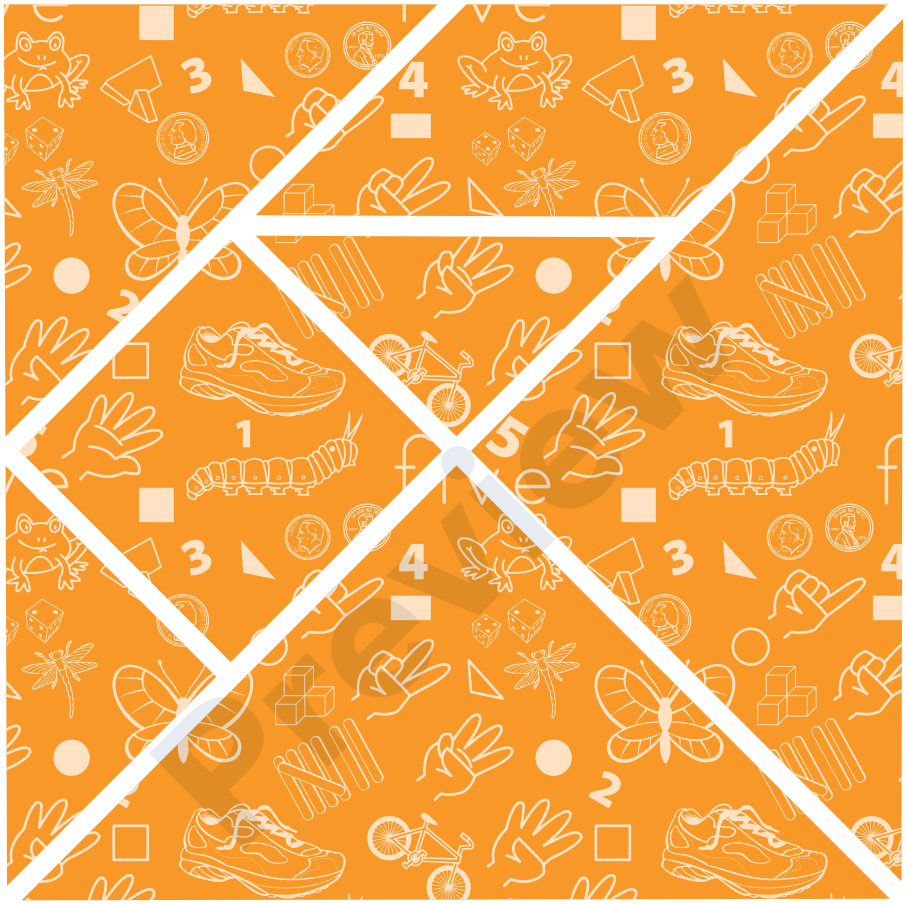
BRIDGES®
IN MATHEMATICS



BRIDGES ASSESSMENT GUIDE GRADE K

Published by The MATH LEARNING CENTER Salem, Oregon

Bridges in Mathematics Second Edition Kindergarten Assessment Guide

The Bridges in Mathematics Kindergarten package consists of:

- Bridges in Mathematics Kindergarten Teachers Guide Units 1–8
- Bridges in Mathematics Kindergarten Assessment Guide
- *Bridges in Mathematics Kindergarten Teacher Masters*
- Bridges in Mathematics Kindergarten Student Book
- Bridges in Mathematics Kindergarten Home Connections Volumes 1 & 2
- *Bridges in Mathematics Kindergarten Teacher Masters Answer Key*
- *Bridges in Mathematics Kindergarten Student Book Answer Key*
- *Bridges in Mathematics Kindergarten Home Connections Answer Key*
- Bridges in Mathematics Kindergarten Components & Manipulatives
- *Bridges Educator Site*
- Work Place Games & Activities
- Number Corner Kindergarten Teachers Guide Volumes 1–3
- *Number Corner Kindergarten Teacher Masters*
- Number Corner Kindergarten Student Book
- *Number Corner Kindergarten Teacher Masters Answer Key*
- *Number Corner Kindergarten Student Book Answer Key*
- Number Corner Kindergarten Components & Manipulatives

Digital resources noted in italics.

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Bridges in Mathematics is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates Number Corner, a collection of daily skill-building activities for students.

The Math Learning Center is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based professional development, curriculum, materials, and resources to support learning and teaching. To find out more, visit us at www.mathlearningcenter.org.

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Kindergarten
Bridges Assessment Guide

Bridges Assessment Guide

Introduction

Although the role of assessment has become a complex and sometimes charged topic, the daily reality of assessment in the classroom remains both simple and profound. The fact of the matter is that assessment and good teaching go hand in hand. To teach effectively, we must be students of our students, continually observing, listening, and probing to determine how they are responding to our instruction. We can't teach well unless we know what our students already know, are in the process of learning, and need to know. Moreover, our students can't learn as effectively as they might unless they understand the short-term and long-term goals of instruction and have as much of a stake in their own learning as we do.

As a student-centered curriculum solidly rooted in problem solving, *Bridges in Mathematics* is filled with assessment opportunities. Consider the fact that many, if not most, of the sessions open with a question or prompt: a chart, a visual display, a problem, or even a new game board. Students are asked to share comments and observations, first in pairs and then as a whole class. This gives the teacher an opportunity to take the group's measure and conduct the day's instruction with a feel for the students in the room. While the strategy may be subtle, it reflects a radically different approach to instruction—one in which assessment takes the lead.

The *Bridges in Mathematics* curriculum features a host of informal and formal assessments woven throughout the Bridges units and Number Corner workouts. These range from tips to help teachers elicit student thinking to individual and small group interviews and formal paper-and-pencil tasks. The assessments themselves, along with all the needed materials, teacher masters, and instructions, reside in the Bridges and Number Corner Teachers Guides. The material in this Bridges Assessment Guide—answer keys, scoring guides, intervention and support suggestions, and tips for engaging students and their families in goal setting and progress monitoring—provides the tools teachers need to process and use the results of the assessments to guide instructional decisions.

Assessment should be more than merely a test at the end of instruction to see how students perform under special conditions; rather it should be an integral part of instruction that informs and guides teachers as they make instructional decisions.

» NCTM

Assessment Overview

Section 1: Standards & Assessments

Summarizes the Common Core State standards for kindergarten, provides a description of the types of assessments in Bridges and Number Corner, and features a complete list of all the assessments offered in Bridges Kindergarten.

Section 2: Assessing Math Content

Takes a deeper look at the types of assessment tasks offered in Bridges Kindergarten. Offers an assessment map that shows exactly where and when each kindergarten Common Core standard is assessed and targeted for mastery.

Section 3: Assessing Math Practices

Profiles the CCSS Mathematical Practices in terms of kindergarten behaviors, and offers suggestions for assessing the practices throughout the year.

Section 4: Assessment as a Learning Opportunity

Describes ways in which the teacher can involve students in taking ownership of their own learning and monitoring their own progress toward mastering desired skills, concepts, behaviors, and attitudes.

Section 5: Using the Results of Assessment to Inform Differentiation & Intervention

Details the connection between Bridges and Response to Intervention (RtI) and explains the scoring guides found in the Bridges Unit Assessments, Number Corner Assessments, and Comprehensive Growth Assessment parts of this guide.

Section 6: Reporting to Families

Suggests ways to help families understand the instructional targets for the year and monitor their child's growth and progress toward meeting those targets. Includes a Kindergarten Math Progress Report that might be used or adapted for use with other district reporting tools.

Bridges Unit Assessments

Features an assessment collection for each Bridges unit. Each collection includes:

- A brief description of all the assessments in the unit and the skills addressed
- Sheets for collecting observations about students' proficiency with CCSS mathematical skills
- Answer keys and scoring guides for each assessment
- Suggestions for support and intervention

Number Corner Assessments

Features an assessment collection for Number Corner Kindergarten. This collection includes:

- A brief description of the baseline and quarterly checkups
- A list of the skills addressed by each of the five assessments
- Answer keys and scoring guides for each assessment
- Suggestions for support and intervention

Comprehensive Growth Assessment

Describes the Comprehensive Growth Assessment (CGA), an instrument that provides global coverage of all the CCSS requirements for kindergarten. It includes:

- A copy of the CGA, along with tips about how to use it to best advantage
- A list of materials needed to conduct the assessment, and all needed teacher masters
- A list of the skills addressed by each item on the assessment
- An answer key and scoring guide
- Suggestions for support and intervention

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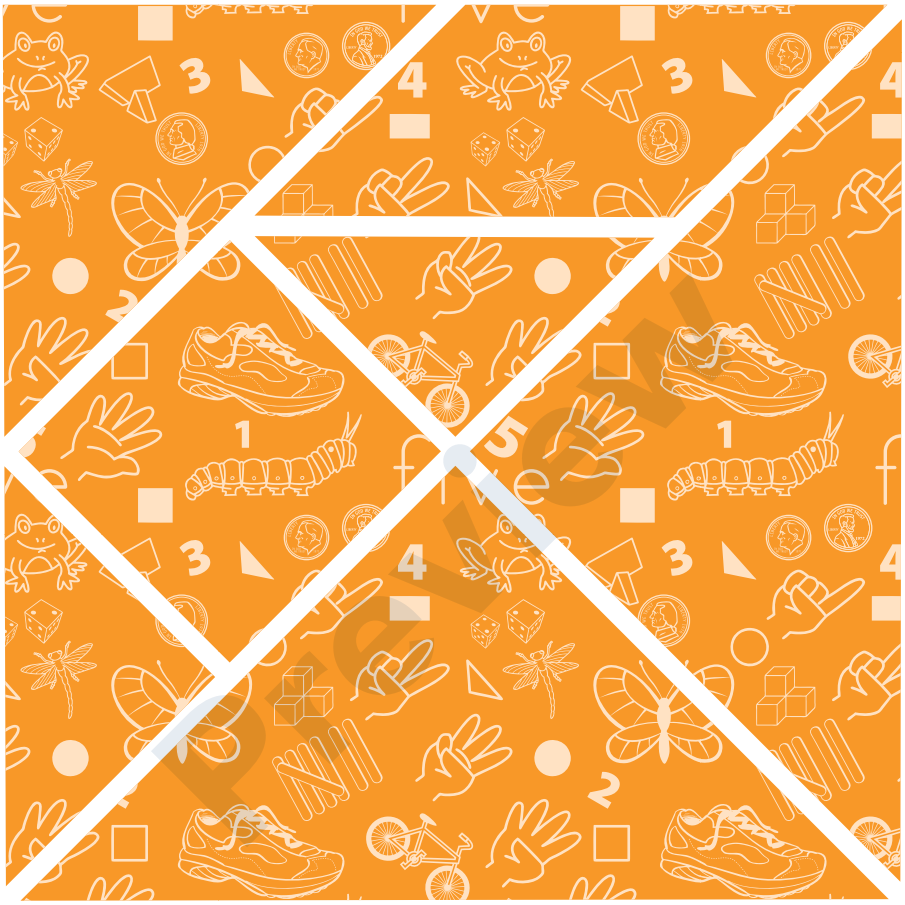


BRIDGES ASSESSMENT GUIDE GRADE K

Assessment Overview

Published by The MATH LEARNING CENTER Salem, Oregon

Section 1

Standards & Assessments

Types of Assessments in Bridges and Number Corner

We have many ways of finding out what our students know. We can observe them as they work in a variety of settings—whole group discussions, problem-solving sessions, Work Places. We can converse with students informally as they solve problems or play games, or we can conduct more formal interviews with individuals or small groups. We can check near the midpoint of each unit to see how they're responding to our instruction and again at the end of the unit for a level of mastery appropriate to the time of year. Finally, every two or three months we can have students complete sets of written tasks that cover a range of skills and concepts to look at long-term growth.

You've got to be very careful if you don't know where you are going, because you might not get there.

» Yogi Berra

To help teachers determine what their students already know, are in the process of learning, and need to know, Bridges and Number Corner feature several different types of assessments. Here is a brief description of each, and an indication of where it is found in the program.

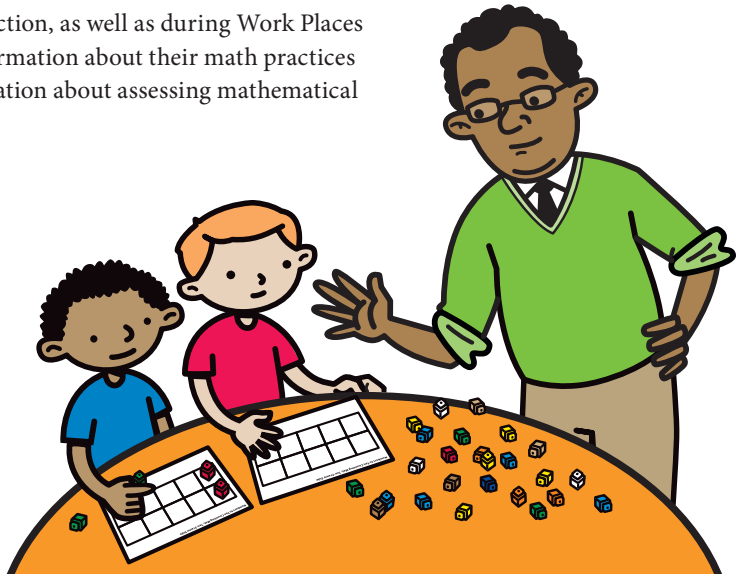
Informal Observation

Located throughout Bridges Sessions and Number Corner Workouts

One of the best but perhaps undervalued methods of assessing students is through informal observation. Teachers develop intuitive understandings of students through careful observation, but not the sort where they carry a clipboard and sticky notes. These understandings develop over a period of months and involve many layers of relaxed attention and interaction. Experience with the age-level helps—after several years at kindergarten, a teacher begins to notice patterns of behavior, things that 5- and 6-year-olds seem to say, think, or do on a fairly consistent basis. Knowledge of learning outcomes is essential—the better you know where you're headed, the easier it is to recognize skills and concepts as they emerge in students.

