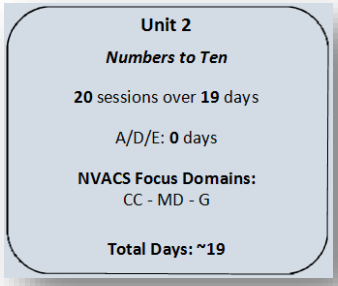
Kindergarten Unit 2: Numbers to Ten

Big Conceptual Idea: K-5 Progression on Counting and Cardinality and Operations and Algebraic Thinking (pp. 1-11), K-5 Progression on Measurement and Data (Data Part) (pp. 1-5), K-6 Progression on Geometry (pp. 1-7)

Read the Bridges Unit Overview/Introduction for Unit 2 pp. i-vi. Also read each Module Overview for the current week's sessions, and the current Session Summary along with details for the teaching of each session as you work through Unit 2. These Introduction/Overview/Summary sections provide focus, clarity, vocabulary, definitions, and examples which support the critical "big mathematical ideas and understandings" for Kindergarten. This information supports professional decision-making within the Sessions and Modules as needed.



Kindergarten Curriculum Pacing Framework: Balanced Calendar

Mathematical Background: Read Bridges Unit 2 Overview and Introduction (pp. i-vi)	Unit Essential Question for the Teacher: How will I use various models including five-frames, ten-frames, the number rack, tally marks, and finger patterns to make mathematical concepts visual? How will I support the construction of students' understandings of subitizing, counting, combinations within 5, and comparing?

Instructional note:

> *"If you learn something deeply, the synaptic activity will create lasting connections in your brain, forming structural pathways, but if you visit an idea only once or in a superficial way, the synaptic connections can "wash away" like pathways made in the sand" (Boaler, 2016, p. 1).*

Throughout Unit 2 behaviors and routines are being established that allow all kindergarten students to actively engage in making sense of problems. This development of a problem solving mindset supports student learning throughout *Number Corner*, *Problems & Investigations* and independent and partner *Work Place* games. Students develop self-regulation and feel safe in the environment so they are free to take risks and make mistakes.

They have also begun to learn to use manipulatives, to make their thinking around mathematics visible, focus their attention, express and explain their thinking, and notice details and patterns. These behaviors provide great opportunities for child watching within the *Problems & Investigation* sessions, the *Number Corner* Workouts, and *Work Places*. The teacher's understanding of the "big mathematical ideas" expected in the Units (clarified in the Overview/Introduction/Summary sections) provides the expertise for kid-watching, and the ability to identify partial understandings and misconceptions as students engage in the problems introduced. These observations inform the teachers' instructional steps throughout each Bridges Session, and provide the understanding required to support and scaffold each students' learning.

Establishing classroom management and routines:
Throughout Unit 2 and during *Number Corner Workouts* (*Problems & Investigations, Work Places, Calendar Grid, Calendar Collector, Computational Fluency, Days in School, and Number Line*) continue to:

- Build independence in routines and patterns of student engagement for active learning, using the materials and the mathematics in Bridges Unit 2. These routines and behaviors continue as critical structures for your classroom management and student interactions. Teach routines to independence and stop to reteach desired behaviors as needed!
- Engage students continually in the Mathematical Practices - persevering in making sense, thinking relationally and mathematically, explaining and justifying, applying what they know to other meaningful situations, using appropriate and efficient tools, working and communicating precisely, using patterns, and working efficiently (NVACS, 2010, pp. 6-8). Bridges Math Practice Posters.
- Engage in authentic conversations and problem solving around the content of the Sessions and Workouts.
- Use the manipulatives, models, and representations to help make the mathematics visual, engaging, and fun for students.
- Support students' development of strategic behaviors/strategies for problem solving. What are students thinking in their own heads and doing to "work" at solving the problem? Independently, what behaviors do they show at a point of error or confusion?
- Watch for development of strategic behaviors within the mathematics content by child watching and using the formative and formal Bridges Assessments.
- Engage students in thinking about and understanding the big mathematical ideas of the mathematics content expected in Kindergarten.
- The "rigor" of Bridges instructional material is dependent on how the teacher engages the students in the activities and conversations of the Sessions. The depth and focus of these interactions, aligned with understanding of student needs, drives mathematics developments for each student through the practices stated above.

