts with teachers, reviewing the Forum Planners and discussing possible student strategies.
- The Unit 5 Pre-Assessment is scheduled for Module 1, Session 1. Two formative checkpoints are scheduled: in Module 2, Session 4; and in Module 4, Session 1. The post-assessment is scheduled for Module 4, Session 6.
- Third grade students can reflect on their learning after the pre- assessment, set their own learning goals for the unit, and reflect on their learning after the post-assessment. Checkpoints are also a good time to reflect on learning goals.
- New Work Places are introduced in Module 1, Session 6; Module 2, Session 2; and Module 3, Sessions 3 and 4. Teachers might consider giving students an additional day of Work Place time before the post-assessment to practice developing concepts and skills.

7 Give teachers time to read the Unit 5 Introduction independently.

Invite teachers who finish early to skim the first few sessions in Module 1. Then, give teachers a few minutes to talk with their groups about what they've read.

8 Next, ask teachers to find and study the Skills Across the Grade Levels chart in the Unit 5 Introduction.

Ask: Which standards are introduced and developed in this unit? Are there any skills that must be mastered? [Yes; 3.OA.1, 2, 3, 4 & 6 and 3.MD.5a, 5b, 6 & 7a]

These standards were also part of September through January Number Corner and will continue in March, April, and May Number Corner. They were addressed in Unit 2 as well, and some are revisited in Unit 6 and 7.

9 Divide the group into four teams. Have each team read one module, then share what they've learned with the whole group.

10 Review the Support & Intervention information in the Unit 5 and Number Corner sections of the Assessment Guide.

Updated guides on the Bridges Educator site include recommendations for using Bridges Intervention to support students.

Bridges Giveaways

Unit 5 Family Overview

1 copy per teacher

Unit Pre- and Post-Assessment and Checkpoints

Module 1 T1–T4

Module 2 T17

Module 4 T1

Module 4 T5–T8

1 class set per teacher

Construction Paper Rectangles

See the Module 4 Materials Preparations chart for specific requirements. Make a set for each teacher, or copy the list and provide materials for them to make their own sets after your meeting.

Scope & Sequence

The Scope & Sequence documents available in the Curriculum section of the Bridges Educator site offer a "big picture" of skills development throughout the year.

- 11 Remind teachers to check out the teacher tools, games, and activities available in the Resources section of the Bridges Educator site.

If time allows, share these posts about multiplication, division, and story problems.

Bunnies’ Legs & Big Ideas

bridges.mathlearningcenter.org/implementation/blog/bunnies-’-legs-big-ideas

Writing Story Problems

bridges.mathlearningcenter.org/implementation/blog/writing-story-problems

Bridges Unit 5 Work Places 15 minutes

Make sure your prepared Work Places are available for the group to use during this activity.

- 12 Let teachers know that four new Work Places are introduced in Unit 5, and they’ll explore these in pairs today.

- Let them know that they don’t have to play a complete round or game of any of the Work Places—just enough to understand the general procedure of play.
- Give them 10 minutes to pair up and explore the Work Places.

- 13 Reconvene and use the Work Place Guides to discuss strategies for differentiation, including game variations, challenge and support. Encourage teachers to get to Work Place time on a regular basis.

If you have time, share these posts full of Work Places tips from teachers in the trenches!

bridges.mathlearningcenter.org/implementation/blog/extra-work-place-time

bridges.mathlearningcenter.org/implementation/blog/tips-workplaces

Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

- 14 If you have extra time, invite teachers to look over each module’s Materials Preparation chart and come up with a plan for dividing the work.

You might also stay for a few minutes to talk with teachers who have concerns and questions that weren’t addressed during the meeting.

As teachers are preparing to leave, consider displaying one of the following resources and tools, or sharing these URLs with teachers for their later use.

“Arrays, Multiplication and Division” by Jennie Pennant:

<http://nrich.maths.org/8773>

An array-based web application for visualizing division (may not load on all browsers):

http://staff.argyll.epsb.ca/jreed/math9/strand1/divide_base10.swf

Children’s literature about multiplication and division recommended by MLC:

<http://astore.amazon.com/thematleace01-20?node=8&page=1>

Work Place

Sentence Frames

Consider printing a set of the Work Place Sentence Frames for the unit for each teacher. These tools that help students communicate their ideas and actions during Work Places are available in English and Spanish from the [Resources section](#) of the Bridges Educator site.

Grade 3 Implementation Guide

Number Corner March

Bridges Unit 6

Materials

Teachers	Facilitator
<ul style="list-style-type: none">• Number Corner Teachers Guide, Volume 3• Bridges Teachers Guide, Unit 6• Assessment Guide (digital or print)• computer or tablet• highlighters in blue, green, and yellow• scissors (optional; see Bridges Unit 6 Preview)	<ul style="list-style-type: none">• meeting agenda (see Preparation)• computer or tablet (with projector or display, if possible)• March Daily Planner (1 per teacher; see Preparation)• March Calendar Markers (optional)• Unit 6 Work Place materials and tubs (see Preparation)• giveaways (optional; see Preparation and sidebars)• a 6" square of construction paper for each teacher and yourself (optional; see Bridges Unit 6 Preview)

Preparation

- Prepare an agenda using the bold headers in this guide. In one hour you can cover Number Corner March; in two hours (or in two 1-hour sessions) you can cover Bridges Unit 6 as well. Timing suggestions for each section are included in this guide.
- Print a Daily Planner for each teacher. You might laminate these so teachers can clean and reuse them. Or, use the customizable Excel format planners available from the Bridges Blog: bridges.mathlearningcenter.org/implementation/blog/customizable-number-corner-planner
- Prepare materials for the Work Places introduced in Unit 6 according to the Work Place Guides. Include the Work Place Guide and Instructions with each Work Place.
- Depending on your resources, you might prepare copies and charts for teachers as giveaways. Suggested items are listed in sidebars in this guide.

