▶ First Grade Unit 7: One Hundred & Beyond

Big Conceptual Idea: [K-5 Progression on Counting and Cardinality and Operations and Algebraic Thinking](#) (pp. 1-7, 12-17), [K-5 Progression on Number and Operations in Base Ten](#) (pp. 1-4, 6-7), [K-6 Progression on Measurement and Data (Measurement Part)](#) (pp. 1-4, 8-11)

Read the Bridges <u>Unit Overview/Introduction</u> for Unit 7 pp. i-viii. Also, read each <u>Module Overview</u> for the current week's sessions, and the current <u>Session Summary</u> along with details for the teaching of each session as you work through Unit 7. These Introduction/Overview/Summary sections provide focus, clarity, vocabulary, definitions, and examples for the "big mathematical ideas and understandings" critical to 1st Grade. This information will support your professional decision-making within the Sessions and Modules as needed.

> **Unit 7**
> **One Hundred & Beyond**
>
> 20 sessions over 20 days
> A/D/E: 5 days
>
> **NVACS Focus Domain:**
> NBT
>
> **Total Days: ~25**

[1st Grade Curriculum Pacing Framework: Balanced Calendar](#)

Mathematical Background:	Essential Questions for teacher consideration:
Read Bridges Unit 7 Overview pages (pp. i-vi)	How will I support students' developing understanding of place value so they are able to strategically, efficiently, accurately, and flexibly reason with two-digit numbers in problem solving? Using numbers to 120, how will I support understanding of estimating, counting, comparing, adding and subtracting within a base ten system using sticks and bundles; dimes, nickels, and pennies; and the number line?

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)
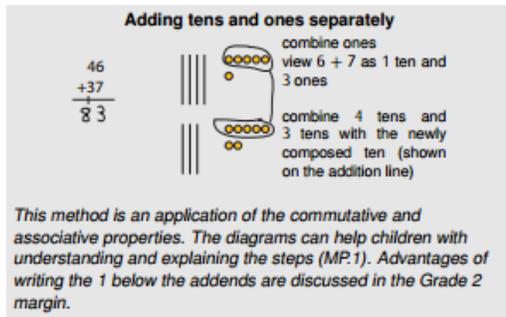
Unit 7 addresses the new standard expectation for 1st Grade of addition and subtraction of two-digit numbers using strategies to match multi-digit problems, and understandings within the range of 0-120. Students will be learning to compute sums within 100 of two-digit numbers using base-ten understanding and to compute differences of two-digit numbers by multiples of 10.

Students build cognitive skills as they use the number line as both a tool for visualizing the relationships of two-digit numbers, as well as a device for recordkeeping as they work up and down the number line solving problems within 120. They will also be estimating, counting, comparing, adding and subtracting within these two-digit quantities. *Bridges Unit 7* (Introduction p. ii) states, "Research has indicated that students with a solid understanding of 1, 2, 5, and 10 can develop both formal and informal strategies for two-digit operations, particularly when those intervals are illustrated and manipulated on the open number line. If a child is comfortable counting by 1s, 2s, or 5s there is no number she cannot conceptualize easily." Also, "Central to these mental manipulation is a strong sense of place value – how our number system works, how predictable patterns can help us navigate number contexts, and how strategies that work with small numbers are scalable to larger numbers." Students will begin to see and understand how some strategies are not efficient or appropriate when working with larger numbers, and will be meaningfully encouraged to search for and use more efficient strategies based on our base-ten system of numbers.

Unitizing (combining 10 discreet objects to make a new unit called a ten and holding the understanding of both the discrete parts and the new unit) is a key understanding of place value and for working with two-digit numbers and beyond. The use of physical and pictorial models is critical for this development of computational fluency and for foundations for algebra. *Bridges* materials for 1st Grade intentionally come with Unifix Cubes rather than Base 10 Blocks so students have many opportunities to develop this critical understanding by manipulating and seeing both the discreet objects and the units of ten. With the use of physical and pictorial models, students come to understand that the two digits of a two-digit number represent the amounts of tens and ones and that the place of a digit represents its value. Students are then able to use this understanding to compose and decompose a unit of 10 to solve problems. "The ability to compose and decompose this unit (a ten) flexibly and to view the numbers 11-19 as composed of one ten and some ones allows development of efficient, general base-ten methods for addition and subtraction." (Progressions for the Common Core State Standards in Mathematics – K-5, Number and Operations in Base Ten p. 6).

