

# Bridges in Mathematics Grade 5

## 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](http://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](http://www.mathlearningcenter.org)

[mlcsupport@mathlearningcenter.org](mailto:mlcsupport@mathlearningcenter.org)

### Contents

<b>Introduction</b> .....	1
<b>Number Corner October, Bridges Unit 2</b> .....	3
<b>Number Corner November &amp; December, Bridges Unit 3</b> .....	9
<b>Number Corner January, Bridges Unit 4</b> .....	17
<b>Number Corner February, Bridges Unit 5</b> .....	23
<b>Number Corner March, Bridges Unit 6</b> .....	27
<b>Number Corner April, Bridges Unit 7</b> .....	31
<b>Bridges Unit 8, Number Corner May</b> .....	37





# Grade 5 Implementation Guide

## Number Corner October

### Bridges Unit 2

#### Materials

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

#### 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](https://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. Note the Work Place Log for Unit 1 & 2 Work Places is combined.
- Depending on your resources, you might prepare copies and charts for teachers as giveaways. We suggest the materials listed in the sidebars on this page and page 6 for this purpose.

#### Introduction & Agenda 5 minutes

- 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](https://bridges.mathlearningcenter.org/implementation/blog/digital-display-materials-tutorial-video)
  - » **Digital Display Materials Information** [bridges.mathlearningcenter.org/implementation/blog/digital-display-materials](https://bridges.mathlearningcenter.org/implementation/blog/digital-display-materials)

#### 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 Collector Record Sheet

*Prepare 1 per teacher as shown in the Teachers Guide for October Calendar Collector.*

##### Fresh carrots

*2 per teacher; refer to Teachers Guide for October Calendar Collector for size.*

##### Clock Face Strips (TM T4)

*At least 3 per teacher for Problem String 5*

##### Number Corner Checkout 1 (TM T5–T8)

*1 class set per teacher*

## October Number Corner Preview 50 minutes

- 2 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.*

- Photos of classroom displays for ideas and inspiration. [bridges.mathlearningcenter.org/implementation/blog/number-corner-display-ideas-photo-gallery](https://bridges.mathlearningcenter.org/implementation/blog/number-corner-display-ideas-photo-gallery)
- Tips for effective use of the Daily Planner. [bridges.mathlearningcenter.org/implementation/blog/beginning-your-year-number-corner-lesson-planning](https://bridges.mathlearningcenter.org/implementation/blog/beginning-your-year-number-corner-lesson-planning)

- 3 Have teachers turn to the October section of Number Corner Volume 1.

- 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.

- 4 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 check-ups. These checkups are designed to assess progress toward the standards named in the Skills/Concepts Assessed chart. These are the learning targets for these two months.

- 5 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, Problem Strings, 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 Mystery Buildings: Views & Volume

- This month, the Calendar Grid pattern asks students to select a marker from a set of four different possibilities, based on clues from the previous three days' markers. These clues include a view from the top, right side, and front view of three-dimensional structures. The structures increase in volume by predictable amounts [3 and 6 cubic units].
- Let teachers know they'll need to be sure to place the numbered markers face-down and keep every fourth pocket empty.
- The lettered mystery buildings include a few distractors that do not match any of the views.
- Students continue to manipulate Omnifix cubes to make sense of volume. The Resource page for October has great activities for this using an online format.

### Calendar Collector Carrot Graphing Experiment

- Fifth graders love to watch two fresh carrots, of two different sizes, dehydrate! They weigh the carrots in grams and track the changes on a coordinate grid and double line graph. (The good news is that dehydrating carrots don't smell!)

**Computational Fluency** Group It!

- This month's activities involve writing and evaluating expressions that include parentheses.
- Students will be using grouping symbols, particularly parentheses, throughout the year. These standards are further developed in Grade 6 as order of operations. Games like Group It! can come back later in the year for additional support.

**Solving Problems** Solving Problems with Organized Lists

- Students come to appreciate using an organized list to solve for adding and subtracting decimals, and finding and extending patterns. They are given time to solve the problems and then discuss their solutions and problem-solving strategies as a class. We encourage teachers to carefully select specific students to share their thinking during whole-class discussions.

**Problem Strings** Fraction Addition with Money & Clock Models

- This month, students use money value pieces, money amounts, and clock models to add unit and non-unit fractions with unlike denominators. This supports the work in Unit 2.
- These blog posts offer suggestions for implementing problem strings:
  - [bridges.mathlearningcenter.org/implementation/blog/3-tips-effectively-implementing-problem-strings](https://bridges.mathlearningcenter.org/implementation/blog/3-tips-effectively-implementing-problem-strings)
  - [bridges.mathlearningcenter.org/implementation/blog/problem-strings-new-approach-building-computational-fluency-number-sense](https://bridges.mathlearningcenter.org/implementation/blog/problem-strings-new-approach-building-computational-fluency-number-sense)
  - Find more problem string blog posts using the search feature or at this link: [bridges.mathlearningcenter.org/implementation/blog/search?keys=problem+strings](https://bridges.mathlearningcenter.org/implementation/blog/search?keys=problem+strings)
- This blog post describes how to make paper plate clocks for use with clock fractions:
  - [bridges.mathlearningcenter.org/implementation/blog/interactive-paper-plate-fractions](https://bridges.mathlearningcenter.org/implementation/blog/interactive-paper-plate-fractions)

## 6 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 proficiency with writing and evaluating expressions, identifying factors and multiples, adding fractions with unlike denominators, finding the volume of rectangular prisms as well as figures composed of two or more rectangular prisms, and locating and identifying points on a coordinate plane.
- Number Corner also offers many opportunities for informal assessment, from students sharing observations to playing games to persevering with problems. Student Book pages can also provide information about student understanding.
- 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](https://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](https://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

*Adding and Subtracting Fractions: Students use money, clocks, ratio tables and number lines as models to compare fractions, find common denominators, and compute fractions with unlike denominators. In Module 2, they engage in a deep inquiry with the double number line model, called the River Trail. This experience was part of the Getting Started workshop but still might need to be reviewed with teachers. In Module 3, students apply and generalize a variety of models and strategies to find common denominators. Three sessions in Module 4 move beyond fifth grade standards with lessons on finding the LCMs and GCFs to generate equivalent fractions, and simplifying fractions.*

- 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:
  - We encourage teachers to complete the first three modules in this unit. Module 4 extends these concepts to Grade 6 and could be offered as an extension.
  - Module 2 has two math forums. If teachers are not familiar with this practice, you may want to model it or discuss this blog post: [bridges.mathlearningcenter.org/implementation/blog/math-forums](https://bridges.mathlearningcenter.org/implementation/blog/math-forums)
  - The Unit 2 Pre-Assessment is scheduled during Module 1, Session 2. Two formative checkpoints are scheduled in Module 2, Session 6 and Module 3, Session 3. The Post-Assessment is scheduled for Module 3, Session 6. Module 4 content is not assessed formally.
  - Remind fifth 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 and Module 2, Sessions 2 & 5. Students will use the Work Place Log from Unit 1 to continue to document their practice.
  - 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 the Daily Practice in the classroom.
  - In the Resources section of the Bridges Educator site for Module 2, teachers will find a blog post by a classroom teacher about the River Trail activity. The post features photos of student work, including photos of their completed River Trail.
- 9 Give teachers time to read the Unit 2 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.
- 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, 5.NF.1 and 5.NF.2] That said, these standards return in Units 3 and 5 and several months of Number Corner.  
*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? [Number & Operations—Fractions]
  - 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