Bridges sessions and Number Corner workouts, which continually ask students to share and explain their thinking (either verbally or in the form of drawings and numbers on whiteboards) present ongoing assessment opportunities. As we become accustomed to learning from our students, we become increasingly skilled at spotting their strengths and needs without resorting to more formal means. Throughout Bridges sessions and Number Corner workouts, teachers will find suggested questions and prompts along with sample dialogs to elicit student thinking, conversation, sharing, and explanation. To make the CCSS Mathematical Practices easy to spot, Teachers Guide sidebars feature Math Practices in Action, which highlight and describe selected instances in which the practices are integrated into instruction.

Carefully observing students during whole-group instruction, as well as during Work Places when they are operating more independently, yields information about their math practices as well as math content skills. You will find more information about assessing mathematical practices in Section 3.



Structured Observation: Work Place Guides

Located in Bridges units

Work Places—individual and small group games and activities—offer almost daily opportunities to observe and interact with students in authentic settings. During Work Places, when students are working independently at tasks that accommodate many different levels of response, we are more likely to see their actual skill levels, misconceptions, and behaviors.

To help teachers make the most of opportunities to assess students and provide on-the-spot support and challenge, each Work Place is accompanied by a guide that lists the skills and concepts involved, the materials needed, and a set of Assessment & Differentiation suggestions. This example is from Unit 4.

Unit 4 Module 2 | **Session 2** *1 copy kept in a clear plastic sleeve and stored in the Work Place bin*

Work Place Guide 4B Foxes & Dens

Summary

Partners play a game in which their "foxes" (game markers) race through dens to the finish. After rolling two dice, they add the numbers together and determine if that number appears in the next den. If so, they can advance to that den. The first one to reach the fifth den is the winner.

Skills & Concepts

- Count forward from a given number, rather than starting at 1 (K.CC.2)
- Count objects one by one, saying the numbers in the standard order and pairing each object with only one number name (K.CC.4a)
- Identify the number of objects as the last number said when counting a group of objects (K.CC.4b)
- Represent addition with fingers, objects, or verbal explanations (K.OA.1)

Materials

Copies	Kit Materials	Classroom Materials
TM T1 Work Place Guide 4B Foxes & Dens **TM T2** Work Place Instructions 4B Foxes & Dens	• 3 Foxes & Dens Game Boards • 3 dice numbered 0–5 • 3 dice dotted 1–6 (with the 6 covered with masking tape or a sticker) • 6 translucent game markers, three red and three blue	

Assessment & Differentiation

Here are some quick observational assessments you can make as students begin to play this game on their own. Use the results to differentiate as needed.

If you see that…	Differentiate	Example
A student has difficulty adding the numbers, either mentally or by counting on.	SUPPORT Remind students to count on, using the strategies learned previously.	Use a ten-frame and cubes, their fingers, or the dots on the dotted die to count on.
A student has difficulty reading the numerals on the die.	SUPPORT Help the student use the dominoes at the bottom of the game board. Invite students to play game variation A.	
A student or pair of students easily reads the numerals and adds.	CHALLENGE Make a graph to record how often the sums come up. Invite students to play game variation B, C, or D.	Columns on the graph would be numbered 1–10. An X is recorded in the correct column each time a sum is obtained.

Teacher Master — Bridges in Mathematics Kindergarten T1 © The Math Learning Center — www.gotomlc.org

Small Group Interviews: Checkpoints

Located in Bridges units

Interviews are widely acknowledged to be one of the most effective ways to assess young children. Because we can vary the level of cognitive demand in accord with students' responses, interviews are especially useful in exploring their thinking processes and problem-solving strategies.

Each Bridges unit includes at least two interview Checkpoints, conducted during Work Places, usually with small groups of four students rather than individuals. These often appear at or near the end of the first and third modules in a unit, giving teachers an opportunity to spot-check or progress-monitor skill development mid-unit rather than waiting until the end of the unit to assess the results of instruction.

Many of these Checkpoints are conducted using one of the Work Place games as a context. For example, in Unit 3, teachers observe two pairs of students at a time playing Beat You to Ten during Work Places. Here they can demonstrate skills with one-to-one correspondence, counting order, cardinality, and comparing sets. If the teacher doesn't observe the students demonstrating a particular skill as they play the game with one another, the Checkpoint sheet includes prompts for eliciting their level of proficiency or understanding.

Beat You to Ten Checkpoint

Instructions
- Observe 4 students playing Beat You to Ten in pairs during Work Places.
- Mark the boxes that best characterize each student's actions and responses during the game.
- If you don't readily observe a skill, use the suggested prompts on the sheet.

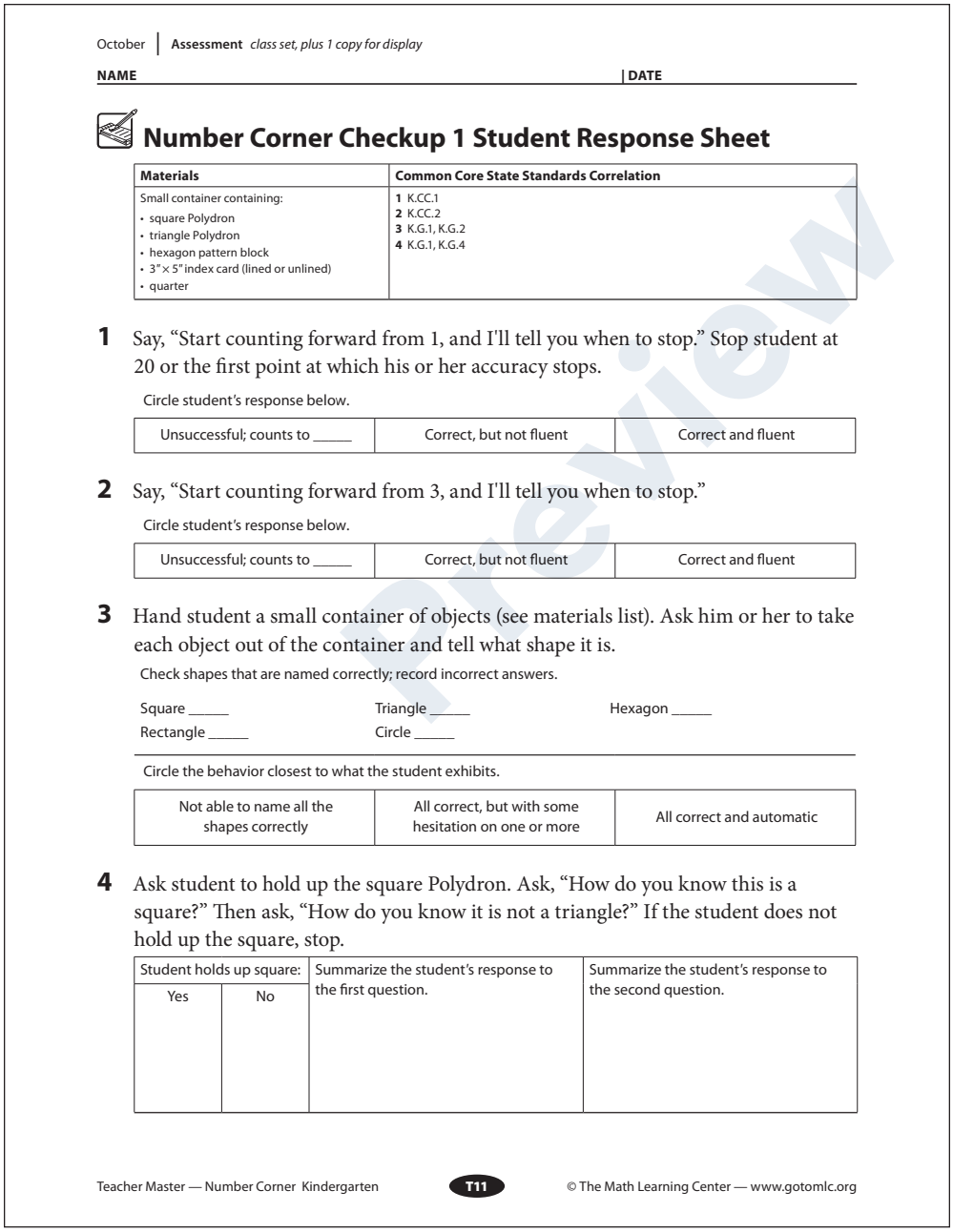
	1 Observe how students count the cubes.			**2** Ask students what will happen if they count the cubes they've collected so far in a different order (e.g., from bottom to top, broken apart, spread out, etc). Will they get the same total or not? Then have them count the cubes in a different order to see what happens.			**3** Observe how students respond to the question "How many do you have now?"			**4** Observe how students determine who has the greater or lesser amount		
	One-to-One Correspondence Count objects one by one, saying the numbers in the standard order and pairing each object with only one number name (K.CC.4a)			**Counting Order** Demonstrate the understanding that the total number of objects in a collection does not change if they are counted in a different order (K.CC.4b)			**Cardinality** Identify the number of objects as the last number said when counting a group of objects (K.CC.4b)			**Compare Amounts** Identify whether the number of objects in one group is greater than, less than, or equal to the number in another group (K.CC.6)		
Student Name	Has 1:1	Has 1:1 with number sequence error *	Doesn't have 1:1	Knows total number of dots will not change. Counts them accurately in a different order.	Not sure what happens if counting order changes. Counts dots accurately and finds out that the total remains unchanged.	Not sure, or believes the total will change when counted differently. Does not count dots accurately in a different order.	Has cardinality	Needs to recount to determine amount	Does not have cardinality	Knows which is greater, which is less, and by how many	Knows which is greater and which is less	Cannot determine which is greater

* Number Word Sequence Error: Indicates that when a student is counting, they omit a number or have an incorrect counting order.

Individual Interviews: Baseline and Quarterly Checkups

Located in Number Corner (September, October, January, March, and May)

The September write-up in the Number Corner Teachers Guide offers a Baseline Assessment designed to gauge incoming students' numeracy skills. An assessment (Checkup) is offered toward the end of each quarter in the Number Corner Teachers Guide as well. Each of these assessments features a set of individual interview questions that are less contextually based than those in Bridges and more tightly focused on specific skills taught during the previous two or three months. For example, the first Number Corner Checkup, conducted at the end of October, asks kindergartners to count to 20 by 1s, count to 10 starting from 3 instead of 1, identify five basic 2-D shapes by name, and describe the attributes of a square. These requests take into account instruction during September and October Number Corner and reflect a level of expectation appropriate for most kindergartners at this early point in the school year.



October | **Assessment** *class set, plus 1 copy for display*

NAME | **DATE**

Number Corner Checkup 1 Student Response Sheet

Materials	**Common Core State Standards Correlation**
Small container containing: • square Polydron • triangle Polydron • hexagon pattern block • 3" × 5" index card (lined or unlined) • quarter	**1** K.CC.1 **2** K.CC.2 **3** K.G.1, K.G.2 **4** K.G.1, K.G.4

1 Say, "Start counting forward from 1, and I'll tell you when to stop." Stop student at 20 or the first point at which his or her accuracy stops.

Circle student's response below.

Unsuccessful; counts to _____	Correct, but not fluent	Correct and fluent

2 Say, "Start counting forward from 3, and I'll tell you when to stop."

Circle student's response below.

Unsuccessful; counts to _____	Correct, but not fluent	Correct and fluent

3 Hand student a small container of objects (see materials list). Ask him or her to take each object out of the container and tell what shape it is.

Check shapes that are named correctly; record incorrect answers.

Square _____ Triangle _____ Hexagon _____
Rectangle _____ Circle _____

Circle the behavior closest to what the student exhibits.

Not able to name all the shapes correctly	All correct, but with some hesitation on one or more	All correct and automatic

4 Ask student to hold up the square Polydron. Ask, "How do you know this is a square?" Then ask, "How do you know it is not a triangle?" If the student does not hold up the square, stop.

Student holds up square:		Summarize the student's response to the first question.	Summarize the student's response to the second question.
Yes	No		

Teacher Master — Number Corner Kindergarten T11 © The Math Learning Center — www.gotomlc.org

Written Assessments: Baseline and Quarterly Checkups

Located in Number Corner (September, October, January, March, and May)

Although observation and interviews probably yield the most in-depth and accurate information about kindergartners, paper-and-pencil tasks are another way to examine their development over the course of the year. In addition to a set of interview items, each Number Corner assessment includes several written tasks to be administered to the whole class in place of a Number Corner workout. At the end of October, for example, students are asked to draw three basic shapes and write numerals from 1 to10. These recall-level tasks allow us to see whether students have acquired skills taught over the previous two months.