The mathematics content of Unit 2:
Children construct understandings in connected and integrated ways, not as isolated, individual pieces. Therefore, continually ask students to explain how they are problem solving ("How did you know?", "What made you think that?", etc.) so you can make explicit the connections students are already making from previous learning, strengthen the synaptic connections being constructed, and encourage the continuance of this sense-making behavior (NVACS, 2010, p. 6).

- Support and instruct to the development of the big mathematical ideas of:
    - Magnitude - Knowing/identifying which group has more – easier than cardinality. References the size or quantity embedded in the number.
    - One-to-one correspondence - A child understands that each item to be counted has a 'name' and that we only count each item once during the counting process. The child needs to make a physical or mental 'tag' of the 'to be counted' and the 'counted' items and keeps them separate.
    - Cardinality - The result of counting to 7 means that I have seven things. Cardinality answers the question, "How many?" with one symbol (word) representing the whole amount. Thus, number means 'amount'.
    - Organizing and keeping track - Example: When counting a large group of objects a student counts 10 objects and sets them aside, counts to twenty and again moves those next 10 objects aside.
    - Hierarchical inclusion/Nesting - 6, 5, 4, 3, 2… are all contained/"nested" in 7.
    - Equivalence - the understanding that different combinations are equal in value. Example, 6+4 = 2+2+6. Language to support equivalence: "Six plus four is the same as 2 plus 2 plus 6". "same as" "same quantity as" "equivalent".

- Watch for students' attempts at thinking about and using these strategic behaviors/strategies to demonstrate their emerging understandings of the big mathematical ideas:
    - Trial and error - Reasoning with number through a trial process to construct the mathematical understandings and then checking. Children often use this process when trying to form understandings about new strategies or acquire a systematic process. Different from 'guess and check' in that they are trying to apply understanding instead of using random guessing.
    - Stable Order (Counting) - The understanding that every time that we use number names to count a set of items, the order of the number names does not change. In English the order of the number names is always one, two…etc. Connected to the idea of synchrony.
    - Subitizing - The ability of the brain to automatically realize the size of sets without counting. Often this can only be done with five or fewer objects. (Technically there are two types: perceptual described above and conceptual which can be identified by the shape as in dice/dominos).
    - One-to-one tagging - Giving each item in a set a "tag" – one and only one tag is used for each item. Often early counters may tag each item, yet may not keep track of their counts. Thus, they will end up counting each item more than one time.
    - Synchrony: one word for every object - count and touch.
    - Counting on - The ability to mentally 'hold' a number and then add to that number through using counting (groups or singles). For example, when adding 48 and 6, a child/student may start with 48 and count on 6 times. 48 (+1), 49 (+1), 50 (+1), 51 (+1), 52 (+1), 53 (+1) is 54.
    - Uses the 5-structure - 6+7 = 5+1+5+2; using anchors of 5 with larger numbers.

Over time, with supportive and scaffolded instruction and interactions, students employ more efficient and effective use of counting strategies leading to and confirming deeper and more expanded understandings. Intentionality with the context and range of numbers students work with in mathematics supports this number sense development.

Unit 2 also introduces shapes and patterns (K.G and K.OA) supporting the critical understandings of spatial relationships, a focus concept for Kindergarten.

On-going enrichment:

- The ***Skills Across the Grade Level*** chart in the Introduction section (Unit 2 p. v) shows that K.CC.1-6 are developed in this Unit along with K.OA.3. Students use various models to see relationships, strengthen subitizing skills, and build number sense within 10 and with groups of 5. Composing shapes (K.G.6) is introduced (see p. v). This is important information for those day-to-day professional instructional decisions that have to be made within each Session as to what discussions or activities to extend or cut short or emphasize or skip or, etc.
- Expect all students to engage in the math.

Essential Academic Vocabulary

Use these words consistently during instruction.