### Sheets of butcher paper for the river trail

Half-class set of 3-foot sheets for each teacher

### Unit 2 Post-Assessment (Module 3 T4–T6)

1 class set per teacher

## 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](http://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 three new Work Places are introduced in Unit 2, and they'll explore these in pairs today.
  - Students practice adding fractions with Work Places 2A–2C.
  - Teachers may remember these Work Places 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 teachers getting to Work Places on a regular basis?
  - These blog posts offer advice for overseeing Work Places, fostering healthy Work Place habits, and getting ready for a substitute teacher using Work Places:
    - » [bridges.mathlearningcenter.org/implementation/blog/great-workout-work-places](https://bridges.mathlearningcenter.org/implementation/blog/great-workout-work-places)
    - » [bridges.mathlearningcenter.org/implementation/blog/fostering-healthy-work-place-habits](https://bridges.mathlearningcenter.org/implementation/blog/fostering-healthy-work-place-habits)
    - » [bridges.mathlearningcenter.org/implementation/blog/substitute](https://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.

[www.readinghorizons.com/blog/seven-ways-to-increase-student-engagement-in-the-classroom](https://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](https://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](https://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 5 Implementation Guide

# Number Corner November & December Bridges Unit 3

### Materials

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

### 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](https://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](https://bridges.mathlearningcenter.org/implementation/blog/digital-display-materials-tutorial-video)
- » **Digital Display Materials Information** [bridges.mathlearningcenter.org/implementation/blog/digital-display-materials](https://bridges.mathlearningcenter.org/implementation/blog/digital-display-materials)

## November Number Corner Preview 50 minutes

- 2 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\\_5.pdf](http://achievethecore.org/content/upload/SAP_Focus_Math_5.pdf)

- Ask: Which workouts are a priority for grade 5 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.

- 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.

- 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, Problem Strings, 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.

### Calendar Collector

For each teacher, cut strips of butcher paper in two different colors, each 35 meters long, to use with November Calendar Collector Activity 1.

**Calendar Grid** Tumbling Triangles

- This month's pattern features right isosceles, obtuse scalene triangles represented on a coordinate grid. Students examine the side lengths and angles to classify the triangles, name ordered pairs of coordinates to identify the locations of the triangles vertices, and describe how the triangles are translated (slid), rotated (turned), or reflected (flipped) from one marker to the next. Translations are above grade level standards and challenging! See also the Challenge notes in the text on pages 9 & 12.
- On Day 5, teachers will facilitate the first discussion about the calendar markers. Each set begins with a triangle oriented on a coordinate grid. The second triangle in the set translates (slides) left or right. The third triangle translates up or down. The fourth triangle rotates (turns) 90 degrees clockwise or counterclockwise, and the fifth triangle in the set reflects (flips) over one side of the triangle.
- Student Book pages 23 & 24 can be assigned as seatwork or used as a formative assessment.

**Calendar Collector** A Meter a Day

- Students estimate and then predict the length of their collection of meter-a-day strips. They chart the total length of their growing collection and use a meter as a benchmark when estimating longer lengths. Converting between centimeters, decimeters, meters, and kilometers also provides a context for place value concepts, powers of 10, fractions, decimals and rounding.
- Finding enough wall space to display 15-meter strips may be a challenge. Consider using the hallway, gym or cafeteria space collaboratively with other fifth grade classes in your school.

**Computational Fluency** Expression Bingo

- This month's Computational Fluency workout, Expression Bingo is played once with the teacher and once with a partner. The Digital Display files would a great way to introduce how this game is played. Number Corner Student Book page 28 provides more practice with expressions.

**Solving Problems** Using Logical Reasoning to Solve Problems

- The Problem Solving workout this month features one set of problems. Students discuss their solutions and strategies as a class on Day 9. Look for pairs of students who used an array model to see parts of a set of 36 marbles.

**Problem Strings** Fraction Subtraction with Money & Clock Models

- Money and clock models return to provide subtraction practice with unit and non-unit fractions with denominators that are factors of 60 and 100. These problems help students move toward expressing fractions with a common denominator before finding the difference between them. The big idea is simplifying expressions by creating equivalent fractions.
- This month contains four problem strings. If pacing problem strings is still challenging for some teachers, consider sharing these materials:
  - » [bridges.mathlearningcenter.org/sites/default/files/documents/tla/inbridges/Problem\\_Strings\\_in\\_Bridges.pdf](https://bridges.mathlearningcenter.org/sites/default/files/documents/tla/inbridges/Problem_Strings_in_Bridges.pdf)
  - » [bridges.mathlearningcenter.org/implementation/blog/problem-strings-no-problem](https://bridges.mathlearningcenter.org/implementation/blog/problem-strings-no-problem)

- 5 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

*Students study skills and concepts related to place value, from reading, writing, and comparing decimals to rounding and examining the decimal patterns of multiplying and dividing numbers by 10. They use their place value understandings to convert within a measurement system, and they use both whole number strategies and place value understanding to add and subtract decimals to hundredths. Division is the focus of Module 4, in which students model, solve, and pose long division problems.*

- 6 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:
  - If students have not created the Great Wall of Base Ten in Grade 5, consider using teacher master T10 from Module 1, Session 4 to examine exponents and exponential notation with your fifth grade teachers. Alongside base ten pieces and decimal grid paper, these visual models help students make sense of the relationship between these pieces.
  - Module 2 has a math forum with computer memory as a context. Consider reviewing the Forum Planner and discussing strategies fifth graders may use at this time of year.
  - Let teachers know that before Module 4, they might want to practice using the Base Ten area pieces and grid paper to demonstrate the area model for division.
  - The Unit 3 Pre-Assessment is scheduled during Module 1, Session 1. Two formative check-points are scheduled in Module 2, Session 4 and Module 3, Session 1. The post-assessment is scheduled for Module 4, Session 4. A work sample is also collected in Module 2. Fifth 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.
  - Four new Work Places are introduced in Module 1, Session 2 and Module 2, Sessions 2, 3, and 4. A fifth Work Place is introduced in Module 4.
    - » Consider sharing this post about the value of Work Places when school calendars interrupt the flow of instruction: [bridges.mathlearningcenter.org/implementation/blog/work-places-real-classroom-calendar](https://bridges.mathlearningcenter.org/implementation/blog/work-places-real-classroom-calendar)
  - Discuss with teachers how they are using Daily Practice in the classroom.
- 7 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.
- 8 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? Are there any that must be mastered? [Yes, 5.NBT.3a, 5.NBT.3b & 5.NBT.4—that said, these standards will also be addressed in future months of Number Corner.]
  - Using the Assessment Guide, together review the updated Support & Intervention section for Unit 3 ([bridges.mathlearningcenter.org/view/br5-ag#110](https://bridges.mathlearningcenter.org/view/br5-ag#110)). Discuss how this information will inform teachers' instruction.
- 9 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 3 Family Overview