October | **Assessment** *class set, plus 1 copy for display*

NAME | **DATE**

Number Corner Checkup 1 Written Assessment

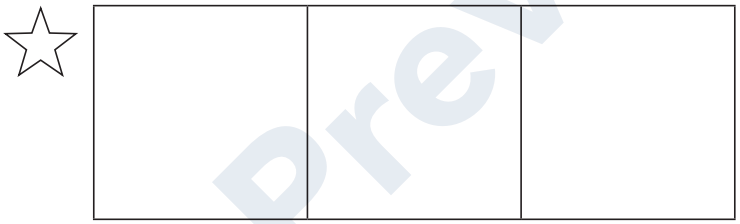
Instructions to the teacher: Read the directions for each item to students. Pause between each item to give students time to respond.

1 Put your finger on the star. I am going to ask you to draw a shape in each box in this row.

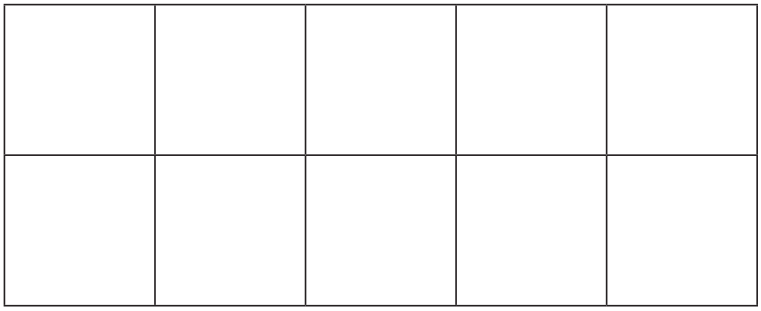
a Put your finger on the first box next to the star. Draw a circle in that box.

b Put your finger on the next box. Draw a square in that box.

c Put your finger on the last box. Draw a triangle in that box.



2 Put your finger on the butterfly. Write the numbers from 1 to 10 in the boxes below the butterfly. Write one number in each box.



Teacher Master — Number Corner Kindergarten T12 © The Math Learning Center — www.gotomlc.org

A Year's Worth of Assessments

Each assessment written into Bridges and Number Corner offers a window into individual students' skills and concepts at a particular moment in time. Any one of these assessments also gives you a snapshot of your entire class—you can literally see the spread of strategies and skills by sorting through the sheets or entering the information on the Class Checklist/Scoring Guide provided for each assessment in this guide. As you collect impressions, observations, interview results, and written assessment tasks, patterns of growth and development begin to emerge for the whole class and for each individual student, allowing you to make more nuanced and responsive instructional decisions.

The chart below shows all the assessments offered in Bridges and Number Corner Kindergarten, in order of appearance during the year. The listing for each assessment includes its title, assessment type, and location in the program.

	Assessment Title	Assessment Type	Location
September	Work Place Guides for Work Places 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I	Observation	**Bridges** Unit 1
	Elements of Early Number Sense Checkpoint	Small Group Interview	**Bridges** Unit 1, Module 2, Session 5
	Beat You to Five Checkpoint	Small Group Work Place Observation/Interview	**Bridges** Unit 1, Module 3, Session 5
	Baseline Assessment	Interview & Written Assessment	**Number Corner** September
October	Work Place Guides for Work Places 2A, 2B, 2C, 2D, 2E	Observation	**Bridges** Unit 2
	Count & Compare Checkpoint	Small Group Work Place Observation/Interview	**Bridges** Unit 2, Module 1, Session 5
	Numbers & Number Racks Checkpoint	Small Group Interview	**Bridges** Unit 2, Module 3, Session 4
	Number Corner Checkup 1	Interview & Written Assessment	**Number Corner** October
Nov./Dec.	Work Place Guides for Work Places 3A, 3B, 3C, 3D, 3E, 3F	Observation	**Bridges** Unit 3
	Beat You to Ten Checkpoint	Small Group Work Place Observation/Interview	**Bridges** Unit 3, Module 1, Session 4
	Working with Numbers Checkpoint	Small Group Interview	**Bridges** Unit 3, Module 3, Session 5
January	Work Place Guides for Work Places 4A, 4B, 4C, 4D, 4E	Observation	**Bridges** Unit 4
	Numeral Order Checkpoint	Individual Interview	**Bridges** Unit 4, Module 1, Session 4
	Foxes & Dens Checkpoint	Small Group Work Place Observation/Interview	**Bridges** Unit 4, Module 2, Session 3
	Counting & Writing Numbers Checkpoint	Small Group Interview	**Bridges** Unit 4, Module 3, Session 3
	Money March Checkpoint	Observation Checklist	**Bridges** Unit 4, Module 4, Session 4
	Number Corner Checkup 2	Interview & Written Assessment	**Number Corner** January
February	Work Place Guides for Work Places 5A, 5B, 5C, 5D, 5E, 5F	Observation	**Bridges** Unit 5
	Sort & Count Checkpoint	Observation Checklist	**Bridges** Unit 5, Module 1, Session 4
	2-D Shapes & Their Attributes Checkpoint	Observation Checklist	**Bridges** Unit 5, Module 3, Session 4

	Assessment Title	Assessment Type	Location
March	Work Place Guides for Work Places 6A, 6B, 6C, 6D	Observation	**Bridges** Unit 6
	Cylinder Tens & Ones Checkpoint	Small Group Interview	**Bridges** Unit 6, Module 1, Session 4
	3-D Shapes & Their Attributes Checkpoint	Observation Checklist	**Bridges** Unit 6, Module 2, Session 4
	Tens & Ones Checkpoint	Written Assessment	**Bridges** Unit 6, Module 3, Session 5
April	Number Corner Checkup 3	Interview & Written Assessment	**Number Corner** March
	Work Place Guides for Work Places 7A, 7B, 7C, 7D	Observation	**Bridges** Unit 7
	Combinations to Five & Equations Checkpoint	Individual Interview	**Bridges** Unit 7, Module 1, Session 4
	Story Problem Checkpoint	Small Group Interview	**Bridges** Unit 7, Module 3, Session 4
May/June	Work Place Guides for Work Places 8A, 8B, 8C, 8D, 8E	Observation	**Bridges** Unit 8
	Bug Catchers Checkpoint	Small Group Work Place Observation/Interview	**Bridges** Unit 8, Module 1, Session 5
	Count & Compare Bugs Checkpoint	Small Group Work Place Observation/Interview	**Bridges** Unit 8, Module 3, Session 4
	Number Corner Checkup 4	Interview & Written Assessment	**Number Corner** May
	Kindergarten Comprehensive Growth Assessment (CGA)*	Interview & Written Assessment	**Bridges Assessment Guide** Comprehensive Growth Assessment

* The Kindergarten Comprehensive Growth Assessment (CGA), comprising 22 interview items and 8 written items, addresses every Common Core standard for kindergarten. It can be administered at the end of the school year as a summative assessment of all the CCSS for kindergarten, administered twice or even three times over the course of the year to monitor students' progress toward mastering the Common Core Standards, or used as a flexible bank of test items. See the Comprehensive Growth Assessment part of this guide for more details.

Section 2

Assessing Math Content

Setting Our Targets: Desired Learning Outcomes for Kindergarten

In a 2012 article titled "From Common Core Standards to Curriculum: Five Big Ideas," assessment specialists Jay McTighe and Grant Wiggins remind us that the Common Core Standards were developed with long-term outcomes in mind. The authors further explain that the Common Core Standards were designed to help educators "construct plans for what learners should be able to *accomplish* with learned content" rather than develop checklists of discrete skills to be "covered" at each grade level.

Since it is impossible to construct or administer assessments without clear targets in mind, let's take a minute to envision the Common Core kindergartner. If a 5- or 6-year-old student were fully immersed in a classroom in which the Common Core Standards were well and skillfully addressed, what would that child be able to do by the end of kindergarten?

Perhaps the best answer comes from the Common Core document itself. Text on page 9 characterizes the desired results of kindergarten instruction in this way:

1) Students [will be able to] use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets of numerals; and modeling simple joining and separating situations with sets of objects. Students [will be able to] choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

2) Students [will be able to] describe their physical world using geometric ideas and vocabulary. They [will be able to] identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways, as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They [will be able to] use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

To maximize the instructional value of assessment, teachers need to move beyond a superficial 'right or wrong' analysis of tasks to a focus on how students are thinking about the tasks. Efforts should be made to identify valuable student insights on which further progress can be based rather than to concentrate solely on errors or misconceptions. […] Assembling evidence from a variety of sources is more likely to yield an accurate picture of what each student knows and is able to do.

» NCTM

Critical Areas of Focus

The description above reflects the Critical Areas of Focus for kindergarten. The authors of the Common Core Standards point out that, "Not all of the content in a given grade is emphasized equally in the standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness."

The chart below, taken from the "Major Emphases and Shifts in Mathematics" document developed by the Common Core State Standards Initiative, shows the major, additional, and supporting clusters for kindergarten. In this chart, we see that numeracy skills are deemed more important than measurement, data, or geometry.

Cluster	Major Clusters	Supporting Clusters	Additional Clusters
Counting and Cardinality			
Know number names and the count sequence.	●		
Count to tell the number of objects.	●		
Compare numbers.	●		
Operations and Algebraic Thinking			
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	●		
Number and Operations in Base Ten			
Work with numbers 11–19 to gain foundations for place value.	●		
Measurement and Data			
Describe and compare measureable attributes.			●
Classify objects and count the number of objects in categories.		●	
Geometry			
Identify and describe shapes.			●
Analyze, compare, create and compose shapes.			●

Assessments in Kindergarten Bridges reflect these emphases. If you examine the Assessment Map at the end of this section, you'll notice that students are assessed up to seven times over the course of the year on their counting skills, as well as their ability to read and write numbers to 20, and to compare sets and numerals. Most of the addition and subtraction skills and concepts are assessed at least four times during the latter half of the school year. By contrast, measuring, data analysis, and geometry skills receive quite a bit less attention, and the assessment of those skills is generally tied more tightly to the period of instruction in the program rather than being spread over the year.

Levels of Cognitive Demand

Along with a tighter focus on fewer skills at each grade level, the authors of the Common Core Standards call for greater levels of rigor in instruction, citing the need to help students develop conceptual understanding, procedural skill and fluency, and the ability to apply math concepts in "real world" situations.

The call for rigor demands that we make efforts to assess students accordingly, especially when grade-level standards call for understanding, analysis, or fluency. This is why many of the assessments in kindergarten involve observation and interview rather than written tasks. Most young children are limited in their ability to demonstrate much beyond simple recall-level skills on paper. Moreover, it takes time, patience, and a certain degree of skill to ascertain their understandings, especially of complex concepts.

One construct that has proved useful in designing the instruction and assessment in Bridges is the Depth of Knowledge scheme developed by Dr. Norman Webb at the University of Wisconsin. Dr. Webb points out that the expectations at a given grade level involve different degrees of cognitive demand. He sets out the following levels for educators to consider in developing instructional activities and assessment tasks.

Level 1: Recall & Reproduction
Recall, recognition; skill, behavior, or sequence of behaviors learned through practice and easily performed

Level 2: Skills & Concepts
Engagement of some mental processing beyond recalling; the use of information or conceptual knowledge; requires making some decisions regarding how to approach a question or problem

Level 3: Strategic Thinking
More sophisticated reasoning and analysis; deep understanding; students are required to solve problems and draw conclusions

Level 4: Extended Thinking
Requires integration of knowledge from multiple sources and ability to represent knowledge in a variety of ways; usually requires work over an extended period of time

The chart below indicates the level of cognitive demand involved in several different CCSS standards for kindergarten and outlines the types of assessment tasks needed to elicit corresponding levels of thinking from the student.

	Common Core Standard	Sample Assessment Task
Level 1: Recall	**K.CC.1** Count to 100 by ones	Ask the student to count aloud from 1.
Level 2: Skills & Concepts	**K.CC.4** Understand the relationship between numbers and quantities; connect counting to cardinality	Give the student a collection of objects to count, and watch to see what strategies she uses to accomplish the task. After she has counted the collection, ask her to state the total and watch her carefully to see if she recounts the objects or verbalizes the last number in the count.
Level 3: Strategic Thinking	**K.OA.2** Solve addition and subtraction word problems, and add and subtract within 10	Pose a story problem. Ask the student to solve the problem and explain his thinking verbally or on paper, using drawings, numbers, or words.
Level 4: Extended Thinking	**K.OA.3** Decompose numbers less than or equal to 10 into pairs in more than one way, and record each decomposition	Explain that Ted E. Bear has 6 buttons on his vest. Some are black and some are orange. Ask the student to generate all the possible combinations of black and orange buttons totaling 6 and devise some way of recording those. Ask the student to prove that he has found all the possible combinations.