Essential Academic Vocabulary: (first time explicitly taught) *indicates Word Resource Cards are available in the materials		Review Academic Vocabulary: (Vocabulary explicitly taught in previous Units, or Number Corner)	
row*	below*	*one*, two, three, four, five, six,*	*most**
compare*	beside*	*seven, eight, nine, ten*	*number**
half*	hexagon*	*attribute**	*less than**
above*	rhombus*	*circle**	*pattern**
next to*	trapezoid*	*greater than**	
square*	zero	*triangle**	
rectangle*			

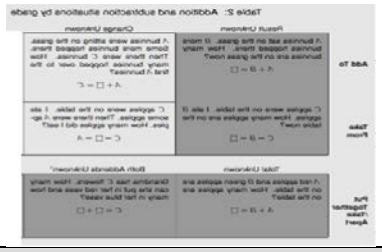
Additional terminology that students may need support with: problem, same/different, five-frame, ten-frame, in all, bottom/top, horizontal, left/right, numeral, middle, tally, extend.

Standards listed in **bold** indicate a focus of the lesson.

NVACS (Content and Practices)	Mathematical Development of the Big Idea	Instructional Clarifications & Considerations
Module 1- Session 1: Two Red, Three Blue		
K.CC.4 K.CC.5 K.OA.1 K.OA.3 MP.1 MP.6 MP.7	Access Prior Learning and Connections to Future Learning: • Counting to 20 by 1s is also in Unit 1 & 4. • Reading numbers from 0 to 10 continues to develop in Units 3 &4. • Counting collections in different ways becomes a focus in Unit 3. Beginning with the Big Idea and key Strategic Behaviors: • making combinations (pairs) of numbers to make 5 Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing • counting (to 20)	Guiding Questions: • Why would you not count a dot more than once to find out how many? • What is similar and what is different about these two five-frames? • Which attributes are the same and different (on regular and irregular five-frame cards)? • How can I represent what I see on the five- frame using my fingers? Instructional Notes: • Visual models are regular five-frame display card and fingers. • The regular, two-color five-frame display cards are introduced to develop understandings of subitizing and combinations (see sidebar note p. 4). Literature Connections: • *Five Creatures* by Emily Jenkins Lockhart (sorting out similarities and differences, combinations to 5). Number Corner Connections: • Sept., Feb. revisit count to 20 by 1s. • Sept.-Dec. revisit reading numbers from 0-10. • Counting collections in different ways is an introductory concept. It is explored again in Sept.-Dec. Writing and Enrichment: • Support and Challenge ideas are suggested on p. 5 for one-to-one correspondence, finger patterns, and subitizing, or for flexibility with combinations. Child Watching and Assessment: • See Assessment Binder, Bridges Unit Assessments tab (pp. 11-21) for supports with observational assessments, students to watch for (p. 13), answer keys for assessments, scoring guides, and Reteaching Suggestions.
Module 1- Session 2: Funny Five-Frame Flash		
K.CC.4a K.CC.4b K.CC.5 K.OA.1 K.OA.3 MP.1 MP.3 MP.7	Access Prior Learning and Connections to Future Learning: • All units continue to cover combinations to 5. *Workplaces* Spill Five Beans, Pennies & Mats, and Beat You to Five provide repeated practice with this concept. Beginning with the Big Idea and key Strategic Behaviors: • making combinations (pairs) of numbers to make 5	Guiding Questions: • Why would you not count a dot more than once to find out how many? • What is similar and what is different about these two five-frames? • Which attributes are the same and different (on regular and irregular five-frame cards)? • How can I represent what I see on the five- frame using my fingers? • How are finger patterns and five-frames related? • How can use cubes to represent dots on a five-frame? • Is there more than one way to make five using red and blue dots? Instructional Notes: • Visual models are regular five-frame display card, irregular five-frame display cards, and fingers. *-continues on next page-*