1 copy per teacher

### Unit 3 Assessments & Base Ten Grid Paper

Module 1 T1–T5

Module 4 T9–T13

1 class set per teacher

## 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 3 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 five new Work Places are introduced in Unit 3, 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.
- 11 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.
- 12 If you have time, share these blog posts about Work Places:
  - Fostering healthy Work Place habits: [bridges.mathlearningcenter.org/implementation/blog/fostering-healthy-work-place-habits](https://bridges.mathlearningcenter.org/implementation/blog/fostering-healthy-work-place-habits)
  - Getting ready for a substitute using Work Places: [bridges.mathlearningcenter.org/implementation/blog/substitute](https://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.*

## 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

- 13 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\\_5.pdf](http://achievethecore.org/content/upload/SAP_Focus_Math_5.pdf)

- Ask: Which workouts are a priority for grade 5 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?

- 14 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.

- 15 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, Problem Strings, 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

*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.*

### Mini Quadrilateral Markers

*TM T1–T2, 1 per teacher, cut apart. Teachers will need to mark congruent sides in red and blue as shown on the actual calendar markers and as described in the workout's Preparation section.*

**Calendar Grid** Classifying Quadrilaterals

- This month’s pattern focuses on classifying special kinds of quadrilaterals: kites, parallelograms, and trapezoids. Observing, recording, and comparing, students begin to focus on the shapes’ defining attributes. They also begin to see how shapes in a subcategory (e.g., rectangles) have all the properties of the broader category (e.g., parallelograms), as well as additional defining properties (e.g., 4 right angles).
- You may want to have teachers sort and color-code the mini-markers (Teacher Masters pages T2–T4) together, then discuss the defining attributes described on pages 6 and 11.
- Note the challenge option on page 11.

**Calendar Collector** Student Height & Foot Lengths

- There are three wall displays for Calendar Collector this month. Discuss how teachers might post the Heights, Lengths and Student Height and Lengths double line plot this month in their Number Corner area, or perhaps as a digital display.
- Students measure and collect data about their heights and foot lengths, to the nearest half-inch. Line plots, scatter plots and coordinate grids are used to organize their data.
- In Activity 3, the class examines the collection and answers questions about the data represented on the line plot.
- In Activity 4, they focus on the same information, looking for relationships and trends on the coordinate grid. Then they complete the Creating Data Displays Student Book page.

**Computational Fluency** Put It on the Line, Part 1

- Students learn a game called Put It on the Line, which focuses on addition, subtraction, and equivalence with decimals and fractions, and division of whole numbers resulting in fractional answers. (If students had Bridges last year, they will remember this game!)
- You may want to play using the digital display file the first time, teacher against the class.

**Solving Problems** Problems That Suggest Making an Informed Start

- The workout this month features one set of problems. Students solve the problems on Day 6, using a ratio table, and discuss their solutions and strategies as a class on Day 10. The content focuses on multiplication and division of whole numbers, decimals, and fractions.
- The context is a price chart in a bakery. The ratio table serves as a way for students to record what they do know (e.g., the prices of certain numbers of cupcakes) in order to determine what they don’t know (e.g., the price of a much larger number of cupcakes). In this way, students make an informed start, to record information that can help them solve the problem.

**Problem Strings** Multiplication & Division

- The problem strings this month are all about a constant ratio, using fruit snacks, oatmeal packages and sticker packages for a context to multiply and divide whole numbers and decimals. Students work with partial products, doubling, and finding products 10 times or 100 times bigger than another, as they continue developing their multiplicative thinking and place value relationships.
- Pages 31, 33, and 36 provide ideas for notating student thinking using a ratio table model.

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

**Wrap-Up** 5 minutes

- 17 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](https://bridges.mathlearningcenter.org/implementation/blog/tip-resources-high-achievers)





# Grade 5 Implementation Guide

## Number Corner January

### Bridges Unit 4

#### Materials

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

#### 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](https://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](https://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 5 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? [Solving problems with and converting measurement units are from a supporting cluster, and taught with Number Corner workouts throughout the year in grade 5.]
- 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, Problem Strings, 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 Numerical Patterns & Graphs

- This month's pattern features 6 sets of 5 markers, each of which begins with 4 terms in a pattern, followed by a graph of the pattern. These visuals are small, and will need to be projected either as a display file or document camera.
- Students determine how many squares are in each arrangement and write equations with  $x$  and  $y$  as variables, that show the totals, and the rule for generating each new term in the sequence. The coordinates of the points on the graph correspond to the terms in the pattern, and the equation of the line on the graph corresponds to the rule for generating each pair of coordinates, or for getting from each  $x$ -value to each  $y$ -value in an ordered pair.

### Calendar Collector Time & Money Collector

- Students spin a spinner and roll a die each day to collect fractional amounts of time and money. Each week, students calculate the total amount of time and money collected. The mathematical focus is on multiplying a whole number by a unit fraction, adding and subtracting fractions with unlike denominators, and discussing equivalent expressions.
- The spinner for money has fractions with denominators that are all factors of 100—2, 4, 5, and 10—and the spinner for time has fractions with denominators that are all factors of 60—2, 3, 4, 5, 6, and 10. When the fractions are set in contexts involving money and time, it becomes quite natural for students to find common denominators before adding or subtracting the fractions.
- Here are some resources for representing clocks, fractions, and money:
  - [www.visnos.com/demos/clock](http://www.visnos.com/demos/clock)
  - [bridges.mathlearningcenter.org/implementation/blog/interactive-paper-plate-fractions](http://bridges.mathlearningcenter.org/implementation/blog/interactive-paper-plate-fractions)
  - [www.mathlearningcenter.org/web-apps/money-pieces](http://www.mathlearningcenter.org/web-apps/money-pieces)

## 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 (T2–T6)

1 class set per teacher

**Computational Fluency** Color Ten

- Students are introduced the Color Ten game. Players model fractions on hundreds grids, convert improper fractions to mixed numbers, and add and subtract fractional quantities with a goal of getting as close to 10 as possible. If they spin a 10, they can shade in 10 fourths, 10 fifths, or 10 tenths. They need to compare fractions and decide whether they need more or less to win the game. The digital display materials work well for introducing this game.
- Version 2 increases difficulty by incorporating the multiplication of whole numbers by fractions. This game is also played teacher versus the class.
  - » The third time this workout appears, students play Version 2 with partners.
  - » As a support option, students can also play Version 1 with a partner.