As students develop deeper understanding of place value concepts, they also couple this work with the operations and algebraic understandings they have been working toward. "There is no need to separate place-value instruction from computation instruction. Children's efforts with the invention of their own computation strategies will both enhance their understanding of place value and provide a firm foundation for flexible methods of computation." (Van de Walle, et al., 2014, p. 176). The idea of supporting computation and place value understanding together is at the forefront of 1.NBT.4 (NVACS, 2010). The "written method" addressed in 1.NBT.4 does not at this time refer to the U.S Traditional Algorithm. The *Progressions for the Common Core State Standards in Mathematics – K-5, Number and Operations in Base Ten* states, "Concrete objects, cards, or drawings afford connections with written numerical work and

discussions and explanations in terms of tens and ones. In particular, showing a composition of a ten with objects or drawings affords connection of the visual ten with the written numeral 1 that indicates 1 ten" (pp. 6-7).

Adding tens and ones separately

46
+37
83

combine ones
view 6 + 7 as 1 ten and 3 ones

combine 4 tens and 3 tens with the newly composed ten (shown on the addition line)

This method is an application of the commutative and associative properties. The diagrams can help children with understanding and explaining the steps (MP.1). Advantages of writing the 1 below the addends are discussed in the Grade 2 margin.

Fluency using the standard algorithms for addition and subtraction is not required until the end of 4th grade. "Use of the standard algorithms can be viewed as the culmination of a long progression of reasoning about quantities, the base-ten system, and the properties of operations." *(Progressions for the Common Core State Standards in Mathematics – K-5, Number and Operations in Base Ten, p. 3).* Students have TIME to build deep understandings of place value. Do not push the use of the written standard algorithm too early at the risk of creating a student who memorizes the steps but has no conceptual understanding of place value. This will create severe disadvantage to students as they progresses through the years in the mathematics trajectory supported by the standards. Battista addresses this as well, "…if algorithms are taught too early in student's development of reasoning about addition and subtraction, students cannot understand the algorithms conceptually, so they learn them by rote." (Battista, 2012, p. 5).

Children construct understandings in connected and integrated ways, not as isolated, individual pieces. Therefore, continually ask students to explain and show what they are thinking ("How did you know?", "What made you think that?", "What did you notice?", "How did you figure that out?" etc.). By child-watching teachers can make explicit the connections students are already making from previous learning; strengthen the synaptic connections being constructed through questions, discussion or student's sharing; and encourage the continuance of sense-making behavior (NVACS, 2010, p. 6).

The opportunities to connect the content in *Unit 7* to the knowledge and skills students have gained through *Number Corner* are endless. Consider how students have been building the concept of "ten" through the *Days in School* and *Number Line* activities: each day adding a one until a group of ten has been made; identifying equivalent names and equations for the total; considering multiple equivalent representations of a given number; and other continuous opportunities for creating place value understanding.

On-going enrichment*:*
Take note of the *Skills Across the Grade Level* chart in the Introduction, Unit 7, (pp. vi-vii). Note that most OA and NBT Standards are expected to be secure by the end of this Unit. This information supports your professional decision-making within the *Unit* for instruction, intensification, and intervention. Expect all students to engage in the problem solving, and in explaining and justifying their thinking. Use Table 1 in the *Nevada Academic Content Standards* (NVACS) titled "Common addition and subtraction situations" (p. 88) to inform decisions about intensification and acceleration.

Continue to consider "Support" and "Challenge" options within each *Session*, and "Game Variations", "Differentiate", and "English-Language Learners" ideas in *Work Places.*

Essential Academic Vocabulary
Use these words consistently during instruction.

New Academic Vocabulary: (first time explicitly taught) *indicates Word Resource Cards are available in the Bridges materials	Review Academic Vocabulary: (Vocabulary from Number Corner or previous units)		
Hundreds* Quarter (one-fourth)	*Add** *Addition* *After** *Before** *Coin/coins* *Coordinate grid* *Coordinates* *Compare** *Count** *Count back** *Count on**	*Difference** *Digit** *Dime** *Distance* *Estimate* *Equation** *Fives* *Fourth** *Greater than** *Hundred Length**	*Less than** *Ones** *Penny** *Square** *Subtract** *Subtraction* *Sum or Total** *Tens** *Twos* *Two-digit number* *Zero*