Targets for Mastery

The Assessment Map at the end of this section indicates when mastery of each standard is expected. As we might predict, those concepts that involve higher levels of cognitive demand are targeted for mastery later in the year than skills that are relatively straightforward, requiring recall or recognition rather than reasoning and analysis.

While it is tempting, and not unusual, for a program or a district to divide a set of grade-level standards into three or four piles and target each pile for mastery by the end of a particular quarter or trimester, this disregards the fact that some skills and concepts, especially those that involve higher levels of cognitive demand, require more time to develop than others. Although it's reasonable to expect kindergartners to be able to read and write numbers after a few weeks of concentrated instruction, it might take an entire year of instruction in counting, comparing, and addition and subtraction concepts for the majority of kindergartners to be able to solve an addition story problem using a variety of efficient and accurate strategies and explain their understanding in written form.

When you examine the Assessment Map you'll notice, then, that many of the CCSS standards are not targeted for mastery until mid-year or later, and in some cases, the targets are incremental. For example, students are expected to be able to count to 10 in September, to 20 by the end of October, to 40 by the end of January, to 60 by the end of March, and to 100 by the end of the school year.

Kindergarten Assessment Map

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	Bridges Unit 1	September NC	Bridges Unit 2	October NC	Bridges Unit 3	Bridges Unit 4	January NC	Bridges Unit 5	Bridges Unit 6	March NC	Bridges Unit 7	Bridges Unit 8	May NC	CGA
K.CC.1.1 Count to 100 by ones	M3, S5 Numbers to Five Checkpoint	*to 10*		*to 20*		M3, S3 Counting & Writing Numbers Checkpoint *to 40*			M1, S4 Cylinder Tens & Ones Checkpoint	*to 60*			*to 100*	●
K.CC.1.1 Count to 100 by tens										●			*to 100*	
K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).				●	M3, S5 Working with Numbers Checkpoint	M3, S3 Counting & Writing Numbers Checkpoint	*to 32*							●
K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).		●	M3, S4 Number & Number Racks Checkpoint	●	M3, S5 Working with Numbers Checkpoint	M3, S3 Counting & Writing Numbers Checkpoint *to 10*			M3, S5 Tens & Ones Checkpoint	*to 20*		M1, S5 Bug Catchers Checkpoint		●
K.CC.4a When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	M2, S5 Elements of Early Number Sense Checkpoint M3, S5 Beat You to Five Checkpoint	●	M1, S5 Count & Compare Checkpoint *to 5*		M1, S4 Beat You to Ten Checkpoint *to 10*		*to 20*							●
K.CC.4b Understand that the last number name said tells the number of objects counted.The number of objects is the same regardless of their arrangement or the order in which they were counted.	M3, S5 Numbers to Five Checkpoint	●	M1, S5 Count & Compare Checkpoint		M1, S4 Beat You to Ten Checkpoint		●							●
K.CC.4c Understand that each successive number name refers to a quantity that is one larger.										●				●
K.CC.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	M2, S5 Elements of Early Number Sense Checkpoint		M1, S5 Count & Compare Checkpoint M3, S4 Number & Number Racks Checkpoint				●							●
K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	M3, S5 Numbers to Five Checkpoint		M1, S5 Count & Compare Checkpoint		M1, S4 Beat You to Ten Checkpoint		●	M1, S4 Sort & Count Checkpoint	M1, S4 Cylinder Tens & Ones Checkpoint	●		M3, S4 Count & Compare Bugs Checkpoint		●
K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.										●				●

NC – Number Corner, **M#** – Module number, **S#** – Session number, **CGA** – Comprehensive Growth Assessment

Color indicates Bridges unit or Number Corner month in which a skill is targeted for mastery

Kindergarten Assessment Map
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	Bridges Unit 1	September NC	Bridges Unit 2	October NC	Bridges Unit 3	Bridges Unit 4	January NC	Bridges Unit 5	Bridges Unit 6	March NC	Bridges Unit 7	Bridges Unit 8	May NC	CGA
K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.					M3, S5 Working with Numbers Checkpoint					•	M1, S4 Combinations to Five & Equations Checkpoint M3, S4 Story Problem Checkpoint	M1, S5 Bug Catchers Checkpoint	•	•
K.OA.2 Solve addition and subtraction word problems, and add and subtract within 10.		•				M2, S3 Foxes & Dens Checkpoint				•	M3, S4 Story Problem Checkpoint	M1, S5 Bug Catchers Checkpoint	•	•
K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	M3, S5 Beat You to Five Checkpoint												•	•
K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, and record the answer with a drawing or equation.								M1, S3 Sort & Count Checkpoint	M3, S5 Tens & Ones Checkpoint	•				•
K.OA.5 Fluently add and subtract within 5.									M3, S5 Tens & Ones Checkpoint		M1, S4 Combinations to Five & Equations Checkpoint		•	•
K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.									M1, S4 Cylinder Tens & Ones Checkpoint M3, S5 Tens & Ones Checkpoint			M3, S4 Count & Compare Bugs Checkpoint	•	•
K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.						Observe during Unit 4, Mod 3 (length)					Observe during Unit 7, Mod 1 (weight)	Observe during Unit 8, Mod 2 (length)	•	•
K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.						Observe during Unit 4, Mod 3 (length)					Observe during Unit 7, Mod 1 (weight)	Observe during Unit 8, Mod 2 (length)		•
K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.							•	M1, S3 Sort & Count Checkpoint						•

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Color indicates Bridges unit or Number Corner month in which a skill is targeted for mastery

Kindergarten Assessment Map
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	Bridges Unit 1	September NC	Bridges Unit 2	October NC	Bridges Unit 3	Bridges Unit 4	January NC	Bridges Unit 5	Bridges Unit 6	March NC	Bridges Unit 7	Bridges Unit 8	May NC	CGA
K.G.1 Describe objects in the environment using names of shapes				●			●	M3, S4 2-D Shapes & Their Attributes Checkpoint	M2, S4 3-D Shapes & Their Attributes Checkpoint					●
K.G.1 Describe the relative positions of objects using terms such as above, below, beside, in front of, behind, and next to.							●							
K.G.2 Correctly name shapes regardless of their orientations or overall size.				●			●	M3, S4 2-D Shapes & Their Attributes Checkpoint	M2, S4 3-D Shapes & Their Attributes Checkpoint					●
K.G.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three dimensional ("solid").							●		M2, S4 3-D Shapes & Their Attributes Checkpoint					●
K.G.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes				●			●	M3, S4 2-D Shapes & Their Attributes Checkpoint	M2, S4 3-D Shapes & Their Attributes Checkpoint					●
K.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes		●		●				M3, S4 2-D Shapes & Their Attributes Checkpoint	M1, S4 Cylinder Tens & Ones Checkpoint M2, S4 3-D Shapes & Their Attributes Checkpoint *3-D only*	● *2-D only*				●
K.G.6 Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"								M3, S4 2-D Shapes & Their Attributes Checkpoint					●	●

NC – Number Corner, **M#** – Module number, **S#** – Session number, **CGA** – Comprehensive Growth Assessment

Color indicates Bridges unit or Number Corner month in which a skill is targeted for mastery

Section 3

Assessing Math Practices

In addition to presenting a set of math content standards for each grade level, the authors of the Common Core Standards have established a set of Mathematical Practice Standards that rest on important "processes and proficiencies with longstanding importance in mathematics education." This set is identical for each grade level, K–12.

Dr. William McCallum, one of the authors of the CCSS, points out that the eight math practices can be grouped into four categories, as shown on the chart below.

Habits of Mind of a Productive Mathematical Thinker	**Reasoning and Explaining**
MP.1 Make sense of problems and persevere in solving them.	**MP.2** Reason abstractly and quantitatively.
MP.6 Attend to precision.	**MP.3** Construct viable arguments and critique the reasoning of others.
	Modeling and Using Tools
	MP.4 Model with mathematics.
	MP.5 Use appropriate tools strategically.
	Seeing Structure and Generalizing
	MP.7 Look for and make use of structure.
	MP.8 Look for and express regularity in repeated reasoning.

It is important to note that these practices reflect the attitudes and ways of thinking and working that characterize successful mathematicians. They are much bigger and somewhat more amorphous than math content skills, and at least as important. However, they are not a list of discrete skills to be "covered." They are, rather, vehicles for teaching, learning, and doing mathematics at every level.

In rich settings in which informal and formal possibilities for solving problems are numerous, young children develop the ability to focus attention, test hypotheses, take reasonable risks, remain flexible, try alternatives, exhibit self-regulation, and persevere.

» Juanita Copley

What Do the Math Practices Look Like at Kindergarten?

It is impossible to address and assess these practices without having a very clear picture of the desired outcomes. The language of the math practices is straightforward, but exactly what does "reasoning abstractly and quantitatively" look like in kindergarten? How do we know when a 5-year-old is proficient at "modeling with mathematics?"

The North Carolina Department of Instruction has produced a document that "unpacks" the Common Core Standards, providing clear descriptions of what the standards mean a student must know, understand, and perform at each grade level. The chart on the next page features explanations and examples of the Math Practices in action at the K level adapted from the North Carolina document.

Math Practice		Explanations and Examples
Habits of Mind	**MP.1** Make sense of problems and persevere in solving them.	Using both verbal and nonverbal means (e.g., drawing pictures, demonstrating on their fingers), kindergarten students begin to explain to themselves and others the meaning of a problem, look for ways to solve it, and determine if their thinking makes sense. As the teacher uses thoughtful questioning and provides opportunities for students to share thinking, kindergarten students begin to reason as they become more conscious of what they know and how they solve problems.
	MP.6 Attend to precision.	Mathematically proficient students in kindergarten begin to express their ideas and reasoning using words. As their mathematical vocabulary increases in response to exposure, modeling, and practice, kindergarteners become more precise in their communication, calculations, and measurements. In all types of mathematical tasks, students begin to describe their actions and strategies more clearly, understand and use grade-level appropriate vocabulary accurately, and begin to give more precise explanations and reasoning regarding their process of finding solutions. For example, a student may use basic attributes (number of corners, number of sides, curved or straight sides) to accurately describe how a collection of shapes is sorted.
Reasoning & Explaining	**MP.2** Reason abstractly and quantitatively.	Mathematically proficient students in kindergarten begin to use numerals to represent specific amount (quantity). For example, a student may write the numeral 11 to represent an amount of objects counted, select the correct number card 17 to follow 16 on the calendar, or build a pile of counters depending on the number drawn. Kindergarten students also begin to draw pictures, manipulate objects, use diagrams or charts, and so on, to express quantitative ideas such as a joining or a separating situation. Using the language developed through numerous joining and separating scenarios, kindergarten students begin to understand how symbols (+, –, =) are used to represent quantitative ideas in a written format.
	MP.3 Construct viable arguments and critique the reasoning of others.	In kindergarten, mathematically proficient students begin to clearly express, explain, organize and consolidate their math thinking using both verbal and written representations. Through opportunities that encourage exploration, discovery, and discussion, kindergarten students begin to learn how to express opinions, become skillful at listening to others, describe their reasoning and respond to others' thinking and reasoning.
Modeling & Using Tools	**MP.4** Model with mathematics.	Mathematically proficient students in kindergarten begin to experiment with representing real-life problem situations in multiple ways such as with numbers, words (mathematical language), drawings, objects, acting out, charts, lists, and number sentences. For example, when building 2-color trains of linking cubes to represent the various combinations of the number 5, the student writes the numerals for the various parts (such as 4 and 1) or selects a number sentence that represents that particular situation (such as 5 = 4 + 1).
	MP.5 Use appropriate tools strategically.	In kindergarten, mathematically proficient students begin to explore various tools and use them to investigate mathematical concepts. Through multiple opportunities to examine materials, they experiment and use both concrete materials (e.g., three-dimensional solids, linking cubes, ten frames, number racks) and technological materials (e.g., virtual manipulatives, apps, interactive websites) to explore mathematical concepts. Based on these experiences, they become able to decide which tools may be helpful to use depending on the problem or task. For example, when solving the problem, "There are 4 dogs in the park. Three more dogs show up in the park. How many dogs are in the park?" students may decide to act it out using counters and a story mat; draw a picture; use a number rack, or use the number rack app on a tablet.

Structure & Generalizing	**MP.7** Look for and make use of structure.	Mathematically proficient students in kindergarten begin to look for patterns and structures in the number system and other areas of mathematics. For example, when searching for triangles around the room, kindergarteners begin to notice that some triangles are larger than others or come in different colors—yet they are all triangles. While exploring the part-whole relationships of a number using a ten-frame, students begin to realize that 5 can be broken down into sub-parts, such as 4 and 1 or 3 and 2, and still remain a total of 5.
	MP.8 Look for and express regularity.	In kindergarten, mathematically proficient students begin to make generalizations about shapes and numbers. Presented with patterned sequences of objects, pictures, or numbers, they begin to make predictions based on the available information.

How Can We Best Assess the Math Practices?

While it is possible to score extended response items for a variety of traits, much as writing samples are scored, the characteristics, habits of mind, and dispositions represented by the math practices don't easily lend themselves to paper-and-pencil testing, especially among young students. We need to observe our students in action during daily instruction, at Work Places, and in individual and small group interview settings, watching and listening carefully for evidence that they are demonstrating the desired proficiencies and performances.