**Solving Problems** Volume Problems

- Omnifix cubes are back. Volume is measured in cubic units and is often thought of as multiplication because the volume of a rectangular prism is the product of the length, width, and height.
- In Buildings in Blocktown, students explore the additive nature of volume, where the volume of a composite figure that is made of rectangular prisms is the sum of the volumes of the individual rectangular prisms.

**Problem Strings** More Multiplication & Division

- Students continue using ratio tables to multiply and divide decimals and whole numbers. As they become more proficient with using ratio tables as a tool for thinking, their strategies become more efficient. This month's strings draw out relationships involving doubling, place value shifts when multiplying by 10 and 100, using a little over or under landmark numbers, and halving. Students use the distributive property for multiplication and division.

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

- Number Corner Checkup 2 gives 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](https://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

*Students return to the study of multiplication and division strategies, including the standard multiplication algorithm. In the first two modules, they investigate strategies that leverage the relationship between multiplication and division; the fact that 5 is half of 10; the relationships between fractions, decimals, and whole numbers; and the process of doubling and halving. In Module 3, the teacher formally introduces the standard multiplication algorithm with the area model and partial products. Module 4 reinforces the connection between multiplication and division, using the area model and ratio tables to help students develop a degree of comfort with long division.*

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:

- The first two modules have six problem strings to develop number sense and fluency with a variety of efficient strategies.
- Module 1, Sessions 3 & 4 have a math forum. 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 4 and Module 4, Session 1. The post-assessment is scheduled for Module 4, Session 5. A work sample is also collected in Module 2, Session 1.
- Fifth 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, Session 1; Module 3, Session 1; and Module 4, Sessions 1 and 4. Consider giving students an additional day for Work Places before the post-assessment for practice with the concepts and skills they are developing.
- Discuss with teachers how they are using Daily Practice in the classroom.

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 that must be mastered? [Yes, 5.NBT.5 & 5.NBT.6.] These standards are addressed in future months of Number Corner and Bridges units.

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

11 If time allows, share these posts about communicating with families and creating a performance assessment.

- Sharing Multi-Digit Multiplication Strategies with Parents  
[bridges.mathlearningcenter.org/implementation/blog/sharing-multi-digit-multiplication-strategies-families](https://bridges.mathlearningcenter.org/implementation/blog/sharing-multi-digit-multiplication-strategies-families)
- Multi-Digit Multiplication Performance Assessment  
[bridges.mathlearningcenter.org/implementation/blog/multi-digit-multiplication-performance-assessment](https://bridges.mathlearningcenter.org/implementation/blog/multi-digit-multiplication-performance-assessment)

## Bridges Giveaways

### Unit 4 Family Overview

1 copy per teacher

### Unit Pre- and Post-Assessment, Checkpoint, and Base Ten Grid Paper

Module 1 T1–T3

Module 2 T5

Module 4 T1

Module 4 T16–T18

1 class set per teacher

## 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.*

- 12 Let teachers know that five 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.
- 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 a few minutes to spare, share this post about the Decimal Product Game: [bridges.mathlearningcenter.org/implementation/blog/decimal-product-game](https://bridges.mathlearningcenter.org/implementation/blog/decimal-product-game)

## 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.

## 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 5 Implementation Guide

## Number Corner February

### Bridges Unit 5

#### Materials

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

#### 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](https://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](https://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\\_5.pdf](http://achievethecore.org/content/upload/SAP_Focus_Math_5.pdf)

- Ask: Which workouts are a priority for grade 5 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, Problem Strings, 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 Using the Area Model to Multiply Fractions

- The calendar markers this month feature rectangular objects whose dimensions are measured to the fraction of an inch. Students identify the dimensions and area of each object and search by multiplying fractions by fractions, mixed numbers, and whole numbers.
- In the area model, the two factors are represented as the dimensions of a rectangle and their product is the area of that rectangle.
- The fact that the product of two fractions can be smaller than either number ( $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$ ) is often surprising and confusing for students who have grown accustomed to the fact that the product of two whole numbers is always greater. Representing multiplication of fractions with the area model can eliminate much of this confusion.
- If teachers are struggling with pacing Calendar Grid, share this post full of tips for catching up: [bridges.mathlearningcenter.org/implementation/blog/catching-calendar-grid](https://bridges.mathlearningcenter.org/implementation/blog/catching-calendar-grid)

### Calendar Collector Two Liters or Spill

- Gather two or three cups and containers that are labeled with metric units (ml), and prepare a half-gallon pitcher of colored water for Activities 2–4.
- Students review metric units of liquid volume (milliliters, deciliters, liters) and conversion between those units. They spin a spinner, convert the amount spun to milliliters, and add that much water to a container. Students keep track of the collections to determine if they have collected 2 liters or spilled (gone over).
- Students can make conversions between units by reasoning about the place value, multiplying by 10 and dividing by 10. For example, to convert 24 liters to milliliters, multiply 24 by 10 to get the number of deciliters, and then by 10 again to get the number of centiliters, and then by 10 again to get the number of milliliters, 2400. See the conversion chart on page 14.

## 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 & 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.

### Fraction Multiplication Grids (TM T1)

A few per teacher, cut apart

### Half-Gallon Pitchers

One per teacher, or give one away as a door prize.

### Food Coloring

Teachers will need a few drops of food coloring to color the water used in Calendar Collector. We recommend green or blue.



**Computational Fluency** I Have, Who Has?

- Students play I Have, Who Has? as a class four times this month. The content varies in each activity: adding and subtracting decimals, multiplying and dividing whole numbers and decimals, and practicing the standard algorithm for multiplication.
- This game encourages students to think carefully about the numbers in each problem and select a strategy that works best for those numbers using efficient solutions.

**Solving Problems** Conversion Problems

- Students solve two sets of problems involving liquid volume measured in both metric and customary units using a ratio table. They solve the problems and discuss their solutions and strategies as a class. They convert between units and discuss the patterns in place value shifts.
- Because the units in the metric system are based on powers of 10, converting among them provides a real-world context in which you can have students discuss the number of 0s and in the placement of the decimal point when they multiply and divide by powers of 10.

**Problem Strings** Multiplying Whole Numbers by Fractions

- All four problem strings this month focus on multiplication of whole numbers by fractions. Arrays of counters model the first two problem strings; students are encouraged to use more abstract thinking later in the month. Plan to discuss the connection between fractions and multiplication and division, the associative and distributive properties, and general strategies for multiplying fractions by whole numbers.
- These strings provide practice multiplying fractions by whole numbers. The strings begin with problems in the form  $1/b \times c$ , where  $c$  is a whole number and  $1/b$  is a unit fraction. To find these products, students will often simply divide  $c$  by  $b$ , because  $1/b \times c = c \div b$ . The problems that follow are in the form  $a/b \times c$ , where  $a/b$  is some multiple of the unit fraction  $1/b$  and  $c$  is the whole number. To calculate the product  $a/b \times c$ , students can think of the problem in this way:  $a \times 1/b \times c$ . Since they have already calculated the product  $1/b \times c$  earlier in the string, simply multiplying the product  $1/b \times c$  by  $a$  makes good sense.
- If pacing problem strings is still a challenge, share these materials:
  - » [bridges.mathlearningcenter.org/sites/default/files/documents/tla/inbridges/Problem\\_Strings\\_in\\_Bridges.pdf](https://bridges.mathlearningcenter.org/sites/default/files/documents/tla/inbridges/Problem_Strings_in_Bridges.pdf)
  - » [bridges.mathlearningcenter.org/implementation/blog/problem-strings-no-problem](https://bridges.mathlearningcenter.org/implementation/blog/problem-strings-no-problem)