Additional terminology that students might need support with: backward, beginning, end, first, forward, paces, reasonable, section, steps strategies

*Collaborative Team Conversations (CTC)

Consider using *one* of the following as part of the formative assessment process at the lesson level to **collect student work** to analyze for <u>evidence of mathematical understanding</u>:

Guiding questions:
"What strategies and tools are students using to solve for missing numbers along a number line, using understandings of multiples of 1s, 5s, and 10?"
"What evidence shows understanding and use of grouping by 5s, and 10s?"
"What evidence demonstrates fluent understanding of 5 and/or 10?"
"How do students show they are making sense of the problems and deepening their understanding of the number system to 120?"
"If needed, what intensification interactions will support the use of a variety of strategies and tools for problem solving with place value concepts?"

Lesson	Evidence	Look for
U7M2S4 *Observations Along the Path* TG pp. 17-19	*Student Book Missing Bread Crumbs* (TG U7M2S4 Student Book p. 58) *Student Book* Answer Keys Bridges Educator Site, Curriculum Tab (p. 62)	Focus CTC around conceptual understandings of the big idea and strategies used: • making sense of the number system (seeing and using 1s, 5s, and/or 10s to identify and confirm missing numbers on a number line) • counting by 1s, 5s, and/or 10s • monitoring own confusions and self-correcting • persevering and explaining thinking • using 1s, 5s, and/or 10s to solve for missing numbers on a number line using place value understandings with flexibility, accuracy, efficiency, and appropriateness
U7M2S5 *Numbers to 120 Checkpoint #1 & 2* TG pp. 21-23	*Numbers to 120 Checkpoint* observations and student record sheet (TG U7M2S5 p. T7) *Numbers to 120 Checkpoint Scoring Guide* (AG Bridges Unit Assessments pp. 75-76)	Focus CTC around conceptual understandings of the big idea and strategies used: • making sense of the number system (seeing and using 1s, 5s, and/or 10s to identify and confirm missing numbers) • counting by 1s, 5s, and/or 10s • monitoring own confusions and self-correcting • persevering and explaining thinking • using 1s, 5s, and/or 10s to solve for missing numbers on a number line using place value understandings with flexibility, accuracy, efficiency, and appropriateness • adding and subtracting with multiples of 5s and/or 10s with flexibility, accuracy, efficiency and appropriateness

Learning Cycle Assessments (summative)	*Unit 7 Assessment* - U7M3S5 TG pp. 24, T10-T12; AG Bridges Unit Assessments pp. 77-79	Use *Unit 7 Assessment Scoring Guide* AG Bridges Unit Assessment p. 80

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: Estimating & Counting Popsicle Sticks	
1.NBT.1a **1.NBT.2a** 1.NBT.2c **MP.4** MP.7	**Access Prior Learning:** • Kindergarten students composed and decomposed numbers from 11-19 into ten ones and some further ones building foundations for place value understanding. **Developing the Big Idea and key Strategic Behaviors:** • understanding number relationships - place value of ones, tens, and hundreds • unitizing 10	**Guiding Questions:** • What do you already know about estimating? • How can you figure out how to make a close estimation? **Instructional Notes:** • Send home the *Family Letter* found <u>here.</u> • Read the *Math Practices in Action* in the margin (p. 6). • Ensure students engage in the process of constructing the bundles of ten. This model of popsicle sticks supports the need for proportionality. "That is, a model for ten is physically ten times larger than the model for a one." (Van de Walle, et al., 2014, p. 179). • When counting, emphasize the base-ten language (1 hundred, 3 tens, 5 ones). • Capitalize on the opportunities for students to make a connection between patterns with single digits such as 2+2= 4 being similar to 20+20= 40. • Consider observing students count with their own jar of sticks. Watch for how they count. Are they grouping? Are they counting by 1? Have students share their strategies, selecting students from the least to the highest sophistication to share in that order. *-continues on next page-*

		• Graham Fletcher Resources such as his <u>3-Act Tasks</u> could support this work. See the Whopper Jar video. Consider having students watch as the teacher grabs a handful at a time of popsicle sticks and places them in the jar, similar to the bags of whoppers. Before collecting estimates from students, help them gather evidence to make an estimate. Create a T-chart with one side for "Noticing" and the other labeled "Wondering". Students may say, "I noticed it was 5 handfuls of sticks." A wondering might be, "How many sticks fit in a handful?" This encourages use of estimation as a strategy based on evidence (Math Practice 6). **Enrichment:** • Have students write the total in expanded notation. 100+ 30+5=135. This can be included in Number Corner with the days in school grid. • Have students explore how different groups of students counted the sticks, and consider what pros and cons there are for each strategy. What strategy is efficient? What strategy helps if you lose track? **Child Watching:** • Identify students referring to the hundreds or the groups of tens as "5" or "3". Respond with, "5 what?" and encourage them to always state "5 hundreds." • Identify students counting by 1s. • Identify students making groups of ten. • Observe for organization techniques that students can share.