Special Preparation for Unit 8

The integrated math/science project in Unit 8 requires a lot of building materials—cardboard, twine, craft sticks, string, rubber bands, and all manner of things students might be able to use to create small model bridges. Gathering these materials from families or other sources is best done well in advance. Suggest that teachers make a note to themselves to find time to read ahead to Unit 8 in the coming week or two if they're not already familiar with it.

Introduction & Agenda 5 minutes

1 Welcome everyone and display the agenda.

Get a quick sense of classrooms' progress in Bridges and Number Corner.

- Who is finishing up Unit 5? Is everyone ready to begin March Number Corner?
- What online resources or apps have teachers been using in their instruction?
- What family resources have they shared?
- What tools have teachers been using to document student progress through the standards? If teachers use Excel-compatible spreadsheet software to track student progress, are they using the Assessment Tools available from the Bridges Educator site?

March Number Corner Preview 50 minutes

- 2 Ask teachers to turn to the March Introduction in their Volume 3 binder. Have them locate the Target Skills section on page 2. Compare these to the Critical Areas of Focus in the Assessment Guide Overview. Have teachers use colored highlighters to identify the standards that are major (green), supporting (blue) and additional (yellow). Ask: Which standards are a priority? Considering these priorities, which workouts should they be sure to address this month?
Note that four workouts this month focus closely on major clusters (Calendar Grid: 3.MD.A; Calendar Collector: 3.MD.C; Computational Fluency: 3.OA.C and D; Number Line: 3.NF.A). If your spring break falls in March, teachers may need to choose their priorities for Number Corner instruction very carefully according to students' needs.
- 3 Ask teachers to turn to the sample display and daily planner at the beginning of the Introduction.
Give them a moment to review the sample display, then pass out blank copies of the planner (or ask teachers to open the customizable Excel planner). Using the school or district calendar, work together to fill in dates. If your spring break is in March, you'll need to make adjustments for the actual number of teaching days. Focus on the workouts that emphasize the priorities teachers have identified.
- 4 Divide the group into teams to read the workouts for the month, then have each team teach the group what they've learned.
 - Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems) to each team.
 - Give teams about 10 minutes to read their workout and prepare to teach the others. Assist any team with a workout they find confusing. Fill in any additional information you feel might be helpful from the following notes.

Calendar Grid Time & Data Displays

- The calendar markers feature digital and analog clocks, as well as a variety of data displays (graphs, charts, etc.) that represent data collected over different periods of time, including weeks and months. Students practice telling time to the minute, calculating elapsed time, and interpreting the data on the charts and graphs. They answer a variety of questions that involve comparing different pieces of data on a given chart or graph.
- The pattern on this month's markers includes digital and analog timepieces as well as markers displaying data with a time theme. The markers follow an AABBBB pattern.
- There's also a growing pattern for the times displayed to give students practice predicting what time comes next and telling time to the minute.
- Consider sharing this post about using the number line to show and calculate elapsed time. bridges.mathlearningcenter.org/implementation/blog/elapsed-time-number-line
- You might also share this online demo clock: www.visnos.com/demos/clock

Calendar Collector Area & Perimeter of Rectilinear Figures

- Students decorate their own square foot of paper and arrange some of those square feet on a grid. They create a rectilinear figure with the square feet, find its area and perimeter, and create a drawing that shows the figure on grid paper. Later in the month, the teacher takes a drawing from the envelope, identifies the dimensions of the rectangles that make up the figure and tells students the perimeter of the figure. Then students try to recreate the figure with tiles.
- Before the month begins, teachers create a 5-foot high by 6-foot wide rectangle with butcher paper. They draw square-foot sections on the paper with a black marker. This chart should be displayed somewhere in the classroom. Teachers also cut a class set plus a few extras of 12" × 12" squares of construction paper.

March Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the [Resources section](#) of the Bridges Educator site.

Calendar Grid Observations Chart

Make and laminate blank charts with column headers and title as shown in the Calendar Grid workout.

Alternatively, bring chart paper, markers, and a sample so teachers can prepare these charts during or after the meeting.

Number Corner Checkup 3 (T6–T11)

1 class set per teacher

Computational Fluency Fact Fluency for Multiplying by Six & Nine

- Students review how to multiply by 6 and 9. They use the multiplication table to consider patterns and relationships among these multiplication facts and complete Scout Them Out activities for practice.
- Discuss or share the literature connections suggested for this month:
 - » *I Can Count the Petals of a Flower* by John and Stacey Wahl
 - » *Amanda Bean's Amazing Dream* by Marilyn Burns
 - » *Minnie's Diner, A Multiplying Menu* by Dayle Ann Dodds
- These posts concern computational fluency. The first post focuses on the second-grade work in addition and subtraction, but the ideas shared would work as well for the third grade Quick Facts multiplication work.
 - » bridges.mathlearningcenter.org/implementation/blog/quick-facts-ready-or-more-practice
 - » bridges.mathlearningcenter.org/implementation/blog/fact-fluency-challenge

Number Line Find the Fraction

- In January, students worked with unit fractions. In February, they worked with same denominators but different numerators. Both of these workouts have built the foundation for this month's workout. Students once again play the game Find the Fraction. The game helps them use the number line to represent and compare fractions, including improper fractions, mixed numbers, and fractions equal to whole numbers.