	Developing: • understanding 1-to-1 correspondence (to 10) • understanding cardinality • subitizing • counting (to 20)	• The irregular, two-colored five-frame display cards are introduced to extend instant recognition (subitizing) beyond consistent dot patterns (see sidebar note p. 8). • Students make connections about quantity by using various models (fingers, dots, and cubes). Writing and Enrichment: • In journals or on paper, use red and blue dots (or crayons) and show 5 in two ways using five-frames. • *Home Connection* p. 11 and *Home Connection* tab pp. 17-21
Module 1- Session 3: Building Ten		
K.CC.4b K.CC.5 K.OA.3 K.OA.4 MP.1 MP.3 MP.6 MP.7	Access Prior Learning and Connections to Future Learning: • All units continue to cover the concept of decomposing numbers less than or equal to 10 into pairs. Beginning with the Big Idea and key Strategic Behaviors: • decomposing numbers less than or equal to 10 Developing: • understanding 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • What is an efficient way or strategy to "read" a ten-frame? (Discuss using top row first, bottom row second, and then determining how many in all) • Does the order in which I count the objects change the total number of objects? • How can I use a ten frame to figure out how many more dots would make 10? Instructional Notes: • Visual models are ten-frame five-wise display cards, and cubes. • Students now build quantities from ten-frame five-wise display cards. Literature Connections: • *How Do Dinosaurs Count to 10* by Jane Yolen and Mark Teague. Number Corner Connections: • Decompose numbers less than or equal to 10 into pairs in more than one way is a developing concept. This will be revisited in Oct.-May. Writing and Enrichment: • In math journals or on paper/white board consider having students represent the following problem: I have 10 oranges. Some are in the tree and some are in the basket. How many different ways could the oranges be arranged?
Module 1- Session 4: Count and Compare Dots		
K.CC.4 K.CC.5 K.CC.6 K.CC.7 MP.1 MP.6 MP.7	Access Prior Learning and Connections to Future Learning: • Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group is revisited in all units Developing the Big Idea and key Strategic Behaviors: • using 1-to-1 correspondence • understanding cardinality • subitizing • recognizing magnitude • comparing <, >, =	Guiding Questions: • How do you know if you have more or less than your partner? • What is another way to describe the word more? • What is equal? How can you find out if two cards are equal? • Can you find out what is more or less without counting? With counting? Instructional Notes: • Visual models are the ten-frame five-wise dot cards. • Students see the relationships of more than and less than on the ten-frame dot cards used in the game and linking the quantity counted with the written numeral. Literature Connections: • *Just Enough Carrots* by Stuart Murphy • *More or Less* by Stuart Murphy Number Corner Connections: • Identifying whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group is a developing concept. Revisited in Oct., Dec., Jan., Feb., Mar., Apr., and May. Writing and Enrichment: • For suggested gestures for ELL support, see the note on p. 18.
Module 1- Session 5: Introducing Work Places 2A Count & Compare Dots		
K.CC.4 K.CC.5 K.CC.6 K.CC.7 K.MD.3 MP.1 MP.6 MP.7	Access Prior Learning and Connections to Future Learning: • Do you play games at home? Whom do you play with? • Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group is revisited in all units. • Comparing should not be a mastered skill yet. Reteach in a small group rather than going	Guiding Questions: • Why is it important to know how many? • Is there more than one way to count a dot card? • How do you know if you have more or less than your partner? • What is equal? How can you find out if two cards are equal? • Can you find out what is more or less without counting? With counting? Instructional Notes: • Visual models are the game board visuals and the ten-frame five-wise dot cards. • Students play game in partners. • Consider using the online digital display tool found on the Bridges web site (note the second page), (p. 2, includes spinner and cards), in addition to teacher/student modeling.