Module 1- Session 2: Two Turns to Build, Day 1

1.NBT.1 1.NBT.2 **1.NBT.3** **1.NBT.4** **MP.4** MP.7	**Access Prior Learning:** • Kindergarten students composed and decomposed numbers from 11-19 into ten ones and some further ones building foundations for place value understanding. • Connect to all groups of 10 work from previous sessions. **Developing the Big Idea and key Strategic Behaviors:** • understanding number relationships - place value with ones, tens, and hundreds • **unitizing 10** • **adding groups of 10s and 1s**	**Guiding Questions:** • How can sticks help you as a mathematical tool? • What do you know about "a bundle" of sticks? **Instructional Notes:** • The digital display tools for this lesson is provided on the Educator Site. • Use the language from the Work Place Sentence Frames while playing. See the *Work Place Sentence Frames* for Unit 7 <u>here.</u> **Enrichment:** • Encourage the use of base-ten language. **Child Watching:** • Identify students who struggle with understanding the 10 sticks as a bundle (conservation of number). Allow students to count the single sticks as often as needed to confirm there are always 10.

Module 1- Session 3: Two Turns to Build, Day 2

1.NBT.1 1.NBT.2 **1.NBT.3** **1.NBT.4** **MP.2** MP.7	**Access Prior Learning:** • Kindergarten students composed and decomposed numbers from 11-19 into ten ones and some further ones building foundations for place value understanding. • Connect to previous understandings of addition. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value with ones, tens, and hundreds • **unitizing 10** • adding groups of 10s and 1s • **representing 10s and 1s with drawings and equations** • comparing 2-digit numbers	**Guiding Questions:** • How can sticks help you as a mathematical tool? • What do you know about "a bundle" of sticks? **Instructional Note:** • Allowing students to come to the idea of adding the 10s first then counting the 1s will support their independent use of this strategy. This lays the foundation for thinking in terms of partial sums, by adding the 10s first, then adding the 1s. **Enrichment:** • See Step 9 (p.17). **Child Watching:** • Identify students who are struggling to understanding that a bundle makes up ten 1s. Allow these students to deconstruct and construct bundles repeatedly. • Identify students struggling to count by 10s, then switching to counting by 1s. Consider adding in a symbolic sound, or motion, such as a clap for support.

Module 1- Session 4: Introducing Work Place 7A Two Turns to Build

1.NBT.1 1.NBT.2 **1.NBT.3** **1.NBT.4**	**Access Prior Learning:** • Kindergarten students composed and decomposed numbers from 11-19 into ten ones and some further ones.	**Guiding Questions:** • How can cubes help you as a mathematical tool? • What do you know about a train of 10 cube? *-continues on next page-*

MP.2 MP.8	• Connect to all groups of 10 work, especially the popsicle sticks from previous days. • Connect to previous understandings of addition. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • **unitizing 10** • **adding groups of 10s**	**Instructional Notes:** • See the *Work Place Sentence Frames* for Unit 7 here. • The online digital tools for the *Work Place* are provided on the Educator Site. **Enrichment:** • See the *Game Variations on Work Place Instructions* (p. T6). **Child Watching:** • Identify students who are struggling with understanding that a bundle makes up ten 1s. Allow these students to deconstruct and construct bundles again. • Identify students struggling to count by 10s, then switching to count by 1s. Consider adding in a symbolic sound, or motion, such as a clap for support.