## 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

*During the first module, students review and extend skills and concepts first introduced in Grade 4 to solidify their understanding of whole number-by-fraction multiplication. In Modules 2 and 3, they use rectangular arrays to model and solve fraction-by-fraction multiplication problems. Module 4 introduces division of whole numbers by unit fractions and of unit fractions by whole numbers. The unit emphasizes sense-making and understanding as students tackle conceptually challenging material.*

- 6 Invite teachers to turn to the introduction for Unit 5 and quickly scan the Overview. Note key details:
  - One problem string is part of Problems & Investigations in the first module.
  - Module 3 has one math forum, Multiplying Fractions. Consider solving the prompts with teachers, reviewing the Forum Planner and discussing possible student strategies.
  - The Unit 5 Pre-Assessment is scheduled during Module 1, Session 1. Two formative checkpoints are scheduled: in Module 2, Session 1; and Module 3, Session 4. The post-assessment is scheduled for Module 4, Session 6.
  - Two new Work Places are introduced in Module 3, Sessions 3 and 4.
- 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: Are any standards targeted for mastery? [Yes, 5.NF.4, 5.NF.5 & 5.NF.7] These standards will continue in April & May of Number Corner and return in Units 6 & 8.
- 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.
- 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 this post about fraction arrays:  
[bridges.mathlearningcenter.org/implementation/blog/creating-collection-fraction-arrays](https://bridges.mathlearningcenter.org/implementation/blog/creating-collection-fraction-arrays)

## 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 two 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 pairs 10 minutes to explore the Work Places. 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

- 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.

## Bridges Giveaways

### Unit 5 Family Overview

*1 copy per teacher*

### Unit Pre- and Post-Assessment, Checkpoints, and Grid Paper

Module 1 T1–T4

Module 2 T1

Module 3 T9–T10

Module 4 T10–T13

*1 class set per teacher*

## 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.

# Grade 5 Implementation Guide

## Number Corner March

### Bridges Unit 6

#### Materials

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

#### 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](https://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 culmination of the integrated math/science project in Unit 8 requires a lot of building materials—cardboard, craft sticks, tape of all kinds, fabric, foam, aluminum foil, and all manner of things students might be able to use to create models of their solar home designs. For other activities earlier in the unit, each teacher also needs a clear vinyl shower curtain, a class set of clear plastic cups, some soil (potting soil works well), and some small rocks or pea gravel. About a gallon of soil (in a zip-top bag) and a half-gallon of rock is enough for a single classroom. 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 this month's Calendar Grid and Calendar Collector workouts address many of the major-cluster standards in 5.NBT and 5.NF.*
- 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, Problem Strings, 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 Multiplication with Decimal Numbers

- The markers this month feature arrays with dimensions that are whole and decimal numbers. Each set of five begins with an array whose dimensions are whole numbers. Markers follow feature arrays in which one or both of the dimensions are reduced by some power of 10 (divided by 10 or 100). The areas of these arrays also shrink by powers of 10.
- Students practice multiplying multi-digit whole and decimal numbers. They also explore how changing the factors changes the products, and talk about interpreting expressions without evaluating them and about strategies for multiplying decimal numbers.
- Students use equations to represent the relationships among the multiplication combinations. They apply the associative property to multiply multi-digit decimal numbers and relate their strategies to multiplication with multi-digit whole numbers.
- Note that the Resources section of the Bridges Educator site has a good selection of online games, teacher tools, and activities to be used as lesson extensions or for additional practice this month: [bridges.mathlearningcenter.org/resources/nc/gr5/mar](https://bridges.mathlearningcenter.org/resources/nc/gr5/mar)

### Calendar Collector Line Plots & Length

- At the beginning of this month, each student is given a new pencil to use all month. Three times during the month, students measure their pencils to the nearest eighth of an inch and then make a class line plot with the data. They use these three line plots to answer questions about the data. The variation and range of their pencil measurements increase as the experiment proceeds.
- Students answer story problems by adding, subtracting, multiplying, and dividing with these measurements. Because the x-axis of the line plot is a number line, students' work this month connects directly to the past work they have done with fractions on a number line.

## 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–T10)

1 class set per teacher

### New, Unsharpened Pencils

1 class set per teacher  
(1 pencil per student)

### Chart or Butcher Paper

3 large pieces per teacher

**Computational Fluency** Quotient Bingo

- Students play a game in which each card features a division problem. They estimate the answer to the problem and solve it. Then they can decide whether to cover the quotient on a bingo board. They can also choose to cover 10 times the quotient or  $\frac{1}{10}$  of the quotient instead. The first team to get four quotients in a row wins.
- In some cases, the answer is a whole number, but in others the answer is a fraction less than 1 or greater than 1.

**Solving Problems** Student-Posed Problems

- Students pose and then answer their own questions about mathematical situations. The problem situations in this month's workout offer opportunities to focus on multiplication and division with whole numbers and all four operations with decimals to the hundredths place.
- This month's workout features "situations" rather than problems. In a problem, at least one question is posed. In a situation, no questions are posed. Instead, students ask their own questions about the situations. You'll help them express those questions in the form of mathematical problems, which they then solve.
- The Three-Read Protocol can be a useful tool for teachers and students approaching and creating story problems. This document offers some background from San Francisco Unified School District: [www.sfusdmath.org/uploads/2/4/0/9/24098802/3\\_read\\_protocol\\_from\\_math\\_teaching\\_toolkit\\_2015-2016.pdf](http://www.sfusdmath.org/uploads/2/4/0/9/24098802/3_read_protocol_from_math_teaching_toolkit_2015-2016.pdf)

**Problem Strings** Fraction Addition & Subtraction

- This month, four problem strings involve addition and subtraction of fractions, where the fractions are mixed numbers and the addition problems have multiple addends. The strings bring out strategies that involve decomposing mixed numbers into their whole number and fractional parts, as well as converting fractions to equivalent fractions with a common denominator.
- Mixed numbers ( $a \frac{b}{c}$ ) can be thought of as  $a + \frac{b}{c}$ . When adding or subtracting mixed numbers, you can deal with the whole number parts and the fraction parts separately (the associative property). The traditional method of adding mixed numbers is to first change the mixed numbers to equivalent fractions greater than 1 (improper fractions).
- It is helpful for students to choose a solution strategy based on the numbers in the problem, and likewise, to have teachers practice efficient and flexible ways to solve these number combinations.

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

This checkup gives teachers more information about students' current skills with volume, measurement conversion, coordinate grids, addition and subtraction of mixed numbers, multiplication of whole numbers by fractions, and division of decimals. Plan for two 20-minute periods over two days.