Solving Problems Area & Perimeter Puzzles

- This month's problems support and extend the work students have been doing with area and perimeter in the February Calendar Collector. In addition to finding the perimeter and area of figures with known side lengths, students find the missing side lengths when given the perimeter and area of a figure.
- Solving context-based problems not only helps develop problem-solving skills, it also helps students find, realize, and discover math in their day-to-day lives. This workout takes many of the skills and concepts explored in this month's Calendar Collector and applies them to problem-solving situations.
- Look for the opportunities included in this workout to support or challenge students, including ELL students.

5 Once everyone has shared, discuss Number Corner Checkup 3.

Number Corner Checkup 3 is designed to give teachers more information about how students are reading, writing, and understanding numbers to 1,000, number names, expanded form, adding & subtracting with sums and minuends to 1,000, modeling, solving and writing equations to represent simple one-step multiplication and division story problems, and developing some degree of fluency with multiplication strategies for 1s through 10s and their related division combinations. Plan for two 20-minute periods.

Break or Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

Strategy Posters

Encourage teachers to download and post multiplication strategy posters if they haven't already done so. The Math Learning Center offers sets of posters for each operation in English and Spanish. Find them in the [Resources Section](#) of the Bridges Educator site.

Assessment Tools

If your teachers use Excel (or software that can work with Excel files) for recording grades, remind them of the Excel scoring guides located in the Assessment Tools sidebar of the Implementation section of the Bridges Educator site.

Bridges Unit 6 Preview 40 minutes

In Unit 6, students develop increasingly precise ways to describe, classify, and make generalizations about two-dimensional shapes, particularly quadrilaterals. In Module 1, students explore polygons in a variety of creative ways. In Module 2, they form polygons and special quadrilaterals to build understanding that shared attributes can define a larger category. Module 3 combines geometry and measurement as students measure the perimeters and areas of polygons. Module 4 offers students opportunities to apply what they've learned about quadrilaterals and area in the context of fractions.

6 Invite teachers to open their Bridges in Mathematics Unit 6 binder to the introduction for Unit 6 and quickly scan the Overview. Note key details:

- No formal math forums are scheduled in Unit 6.
- The Unit 6 Pre-Assessment is scheduled during Module 1, Session 1. One formative checkpoint is scheduled in Module 2, Session 4. The post-assessment is scheduled for Module 4, Session 4. Remember, Work Places can also serve as assessments.
- Third grade students can reflect on their learning after the pre-assessment, set their own learning goals for the unit, and reflect on their learning after the post-assessment. Checkpoints are also a good time to reflect on learning goals.
- New Work Places are introduced in Module 1, Session 5; Module 2, Session 2; and Module 3, Sessions 2 & 5. Teachers might consider giving students an additional day for Work Places before the post-assessment for practice with developing concepts and skills.
- Consider sharing this post about using a peer-editing process as part of the Module 1 activity in which students create shape posters.

bridges.mathlearningcenter.org/implementation/blog/shape-posters-and-peer-editing

7 Give teachers time to read the Unit 6 Introduction independently.

Invite teachers who finish early to skim the first few sessions in Module 1. Then, give teachers a few minutes to talk with their groups about what they've read.

8 Ask teachers to find and study the Skills Across the Grade Levels chart.

Ask: Which standards are introduced and developed in this unit? [3.MD.5a, b, and 7a; 3.MD.8; 3.G.2] Are there any that must be mastered? [Yes, 3.MD.7b and 7d as well as 3.G.1 and 3.G.2.] Where else will these standards be addressed? (See the Major Skills/Concepts Addressed chart.)

9 Divide the group into four teams. Have each team read one module, then share what they've learned with the whole group.

10 (Optional) Using scissors and squares of construction paper, have teachers follow along with you as you each make a set of tangram pieces, following the directions in Module 1, Session 4.

11 Spend any remaining time discussing support and intervention.

- Review the suggestions included in this month's Bridges sessions and Number Corner workouts for supporting students, and discuss additional ideas teachers might have.
- Remind teachers that differentiation opportunities are presented in the Work Place Guides, and that past Work Places can be reintroduced or assigned to give students more practice with particular skills.
- If teachers are concerned about students who are falling behind, give them some time to review the Assessment Guide section for Unit 6. Under Support & Intervention, they'll find suggestions for using resources to support students in and out of the classroom, as well as Bridges Intervention volumes and modules recommended by concept or skill.

Bridges Giveaways

Unit 6 Family Overview

1 copy per teacher

Unit Pre- and Post-Assessment and Checkpoints

Module 1 T1–T4

Module 2 T17

Module 4 T1

Module 4 T5–T8

1 class set per teacher

Construction Paper Rectangles

See the *Module 4 Materials Preparations* chart for specific requirements. Make a set for each teacher, or copy the list and provide materials for them to make their own sets after your meeting.

Scope & Sequence

The Scope & Sequence documents available in the Curriculum section of the Bridges Educator site offer a "big picture" of skills development throughout the year.

Bridges Unit 6 Work Places 15 minutes

Make sure your prepared Work Places are available for the group to use during this activity.

- 12 Let teachers know that four new Work Places are introduced in Unit 6, then give them 10 minutes to pair up and explore the Work Places. Let them know that they don't have to play a complete round or game of any of the Work Places—just enough to understand the general procedure of play.
- 13 Reconvene and use the Work Place Guides to discuss strategies for differentiation, including game variations, challenge and support.

Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

- 14 If you have extra time, invite teachers to look over each module's Materials Preparation chart and come up with a plan for dividing the work.
 - They might also consider working together to write a letter to send home to families to request materials for Unit 8, or reading ahead to Unit 8 to become more familiar with the materials and activities.
 - You might also talk with teachers who have other questions or concerns not addressed during the meeting.
 - As teachers are preparing to leave, consider displaying one of the following resources and tools, or sharing these URLs with teachers for their later use.
 - » **Books pertaining to geometry recommended by The Math Learning Center**
astore.amazon.com/thematleace01-20?_encoding=UTF8&node=49
 - » **A movie about a circle that's not a polygon**
bridges1.mathlearningcenter.org/resources/blog/201211/polygon-movie-stars-third-graders
 - » **The Math Learning Center's free Geoboard app**
catalog.mathlearningcenter.org/apps/geoboard
 - » **Video about using the geoboard to help students improve the precision of their understanding of "half":** www.learner.org/series/modules/express/pages/ccmathmod_17.html

Work Place Sentence Frames

Consider printing a set of the Work Place Sentence Frames for the unit for each teacher. These tools that help students communicate their ideas and actions during Work Places are available in English and Spanish from the [Resources section](#) of the Bridges Educator site.

Grade 3 Implementation Guide

Number Corner April

Bridges Unit 7

Materials

Teachers	Facilitator
<ul style="list-style-type: none">• Number Corner Teachers Guide, Volume 3• Bridges Teachers Guide, Unit 7• Assessment Guide (digital or print)• computer or tablet• highlighters in blue, green, and yellow• scissors (optional; see Bridges Unit 7 Preview)	<ul style="list-style-type: none">• meeting agenda (see Preparation)• computer or tablet (with projector or display, if possible)• April Daily Planner (1 per teacher; see Preparation)• April Calendar Markers (optional)• Unit 7 Work Place materials and tubs (see Preparation)• giveaways (optional; see Preparation and sidebars)

Preparation

- Prepare an agenda using the bold headers in this guide. In one hour you can cover Number Corner April; in two hours (or in two 1-hour sessions) you can cover Bridges Unit 7 as well. Timing suggestions for each section are included in this guide.
- Print a Daily Planner for each teacher. You might laminate these so teachers can clean and reuse them. Or, use the customizable Excel format planners available from the Bridges Blog: bridges.mathlearningcenter.org/implementation/blog/customizable-number-corner-planner
- Prepare materials for the Work Places introduced in Unit 7 according to the Work Place Guides. Include the Work Place Guide and Instructions with each Work Place.
- Depending on your resources, you might prepare copies and charts for teachers as giveaways. Suggested items are listed in sidebars in this guide.

Special Preparation for Unit 8

In anticipation of the math/science project in Unit 8, consider working with third grade teachers to send letters home to families asking for donations of paper towel or gift wrap tubes, cardboard boxes, toothpicks, craft sticks or popsicle sticks, straws, foil, newspapers, fishing line, twine, wire, rubber bands, clay or dough, tape, glue, paperclips, and other inexpensive household materials to use for constructing model bridges.

Suggest that teachers make a note to themselves to find time to read ahead to Unit 8 in the coming week or two if they're not already familiar with it.

Introduction & Agenda 5 minutes

1 Welcome everyone and display the agenda.

Get a quick sense of classrooms' progress in Bridges and Number Corner.

- Who is finishing up Unit 6? Is everyone ready to begin April Number Corner?
- What online resources or apps have teachers been using in their instruction?
- What family resources have they shared?
- Who has reviewed student assessment data to decide if they need to review and reteach critical areas? What areas have they identified in need of such review or reteaching?

April Number Corner Preview 50 minutes

- 2 Ask teachers to turn to the April section of their Number Corner Volume 3 binders and give them a few minutes to look at the sample display and review the introduction. Then have them locate the Target Skills section on page 2. Compare these to the Critical Areas of Focus in the Assessment Guide Overview.

You can also use the Achieve document, available from Achieve the Core and linked on the Math Coaches tab in the Implementation section of the Bridges Educator site.

http://achievethecore.org/content/upload/SAP_Focus_Math_3.pdf

Have teachers use colored highlighters to identify the standards that are major (green), supporting (blue) and additional (yellow). Ask: Which workouts are a priority for grade 3 students? Considering these priorities, which workouts should they be sure to address this month?

- 3 Schedule the month's Number Corner activities.

Pass out blank copies of the planner (or ask teachers to open the customizable Excel planner). Using the school or district calendar, work together to fill in dates. If your spring break is in April, you'll need to make adjustments for the actual number of teaching days. Focus on the workouts that emphasize the priorities teachers have identified.

- 4 Divide the group into teams to read the workouts for the month, then have each team teach the group what they've learned.
 - Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line, and Solving Problems) to each team.
 - Give teams about 10 minutes to read their workout and prepare to teach the others. Assist any team with a workout they find confusing. Fill in any additional information you feel might be helpful from the following notes.

April Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the [Resources section](#) of the Bridges Educator site.

Calendar Grid Observations Chart & Calendar Collector Record Sheet

Make and laminate blank charts with column headers and title as shown in the [Calendar Grid and Calendar Collector workouts](#).

Alternatively, bring chart paper, markers, and a sample so teachers can prepare these charts during or after the meeting.

Calendar Grid More Equivalent Fractions

- The pattern this month features twelfths and sixths shown as parts of a rectangular array, pizza, clock face, egg carton, and ruler. Third graders are responsible for sixths and twelfths, which provide a nice extension into fourth grade work.
- Every five days, the fraction shown on the markers increases by one-sixth, and students are asked to figure out what is similar about each set of five markers. In considering questions like this, students develop deeper understandings of unit fractions and equivalent fractions.

Calendar Collector Collecting Fractions of an Hour

- Students collect fractions of an hour and determine the amount collected in both minutes and hours.
- Students use the How Many Parts? Spinner to find out how many fractions of an hour to add to the collection. The amount is shaded in on the Coloring Parts of an Hour Teacher Master, and the Calendar Collector is also updated for each day in school this month.
- Teachers can use the Key Questions to generate deeper discussion and understanding.