Module 1- Session 5: Introducing Work Place 7B Race to Zero

1.NBT.6 MP.2 MP.8	**Access Prior Learning:** • Kindergarten students composed and decomposed numbers from 11-19 into ten ones and some further ones building foundations for place value understanding. • Connect to all groups of 10 work from previous sessions. • Connect to previous understandings of addition. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • **unitizing 10** • **subtracting multiples of 10s**	**Guiding Questions:** • How are addition and subtraction related? • What do you know about addition and subtraction? **Instructional Note:** • The online digital tools for the *Work Place* is provided on the Educator Site. **Enrichment:** • See the *Game Variations on Work Place Instructions* (p. T10). **Child Watching:** • Identify students who are struggling with understanding that a bundle makes up ten 1s. Allow these students to deconstruct and construct bundles repeatedly. • Identify students struggling to count by 10s, and then switch to count by 1s. Consider adding in a symbolic sound, or motion, such as a clap for support. • Identify students struggling with counting backward by 10s.

Module 2- Session 1: Introducing Hansel & Gretel's Path

1.NBT.1 1.NBT.2 1.NBT.4 MP.3 MP.7	**Access Prior Learning:** • Kindergarten students composed and decomposed numbers from 11-19 into ten ones and some further ones building foundations for place value understanding. • Connect to all groups of 10 work from previous sessions. • Connect to knowledge of the story of Hansel and Gretel. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • understanding and using number structure to 120 • **counting by 10s and 1s** • **adding multiples of 10** • counting forwards and backwards by 1s	**Guiding Questions:** • What do you notice about the trails? • How are they different? **Instructional Notes:** • The blog titled *Hansel & Gretel's Path* on the Educator Site shares ideas for supporting students. It can be found under the Implementation tab, and then search for the title in the search bar. • This unit is an opportunity to engage in Math Practice 3, constructing viable arguments and critiquing the reasoning of others. **Enrichment:** • See Step 11 (p. 6). **Child Watching:** • Identify students working together counting 10 paces and laying a different colored cube down with their partner.

Module 2- Session 2: Counting Pebbles Along the Path

1.NBT.1 1.NBT.4 MP.1 MP.7	**Access Prior Learning:** • Connect to the last session's work. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • understanding and using number structure to 120	**Guiding Questions:** • How are these paths like a number line? • What do you know about counting forward and backward? **Instructional Note:** • Continuously reinforce strategies that involve place value understanding and use of the landmark numbers of 5 and 10 when appropriate, rather than counting on or counting backward by 1s. *-continues on next page-*

	• reading and writing numbers • **counting forward and backward by 10s and 1s**	**Enrichment:** • See Steps 2, 3, 4 & 6 (p. 10-11) **Child Watching:** • Identify students who are using place value addition and subtraction strategies and not counting on or back by 1s. Have these students share so others who are using counting on or counting back are exposed to a more sophisticated strategy.
Module 2- Session 3: A Fork in the Path		
1.NBT.1 **1.NBT.4** **1.NBT.5** MP.3 **MP.7**	**Access Prior Learning:** • Connect to the last session's work. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • understanding and using number structure to 120 • reading and writing numbers • **counting forwards and backwards by 10s 5s and 1s**	**Guiding Question:** • What strategies can you use to fill in the path? **Instructional Note:** • The "Math Practices in Action" blog from the Educator Site provides support for how this discussion might look in the classroom and what student response might be anticipated. Search for the blog title under the Implementation Tab. **Enrichment:** • See Step 6 (p. 15). **Child Watching:** • Identify students who struggle with counting by multiples of 5. See the support suggestion, Step 7 (p. 15).
Module 2- Session 4: Observations Along the Path		
1.NBT.1 **1.NBT.4** MP.2 **MP.7**	**Access Prior Learning:** • Connect to the last session's work. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • **reasoning with number structure to 120** • reading and writing numbers • **using multiples of 5 and 10**	**Guiding Questions:** • What do you notice about the path? • What is a "key" and how does it help you to solve the problem? **Instructional Notes:** • Encourage students to work with the boxes out of sequence to reinforce reasoning with multiples of 5 and 10. See note in Step 4. • [This game](#) suggested on the Educator Site may be used to reinforce understanding for counting on the number line. • The Student Book page for this session is suggested as a possible CTC. **Enrichment:** • See Step 5 (p. 19). **Child Watching:** • Identify students struggling with skip counting by 5s or 10s.
Module 2- Session 5: Problems Along the Path		
1.NBT.1 **1.NBT.4** **1.NBT.6** MP.1 **MP.3**	**Access Prior Learning:** • Connect to the last session's work. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • **reasoning with number structure to 120** • reading and writing numbers • **using multiples of 5 and 10**	**Guiding Question:** • What do you observe about the path? **Instructional Notes:** • Read the *Math Practices in Action* in the margin (p. 23). • Review getting information from a "key". • Students may be confused with the abbreviations used for the breadcrumb, pinecone, and pebble (P, PC and B). Consider having them draw a picture and/or write the numbers associated with the symbol if needed. • The *Assessment Binder* under the *Bridges Unit Assessment* tab provides the scoring guide for this checkpoint (p. 76). **Enrichment:** • Consider using sidewalk chalk outside to recreate the pathways beginning from various numbers. • See the Challenge in Step 6 (p. 23). **Child Watching:** • Use the scoring guide to inform your instruction and consider pulling a small group of students who need support. This Assessment is suggested as a CTC.
Module 3- Session 1: Ten Steps on the Path		
1.OA.1 **1.OA.3** 1.MD.2	**Access Prior Learning**: • Connect to all previous work with groups of 10 and 5.	**Guiding Questions:** • What do you already know about a "key"? • What strategies will you use to make decisions about what fences, benches and flowerpots you will use? • How can pictures help you write equations? *-continues on next page-*