What Is the Teacher's Role in Eliciting Math Practices?

As we consider how to best teach and assess math practices, we need to examine the teacher's role as a model and a facilitator in the classroom. What behaviors and attitudes can we hold and model on a consistent basis, whether in instructional or assessment settings, that will elicit and reinforce the practices?

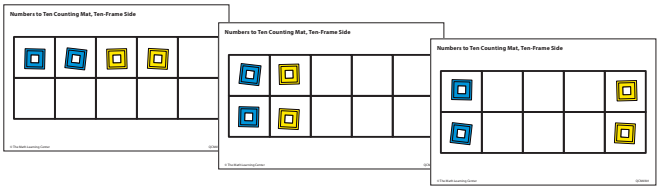
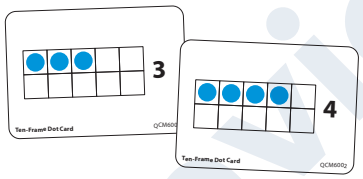
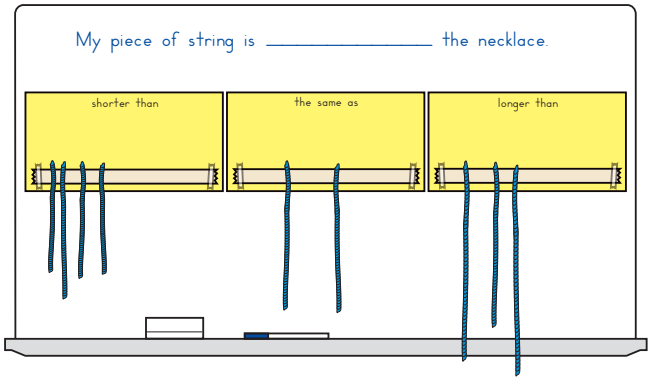
- **Value the process of finding the answer at least as much as the answer itself.** This means listening carefully to students and trying to understand how they get their answers, even when they don't make much sense to you. Students' responses, as random as they may seem at times, are based on their current understandings. There is almost always some kind of underlying logic.
- **Create an atmosphere in which it's OK to take risks and make mistakes.** If you listen to students with genuine respect and delight, you'll find that they begin to do the same for their classmates.
- **When appropriate, make a selection of tools available,** including Unifix cubes; pattern blocks, the number rack, counting mats, whiteboards and pens, paper and pencils, and virtual tools such as the number rack and geoboard apps. Talk with students about their choices from time to time, and encourage them to explain why, for example, they've chosen the number rack instead of the cubes to model and solve a particular problem.
- **Provide time for students to share their observations, ideas, and strategies with one another.** This can take place in small group settings or whole group discussions, but it means that you have to establish the idea of listening to and learning from one another as a classroom norm, as challenging as this can be for kindergartners. The care and respect you demonstrate in listening to each member of your classroom community will serve as an important model to your students.
- **Help students clarify and justify their thinking with the questions you ask** as they are working independently or discussing problems in group settings. We've included dialog in many of the sessions and workouts for modeling possible questioning techniques. Beyond these examples, we find there are key questions that elicit specific math practices. Some of these are listed on the following chart.

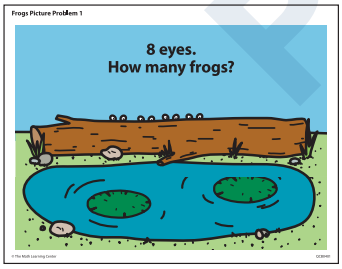
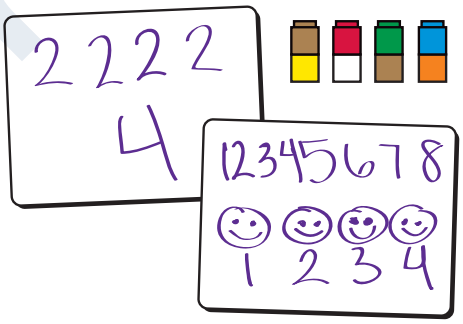
Math Practice		Questions that Elicit the Desired Behavior
Habits of Mind	**MP.1** Make sense of problems and persevere in solving them. **MP.6** Attend to precision.	• What do you think that problem is asking? • How would you describe this problem in your own words? • What might you do to get started? • Share your thinking with the person next to you. • What does your partner think? • Did your partner get the same answer? If not, can the two of you figure out why not? • What's the word we use for shapes that have 3 sides? • Yes, that shape is round all the way around, and rolls like a ball. Can anyone think of the name of this shape?
Reasoning & Explaining	**MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others.	• Can you find the number card that matches the number of dots on this ten-frame? • How many are there in each group? How might we show that with numbers? • How many more do you need to make 10? • Which team is winning our game so far? By how much? • What number do you hope you spin next in this game? Why? • How did you figure it out? • Does anyone have a different solution? • Does anyone have a different strategy; a different way to solve the problem? • Can you convince us? • Can you find a way to prove that?
Modeling & Using Tools	**MP.4** Model with mathematics. **MP.5** Use appropriate tools strategically.	• Can you use your fingers to show this situation? • Can you draw a picture to show your thinking? • Can you label your drawing with numbers? • Would you prefer to use cubes or drawings to solve this problem? • How might you use the number rack to show this situation? • Would you rather use the number rack you made with beads, or the number rack app on your tablet? Why?
Structure & Generalizing	**MP.7** Look for and make use of structure. **MP.8** Look for and express regularity.	• What do you notice (about this chart, picture, pattern, problem, etc.)? • Does that always work? Why or why not? • How are these shapes alike? How are they different? • What do you notice about the numbers in this list? • Do you see any patterns here? • What might come next? Why? • What do you predict will happen? Why?

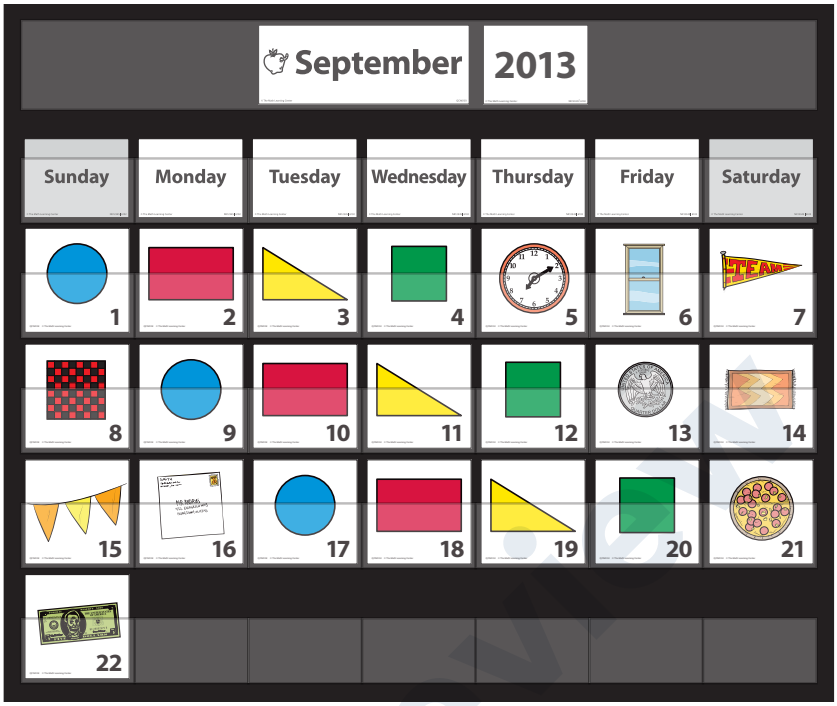
Looking for the Math Practices in All the Right Places, Part 1

Although teachers' beliefs and attitudes regarding the math practices shape their questioning and instructional strategies and go a long way toward eliciting the desired behaviors, we need to acknowledge that certain types of activities are more effective than others in educing particular practices. To say that we're doing all the math practices all of the time strips them of their fundamental value.

Math educator Susan Jo Russell suggests instead that we identify "Content-Practice nodes" or places in a curriculum where a teaching/learning emphasis on each practice can most productively occur. The chart below identifies some of the types of activities in Bridges and Number Corner that are particularly strong at facilitating each practice in kindergarten, and gives an example of each.

MP	Activity from Bridges or Number Corner Kindergarten
MP.1, MP.6 MP.2, MP.3 MP.4, MP.5 MP.7, MP.8	**Numeric Problems** **Unit 3, Module 1, Sessions 1 & 2: Bike Wheels, Parts 1 & 2** In the first of these two sessions, students use ten-frames and cubes to model the number of wheels on a bicycle, then combine their cubes with a partner's and explore the variety of ways to show 4 on a ten-frame.  In the second, students combine their ten-frame with a partner's to create a double ten-frame, and then model different numbers of bicycle wheels. Throughout both sessions, the teacher encourages students to place the cubes on their counting mats in any way they choose, sharing and comparing their strategies with those of their classmates, and talking about how they know there are enough cubes to show the wheels on a given number of bikes.
MP.1, MP.6 MP.3 MP.4, MP.5	**Problem Solving** **Unit 3, Module 4, Session 4: Fives Up** In this session, the teacher introduces a game in which students search for combinations of cards that total 5. This is a significant problem for most kindergartners, and the discussion surrounding each turn is often animated. ***Teacher*** *Can I use these two cards to make 5? What happens if we put the two cards together and count up all the dots? Talk to your neighbor about it, and raise your hand when you have an idea.*  ***Students*** *It makes 7. We counted—1, 2, 3, 4, 5, 6, 7. We said 3 and 3 makes 6 and then 1 more is 7.* ***Teacher*** *Does that solve my problem of making 5?* ***Students*** *No! It's too much!* ***Teacher*** *I can't make 5, so we'll leave the cards there, and it's your turn again.*
MP.6 MP.2 MP.5	**Measuring Problems** **Unit 4, Module 3, Session 2: How Long?** In this activity, the students each cut a length of string to approximate the length of the teacher's scarf, necklace, or tie. Then they each compare the length of string to the item, post it on a chart to show if it is longer than, shorter than, or the same length. The activity is vocabulary rich, and students are particularly motivated to be precise in comparing the length of string they've cut because the item belongs to the teacher.  ***Students*** *I shouldn't have cut my string so long. It's way longer than Ms. Smith's necklace. Mine was too short. I want another turn to try.*

MP	Activity from Bridges or Number Corner Kindergarten
MP.6 MP.3 MP.7, MP.8	**Sorting Activities** **Unit 5, Module 2, Session 4: Goodbye, Shapes!** In this activity, helpers lay out a collection of shapes in the center of the circle. After students have had a chance to look them over, they use a set of Shape Attribute Cards to eliminate shapes, saying good-bye to each new group as it leaves the circle. The object of the game is to work together to get rid of all the shape cards.  ***Teacher*** *What happens if we use the Shape Attribute Card that shows* curved side*? Which shapes will have to leave the collection?* ***Students*** *All the circles will have to go.* *Big and little ones, because they all have curves.* ***Teacher*** *Does it matter what color they are?* ***Student*** *No! If they're red or blue doesn't matter. All the circles have to go away.*
MP.2, MP.3 MP.4, MP.5	**Story Problems** **Unit 7 Module 3, Sessions 1 & 2: Story Problems, Parts 1 & 2** In these sessions, the teacher poses well-illustrated story problems about frogs. Students are encouraged to choose the tools that seem most advantageous to them (including cubes, fingers, drawings, numbers, and equations), work the problems, give their answers, and share and compare their strategies.  

MP	Activity from Bridges or Number Corner Kindergarten
MP.1, MP.6 MP.2, MP.3 MP.4 MP.7, MP.8	**September Number Corner Calendar Grid Workout** Each day, a new marker is posted in the Calendar Grid pocket chart. In September, a two-dimensional shape appears on each marker, and the shapes appear in a patterned sequence: circle, rectangle, triangle, and square. These four shapes are presented in isolation, and then in the context of familiar objects, so by the second or third week of the month, students are able to predict what shape they'll see on the next marker and whether it will be in isolation or in the form of an everyday object.  ***Teacher*** *What do you think the Calendar Grid marker for today will look like? Please talk to the person next to you, and then we'll have some people share their thinking with the class.* ***Student*** *It has to be a triangle today.* ***Teacher*** *Thumbs up if you agree that the shape on today's marker will be a triangle. Hmm … lots of thumbs up. How do you know?* ***Students*** *Because yesterday was a rectangle, so it has to be a triangle today.* *A triangle always comes after a rectangle. It works like that every time.* *But it's going to be a thing shaped like a triangle, not just a plain old triangle.* *It could be a mountain!* *Or maybe like a shark tooth. Those sharks have really pointy, sharp teeth.*

The sessions and workouts listed on the chart above are meant to give examples of the types of activities teachers will find throughout the program. Each Bridges session and Number Corner workout is accompanied by a skills list that identifies the two math practices most strongly elicited by the activity. For a complete listing, see the *Bridges in Mathematics* Kindergarten CCSS Correlations on the Bridges Educator website, where you can view all the Bridges sessions and Number Corner workouts that are most strongly associated with each math practice.