Computational Fluency Quick Facts & Games

- Students learn the Quick Facts routine, which helps them monitor and track fluency progress with multiplication facts. After the first activity, they do the routine at the beginning of each subsequent activity before playing a multiplication game. They also work with fact families and the associative property of multiplication.
- Consider giving each student a folder to store their Quick Facts worksheets, or plan to store them in another organized way to chart students' progress. Keep in mind they also need to correct the worksheets before each new Quick Facts routine, so each student can set goals and also chart progress with strategies they know well.

Number Line Put It On the Line

- Students play a version of the game Put It on the Line that focuses on fractions. They solve problems and put the answers on a 0 to 1 number line. Their answers become their score. Students play the game three times, each time with a different game board that focuses on different sets of equivalent fractions.
- Teachers can consider using the Digital Display Materials to play Put It on the Line with their students: bridges.mathlearningcenter.org/digital-materials/number-line-put-it-line-0

Solving Problems Multi-Step Problems & Equations

- The Solving Problems workout this month gives students an opportunity to think about the properties of multiplication, the relationship between multiplication and division, and strategies for solving some of the more challenging multiplication combinations. This workout supports and extends the Quick Facts routine, which becomes the focus of Computational Fluency workouts for the rest of the school year.
- Key Questions help initiate discussions and deeper thinking.

Break or Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

Strategy Posters

Encourage teachers to download and post multiplication strategy posters if they haven't already done so. The Math Learning Center offers sets of posters for each operation in English and Spanish. Find them in the [Resources Section](#) of the Bridges Educator site.

Bridges Unit 7 Preview 40 minutes

Unit 7 provides a review of material covered earlier in the year as well as opportunities to extend skills and concepts into work with larger numbers and bigger ideas. Early in the unit, students learn to multiply single digits by multiples of 10. That skill is then extended into building and sketching 1-digit by 2-digit multiplication combinations. Working with multiplication beyond the basic facts provides rich opportunities to review the commutative and distributive properties and tap into the power of the associative property of multiplication. Having worked previously with fractions as parts of a whole and distances along a number line, students are introduced to linear and area models that allow them to see fractions as parts of a set as well as parts of a whole. These models include a ruler, an egg carton, a 12-foot strip of adding machine tape, and a circle graph. The unit ends with a foray into data collection, representation and interpretation, foreshadowing the work with measurement and data students do in Unit 8.

5 Invite teachers to open their Unit 7 binder to the introduction for Unit 7 and quickly scan the Overview. Note key details:

- Take special note of the Materials Preparation Chart for each module. For example, in Module 3 students use egg cartons (dozen type) to model different fractions. Encourage teachers to start collecting egg cartons from families and friends.
- There are no formal math forums during this unit.
- Take some time to go over the models discussed in the Mathematical Background section of the Introduction. Invite teachers to discuss each model and how they are used to create a visual image of fraction relationships.
- The Unit 4 Pre-Assessment is scheduled during Module 1, Session 1. Two formative checkpoints are scheduled: in Module 2, Session 2; and Module 4, Session 2. The post-assessment is scheduled for Module 4, Session 5.
- Third grade students can reflect on their learning after the pre-assessment, set their own learning goals for the unit, and reflect on their learning after the post-assessment. Checkpoints are also a good time to reflect on learning goals.
- New Work Places are introduced in Module 3, Session 5 and Module 4, Session 1. Consider giving students an additional day for Work Places before the post-assessment for practice with the concepts and skills they are developing.

6 Give teachers time to read the Unit 7 Introduction independently.

Invite teachers who finish early to skim the first few sessions in Module 1. Then, give teachers a few minutes to talk with their groups about what they've read.

7 Ask teachers to find and study the Skills Across the Grade Levels chart.

Ask: Which standards are introduced and developed in this unit? Are there any that must be mastered? [Yes; 3.OA.5 & 8, 3.NBT.3, 3.NF.1, 2, 2a, 2b, 3a, 3b, 3c, 3d, 3.MD.7c, 3.G.2]

- All of these standards were introduced previously in Number Corner or Bridges.
- Standards 3.G.2, 3.MD.7b, 3.NF.3d, and 3.NF.1 will also be addressed in Unit 8.

8 Divide the group into four teams. Have each team read one module, then share what they've learned with the whole group.

Bridges Giveaways

Unit 7 Family Overview

1 copy per teacher

Unit Pre- and Post-Assessment and Checkpoints

Module 1 T1–T4

Module 2 T17

Module 4 T1

Module 4 T5–T8

1 class set per teacher

- 9 Spend any remaining time reflecting on the year so far and preparing for the end of the year.
- If teachers are concerned about students who are falling behind, give them some time to review the Assessment Guide section for Unit 7. Under Support & Intervention, they'll find suggestions for using resources to support students in and out of the classroom, as well as Bridges Intervention volumes and modules recommended by concept or skill.
 - Remind teachers that differentiation opportunities are presented in the Work Place Guides, and that past Work Places can be reintroduced or assigned to give students more practice with particular skills.
 - Highlight the fact that the Resources section of the Bridges Educator site contains literature, songs, games, online activities and more to help with support and challenge.
 - Consider sharing these posts from the Bridges blog.
 - » Suggestions for setting next year's goals:
bridges.mathlearningcenter.org/implementation/blog/check-your-rough-edges
 - » Egg carton fractions:
bridges.mathlearningcenter.org/implementation/blog/egg-carton-fractions
 - » Using MLC's free Number Frames app to create virtual egg cartons:
bridges.mathlearningcenter.org/implementation/blog/egg-carton-fractions-number-frames
 - » A neat web app for showing the egg carton model:
www.teacherlink.org/content/math/interactive/flash/Eggs/Eggs.html
 - » Multiplying 11 and 12:
bridges.mathlearningcenter.org/implementation/blog/multiplying-11s-and-12s

Bridges Unit 7 Work Places 15 minutes

Make sure your prepared Work Places are available for the group to use during this activity.