MP.2 **MP.4** MP.7	• Kindergarten students represented addition and subtraction with objects, fingers, mental images, drawings, sounds, actions, verbal explanations, and expressions or equations. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • **reasoning with number structure to 120** • reading and writing numbers • **using multiples of 5 and 10 both forward and backward** • understanding and using the commutative property	**Instructional Notes:** • Read the *About This Session* in the margin (p. 4). • Read the *Math Practices in Action* in the margin (p. 5). **Enrichment:** • See Step 6 (p. 5). Consider having students write an equation to match their thinking. **Child Watching:** • See the *Support* note in step 7 (p. 5).

Module 3- Session 2: Twenty Steps on the Path

1.OA.1 1.OA.2 **1.OA.3** **1.OA.6** 1.MD.2 MP.2 **MP.4** MP.7	**Access Prior Learning:** • Kindergarten students represented problems in various ways. • Connect to all previous work with groups of 10 and 5. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - place value • **reasoning with number structure to 120** • reading and writing numbers • **using multiples of 5 and 10 forward and backward** • understanding and using the commutative property	**Guiding Questions:** • What do you already know about a "key"? • What strategies will you use to make decisions about what fences, benches and flowerpots you will use? • How can pictures help you write equations? **Instructional Note:** • Read the *About This Session* in the margin (p. 8). **Enrichment:** • Consider limiting the number of each object students can use. See the *About This Session* note (p. 8). **Child Watching:** • Observe for student strategies. Are students using any systematic way to determine combinations? • When writing an equation, are they identifying and using friendly numbers?

Module 3- Session 3: The Path Game, Part 1

1.NBT.1 **1.NBT.4** **1.NBT.5** 1.NBT.6 1.G.3 MP.2 MP.3	**Access Prior Learning:** • Kindergarten students represented addition and subtraction with objects, fingers, mental images, drawings, sounds, actions, verbal explanations, and expressions or equations. • Connect to all previous work with combinations of 10 and 5. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships – place value • **reasoning with number structure to 120** • **using 1s, 2s, 5s and 10s to move forward along a number line 0-60** • writing equations	**Guiding Question:** • What do you already know about moving on a number line? **Instructional Notes:** • Give time for students to create their own number lines. This allows them to construct understandings of the tool's properties. • Capitalize on opportunities for students to share their written methods for adding and subtracting these numbers as they work on 1.NBT.4. Refrain from any focus on the traditional algorithm. Encourage students to use sense-making strategies and document those strategies in a representational form. Have students' share their thinking on the board, using their words to express in written form their thinking. **Enrichment:** • See Step 8 (p. 16). **Child Watching:** • Identify students struggling with the construction of the number line. • Identify student strategies (counting on, making friendly numbers, using 5 and 10 as landmark numbers, counting on and off the decade, adding the 10s and the 1s, etc.). Invite students to share when there are interesting strategies for more challenging combinations such as 17+5.