	back to previous lessons in whole group. Developing the Big Idea and key Strategic Behaviors: • using 1-to-1 correspondence • understanding cardinality • subitizing • recognizing magnitude • comparing <, >, =	*-continues on next page-* Literature Connections: • *Every Buddy Counts* by Stuart Murphy Number Corner Connections: • Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group is a developing concept. This is revisited in Oct., Dec., Jan., Feb., Mar., Apr., and May. Writing and Enrichment: • See *Teacher Masters* (p. T1) of the *Work Place Guides for Differentiation* ideas. • See *Work Place Instructions* (p. T2) for game variations. • *Home Connection* p. 23 and *Home Connection* tab pp. 23-29. Child Watching and Assessment: • Count and Compare CHECKPOINT – observing students playing the game in pairs during *Work Places* (see p. 23 and T4). Also see scoring and reteaching suggestion in the Assessment Binder, Bridges Unit Assessments tab pp. 17-18.
Module 2- Session 1: Two-Color Ten-Frames		
K.CC.4 K.CC.5 K.OA.3 MP.1 MP.3 MP.7	Access Prior Learning and Connections to Future Learning: • Students begin to develop the combinations of 5. All units cover this concept. *Workplaces* Spill Five Beans, Pennies & Mats, and Beat You to Five provide repeated practice with this concept. Beginning with the Big Idea and key Strategic Behaviors: • understanding hierarchical inclusion • using part /whole relationships Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • Is there more than one way to make 10 using red and white dots? • How do I know that I have found all of the ways to make 10? Instructional Notes: • Visual models are red and white ten-frame display cards and cubes. • The red & white ten-frame cards are introduced to support recognition of two distinct quantities as a foundation for addition and subtraction later and to align with the Number Rack, which they will see tomorrow (see sidebar note p. 4). Literature Connection: • *Mouse Count* by Ellen Stoll Walsh • *10 Flashing Fireflies* by Philemon Sturgess Writing and Enrichment: • After listening to the story, *Mouse Count*, solve the following problem: How many different ways could 10 mice be arranged with some in the jar and some in the grass? • Ideas for Literature Connections, ELL, Support, and Challenge are suggested on p. 5.
Module 2- Session 2: Building a Number Rack		
K.CC.4 K.CC.5 MP.1 MP.5 MP.7	Access Prior Learning and Connections to Future Learning: • What do you think you would do with this math tool? How is it the same/different than the dots, or fingers, or cubes? • Count objects one by one, and say the numbers in the standard order, pairing each object with only one number name, and identify the number of objects as the last number said are all addressed again in units 1, 3, 4, & 6. Beginning with the Big Idea and key Strategic Behaviors: • Recognizing hierarchical inclusion Developing: • using 1-to-1 correspondence • understanding cardinality subitizing	Guiding Questions: • How can numbers be represented? • How are number racks and ten frames related? • Why is a number rack useful? Instructional Notes: • Visual model is student-created number rack and the horizontal ten-frame. • Students build and explore with the Number Rack to develop critical understandings of relationships of numbers; they are also introduced to the linear ten-frame which aligns with the Number Rack. • Materials for building the student Number Racks are not provided from year to year. Options are to purchase new materials each year or keep, disassemble and reuse the materials, or use the ones previously made. Literature Connections: • *Fish Eyes* by Lois Elhert Number Corner Connections: • All months explore these concepts - Count objects one by one, by saying the numbers in the standard order and pairing each object with only one number name and identify the number of objects as the last number said *-continues on next page-*

		Writing and Enrichment: • Model how to write a number story using the red and white beads (e.g. I have 5 pets. 2 are cats. The rest are dogs. How many dogs do I have?) • Students create their own number stories orally using their number racks and then record. • As you are working with number stories refer to the K-5 Progression on Counting and Cardinality and Operations and the Algebraic Thinking document (linked above) on Table 2, p. 9 for kindergarten problem subtypes. • *Home Connection* p. 10 *and Home Connection* tab p. 31-32. 
Module 2- Session 3: Numbers and Number Racks		
K.CC.4 K.CC.5 MP.1 MP.5 MP.7	Access Prior Learning and Connections to Future Learning: • Count objects one by one, and say the numbers in the standard order, pairing each object with only one number name, and identify the number of objects as the last number said are all addressed again in units 1, 3, 4, & 6. Beginning with the Big Idea and key Strategic Behaviors: • recognizing hierarchical inclusion Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • What is different between your number rack and my number rack? • How can numbers be represented? How are number racks and ten frames related? • How far away from 5 is your number? • How far away from 10 is your number? Instructional Notes: • Visual models are the number racks and student ten-frame dot cards. • Students learn to use the Number Rack with precision and make connections with the ten-frame dot cards; starting position for the Number Rack is having all beads to the right and beads are pushed to the left when problem-solving. • Students are encouraged to push the beads in groups and make as few moves as possible. Literature Connections: • *Five Creatures* by Emily Jenkins • *12 Ways to Get to 11* by Eve Merrian Number Corner Connections: • All months explore these concepts - Count objects one by one, by saying the numbers in the standard order and pairing each object with only one number name and identify the number of objects as the last number said. Writing and Enrichment: • Model how to write a number story using the red and white beads (e.g. I have 5 pets. Two are cats. The rest are dogs. How many dogs do I have? • Students create their own number stories orally using their number racks and then record. • Differentiation ideas for students developing fluency within 5 or able to work with combinations to 10 are suggested on p. 15.
Module 2- Session 4: Introducing Work Place 2B Numbers & Number Racks		
K.CC.4a K.CC.4b K.CC.5 MP.1 MP.5 MP.7	Access Prior Learning and Connections to Future Learning: • Count up 10 objects arranged in line, rectangular array or circle to answer "how many" is addressed again in Unit 4 Beginning with the Big Idea and key Strategic Behaviors: • recognizing hierarchical inclusion Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • How many red beads are there? How many white beads are there? How many in all? • Can you tell the number of red beads without counting each one? How about the white ones? • If you see five red beads, can you keep counting the white beads from there (counting on)? Instructional Notes: • Visual model is the number rack. • When students draw connections between the groups of 5 and 10 on the ten frame and the number rack, they are actively looking for and making use of structure. Number Corner Connections: • Developing - count up 10 objects arranged in line, rectangular array or circle to answer how many? Addressed again in Sept.-Dec. Writing and Enrichment: • See Teacher Masters (M2 S4 p. T2) of *the Work Place Guides for Differentiation* ideas. See *Work Place Instructions* (p. T3) for game variations.