**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.*

**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

Students are formally introduced to several new geometric concepts, including coordinate graphing and the use of hierarchies to classify two-dimensional shapes by their properties. They also review volume, working from counting the cubes that will fit into a box to measuring prisms in continuous units and using standard formulas ( $V = l \times w \times h$  and  $V = b \times h$ ) to find their volumes. Module 4 features a brief review of fraction and mixed number multiplication, set in the context of making banners and flags.

- 6 Invite teachers to turn to the introduction for Unit 6 and quickly scan the Overview. Note key details:
  - One problem string is part of Problems & Investigations in Module 4.
  - The Matt’s Marbles Math Forum takes place in Module 3, Sessions 2 and 3. Consider solving the prompts with teacher and discussing possible student strategies.
  - The Unit 6 Pre-Assessment is scheduled in Module 1, Session 1. Three formative checkpoints are scheduled: in Module 1, Session 7; in Module 3, Session 1; and in Module 4, Session 3. The post-assessment is scheduled for Module 4, Session 4.
  - Work Places are introduced in Module 1, Session 7 and in Module 3, Sessions 3 and 5.
- 7 Give teachers time to read the Unit 6 Introduction independently. Call special attention to the Levels of Geometric Thinking and Algebraic Connections sections. 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. Note that in this unit, all of the standards addressed are targeted for mastery.
- 9 Divide the group into four teams. Have each team read one module, then share what they’ve learned with the whole group.
- 10 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 Unit 6 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 three 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.
- 12 Reconvene and use the Work Place Guides to discuss strategies for differentiation, including game variations, challenge and support.

## Wrap-Up 5 minutes

- 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. They might also consider working on a letter to send home to families to request materials for Unit 8, or reading ahead to Unit 8 to become familiar with the materials and activities.

## Bridges Giveaways

### Unit 6 Family Overview

1 copy per teacher

### Unit Pre- and Post-Assessment, and Checkpoints

Module 1 T1–T4  
Module 1 T12–T13  
Module 3 T1–T2  
Module 4 T2–T6

1 class set per teacher

### Butcher or Chart Paper

1 large piece per teacher for Shape Hierarchy charts (see Module 2, Session 1)

### Baseball & Marble Boxes

Module 3 T4–T5

1 Baseball Box and a class-set of Marble Boxes per teacher. If possible, copy them on card stock. Trim them, or allow teachers a little time to trim and assemble them after your 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 5 Implementation Guide

## Number Corner April

### Bridges Unit 7

#### Materials

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

#### 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](https://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

The culmination of the integrated math/science project in Unit 8 requires building materials students can use to create models of their solar home designs. Consider working with fifth grade teachers to send letters home to families asking for donations of the materials listed to the right. Cardboard is especially important: each team of three students needs at least 12 pieces (8–12" square is a good rule of thumb), and the teacher needs some as well. Each teacher also needs a clear vinyl shower curtain, a class set of clear plastic cups, some soil (potting soil works well), and some small rocks or pea gravel. About a gallon of soil (in a zip-top bag) and a half-gallon of rock is enough for a single classroom.

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.

#### Unit 8 Building Materials

cardboard  
scotch tape  
masking tape  
duct tape  
styrofoam  
craft foam  
cotton batting  
bubble wrap  
paper towels  
fabric remnants  
felt  
foil  
plastic wrap  
newspaper

#### 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\\_5.pdf](http://achievethecore.org/content/upload/SAP_Focus_Math_5.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 5 students? Considering these priorities, which workouts should they be sure to address this month?
  - Note that standards in NBT and NF, as well as the volume skills in MD, are all part of the critical standards for the grade.
- 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, Problem Strings, 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 Growing Cube Constructions

- This month's markers feature a sequence of figures built from centimeter cubes. The focus of the pattern, dimensions, and volume of rectangular solids leads to applying formulas for finding the volume of a rectangular prism. Note the observation chart with  $\text{cm}^3$  notation.
- The volume of a rectangular prism can be found by multiplying the length, width, and height of the prism:  $V = l \times w \times h$ . A more general formula for finding the volume of any prism is to multiply the area of its base by its height:  $V = b \times h$ . In the case of a rectangular prism, the area of the base is equal to  $l \times w$ , which makes the connection between the two formulas clear.
- Students might remember building the Layer a Day in September and noticing that the order of the factors doesn't change the product (the associative property).
- The markers can be considered in sets of 5. Building volumes in each set doubles three times, then halves. Every third building is a solid with labeled dimensions rather than a centimeter cube construction to nudge students away from inefficient counting strategies.
- Check out this lesson extension idea: [bridges.mathlearningcenter.org/implementation/blog/flashcard-extravaganza](http://bridges.mathlearningcenter.org/implementation/blog/flashcard-extravaganza)

## 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 Collector** Collecting Quarters

- In this month's two parallel collections, each day students collect  $\frac{3}{4}$  of a dollar and  $\frac{3}{4}$  of an hour. The mathematical focus is on multiplying a whole number by a fraction, identifying equivalent fractions, and adding and subtracting fractions with unlike denominators.
- In one collection, students add  $\frac{3}{4}$  of a dollar each day and express the running total as a fraction and as a decimal. In the other, they add  $\frac{3}{4}$  of an hour each day and express the running total as some number of minutes and as a fraction. To determine how much money or time they have accumulated each day, students can multiply the number of days by  $\frac{3}{4}$  of a dollar or an hour. This involves multiplying a whole number (the number of days) by a fraction ( $\frac{3}{4}$ ).
- Students add  $\frac{3}{4}$  to the previous day's total, which involves adding fractions with unlike and like denominators. They consider the variety of equivalent fractions that can be used to represent the total each day. In the collection of money, they also calculate with decimal numbers and identify equivalent fractions and decimals.

**Computational Fluency** Put it on the Line, Decimals

- This month's version of Put It on the Line focuses on addition, subtraction, multiplication and division of decimals to hundredths, addition and subtraction of fractions, including mixed numbers, and multiplication of fractions.
- Students solve problems involving decimals and fractions and then compare and order the rational number answers. They are encouraged to use and explain mental math strategies. They often need to flexibly convert between fractions and decimals to choose the value that helps them solve the problem and also plot the correct point on the number line.
- Students ready for a challenge can convert fractions and decimals into percentages, too.
- Let teachers know that they can consider using the Digital Display Materials or The Math Learning Center's free Number Line app for Put It on the Line.

**Solving Problems** More Student-Posed Problems

- Students continue to pose and then answer their own questions about mathematical situations. They discuss their solutions, share strategies, and describe how they know their answer is reasonable. The situations this month offer opportunities to focus on addition, subtraction, multiplication, and division of fractions.
- In a *problem*, at least one question is posed. In a *situation*, no questions are posed. In this workout, students ask their own questions about the situations. You'll help them express those questions in the form of mathematical problems, which they will then solve.