- 10 Let teachers know that two new Work Places are introduced in Unit 7, then give them 10 minutes to pair up and explore the Work Places.
- Let them know that they don't have to play a complete round or game of any of the Work Places—just enough to understand the general procedure of play.
 - If there aren't enough Work Place materials for everyone at once, invite pairs to review the Work Place Guides while they wait, discussing strategies for differentiation including game variations, challenge, and support.

Wrap-Up 5 minutes

If your meeting will continue, this is a good time for a stretch break. If your meeting ends or you must move on to other business, wrap up now.

- 11 If you have extra time, invite teachers to look over each module's Materials Preparation chart and come up with a plan for dividing the work.
- They might also consider working together to write a letter to send home to families to request materials for Unit 8, or reading ahead to Unit 8 to become more familiar with the materials and activities.
 - You might also talk with teachers who have other questions or concerns not addressed during the meeting.

Work Place Sentence Frames

Consider printing a set of the Work Place Sentence Frames for the unit for each teacher. These tools that help students communicate their ideas and actions during Work Places are available in English and Spanish from the [Resources section](#) of the Bridges Educator site.

Grade 3 Implementation Guide

Bridges Unit 8

Number Corner May

Materials

Teachers	Facilitator
<ul style="list-style-type: none">• Bridges Teachers Guide, Unit 8• Number Corner Teachers Guide, Volume 3• computer or tablet• sticky notes, highlighters, etc.	<ul style="list-style-type: none">• meeting agenda (see Preparation)• computer or tablet (with projector or display, if possible)• Number Corner Daily Planner (1 per teacher; see Preparation)• school or district calendar for May (and June, if applicable)• Unit 8 Work Place materials and tubs (see Preparation)• giveaways (optional; see Preparation and sidebars)

Special Preparation for Unit 8: Building Materials

If you're preparing for your implementation session well in advance of the time that classrooms will begin Unit 8, consider working with third grade teachers to send letters home to families asking for donations of paper towel or gift wrap tubes, cardboard boxes, toothpicks, craft sticks or popsicle sticks, straws, foil, newspapers, fishing line, twine, wire, rubber bands, clay or dough, tape, glue, paperclips, and other inexpensive household materials to use for constructing model bridges. If you're able to collect large quantities of these items ahead of time, divide them into boxes or large grocery bags to give out to the teachers at the implementation meeting.

Preparation

- Prepare an agenda using the bold headers in this guide. In about an hour you can cover Bridges Unit 8; in two hours (or in two 1-hour sessions) you can cover Number Corner May as well. Timing suggestions for each section are included in this guide.
- Print a copy of the May Daily Planner for each teacher. You might consider laminating these so teachers can clean and reuse them year after year. Or, use the customizable Excel format planners available from the Bridges Blog: bridges.mathlearningcenter.org/implementation/blog/customizable-number-corner-planner
- Have a copy or display of the school or district calendar for May (and June, if applicable) available for use in planning out May Number Corner.
- Prepare materials for the Work Places introduced in Unit 8 according to the instructions on the Work Place Guides. Include the Work Place Guide and Instructions with each Work Place.
- Depending on your resources, you might prepare copies, charts, and materials for teachers as giveaways. Suggested items are listed in sidebars in this guide.

Introduction & Agenda 5 minutes

- 1 Welcome everyone and display the agenda.

Suggested agenda:

- » Bridges Unit 8
- » Bridges Unit 8 Work Places
- » Break
- » May Number Corner

- 2 Get a quick sense of classrooms' progress in Bridges and Number Corner.

- Who has made it midway through Unit 7? Are classes on track to begin Unit 8 about four weeks before the end of the school year? (If not, discuss strategies for using a partial selection of the bridge-building and testing activities from Unit 8; see ideas on page 42.)
- How many and which Number Corner workouts are in regular use in each classroom?

Bridges Unit 8 Preview 40 minutes

The final unit of the school year integrates science and mathematics. In addition to reviewing and extending mathematical skills studied earlier in the year, the concepts in this unit address NGSS standards in Engineering Design: see “Science Concepts” in the Unit Introduction. The unit also uses the natural opportunities in data collection to offer students early experience with statistical analysis.

Unit 8 is particularly rich with opportunities for extensions, from investigating higher-level math concepts like mean, mode, and median to optional online research on bridges. The work is project-based and can optionally culminate in a presentation to the school community.

3 Discuss a few key details about Unit 8 with the group.

- *Bridge Design & Construction: Data Collection & Analysis* is a project-based learning unit that integrates math and science. Over the course of the unit, students:
 - » learn about bridge types and construction;
 - » design and construct their own model bridges;
 - » test their models, then collect and chart data from the testing; and
 - » optimize and refine their designs based on the test results.
- Most of the Grade 3 concepts addressed in this unit are review, but call attention to the fact that 3.MD.4, introduced and developed in Unit 4 and Number Corner April, is targeted for mastery here.
- Some above-level skills are introduced in this unit, but students are not assessed on them and need not be “ready” for them in order to benefit from the work in the unit.
- Unit 8 does not include a unit assessment (a formative assessment is included in May Number Corner). However, five assignments can be used as informal assessment opportunities, and three of these are especially good options for work samples. Teachers can also continue to use Work Places as observational assessment opportunities. They’ll find more information in the Unit 8 section of the Assessment Guide.
- New Work Places are introduced in Module 1, Session 2 and Module 2, Session 2. Let teachers know that you’ll discuss them more after you review the rest of the unit, and that they’ll have a chance to test out the Work Places themselves.
- The Looking for Bridges Home Connection assigned in Module 1, Session 2 asks students to research bridges in their area. The pictures and information they collect provides content for data analysis in Module 2. The other homework assignments in Unit 8 review and extend concepts addressed earlier in the year.
- Daily Practice pages are optional but recommended to provide classroom practice of core skills addressed earlier in the year. Many of Unit 8’s Daily Practice pages are thematically connected to the project-based learning in the unit.