Module 2- Session 5: Show Me Five		
K.CC.4a K.CC.4b K.CC.5 K.OA.1 K.OA.3 MP.1 MP.5 MP.7	Access Prior Learning and Connections to Future Learning: • All units cover recognize the number of objects in a collection of 6 or fewer, and build combinations to 5. • Memorizing the combinations and connecting the quantities is not necessary yet. Students need and will get many practice opportunities throughout the year. The goal is to promote flexible ways of representing and recognizing quantities. Beginning with the Big Idea and key Strategic Behaviors: • Understanding part/whole relations (to 5) • Combining (pairs) of numbers to make 5 Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • How many red beads are there? How many white beads are there? How many in all? • Can you tell the number of red beads without counting each one? How about the white ones? • If you see five red beads, can you keep counting the white beads from there (counting on)? • Which pairs of numbers make 5? Instructional Notes: • Visual models are regular five-frame display cards and number racks. • Students work again with building combinations to 5 and make connections between dots, fingers, cubes, and the Number Rack. • Number rack beads are divided into 5s and then moved to the middle for problem-solving. • Keep student number racks available for student use as a problem solving tool throughout the year. Number Corner Connections: • Developing: recognize the number of objects in a collection of 6 or fewer; build combinations to 5; months Oct.-May explore these concepts. Writing and Enrichment: • *Home Connection* p. 22 and *Home Connections* tab pp. 33-34.
Module 3- Session 1: Craft Stick Tallying, Day 1		
K.CC.1 K.CC.4 K.CC.5 K.OA.1 MP.1 MP.6 MP.7	Access Prior Learning and Connections to Future Learning: • Recognize the number of objects in a collection of 6 or fewer and build combinations to 5 are covered in all units. Beginning with the Big Idea and key Strategic Behaviors: • Understanding part/whole relations (to 5) Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • How can I use tallies to keep track of a count? • How do groups help me when I count? Instructional Notes: • Visual models are craft stick and tally display cards. • Students continue to visualize groups of 5 with tally sticks and begin to count on to "5 and some more". • Teachers are tempted to use the rhyme 1,2,3,4, shut the door. This creates a misconception that the diagonal stick is not counted. An easy fix is to say 1,2,3,4. Then 5 shuts the door. Literature Connections: • *Tally O'Malley* by Stuart Murphy Number Corner Connections: • Developing - recognize the number of objects in a collection of 6 or fewer; build combinations to 5.
Module 3- Session 2: Craft Stick Tallying, Day 2		
K.CC.1 K.CC.4 K.CC.5 K.OA.1 MP.1 MP.6 MP.7	Access Prior Learning and Connections to Future Learning: • Recognize the number of objects in a collection of 6 or fewer and build combinations to 5 are covered in all units. Beginning with the Big Idea and key Strategic Behaviors: • Understanding part/whole relations (to 5) Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • How many sticks do you see? How do you know? • How do groups help me when I count? Instructional Notes: • Visual models are craft stick and tally display cards. • Teachers are tempted to use the rhyme 1,2,3,4, shut the door. This creates a misconception that the diagonal stick is not counted. An easy fix is to say 1,2,3,4. Then 5 shuts the door. Literature Connections: • Reread *Tally O'Malley* by Stuart Murphy Number Corner Connections: • Developing – Recognize the number of objects in a collection of 6 or fewer; build combinations to 5; months Oct.-May explore these concepts.