**Problem Strings** Fraction Multiplication & Division

- Fraction-by-fraction multiplication is represented on an array with dimensions of 1 linear unit and an area of 1 square unit. The array that represents the fraction multiplication is composed of rectangles, each of which represents some unit fraction. To determine the value of each rectangle, multiply the denominators of the dimensions. To determine the number of rectangles, multiply the numerators of the dimensions.
- Division with unit fractions and whole numbers is represented using a bar model. The third string this month uses the context of breaking a whole number of candy bars into equal pieces to model division of whole numbers by unit fractions. Each time, the question is essentially, "How many halves (or thirds, fifths, and so on) are in 3 wholes (or 2 wholes, 4 wholes, and so on)?" The problems are designed to draw out a strategy that involves finding the number of unit fractions in 1 whole, then scaling up to the number of wholes given.
- The final string this month presents division of a unit fraction by a whole number. The problems are all presented in the form, "If I have a fraction  $\frac{1}{a}$  of a candy bar and share it with  $b$  people, how much of the original candy bar is each person's share?"
- If these models and strategies are new to your fifth grade teachers, practice the models, fraction operations, and notating student solutions using the scripts provided.

**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 7 Preview 40 minutes

*In this unit, students continue their study of division, including its relationship to multiplication. In Module 1, students work with problem strings to find partial quotients as they divide 3- and 4-digit dividends by 2-digit divisors. Module 2 centers around the sharing and grouping interpretations of division, providing opportunities to review the skills and concepts associated with dividing unit fractions by whole numbers and vice versa. During this module, students also solve and discuss a wide variety of division story problems, including contexts that require decisions about how to handle the remainders. In the last two modules, students review and extend their thinking about the effects of multiplying and dividing by powers of 10, as well as multiplying and dividing decimal numbers.*

- 5 Invite teachers to turn to the introduction for Unit 7 and quickly scan the Overview. Note key details:
  - Nine problem strings are part of Problems & Investigations in the first three modules. If pacing problem strings continues to be a challenge for some teachers and you haven't shared these materials in past meetings, offer them now.
    - » [bridges.mathlearningcenter.org/sites/default/files/documents/tla/inbridges/Problem\\_Strings\\_in\\_Bridges.pdf](https://bridges.mathlearningcenter.org/sites/default/files/documents/tla/inbridges/Problem_Strings_in_Bridges.pdf)
    - » [bridges.mathlearningcenter.org/implementation/blog/problem-strings-no-problem](https://bridges.mathlearningcenter.org/implementation/blog/problem-strings-no-problem)
  - There are two math forums: Fruit Pizza, in Module 1, Sessions 4 and 5; and Story Problems in Module 2, Sessions 1 & 2. Consider solving the prompts with teachers, reviewing the Forum Planners and discussing possible student strategies.
  - The Unit 7 Pre-Assessment is scheduled during Module 1, Session 1. Three formative checkpoints are scheduled: in Module 1, Session 6; Module 2, Session 4; and Module 4, Session 1. The post-assessment is scheduled for Module 4, Session 4. There's a Division Work Sample in Module 2, Session 2.
  - Two new Work Places are introduced: in Module 1, Session 3; and Module 2, Session 4.
- 6 Give teachers time to read the Unit 7 Introduction independently. 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. Note that in this unit, all of the standards addressed are targeted for mastery.
- 8 Divide the group into four teams. Have each team read one module, then share what they've learned with the whole group.
- 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 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.
    - » Looking toward sixth grade: [bridges.mathlearningcenter.org/implementation/blog/fact-is-sixth-grade-coming](https://bridges.mathlearningcenter.org/implementation/blog/fact-is-sixth-grade-coming)
    - » Suggestions for setting next year's goals: [bridges.mathlearningcenter.org/implementation/blog/check-your-rough-edges](https://bridges.mathlearningcenter.org/implementation/blog/check-your-rough-edges)

## Bridges Giveaways

### Unit 7 Family Overview

1 copy per teacher

### Unit Pre- and Post-Assessment, and Checkpoints

Module 1 T1–T4

Module 1 T11

Module 2 T6–T7

Module 4 T1

Module 4 T5–T9

1 class set per teacher

**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**

- 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 on a letter to send home to families to request materials for Unit 8, or reading ahead to Unit 8 to become familiar with the materials and activities.

**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 5 Implementation Guide

## Bridges Unit 8

### Number Corner May

#### Materials

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

#### Special Preparation for Unit 8: Building Materials

If you're preparing for your meeting well in advance of the time that classrooms will begin Unit 8, consider working with fifth grade teachers to send letters home to families asking for donations of the materials listed to the right. Cardboard is especially important: each team of three students needs at least 12 pieces (8–12" square is a good rule of thumb), and the teacher needs some as well.

Each teacher also needs a clear vinyl shower curtain, a class set of clear plastic cups, some soil (potting soil works well), and some small rocks or pea gravel. About a gallon of soil (in a zip-top bag) and a half-gallon of rock is enough for a single classroom.

If you're able to collect these materials ahead of time, divide them up to give to 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](https://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.
- Depending on your resources, you might prepare copies, charts, and materials for teachers as giveaways. Suggested items are listed in sidebars in this guide.

#### Building Materials

cardboard  
scotch tape  
masking tape  
duct tape  
styrofoam  
craft foam  
cotton batting  
bubble wrap  
paper towels  
fabric remnants  
felt  
foil  
plastic wrap  
newspaper

#### Introduction & Agenda 5 minutes

- 1 Welcome everyone and display the agenda.

Suggested agenda:

- » Bridges Unit 8
- » 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, you may want to discuss strategies for using a partial selection of the activities from Unit 8; see page 38.)
- 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 math skills studied earlier in the year, concepts in this unit address selected NGSS standards in Engineering Design and Earth & Space Science: see “Science Concepts” in the Unit Introduction. The unit also introduces ideas about energy transfer, which correlate to middle school standards in Physical Science. In addition, students continue to develop their skills in data collection and statistical analysis.*

*Unit 8 is particularly rich with opportunities for extensions, especially in experiments investigating energy transfer and energy efficiency. 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.

- *Solar Design* is a project-based learning unit that integrates math and science. Over the course of the unit, students:
  - » learn about solar energy, solar features in homes, energy transfer, and energy efficiency;
  - » conduct experiments in solar energy collection, concentration, and retention;
  - » design simple model houses informed by the results of their research;
  - » make scaled floor plans and side-view drawings of their designs; and
  - » build models of their designs; and
  - » test and refine their designs for optimal solar efficiency.
- Mathematically, this unit focuses on review of skills developed earlier in the year.
- The science concepts range in level from third grade to middle school, but the work is experimental and investigative—students need not develop or demonstrate mastery here.
- Unit 8 offers opportunities to let students record, graph, and analyze data using computers or mobile devices with spreadsheet software (e.g., Google Sheets, Microsoft Excel), either with you as a group or independently in teams. Excel-based spreadsheet templates are available from the Resources section of the Bridges Educator site.