4 Give teachers time to read the Unit 8 Introduction independently.

- Give teachers a few minutes to talk with their groups about what they’ve read.
- Let them know that Unit 8 contains sidebars about mathematical and data-analysis concepts that will help them introduce these concepts to their students.
- Discuss the inexpensive household materials needed for the bridge project and give teachers time to strategize about contacting families for donations of those materials.

5 If your third grade classrooms won’t have four full weeks to explore Unit 8, work with teachers to plan how to use only part of the unit. Ideas:

Accelerating the Bridge Design Investigation

It’s possible to accelerate Unit 8 by covering two, three, or more sessions per day. Much of the unit consists of design-build-test cycles; for these, it’s reasonable to have students design a model, build it, test it, and chart their data all in one day. If there will be only a few days or a couple weeks left in the school year, but an abundance of time to use each day, consider this approach.

Bridges Giveaways

Unit 8 Family Overview

1 copy per teacher

Bridge Posters

Module 1 TMs T1–T3

1 per teacher, enlarged

Photos of bridges from the region and around the world, or links to websites with lots of pictures of bridges

Cardboard or tagboard, clay, building blocks, tape, craft sticks, twine, other building materials

It may be best to plan to ask families to donate these items. While they are inexpensive and easy to find, each classroom will need a lot of them. See the Materials Preparation charts in each module of Unit 8 for more information.

Investigating Bridge Design in Ten or Fifteen Sessions

In Modules 1 and 2, students learn about three basic bridge types, then build and test models of each. In Module 3, they refine their models to achieve better results according to two criteria (strength, then length). At the end of either the second or third module, students can analyze and discuss their results and present models in a project finale; the fourth module (which offers another phase of refinement for the model bridges) can be omitted.

Investigating Bridge Design in Fewer Than Ten Sessions

To shorten the unit even further, spend one day briefly introducing the types of bridges (select activities from Module 1, Sessions 1 and 2). On the next day, divide the class into three groups: one for beam bridges, one for arch bridges, and one for suspension bridges. Teams in each group can spend a day building and testing models of their bridge type.

- Beam bridge group: See Module 1, Sessions 3 and 4
- Arch bridge group: See Module 1, Session 5
- Suspension bridge group: See Module 2, Sessions 2 and 3

If two more days are available, the class can next be divided into two groups, one striving to build the strongest bridges they can (Module 3, Sessions 1–3) and the other working on the longest bridges they can (Module 3, Sessions 4–6). Teams can do as much testing and data collection as time allows, then graph their results for an end-of-year presentation.

- 6 Have teams each read part of the unit, then share with the group.
- 7 If you have time, share this Build a Bridge activity from PBS' NOVA. This and other bridge-related resources can be found in the Bridges Educator site's Resources section for Unit 8: www.pbs.org/wgbh/nova/tech/build-bridge-p4.html

Bridges Unit 8 Work Places 15 minutes

- 8 Let teachers know that four new Work Places are introduced in Unit 8, and they'll explore these in pairs today.
 - Students review measuring and data skills in Work Places 8A–8C. Work Place 8D involves partitioning shapes into equal parts and using fractions to describe the divisions and parts.
 - The Unit 8 Work Places, especially 8A and 8B, work better as classroom activity stations than as regular Work Places. Each station will accommodate just two students. If class sizes are large, encourage teachers to consider setting up more than one station for some or all of the Unit 8 Work Places.
 - Work Places from Units 6 and 7 continue to be available during Unit 8, and teachers can opt to bring out other Work Places from previous units for review and extension as well. (This can help if there isn't room for duplicates of the Unit 8 Work Places.)
 - Give the group 10 minutes to pair up and explore as many of the Work Places as they can.
- 9 Reconvene and ask what challenges teachers see in these Work Places. Teachers might note that the Unit 8 Work Places involve physical activity and offer opportunities for students to handle materials roughly or in unconventional ways. Discuss strategies for preparing students to help maintain a safe, supportive learning environment for everyone while at Work Places.
- 10 Wrap up this discussion with a few last notes about Work Places.
 - This blog post offers ideas for integrating extra Work Place time, which can be handy for letting students guide their own review and extension of math concepts learned earlier in the year: bridges.mathlearningcenter.org/implementation/blog/extra-work-place-time
 - You might also review this post about fostering healthy Work Place habits: bridges.mathlearningcenter.org/implementation/blog/fostering-healthy-work-place-habits

Unit 8 Work Places

No matter how teachers plan to accommodate the amount of time left in the school year, encourage them to be sure they save time for the Unit 8 Work Places. These Work Places review and extend important skills in measuring and data, geometry, and fractions.

Work Place

Sentence Frames

Consider printing a set of the Work Place Sentence Frames for the unit for each teacher. These tools that help students communicate their ideas and actions during Work Places are available in English and Spanish from the Resources section of the Bridges Educator site.

Break or Wrap-Up 5 or 10 minutes

If your meeting will continue, this is a good time for a 5-minute stretch break. If you must move on to other business, wrap up now (see “Wrap-Up” on the next page for some end-of-year items you might want to discuss or plan).