Looking for the Math Practices in All the Right Places, Part 2

On the next page, you'll find a Math Practices Observation Sheet. Here you can note observations about students' use of math practices during Bridges sessions and Number Corner workouts. Consider running several copies, labeling each row with one of the students' names, and making periodic notes about each student once every week or two.

Math Practices Observation Chart

You can use this chart to record notes about students' use of Math Practices during Bridges sessions and Work Places, as well as during Number Corner workouts. See the Kindergarten Correlations on the Bridges Educator site for the sessions and workouts most likely to elicit particular Math Practices.

Students	**Habits of Mind** **K.MP.1** Make sense of problems and persevere in solving them **K.MP.6** Attend to precision	**Reasoning & Explaining** **K.MP.2** Reason abstractly and quantitatively **K.MP.3** Construct viable arguments and critique the reasoning of others	**Modeling & Using Tools** **K.MP.4** Model with mathematics **K.MP.5** Use appropriate tools strategically	**Seeing Structure & Generalizing** **K.MP.7** Look for and make use of structure **K.MP.8** Look for and express regularity in repeated reasoning

Section 4

Assessment as a Learning Opportunity

There is no question that students even as young as kindergartners can participate in an informed way in their own learning, setting goals and monitoring their progress toward meeting those goals. One of the easiest and most effective ways to help children become active participants in their own learning is through the use of learning targets.

Assessment should not merely be done to *students; rather it should also be done* for *[and with] students, to guide and enhance their learning.*
» NCTM

Setting Learning Targets

A learning target is, very simply, a statement of intent for a lesson. Such a target lets students know what the goal of the lesson is. Teachers sometimes set two or even three targets for a math session: one that has to do with the content (skills or concepts), one that has to do with key vocabulary, and one that has to do with a mathematical practice likely to be elicited in the course of the activity.

Each Bridges session includes an overview, list of skills and concepts, and list of related vocabulary to make the task of generating learning targets easier for teachers.

Unit 7 Module 3

Unit 7
Module 3
Session 1

Session 1
Story Problems, Part 1

Summary

After the warm-up activity (reading numbers and counting on), three frog story problems are posed. Students solve each story problem, record how they solve it, share their strategies with partners, and discuss the various strategies that classmates used to solve the problems.

Skills & Concepts

- Read numbers from 0 to 10 (supports K.CC)
- Count up to 20 objects arranged in a line or a scattered configuration to answer "how many?" questions (K.CC.5)
- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group for groups of up to 10 objects (K.CC.6)
- Represent addition and subtraction with objects, fingers, mental images, drawings, acting out situations, verbal explanations, expressions, or equations (K.OA.1)
- Solve addition and subtraction story problems (K.OA.2)
- For any number from 1 to 9, find the number that makes 10 when added to that number (K.OA.4)
- Fluently add and subtract within 5 (K.OA.5)
- Make sense of problems and persevere in solving them (K.MP.1)
- Use appropriate tools strategically (K.MP.5)

Materials

Session Activities	Copies	Kit Materials	Classroom Materials
Problems & Investigations Story Problems, Part 1	**SB 19–20*** Story Problems, Part 1	• Numerals to Ten Display Card for 8 • Frogs Picture Problems 1–3	

HC – Home Connections, **SB** – Student Book, **TM** – Teacher Masters *Copy instructions are located at the top of each teacher master.*
** Run 1 copy of these pages for display.*

Vocabulary (An asterisk [*] identifies those terms for which Word Resource Cards are available.)

equal* in all minus plus strategy

A teacher might examine the front material for a session such as the one shown above and devise one, two, or even three learning targets in the form of "I can" statements:

I can draw a picture to show and solve a story problem.

I can use the word plus *when I talk about adding two numbers.*

I can keep working until I solve a problem, even if it seems hard.

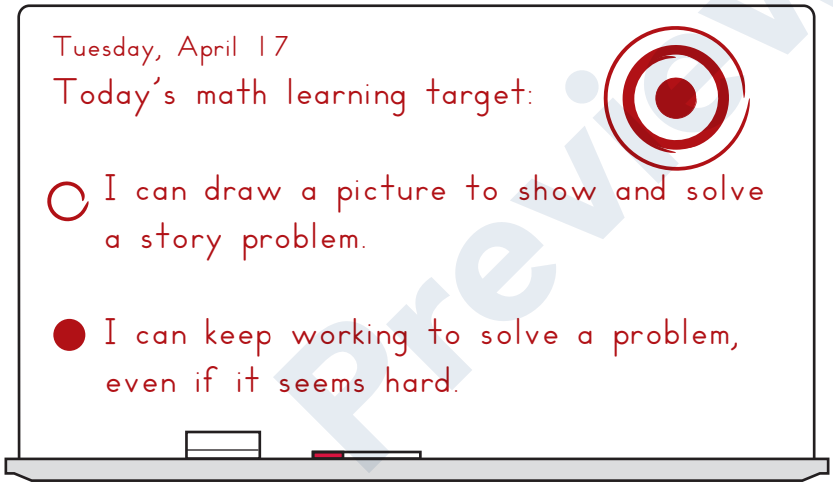
These are only three of many possible learning targets for this particular session. Other content targets might deal with comparing sets of objects; representing a story problem with objects, fingers, numbers, or even equations; or finding combinations of 10. Alternate vocabulary targets might revolve around any of the words listed for the session. Alternate math practice targets might have to do with sharing and explaining one's thinking, listening to a partner explain his or her thinking, modeling mathematics by drawing a picture to show the story problem, and so on. It is not hard to come up with an assortment of possible targets; the challenge is to choose the one or two that best address the strengths and needs of your students at the time and to frame those targets in student-friendly terms (e.g., "I can … " statements).

Teachers generally find that the process of devising learning targets for their students is helpful in focusing their own thinking about the purpose of a lesson. It's not unusual for teachers to collaborate during grade-level team meetings or Professional learning communities in generating learning targets for the sessions they plan to teach in the coming week.

Communicating Learning Targets

Once a teacher has decided on the learning targets for a particular session, he or she must then communicate them to the students. Oftentimes, they do this by writing the targets on the board before the session and then sharing them with the students at the very opening of the session or directly after the warm-up activity.

Some teachers even make a drawing of a target on the board to accompany the display, like this:



After sharing the targets with the students and clarifying as needed, the teacher conducts the lesson, referring back to each target once or twice during instruction to refocus students on their learning goals. At the end of the activity, the teacher draws students' attention back to the targets and evaluates each with the class, perhaps conducting a mini-assessment in the process, as illustrated in the dialog below.

> ***Teacher*** *Our first learning target for today's lesson was to draw a picture to show and solve a story problem. Let's check to see how we're doing with that goal. What if we had a problem to solve where there were 3 frogs on a log? Some more came along and then there were 5 frogs on the log. How could we draw a picture that would help us solve the problem? Talk to the person sitting next to you, and then I'll call on people to share with the class.*
>
> ***Student A*** *I would draw a log and put 3 circles on it for the frogs. It takes too long to draw real frogs. Then I would keep putting circles until there were 5, and I would know the answer.*
>
> ***Student B*** *You could just put 3 circles and 2 more because 3 and 2 is 5.*

Teacher *Let me try that up here on the board. OK, here are 3 circles. What do they mean?*

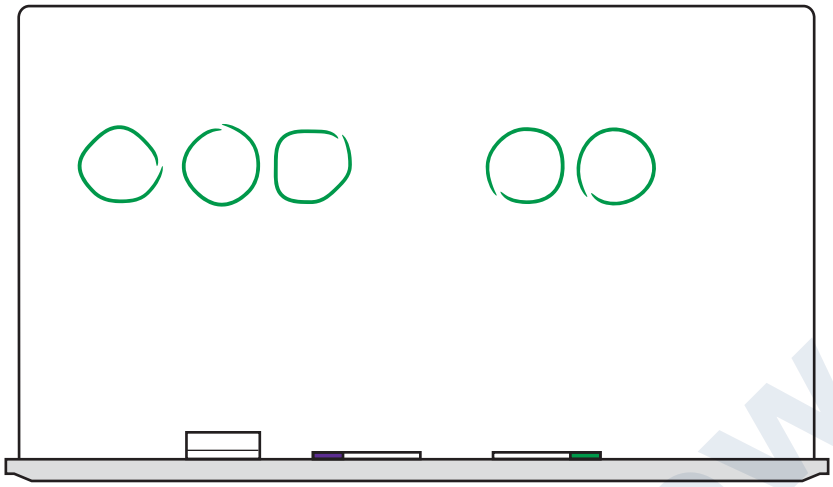
Students *Those are the first frogs that were there.*

Teacher *Now what should I do?*

Student C *Keep putting more circles 'til you get 5.*

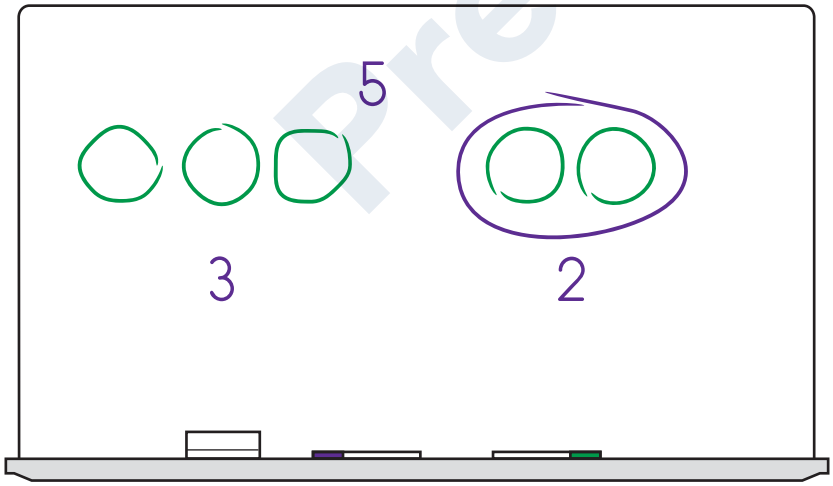
Teacher *OK, you all help me count. Here we go. Three. . . 4, 5. Now what?*

Student D *That's the answer! Two more frogs came so it's 5!*



Teacher *Is there anything we might add to our picture to help other people understand our thinking?*

Students *You could put numbers, like 3 with the first frogs and 2 with the others. And then put 5 to show how many in all!*
You could put a circle around the 2 frogs to show they came later.



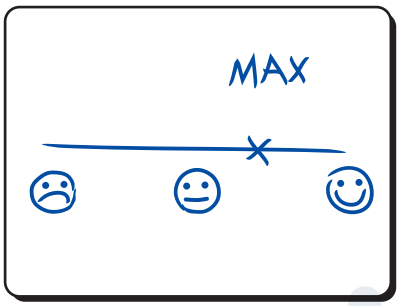
Teacher *So how do you think we did with our first goal? How are we doing with drawing pictures to help show and solve problems? Show thumbs up if you think we hit the bull's-eye, thumbs sideways if you think we're not really there yet, and thumbs down if you're still not sure about this skill. OK—looks like lots of bull's-eyes!*

The whole process takes about 5 minutes and can be conducted either before or after the students go to Work Places. The point is to make the goals of your lessons transparent to the students and involve them in evaluating their own progress toward those goals. It's important to remember that these targets and the students' evaluations don't generally reflect total mastery. Any of the targets mentioned earlier in this section might be repeated many times over the year as students work their way to performing skills and understanding concepts at increasingly sophisticated and challenging levels, and exercising the math practices more fully from one month to the next.

Other Ways to Encourage Student Reflection

Learning Lines

At the end of an activity, have students each draw a line on a whiteboard or small piece of scratch paper and label it with three faces, as shown in the illustration. Then have them mark an X along the line to indicate how well they think they did with the skill, concept, or practice that was targeted for the lesson.



Student *I kept working hard, even on that really tricky problem, but not my hardest. I'm going to put my X between the face in the middle and the smiley face at the end.*

Exit Cards

At the end of an activity or session, give students each a 3″ × 5″ index card or a small piece of scratch paper and ask them to respond to one final question or problem, or use quick sketches or words to show one thing they learned during math class.

Before & After

Even the youngest students enjoy comparing work samples from earlier and later in the school year. You might save samples of students' work from early in the school year and later in the year, and let them examine the samples side by side, looking for differences. For example, if you conduct the Number Corner Checkups, students will be asked to draw three different shapes and write their numbers several times over the course of the year. Students enjoy seeing how much they have grown and changed, even if it's only that their handwriting has become more legible or their shapes more recognizable.

Section 5

Using the Results of Assessment to Inform Differentiation & Intervention

The key to meaningful intervention is for teachers at a grade level to conduct the same assessments, score them the same way, discuss the results with colleagues, and develop a plan that accurately targets and addresses the needs of students.

This time-tested recipe for success has been formalized over the past decade, partly as a result of state and federal demands for increased accountability. The last ten years have seen the rise of professional learning communities, data walls, and Response to Intervention (RtI). At the heart of these developments is the goal of ensuring that *all* students meet the standards and achieve mathematical success.

One of the most challenging tasks we face as classroom teachers is finding ways to reach all our students and match each student's level of mathematical readiness and performance to the skills we are required to teach.

» Regina Gresham and Mary Little

What Is RtI?