Module 3- Session 3: Which Bug Will Win?		
K.CC.6 K.OA.3 K.MD.3 MP.1 MP.6 MP.8	Access Prior Learning and Connections to Future Learning: • Recognize the number of objects in a collection of 6 or fewer is revisited in all units. • The game provides exposure to representing data in a graph, also addressed in Units 5 and 7. Beginning with the Big Idea and key Strategic Behaviors: • comparing measurable attributes Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • Which bug will win in Spinner A? Which bug will win in Spinner B? Why? • If want ladybugs to win, which spinner would you choose? • Why did other students who used the same spinner get different results? • How many sets of 5 are in 10? How do you know? Instructional Notes: • Visual models are graphs. Number Corner Connections: • Introductory - representing data in a graph. The game provides exposure to this and is addressed in Oct., Dec., March, April, and May. Writing and Enrichment: • *Home Connection* p. 14 and *Home Connection* tab pp. 35-37.
Module 3- Session 4: Introducing Work Place 2C Which Bug Will Win?		
K.CC.6 K.OA.1 K.MD.2 MP.1 MP.6 MP.8	Access Prior Learning and Connections to Future Learning: • Recognize the number of objects in a collection of 6 or fewer is revisited in all units. • The game provides exposure to representing data in a graph, also addressed in Units 5 and 7. Beginning with the Big Idea and key Strategic Behaviors: • comparing measurable attributes Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • Which bug will win in Spinner A? Which bug will win in Spinner B? Why? • If want ladybugs to win, which spinner would you choose? • Why did other students who used the same spinner get different results? • How many sets of 5 are in 10? How do you know? Instructional Notes: • Visual models are graphs. • Consider using 2 different colors for marking spins so combinations of 5 are more visible. Number Corner Connections: • Introductory - representing data in a graph. The game provides exposure to this and is addressed in months Oct. Dec., March, April, and May. Writing and Enrichment: • Provide a blank spinner. Create a spinner that has more spiders than ladybugs. • See *Teacher Masters* (p.T2) of the *Work Place Guides for Differentiation* ideas. • Note suggested sidebar note on p. 16 for analyzing data from this *Work Place*. Child Watching and Assessment: • Number & Number Racks CHECKPOINT – observe students during *Work Places* (see p. 17 and T4). Also see scoring and reteaching suggestion in the Assessment Binder, Bridges Unit Assessments tab pp. 20-21.
Module 3- Session 5: Dots, Tallies & Numbers Bingo		
K.CC.5 K.OA.1 MP.1 MP.7 MP.8	Access Prior Learning and Connections to Future Learning: • Count up 10 objects arranged in line, rectangular array or circle to answer "how many" is addressed again in Unit 4. • Recognize the number of objects in a collection of 6 or fewer is revisited in all units. Beginning with the Big Idea and key Strategic Behaviors: • recognizing hierarchical inclusion • using part/whole relations • using the five-structure Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • How are ten frames, numbers and tallies similar? Instructional Notes: • Visual models are ten-frame five-wise display cards, tally display cards, and number cards. • Students build flexibility with number recognition by using both dots/tallies, and Number Cards. Number Corner Connections: • Developing - count up 10 objects arranged in line, rectangular array or circle to answer how many? Addressed again in Sept.-Dec. • Recognize the number of objects in a collection of 6 or fewer. Months Oct.-May explore these concepts. Writing and Enrichment: • Number Collection Box: Show all the ways you can make ____. Students might use dots, number, tallies, objects, dominoes, number rack, and so forth.