May Number Corner Preview 40 minutes

- 11 Ask teachers to turn to May in their Number Corner Volume 3 binders. Give them a moment to review the Sample Display and Daily Planner, then pass out blank copies of the Daily Planner (or ask teachers to open the customizable Excel planner). Work together, using the school or district calendar, to fill in dates, making adjustments as necessary based on the actual number of instructional days remaining in the school year.
 - Calendar Grid ‘ends’ when the month ends or when the school year ends, whichever comes first. Students can do Activity 4 any time after Activity 3 is complete and at least markers 1–8 are displayed.
 - 14 instructional days are needed for May Calendar Collector.
 - Schedule the other workouts where they fit best.

- 12 Divide the group into teams to read the workouts for the month, then have each team teach the group what they’ve learned.
 - Assign one of the Number Corner workouts (Calendar Grid, Calendar Collector, Computational Fluency, Number Line and Solving Problems) to each team.
 - Give teams about 10 minutes to read their workout and prepare to teach the others.
 - Have each team give an overview of their workout’s activities for the month.
 - Fill in any additional information you feel might be helpful from the following notes.

Calendar Grid Fractions & Area with Rectilinear Figures

- Students explore ways of finding the area of rectilinear figures and of portions of rectilinear figures. They also revisit key fraction concepts including equivalent fractions, comparison of fractions, and the use of benchmark fractions like $\frac{1}{2}$ to compare other fractions. They deepen their work with these skills, then apply them to story problems at the end of the month.

Calendar Collector Roll & Multiply

- Students collect data from repeated trials of a probability experiment in which they roll two dice marked 4–9 and multiply the two numbers. Before conducting the experiment, they predict the likeliness that a given product will be odd or even. They revisit those predictions as they gather data throughout the month.

Computational Fluency More Quick Facts & Games

- Students continue the Quick Facts routine to demonstrate mastery of multiplication facts with products to 100. They also play Win Ten Multiplication and make their own flashcards with arrays and equations that illustrate strategies for quickly calculating selected products.
- If you aren’t providing (or teachers won’t be able to make) flashcards printed back-to-back on card stock, let teachers know that they can print the flashcards on heavy copy paper. Students can use glue sticks to affix the fronts to the backs as they work on their cards.
- Also let them know that students will make flashcards in both Activity 1 and Activity 3 this month. They’ll want to give out only about half the flashcards in Activity 1, and reserve the other half for use in Activity 3.
- Note also that teachers can opt to have students use their flashcards as a reference during Solving Problems activities, and at the end of the school year, students can take their cards home for summer practice.

Number Corner Giveaways

Key Questions

Ready-to-print layouts of the Number Corner Key Questions for each month are available from the [Resources](#) section of the Bridges Educator site.

Recording Charts

Make and laminate blank charts with column headers and title as shown in the Teachers Guide for May Calendar Grid and Calendar Collector.

Alternatively, bring chart paper, markers, and a sample so teachers can prepare charts during or after the meeting.

Quick Facts Worksheet (TM T1)

5 class sets per teacher

Quick Facts Sheets (TM T2–T4)

1 class set plus a few extra per teacher

Multiplication & Division Flashcards (TM T5)

1 class set per teacher, plus a couple extra, printed back-to-back on card stock

Number Corner Checkup 4 (TM T12–T17)

1 class set per teacher

Number Line Put It on the Line with Fractions & Mixed Numbers

- Teachers and students will likely find Put It on the Line to be quite familiar, as they played it with whole numbers in October and April.
- In Put It on the Line, teams take turns solving problems and placing the answers to the problems on a number line. This month, the answers include fractions and mixed numbers.

Solving Problems More Multiplication & Division Practice

- Problems and puzzles give students opportunities to deepen their understanding of the properties of multiplication, the relationship between multiplication and division, and strategies for solving more challenging multiplication combinations. The work supports and extends the Quick Facts routine from Computational Fluency, and provides the practice that students need to demonstrate fluency with products to 100 before the end of the year.
- Teachers might consider encouraging students to use their flashcards as a reference or for support during Solving Problems activities.

13 **Once everyone has shared, invite teachers to turn to the May Assessment page in their binders, and quickly discuss Number Corner Checkup 4.**

At the end of this month, students will take the last of the quarterly Number Corner checkups. This checkup is designed to assess progress toward the standards listed. Note that the final checkup of the year is not a summative assessment; it does not check *all* of the mathematics skills students have studied over the school year.

The Comprehensive Growth Assessment included in the Assessment Guide can serve as a summative assessment or as the material for creating such an assessment.

14 **Depending on the needs of your group, spend additional time on Key Questions or differentiation suggestions for each activity.**

If you like, share this article for some extra encouragement on finishing the Number Corner year strong: bridges.mathlearningcenter.org/implementation/blog/may-number-corner-hang-there

Wrap-Up 10 minutes15 **Take a few minutes to discuss the end of the school year. Possible topics:**

- If your school has an end-of-year parent night or community open house, ask teachers to collaborate on a plan for displaying students' bridges and data collections at the event.
- Let teachers know how to refer students who may need additional support in mathematics in order to approach the work in Grade 4—screening, intervention, summer opportunities, etc.
- You might also stay for a few minutes to talk with teachers who have concerns and questions that weren't addressed during the meeting, or to share some more information from the Bridges blog.
 - » Pictures and information about the bridge-building activities in Unit 8: bridges.mathlearningcenter.org/implementation/blog/great-finish-year
 - » End-of-year organization and storage of materials: bridges.mathlearningcenter.org/implementation/blog/organizing-your-bridges-materials-0