Succinctly stated by math educators Gina Gresham and Mary Little, Response to Intervention is the practice of "1) providing high-quality instruction or intervention matched to student needs and 2) using learning rate over time and level of performance to 3) make important educational decisions to guide instruction."

Gresham and Little go on to identify the importance of classroom teachers in this process:

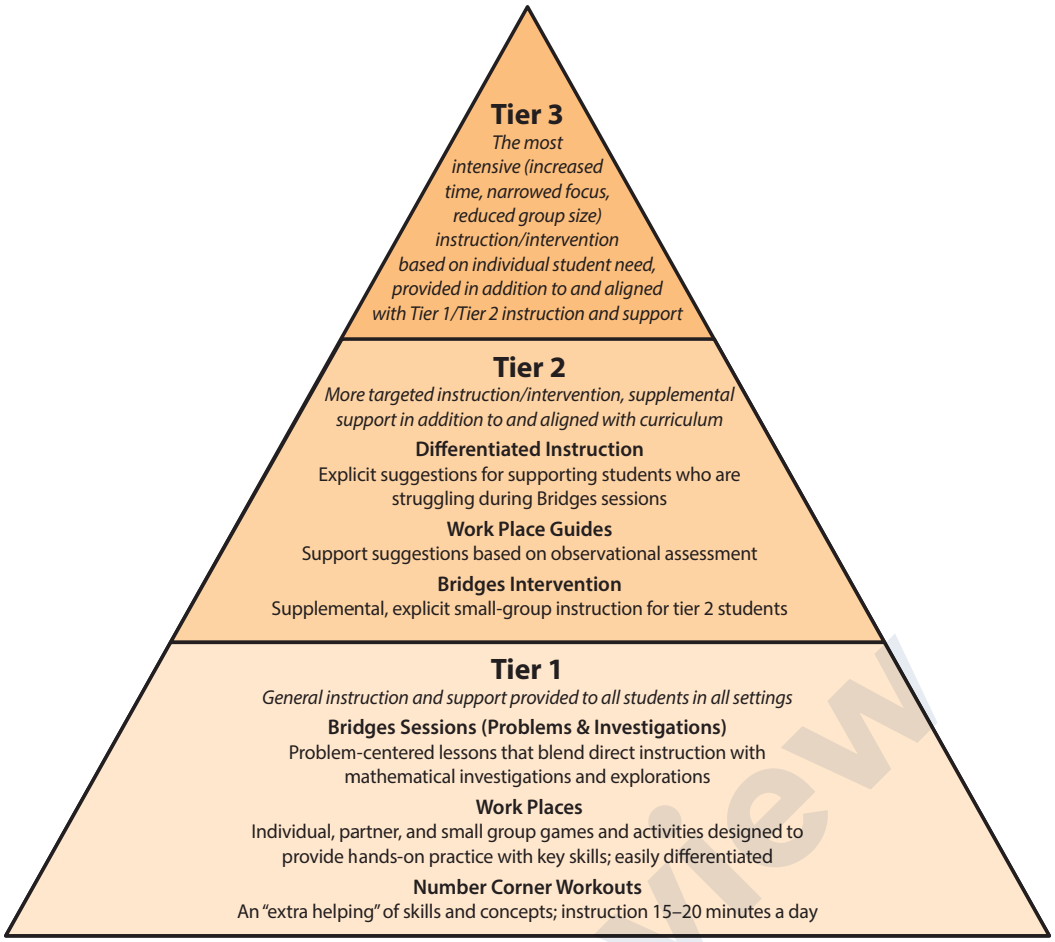
> The RtI process relies on proactive, instructional problem solving among educators to develop dynamic instructional or intervention plans that are based on assessment data and that address academic or behavioral concerns about students. RtI in mathematics focuses on the effective use of evidence-based instructional approaches, resources, and strategies within the classroom while continuously monitoring student learning. Because the goal is to increase mathematical achievement for students, general education classroom teachers are crucial participants in the RtI process.

How Does Bridges Support RtI?

RtI models generally describe a three-tiered approach to providing instruction and intervention to students at increasing levels of intensity, as determined by student response. Assessment data is collected at each tier in order to make instructional decisions and determine whether or not students are responding to instruction and interventions.

As illustrated in the diagram below, Bridges provides tier 1 instruction to all students. Supports for struggling students within the core program include suggestions for differentiation during whole group instruction and Work Places. Number Corner, which provides review and preview of key concepts in the form of short daily "bursts" of instruction in addition to the Bridges sessions, offers another source of support for Tier 2 and Tier 3 learners.

Additionally, Bridges Intervention features warm-ups, activities, and practice pages designed to provide small-group instruction for Tier 2 students within the Response to Intervention (RtI) framework. Each of the nine volumes in the set addresses specific skills and concepts. The instruction is divided into modules containing five 30-minute sessions, and every fifth session is dedicated to progress monitoring.



Continual use of assessments throughout the school year helps guide decisions about the level of intervention required to ensure success for each student. The following items are part of an instructional path that follows a set of RtI-friendly steps:

1 Conduct tier 1 instruction for approximately 75 minutes a day (or 30–45 minutes a day for half-day kindergarten) following the sequence laid out in the Bridges units and monthly Number Corner write-ups. The RtI model is most effective if it rests on a curriculum such as Bridges, which is based on best practices, research-based models and instructional methods, consistent development of key vocabulary, and an unflagging commitment to access and equity for all students.

2 Use the observational assessments included with each Work Place Guide in the Bridges units to fine-tune instruction during Work Places. The Assessment & Differentiation section on the first page of each Work Place Guide Teacher Master provides guidance about specific behaviors to watch for and suggests appropriate on-the-spot support or challenge (see example below). The support suggestions, implemented during Work Places, might be just the type of Tier 2 instruction needed to address the needs of your struggling students most of the time.

Unit 2 Module 3 | **Session 6** *1 copy kept in a clear plastic sleeve and stored in the Work Place bin*

Work Place Guide 2D Beat You to Ten

Summary

This partner game is similar to the previous game Beat You to Five. Players take turns spinning the 0–3 spinner and covering the indicated number of pictured cubes with actual Unifix cubes. They use a different color on each turn. The first player to cover ten exactly is the winner.

Skills & Concepts

- Read numbers from 0 to 10 (supports K.CC)
- Count objects one by one, saying the numbers in the standard order and pairing each object with only one number name (K.CC.4a)
- Count up to 10 objects arranged in a line, rectangular array, or circle to answer "how many?" questions (K.CC.5)
- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group for groups of up to ten objects (K.CC.6)
- Decompose numbers less than or equal to 10 into pairs in more than one way (K.OA.3)

Materials

Ancillaries	Kit Materials	Classroom Materials
TM T6 Work Place Guide 2D Beat You to Ten **TM T7** Work Place Instructions 2D Beat You to Ten	• 3 Beat You to Ten Game Boards	• 3 containers of 20 Unifix cubes (each containing 10 of one color and 10 of a second color)

Assessment & Differentiation

Here are some quick observational assessments you can make as students begin to play this game on their own. Use the results to differentiate as needed.

If you see that…	Differentiate	Example
A student has difficulty with counting or cardinality.	SUPPORT Be sure the student is using a different color for each turn. This helps students to accurately count out the number of cubes needed each time, and to see number combinations more clearly.	
A student does not readily see the number combinations.	SUPPORT Ask the student questions that will help her visualize the number combinations to 10.	You had 3 on your first turn and 2 on your second. How many cubes do you have now? You have 7 cubes now. How many do you need to get to 10?
Students easily read, count, and compare numbers.	CHALLENGE Invite students to play Game Variation A or B.	
English-Language Learners Use the following adaptations to support the ELL students in your classroom.		
• Stress the vocabulary for this activity (more than, less than, numbers 1–10). • Use hand gestures to indicate *more than* and *less than*.		

3 Administer the Baseline Assessment (found in the Number Corner Teachers Guide) in September. Examine students' work, and score it using the suggestions found in the Number Corner Assessments part of this guide. Use the results to inform your initial thinking about support and intervention. While it is risky to make hard-and-fast judgments about incoming kindergartners, the Baseline Assessment serves as an early warning system. You'll want to keep a close eye on students who are unable to perform the featured assessment tasks, as some may emerge as candidates for additional services either this year or in first grade.

4 Administer the checkpoints as they appear in the Bridges units. Assessment instructions, materials, and teacher masters can be found in the Bridges Teachers Guide.

5 Examine, correct, and score students' work, using the class list/scoring guides for each of the checkpoints in the Bridges Unit Assessments part of this guide. Use of the scoring guides is optional, of course, but the guides will help you and your colleagues, school- or district-wide, score the unit checkpoints consistently.

6 Use your observations and the results of the assessments to help make decisions about interventions for specific students. The support suggestions in the Bridges sessions and the Work Place Guides may be adequate to support those who struggle with one or more skills from time to time. Students who consistently score between 25% and 50% on the Bridges and Number Corner assessments may need Tier 2 intervention, while students who consistently score less than 25% on the assessments may qualify for Tier 3 intervention.

7 Conduct the Number Corner checkups near the end of each quarter. You'll find the instructions, materials, and needed teacher masters in the Number Corner Teachers Guide for October, January, March, and May. These quarterly checkups retest many of the skills covered in the Bridges checkpoint assessments and may be considered more summative in nature. Examine, correct, and score students' work, using the class list/scoring guides for each of the Number Corner checkups in the Number Corner Assessments part of this guide.

8 It is well worth your time to meet with other teachers at your grade level, either in your building or in your district, to share, examine, and discuss the results of the Number Corner checkups at or near the end of each quarter. Given that the Number Corner checkups address a fairly broad set of skills each quarter, the results may provide you and your colleagues with the information you need to make decisions about grouping students who need support as you devise strategies for delivering Tier 2 and Tier 3 instruction to all students in need of intervention, school-wide.

9 Bridges Intervention, which is well aligned to the Bridges core program in terms of pedagogy, instructional strategies, and models, can be used to provide support for Tier 2 learners. In fact, in the assessment collection for each unit in the next part of this guide, there is a Support & Intervention section that will direct you to the Bridges Intervention volumes and the modules within those volumes that are most likely to be helpful in supporting students who are struggling with particular skills and concepts.

Ideally, Bridges Intervention sessions would be conducted several or more times a week by interventionists (e.g., Title 1/resource/special education teachers, or paraprofessionals and volunteers under their supervision) with small groups of students designated for Tier 2 support. Such instruction would be offered to these students in addition to regular math instruction in the classroom. However, we recognize that this is not feasible in all school settings. Therefore, the Bridges Intervention resources may also be used flexibly in a variety of ways, including the following:

- Pull selected activities and games from the Bridges Intervention resources for use by paraprofessionals or volunteers in working with small groups of students during Work Places in the regular classroom.
- Introduce selected Bridges Intervention games as Work Places in the regular classroom to provide a wider range of practice opportunities. These might be open to use by any of the students in the class, or designated for use by just some of the students.
- If a large number of students need additional work with a particular skill or set of skills, classroom teachers might consider using selected Bridges Intervention resources for short periods during regular math instruction.
- Work with others in the school to group students across classrooms, and even across grade levels, for short periods. Use resources from the Bridges Intervention volumes to support students struggling with particular skills and concepts.
- Send selected games or practice pages home with students for additional support.

A Word About Assessment Scoring Guides

In the Bridges Unit Assessments and Number Corner Assessments parts of this guide, you'll find scoring guides for nearly every assessment in the Bridges units and all the Number Corner assessments. These guides assign a point value to every item on an assessment. If an item involves a level of cognitive demand greater than simple recall, the scoring guide gives specific direction about how to assign points. Attention is also paid to how the student responds. Consider the following example, taken from the scoring guide for Number Corner Checkup 2.

Item	CCSS	Points Possible
1a Count forward by 1s to 20 starting at 8.	K.CC.2	**0 pts.** Unsuccessful **1 pt.** Counts from 8 given a running start, but doesn't get past 12 **2 pts.** Counts from 8 to 20 given a running start **3 pts.** Counts from 8 to 20 without a running start

While it would be easier to simply award one point on the basis of whether or not the student can count to 20 starting at a number other than 1, we can learn more about the student's current skill level by using a more nuanced scoring scale that enables us to acknowledge what the student can do, even if he can't yet perform the skill completely and correctly. Too, terminology such as "running start" is explained on the assessment sheet, which provide detailed instructions to teachers about how to administer each item.

Here is another example, taken from the scoring guide for Number Corner Checkup 4.

Item	CCSS	Points Possible
1 Solve a story problem that involves taking 2 away from 5	K.OA.1 K.OA.2	**3 pts.** (See scoring scale below.)
Scoring Scale for Solving Story Problems (3 points possible for each problem): • 1 point for using the information given in the problem (e.g., the numbers and the situation) • 1 point for using a viable strategy that could lead to the answer; strategies may include drawings, equations, numeric representations, etc. • 1 point for showing the correct answer		

In this case, a student who is able to use the information given in the problem and demonstrate a strategy that could lead to the correct answer is able to score 2 points, even if she doesn't get the correct answer. Why not award 1 point for the correct answer and be done with it? Again, we're interested in looking at what the student can do. Representing and solving a story problem is a complex operation. If a student can gather the information from the problem and use it constructively, perhaps making a drawing labeled with the relevant numbers, she may be further along than the student who simply writes the answer. This is doubly important given that the Common Core standards value practices such as making sense of a problem, modeling with mathematics, and communicating effectively.