Module 3- Session 6: Introducing Work Place 2D Beat You to Ten		
K.CC.4a K.CC.5 K.CC.6 K.OA.4 MP.1 MP.6 MP.7	Access Prior Learning and Connections to Future Learning: Beginning with the Big Idea and key Strategic Behaviors: • using the five-structure Developing: • using 1-to-1 correspondence • understanding cardinality • subitizing	Guiding Questions: • Which is the best spot for your spinner to land? • How do I determine how many more cubes I need to win? • Is there more than one way to get to 10 (win)? • How many sets of 5 are in 10? Instructional Notes: • Visual models are 2 colors of cubes. • Students build towers of 5 with cubes to make combinations of 5 visible. Writing and Enrichment: • See *Teacher Masters* (pp. T7 & T8) of the *Work Place Guides for Differentiation* ideas. • See *Work Place Instructions* (p. T8) for game variations. • *Home Connection* p. 25 *and Home Connection* tab pp. 39 & 40.
Module 4- Session 1: Butterfly Quilt, Part 1 (optional)		
K.G.1 K.G.6 MP.1 MP.7 MP.8	Access Prior Learning and Connections to Future Learning: • Patterning to algebra connection Beginning with the Big Idea and key Strategic Behaviors: • recognizing shapes and attributes • patterning • composing simple shapes to form larger shapes	Instructional Notes: • Optional Session or time can be used as an A/D/E day. • Visual models are square and rectangle pattern pieces.
Module 4- Session 2: Butterfly Quilt, Part 2 (optional)		
K.G.1 K.G.6 MP.1 MP.3 MP.7 MP.8	Access Prior Learning and Connections to Future Learning: Patterning to algebra connection Beginning with the Big Idea and key Strategic Behaviors: • recognizing shapes and attributes • patterning • composing simple shapes to form larger shapes	Instructional Notes: • Optional Session or time can be used as an A/D/E day. • Visual models are squares and rectangle pattern pieces. Writing and Enrichment: • The *Home Connection* p. 10 and *Home Connection* tab pp. 41-42.
Module 4- Session 3: Pattern Block Puzzles		
K.G.1 K.G.2 K.G.6 MP.1 MP.7 MP.8	Access Prior Learning and Connections to Future Learning: • Identify and describe shapes and compose simple shapes to form larger shapes are also covered in Units 5 and 6. Emphasize that students can describe shapes initially using visual descriptions (long, pointy, etc.). Beginning with the Big Idea and key Strategic Behaviors: • recognizing shapes and attributes – hexagon, rhombus, triangle, trapezoid • composing simple shapes to form larger shapes	Guiding Questions: • How do the pattern block shapes relate to one another? • How can I use smaller shapes to form larger shapes? Instructional Notes: • Visual models are pattern blocks and 2-D shape puzzles. • Step 1 - Remember pattern blocks have thickness. The trapezoid pattern block is not a trapezoid but a block with a face of a trapezoid. • This lesson leads into a discussion of strategy by decomposing and composing shapes. • Consider using the online digital display tool found on the Math Learning Center web site (note the second page), https://www.mathlearningcenter.org/resources/apps/pattern-shapes, in addition to teacher/student modeling. Literature Connections: • *Grandfather Tang's Story* by Ann Rompert (Tangrams are special set of shapes to compose…focus on the composing new shapes aspect of the story). Number Corner Connections: • Introductory - Identify and describe shapes explored again in months Sept. and Nov.

Module 4- Session 4: Introducing Work Place 2E Pattern Block Puzzles		
K.G.1 K.G.2 K.G.6 MP.1 MP.8	Access Prior Learning and Connections to Future Learning: • Identify and describe shapes and compose simple shapes to form larger shapes are also covered in Units 5 and 6. Emphasize that students can describe shapes initially using visual descriptions (long, pointy, etc.). Beginning with the Big Idea and key Strategic Behaviors: • recognizing shapes and attributes – hexagon, rhombus, triangle, trapezoid • composing simple shapes to form larger shapes	Guiding Questions: • How do the pattern block shapes relate to one another? • How can I use smaller shapes to form larger shapes? Instructional Notes: • Visual models are pattern blocks and 2-D shape puzzles. • Consider using die cut pattern blocks if available instead of hand cutting. Punch-out pattern blocks are available to purchase on the Bridges web site and various other retailers. • Step 1 - Remember that pattern blocks have thickness. The trapezoid pattern block is not a trapezoid but a block with a face of a trapezoid. • This lesson leads into a discussion of multiple solutions by decomposing and composing shapes in more than one way. Literature Connections: • *Grandfather Tang's Story* by Ann Rompert (Tangrams are special set of shapes to compose…focus on the composing new shapes aspect of the story. Number Corner Connections: • Introductory - Identify and describe shapes. Explored again in Sept. and Nov. Writing and Enrichment: • See *Teacher Masters* (p. T4) of the *Work Place Guides for Differentiation* ideas. • See *Work Place Instructions* (p. T5) for game variations. • The *Home Connection* p. 17 and *Home Connection* tab pp. 43-45.

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