Module 3- Session 4: The Path Game, Part 2

1.NBT.1 **1.NBT.4** **1.NBT.5** **1.NBT.6** MP.2 MP.3	**Access Prior Learning:** • Kindergarten students represented addition and subtraction with objects, fingers, mental images, drawings, sounds, actions, verbal explanations, and expressions or equations. • Connect to all previous work with combinations of 10 and 5. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships – place value • **reasoning with number structure to 120** • **using 1s, 2s, 5s and 10s to move forward along a number line 61-120** • writing equations	**Guiding Question:** • How is this path like other paths you have seen? **Instructional Notes:** • This session is an opportunity to revisit the understandings of the open number line (introduced in Unit 4) to allow students to expand their reasoning. This will support their transition to 2nd grade. • Capitalize on opportunities for students to share their written methods for adding and subtracting these numbers as they work on 1.NBT.4. Refrain from any focus on the traditional algorithm. Encourage students to use sense-making strategies and document those strategies in a representational form. Have students' share their thinking on the board, using their words to express in written form their thinking. **Enrichment:** • See Step 8 (p. 20). **Child Watching:** • Identify student strategies (counting on, making friendly numbers, using 5 and 10 as landmark numbers, counting on and off the decade, adding the 10s and the 1s, etc.). Invite students to share when there are interesting strategies for more challenging combinations such as 72+10. • Observe how students express their thinking in written form. Collect ways to show thinking on a big poster in the room.

Module 3- Session 5: Unit 7 Assessment

1.NBT.1 **1.NBT.4** **1.NBT.5** **1.NBT.6** MP.2 MP.3	**Access Prior Learning:** • Kindergarten students represented addition and subtraction with objects, fingers, mental images, drawings, sounds, actions, verbal explanations, and expressions or equations. • Connect to all previous work using 1s, 2s, 5s, 10s, 20s, and 30s to move along a number line both forward and backward. **Developing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships – place value • **reasoning with number structure to 120** • reading and writing numbers • **using 1s, 5s, 10s, 20s, and 30s to move forward along a number line 0-120** • writing equations	**Guiding Question:** • How is this path like other paths you have seen? **Instructional Notes:** • The *Assessment Guide* under the *Bridges Unit Assessments* tab provides the scoring guide for *Unit 7 Assessment* (p. 80). • Standards 1.OA.2, 1.OA.3, 1.NBT.1, 1.NBT.4, 1.NBT.6 are targeted for security according to the *Grade 1 Assessment Map* (pp. 13-15) in the *Assessment Binder* under the *Assessment Overview* tab. • The assessment provides another opportunity to assess 1.OA.1, which was targeted for security last unit. • In the assessment, if students are confused with the abbreviations used for the breadcrumb, pinecone, and pebble (P, PC and B), have them draw a picture and/or write the numbers associated with the symbol. **Enrichment:** • See Step 11 (p. 24). **Child Watching:** • At this point teachers, should be concerned about students struggling with one or more of the following: solving addition and subtraction story problems within 20; counting on and counting back to solve addition and subtraction combinations within 20; adding and subtracting with sums and minuends to 10; working from familiar facts such as doubles, make 10s, and add tens; counting to 120; reading and writing numbers to 100; understanding that whole numbers between 10 and 100 are composed of 10s and 1s. (See *Assessment Binder, Bridges Unit Assessment* tab, p. 61 for more information). • Any students struggling with these standards at this point could benefit from use of the Bridges Intervention materials.

Module 4- Session 1: How Many Pennies in the Jar?

1.NBT.1 **1.NBT.2** **1.NBT.4** Supports 1.MD **MP.7** **MP.8**	**Access Prior Learning:** • Kindergarten students classified objects and counted the number of objects in each category. • Connect to previous use of coins to support place value understandings. **Securing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - placer value	**Guiding Questions:** • What do you already know about estimation? • How can you count all these pennies most efficiently? **Instructional Notes:** • See Module 1 Session 1 notes for more ideas on this session. • The intent of the use of coins as a model in 1st grade is to support place value understanding. Money and adding the values of money is a 2nd grade standard. • Money is an example of a nonproportional model for place value in which the ten is not physically ten times larger than the one. Nonproportional representations are used "once children have a conceptual understanding of the numeration system and need additional reinforcement" (Van de Walle, et al., 2014, p. 181). *-continues on next page-*