### 4 Briefly cover the possible use of Work Places in Unit 8, as well as opportunities for assessment, homework, and practice.

- Unit 8 does not include a unit assessment (a formative assessment is included in May Number Corner). However, two assignments students do while designing and testing their model houses, as well as the houses themselves, make good work samples. Teachers will find more information on these opportunities in the Unit 8 section of the Assessment Guide.
- No new Work Places are introduced in Unit 8, and some classrooms might choose to end the Work Place time routine as they begin this unit. However, those who choose to continue using Work Places can use them as observational assessment opportunities. This blog post offers ideas for integrating extra Work Place time: [bridges.mathlearningcenter.org/implementation/blog/extra-work-place-time](https://bridges.mathlearningcenter.org/implementation/blog/extra-work-place-time)
- Home Connections in Unit 8 review and extend concepts addressed earlier in the year, and are thematically connected to the project-based learning in the unit.
- Daily Practice pages are optional but recommended to provide classroom practice of core skills addressed earlier in the year. Unit 8’s Daily Practice pages are thematically connected to the project-based learning in the unit.

## Bridges Giveaways

### Unit 8 Family Overview

1 copy per teacher

### Dry Soil

Each teacher needs about a gallon of potting soil or other dry (-ish) dirt.

### Rocks or Gravel

Each teacher needs about a half-gallon of pea gravel or small rocks.

### Building Materials

Plan to ask families to donate the items needed to build and insulate the model houses. Cardboard is especially important. See the Materials Preparation charts in Module 2 for more information.

- 5 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 statistics, data analysis, measurement, solar energy, and other concepts that will help them introduce these ideas to their students and use them in the course of the students' projects. In addition, some of the teacher masters offer in-depth information teachers can read and share with students.
  - Discuss the inexpensive household materials (especially cardboard) needed for the models and give teachers time to strategize about contacting families for material donations. (Note: if your school schedule means that teachers will need to cut the unit short, they might not need these materials.)
- 6 If your fifth grade classrooms won't have 20 instructional days to explore Unit 8, have teachers work together to decide how much of the unit they'll use. Some considerations:
- Module 1 and Module 2 both end at great "stopping points." Module 1 culminates in students building and testing a solar collector. Over the course of Module 2, students build simple model solar houses, then insulate and test them. If teachers will have only a week or two to spend with Unit 8, suggest that they use just Module 1, or Modules 1 and 2, as time permits.
  - Module 3 also ends with a major build project—more complex model houses built according to the students' own design. However, the complete design and building process will take at least five sessions, and two more sessions (in Module 4) are needed to test, refine, and analyze the resulting models. If, at the end of Module 2, the class will have fewer than 8 instructional days (or equivalent time) to continue their work, it's probably best to stop there and explore other mathematics activities (such as those in May Number Corner) for the remaining days.
  - Note that it's possible to do the project in much larger chunks of time, covering two or more sessions per day. Since the project involves many different tasks, students can work on it for half a day or even a full day without too much restlessness. 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!
- 7 Divide the group into teams, and have each team read part of the material. Then have the teams share what they've learned with the group.
- Depending on what they'll be using, each team might read a whole module or just a few sessions.

### **Break or Wrap-Up** 10 minutes

*If your meeting will continue, this is a good time for a stretch break. If you must move on to other business, wrap up now (see "Wrap-Up" on page 41 for some end-of-year items you might want to discuss or plan).*

## May Number Corner Preview 40 minutes

8 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 Activity 3 can be done anytime after the 21st of May (the remaining calendar markers are provided on the Number Corner Student Book page for the activity). However, we recommend waiting as long as you can to do Activity 3—through the end of May if at all possible.
- You'll probably do Calendar Collector Activity 3 twice, with the second time ending the collection. We recommend trying to schedule the two dates for Activity 3 at least four days apart.
- Schedule the other Number Corner workouts where they fit best.

9 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 workout (Calendar Grid, Calendar Collector, Computational Fluency, Solving Problems, and Problem Strings) 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 Mumford Mole's Meadows

- Students will use clues from the calendar markers to construct a map of Mumford Mole's Meadow. As they proceed, students practice identifying and writing coordinates, as well as creating and using coordinate grids. They'll also discover a set of rules or "building codes" that govern how Mumford Mole digs his burrows.
- Instead of an Observations Chart, this month's Calendar Grid information is recorded on the Large Meadow Grid (assembled from copies of teacher masters). In addition, students record information on a Number Corner Student Book page dedicated to the activity.

### Calendar Collector Two Quarts or Spill

- Students spin a spinner each day to find out an amount of water to add to the collection. They must convert the amount spun to ounces before recording it. They track the collection and predict whether they will collect 2 quarts or less—or exceed 2 quarts and spill.
- Let teachers know that students need not pour any water in this activity; it's sufficient for each update if the student helper simply spins, converts the quantity, and records it. The teacher will then update the physical collection of colored water as part of Activities 2–4.

### Computational Fluency Fraction Splat!

- In Fraction Splat!, players spin two spinners, one for whole numbers and one for unit fractions, and multiply the resulting numbers. The student with a greater sum of products at the end of the game wins.
- The class is introduced to Fraction Splat! in Activity 1 and play as a class in Activity 2. After that, they play Fraction Splat! as a partner game twice. With some extra copies of the Student Book pages for the game, teachers can opt to repeat this activity additional times or provide it as an option during Work Places or at other times.

## 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 Collector Record Sheet

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

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

### Large Meadow Grid (TM T2–T5)

1 copy per teacher. Trim and assemble them ahead of time, or you might provide scissors and tape so teachers can do so during a break.

### Water Containers

Per teacher:

- 2–3 two-quart containers
- measuring cups marked in fluid ounce increments
- half-gallon pitcher

### Number Corner Checkup 4 (TM T8–T11)

1 class set per teacher



**Solving Problems** Problems That Emphasize Reasoning

- Students solve problems that involve all four basic operations and emphasize reasoning. In making sense of the problems, solving them, and justifying their strategies and solutions, students end the year employing key mathematical practices.

**Problem Strings** Fraction Multiplication & Division

- This month's problem strings focus on multiplication of fractions, dividing whole numbers by fractions, and dividing fractions by whole numbers. Fraction multiplication is modeled with arrays, while fraction division is modeled using a bar model.

- 10 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.*

- 11 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](https://bridges.mathlearningcenter.org/implementation/blog/may-number-corner-hang-there)

**Wrap-Up** 10 minutes

- 12 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' model houses and data analysis at the event.
  - Let teachers know how to refer students who may need additional support in mathematics in order to approach the work in middle school—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.
    - » Looking toward sixth grade: [bridges.mathlearningcenter.org/implementation/blog/fact-is-sixth-grade-coming](https://bridges.mathlearningcenter.org/implementation/blog/fact-is-sixth-grade-coming)
    - » End-of-year organization and storage of materials: [bridges.mathlearningcenter.org/implementation/blog/organizing-your-bridges-materials-0](https://bridges.mathlearningcenter.org/implementation/blog/organizing-your-bridges-materials-0)