Assessment vs. Evaluation

Assessment and evaluation are often confused or taken to mean the same thing, but there is an important distinction. Assessment is the process of gathering information in order to make decisions. Evaluation is a step beyond assessment in that we assign a rank, level, score, or grade to the information collected. Assessment captures the situation as it exists at a particular moment or over a period of time. Evaluation places a judgment on it—adequate, not adequate; enough, not enough, below, at, or above expectation.

The fact that RtI is data-driven requires a move in the direction of evaluation. In working with our colleagues to make instructional decisions that sometimes go beyond the walls of our own classroom, the results of our assessments take on added weight at times. The scoring guides in this assessment guide bear out this line of thinking, in that the points possible for each item are added together, and the total scored by a student is assigned a value: meeting standard, approaching standard, strategic (Tier 2), or intensive (Tier 3). Here are examples taken from two of the scoring guides in the Bridges Unit Assessments part of this guide. The first is from an assessment conducted very early in the school year, as students are just beginning their journey toward mastering the standards for their grade level.

TOTAL SCORE/LEVEL OF PROFICIENCY* **24 pts.**

* 6–24 points: Working at tier 1 or Tier 2 level
5 points or fewer: May need Tier 3 support

The example below is taken from an assessment later in the school year, when students have had far more instruction in the skills and concepts they're expected to master.

TOTAL SCORE/LEVEL OF PROFICIENCY* **24 pts.**

* Meeting Standard	18–24 points (75–100% correct)
Approaching Standard	12–17 points (50–74% correct)
Strategic	9–16 points (25–49% correct)
Intensive	8 points or fewer (24% or less correct

The cut scores and the designations assigned to each range in the second example are designed to help teachers identify students in need of Tier 2 or Tier 3 instruction, as well as students who are approaching or meeting standard. This ranking system is particularly useful in districts with standards-based report cards, where the marks shared with parents have to do with whether or not their children are meeting state and district standards.

That said, it is certainly possible to use the scoring guides without assigning values to students' scores. One might push back in the direction of assessment rather than evaluation by simply looking at an individual's score on a particular item or set of items and making the decision to provide intervention (or not) on that basis. One might also look at the scores on a particular item across the entire class and decide to re-teach or emphasize the concept or skill in the coming weeks of instruction.

Section 6

Reporting to Families

Research has shown that the home environment has a profound impact on the academic achievement of our students. Its relationship to student achievement is much stronger than that of household income, parents' occupations, or parents' education. Ongoing communication is critical to the success of the parent-teacher and family-school relationship. With the proper resources and information, parents, families, and the community can become a teacher's greatest asset and support system.

In contrast to years past, when grade-level standards varied from one state, one district, or even one school to another, most states have adopted the common, coherent, rigorous, and focused goals set by the Common Core State Standard Initiative. It is safe to anticipate that we will have support from a variety of organizations, ranging all the way from federal and state governments to the National PTA, in communicating grade-level expectations to parents. In fact, as of this writing, the PTA has made available a set of parent guides that explain the Common Core State Standards at each grade level and offer tips about how parents can help support their children's mathematical development at home. Such resources are likely to be increasingly available, many online. Links to the PTA *Parents' Guide to Student Success* and other helpful resources can be found on the Bridges Educator site.

Even though most states have adopted the Common Core Standards, the pacing of instruction and assessment will continue to vary from one district to another, along with the methods, models, and strategies for helping students master the national standards. It will still be incumbent upon teachers to communicate with parents about how the standards are being taught and assessed. One of the more powerful ways we can accomplish this is through conferencing and writing reports. Although your district probably determines the form and content of your report cards, you may be free to supplement with written comments, checklists, and the like.

The following pages contain quarterly and trimester Math Progress Reports to help you report students' progress to parents in greater detail. Please note that the skills and concepts on these reports follow the sequence of instruction and assessment in Bridges, and have been framed in family-friendly language. Also, those standards associated with the Critical Areas of Focus for Kindergarten may appear on more than one of the reports.

In addition to marking the Math Progress Report, there is room to write a note about each student's use of the CCSS Mathematical Practices, along with observations about any special strengths or weaknesses. During conferences, you can provide families even more information by sharing samples of students' work, including notable responses to interview and written items on unit and Number Corner assessments.

Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more.

» National PTA

Kindergarten Math Progress Report: First Quarter

Assessment Schedule: August/September through late October/early November

CCSS	Needing	Meeting	Exceeding
K.CC.1		Counts to 20 by ones	
K.CC.2		Counts forward to 10 starting with numbers other than 1	
K.CC.3		Writes numerals 0–10 (reversals are OK)	
K.CC.4a		Counts sets of objects accurately in the range of 1–10	
K.CC.4b		Can tell the number of objects counted in the range of 1–10	
K.CC.5		Tells "how many" objects in the range of 1–10 without moving the objects	
K.CC.6		Compares sets of objects in the range of 1–10, and tells which set has more and which has less	
K.G.1		Describes two-dimensional shapes (triangle, square, circle, rectangle, hexagon) by number of sides, number of corners, and so on	
K.G.2		Names two-dimensional shapes (triangle, square, circle, rectangle, hexagon) in the environment	
K.G.4		Sorts two-dimensional shapes by attributes (number of sides/corners, sides are of equal length or different lengths, and so on)	
K.G.5		Draws two-dimensional shapes (circle, square, triangle)	

Comments

Kindergarten Math Progress Report: Second Quarter

Assessment Schedule: November through January

CCSS	Needing	Meeting	Exceeding
K.CC.1		Counts to 40 by ones	
K.CC.2		Counts forward to 32 starting with numbers other than 1	
K.CC.3		Writes numerals 0–10 to represent a number of objects (reversals are OK)	
K.CC.4a		Counts sets of objects accurately in the range of 1–20	
K.CC.4b		Can tell the number of objects counted in the range of 1–20	
K.CC.5		Tells "how many" objects in the range of 1–20 without moving the objects	
K.CC.6		Compares sets of objects in the range of 1–10, and tells which set has more and which has less	
K.MD.1		Understands length as something that can be measured	
K.MD.2		Compares the lengths of two objects and describes the difference using words like *shorter* and *longer*	
K.G.1		Describes three-dimensional shapes (cube, cone, cylinder, sphere)	
K.G.1		Describes the location of objects using words like *above, below, beside, in front of, behind,* and *next to*	
K.G.2		Names three-dimensional shapes (cube, cone, cylinder, sphere) in the environment	
K.G.3		Tells whether shapes are two-dimensional (flat) or three-dimensional (solid)	
K.G.4		Sorts three-dimensional shapes by attributes (round/square, rolls/doesn't roll, stacks/doesn't stack, and so on)	
K.G.5		Draws two-dimensional shapes (circle, square, triangle)	

Comments

Kindergarten Math Progress Report: Third Quarter

Assessment Schedule: February through March

CCSS	Needing	Meeting	Exceeding
K.CC.1		Counts to 60 by ones	
K.CC.1		Counts to 100 by tens	
K.CC.3		Writes numerals 0–20 *Reversals of individual numerals are OK, but not reversals of digits. Writing the number 5 backward is common among young students and OK even now, but it is not OK to write 13 as 31.*	
K.CC.4c		Understands that each number means 1 more than the one before it	
K.CC.6		Compares sets of objects in the range of 1–10, and tells which set has more and which has less	
K.CC.7		Compares numbers in the range of 1–10, and tells which is more and which is less	
K.OA.1		Shows addition and subtraction using objects, fingers, drawings, or numbers	
K.OA.2		Solves addition and subtraction story problems, and adds and subtracts within 10	
K.OA.4		For any number 1–9, finds the other number needed to make 10	
K.NBT.1		Understands that teen numbers are 10 and some more	
K.MD.3		Sorts objects into groups, counts how many in each group, and puts the groups in order from least to most	
K.G.1		Describes two- and three-dimensional shapes and objects	
K.G.2		Identifies two- and three-dimensional shapes by name	
K.G.4		Sorts two- and three-dimensional shapes in various ways	
K.G.5		Builds and draws two- and three-dimensional shapes	

Comments

Kindergarten Math Progress Report: Fourth Quarter

Assessment Schedule: April through May/June

CCSS	Needing	Meeting	Exceeding
K.CC.1		Counts to 100 by ones	
K.CC.1		Counts to 100 by tens	
K.OA.1		Shows addition and subtraction using objects, fingers, drawings, numbers, or equations	
K.OA.2		Solves addition and subtraction story problems, and adds and subtracts within 10	
K.OA.3		For any number to 10, finds different pairs of numbers that combine to make that number, and records them (e.g., 8 = 5 + 3, 4 + 4, 6 + 2, 7 + 1, and so on)	
K.OA.5		Adds and subtracts quickly and easily to 5	
K.NBT.1		Understands that teen numbers are 10 and some more	
K.MD.1		Understands weight as something that can be measured	
K.MD.2		Compares the weights of two objects and describes the difference using words like *lighter* and *heavier*	
K.G.6		Puts smaller shapes together to make larger shapes	

Comments

Kindergarten Math Progress Report: First Trimester

Assessment Schedule: August/September through November

CCSS	Needing	Meeting	Exceeding
K.CC.1		Counts to 20 by ones	
K.CC.2		Counts forward to 10 starting with numbers other than 1	
K.CC.3		Writes numerals 0–10 (reversals are OK)	
K.CC.4a		Counts sets of objects accurately in the range of 1–10	
K.CC.4b		Can tell the number of objects counted in the range of 1–10	
K.CC.5		Tells "how many" objects in the range of 1–10 without moving the objects	
K.CC.6		Compares sets of objects in the range of 1–10, and tells which set has more and which has less	
K.G.1		Describes two-dimensional shapes (triangle, square, circle, rectangle, hexagon) by number of sides, number of corners, and so on	
K.G.2		Names two-dimensional shapes (triangle, square, circle, rectangle, hexagon) in the environment	
K.G.4		Sorts two-dimensional shapes by attributes (number of sides/corners, sides are of equal length or different lengths, and so on)	
K.G.5		Draws two-dimensional shapes (circle, square, triangle)	

Comments

Kindergarten Math Progress Report: Second Trimester

Assessment Schedule: December through early March

CCSS	Needing	Meeting	Exceeding
K.CC.1		Counts to 40 or more by ones	
K.CC.2		Counts forward to 32 starting with numbers other than 1	
K.CC.3		Writes numerals 0–10 to represent a number of objects (reversals are OK)	
K.CC.4a		Counts sets of objects accurately in the range of 1–20	
K.CC.4b		Can tell the number of objects counted in the range of 1–20	
K.CC.5		Tells "how many" objects in the range of 1–20 without moving the objects	
K.CC.6		Compares sets of objects in the range of 1–10, and tells which set has more and which has less	
K.MD.1		Understands length as something that can be measured	
K.MD.2		Compares the lengths of two objects and describes the difference using words like *shorter* and *longer*	
K.MD.3		Sorts objects into groups, counts how many in each group, and puts the groups in order from least to most	
K.G.1		Describes two- and three-dimensional shapes and objects	
K.G.1		Describes the location of objects using words like *above, below, beside, in front of, behind,* and *next to*	
K.G.2		Identifies two- and three-dimensional shapes by name	
K.G.3		Tells whether shapes are two-dimensional (flat) or three-dimensional (solid)	
K.G.4		Sorts two- and three-dimensional shapes in various ways	
K.G.5		Builds and draws two- and three-dimensional shapes	

Comments

Kindergarten Math Progress Report: Third Trimester

Assessment Schedule: Late March through May/June

CCSS	Needing	Meeting	Exceeding
K.CC.1		Counts to 100 by ones	
K.CC.1		Counts to 100 by tens	
K.CC.3		Writes numerals 0–20 *Reversals of individual numerals are OK, but not reversals of digits. Writing the number 5 backward is common among young students and OK even now, but it is not OK to write 13 as 31.*	
K.CC.4c		Understands that each number means 1 more than the one before it	
K.CC.6		Compares sets of objects in the range of 1–10, and tells which set has more and which has less	
K.CC.7		Compares numbers in the range of 1–10, and tells which is more and which is less	
K.OA.1		Shows addition and subtraction using objects, fingers, drawings, numbers, or equations	
K.OA.2		Solves addition and subtraction story problems, and adds and subtracts within 10	
K.OA.3		For any number to 10, finds different pairs of numbers that combine to make that number, and records them (e.g., 8 = 5 + 3, 4 + 4, 6 + 2, 7 + 1, and so on)	
K.OA.4		For any number 1–9, finds the other number needed to make 10	
K.OA.5		Adds and subtracts quickly and easily to 5	
K.NBT.1		Understands that teen numbers are 10 and some more	
K.MD.1		Understands weight as something that can be measured	
K.MD.2		Compares the weights of two objects and describes the difference using words like *lighter* and *heavier*	
K.G.6		Puts smaller shapes together to make larger shapes	

Comments