	• counting and comparing quantities to 100 • estimating • unitizing 10	**Enrichment:** • See *Extension* in the margin (p. 6). **Child Watching:** • Identify students who struggle with the nonproportional representation of place value. Consider reinforcing their understandings by using 1 cube per penny and 100 cubes per dollar to help them see the connection.
Module 4- Session 2: Two Turns to Win		
1.NBT.1 **1.NBT.2** 1.NBT.3 **1.NBT.4** Supports 1.MD **MP.2** MP.7	**Access Prior Learning:** • Kindergarten students classified objects and counted the number of objects in each category. • Connect to previous use of coins to support place value understandings. • Coins have been utilized during Number Corner throughout the year. **Securing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - placer value • **counting and comparing quantities to 100** • **adding 10s and 1s**	**Guiding Question:** • What do you already know about comparing? **Instructional Notes:** • Read the Math Practices in Action in the margin (p. 10). • The intent of the use of coins as a model in 1st grade is to support place value understanding. Money and adding the values of money is a 2nd grade standard. • Money is an example of a nonproportional model for place value in which the 10 is not physically ten times larger than the 1. Nonproportional representations are used "once children have a conceptual understanding of the numeration system and need additional reinforcement" (Van de Walle, et al., 2014, p. 181). **Child Watching:** • Identify students who struggle with the nonproportional representation for place value. Consider reinforcing their understandings by using 1 cube per penny and 100 cubes per dollar to help them see the connection.
Module 4- Session 3: Pull, Count & Compare		
1.NBT.3 **1.NBT.4** 1.NBT.5 Supports 1.MD MP.4 **MP.8**	**Access Prior Learning:** • Kindergarten students classified objects and counted the number of objects in each category. • Connect to previous use of coins to support place value understandings. • Coins have been utilized during Number Corner throughout the year. **Securing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - placer value • **counting and comparing quantities to 100** • **adding 10s and 1s**	**Guiding Question:** • Why is it important to know how to compare? **Instructional Notes:** • The intent of the use of coins as a model in 1st grade is to support place value understanding. Money and adding the values of money is a 2nd grade standard. • Money is an example of a nonproportional model for place value in which the 10 is not physically ten times larger than the 1. Nonproportional representations are used "once children have a conceptual understanding of the numeration system and need additional reinforcement" (Van de Walle, et al., 2014, p. 181). **Child Watching:** • Use the suggestions in Step 13 (p. 16) to guide child watching.
Module 4- Session 4: Coins on Board, Day 1		
1.NBT.2 1.NBT.3 **1.NBT.4** Supports 1.MD MP.1 **MP.3**	**Access Prior Learning:** • Connect to previous use of coins to support place value understandings. • Connect to the use of coordinate grids in other content areas. **Securing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - placer value • **counting and comparing quantities to 100** • **adding by 10s, 5s, and 1s**	**Guiding Question:** • What strategies can you use to add by 1s, 5s, and 10s? **Instructional Notes:** • These next few lessons provide opportunities to pull aside students who might need more support based on the *Unit 7 Assessment*. • The intent of this experience is to provide a different opportunity for students to work with adding strings of numbers by 10s, 5s and 1s. The focus of this lesson is not to understand coordinate grids. Therefore, if students struggle with locating on the grid provide as much support as needed. **Enrichment:** • See Step 15 (p. 20). **Child Watching:** • Identify students struggling to use the coordinate grid and partner them with a peer for support. *-continues on next page-*

		• Identify students using the property of commutativity and adding numbers in orders that make sense, for example adding all the 10s first, then 5s, followed by 1s. Select students to share. • Observe student's documentation of their addition in a written method. Share student strategies, and add to class posters for idea of representing thinking.
Module 4- Session 5: Coins on Board, Day 2		
1.NBT.2 **1.NBT.3** **1.NBT.4** Supports 1.MD MP.7 **MP.8**	**Access Prior Learning:** • Connect to previous use of coins to support place value understandings. • Connect to the use of coordinate grids in other content areas. **Securing the Big Idea and key Strategic Behaviors:** • understanding and using number relationships - placer value • **counting and comparing quantities to 100** • **adding by 10s, 5s, and 1s**	**Guiding Question:** • What strategies can you use to add by 1s, 5s, and 10s? **Instructional Notes:** • These next few lessons provide opportunities to pull aside students who might need more support based on the *Unit 7 Assessment.* • The intent of this experience is to provide a different opportunity for students to work with adding strings of numbers by 10s, 5s and 1s. The focus of this lesson is not to understand coordinate grids. Therefore, if students struggle with locating on the grid provide as much support as needed. **Child Watching:** • Identify students using the property of commutativity and adding numbers in orders that make sense, for example adding all the 10s first, then 5s, followed by 1s. Select students to share. • Observe student's documentation of their addition in a written method. Share student strategies, and add to class posters for idea of representing thinking.

References

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