Standards for Mathematical Practice	To encourage the Mathematical Practice Standards in your classroom, emphasize the following aspects in your lesson planning. The italicized words below refer to the names of specific routines, processes, lesson delivery modes, worksheets, and models used in "A Story of Units."
MP 1 Make sense of problems and persevere in solving them.	A student is practicing MP 1 every time he: • works on an *Activity Sheet* or *Homework Sheet* independently or with a single partner. • solves a problem during the *Problem Solving Part* of a planned lesson, depending on the mode of delivery[1] that day. • completes a *constructed response problem* (usually the last problem(s)) in a quiz or larger assessment). • solves a *puzzle*, a *non-routine problem*, or plays a strategic game. "I got it!" or "I got better at it" are reactions that lead to greater courage to fail (and therefore ultimately succeed) in future problem situations. Note: The wise teacher is alert to student readiness for independent work, balancing the support of direct modeling ("*I do*") and guided practice ("*We do*") with empowered individual and/or partner work ("*You do*").
MP 2 Reason abstractly and quantitatively.	A student is practicing MP 2 every time he: • draws a *bar model*, *number bond*, *number line*, *array*, or *area model* during an *RDW*[2] to a problem and then reasons directly off the model itself to answer the question. (The "Draw" in RDW) • refers, if necessary, back to the word problem to reestablish meaning during an *RDW*. (The "Read" in RDW) • writes an equation or number sentence to express the thinking of his solution during an *RDW*. (The "Write" in RDW) • writes a sentence containing the answer to a word problem that includes the unit (monkeys, meters, inches, money, etc.). "Using 2 ¾ m of fabric for each one, Mary was able to make 5 costumes." (Also the "Write" in RDW)

[1] *See "3 Modes of Delivery of Word Problems" and "3 Modes of Independent Work" in "Fluency, Word Problems, and Assessment" at the end of the module.*
[2] *See a more detailed description of the "Read-Draw-Write" process in "Fluency, Word Problems and Assessments" at the end of the module.*

MP 3 Construct viable arguments and critique the reasoning of others.	A student is practicing MP 3 every time he: • engages in the *lesson debrief* after the content lesson in which he defends his own or critiques another's work. • articulates to a partner during a "*turn and talk*", or later to the entire class his way of solving a problem and possibly comparing it to another person's solution. • writes an explanation to a loved one (to grandma or his younger brother) in a "*Explain to your…*" problem. • argues on behalf or in opposition to his, a peer's, or the teacher's solution strategy. "Which of these solution paths is most efficient?" "Where did you get confused when I was explaining my way of solving the problem?" "You just said, "Oh, I get it." What was it that helped you to get your "aha" moment?" • explains how a simpler but possibly different problem empowers him to solve a more complex problem (or a simpler problem that is "embedded" in a more complex problem, i.e., 9+5=14, so 39+5=44).

MP 4
Model with mathematics.
	A student is practicing MP 4 every time he:
	
	• draws a picture or uses a manipulative to solve a problem, including (but not limited to):
	  • a *number path* to add or subtract numbers to 10,
	  • a *number bond* to add 8 and 6 or 48 and 6,
	  • *linker cubes* to model tens and ones,
	  • *place value chart* and *number disks* to model mental math or algorithms,
	  • *bar models* to represent different quantities in a story or word problem,
	  • the *number line* to round or compare numbers,
	  • an *area model* or *rectangular array* to model multiplication or division,
	  • *folded paper strips* to model fractions,
	  • *area model* to model the fraction operations.

MP 5. Use appropriate tools strategically.	A student is practicing MP 5 every time he: • uses his mind, his primary tool, with intentionality to solve or analyze a problem (practices metacognition). • makes a determination from an arithmetic problem written horizontally (instead of vertically) to use mental math, a model, or a standard algorithm. • chooses to use a *bar model* to solve a problem during the *RDW* process. • responds to the question "Did anyone solve this problem differently?" "Based on our conversation, let's see how you will solve this problem."

	• draws during an *RDW*. "Can you draw something?" "What can you draw?
MP 6. Attend to precision.	A student is practicing MP 6 every time he: • discusses and writes in his journal the precise definitions of vocabulary terms during the *lesson debrief*. • refers to a specific *place value unit* and/or specifies the *value*. "3 tens + 5 tens is 8 tens", "4 tenths × 3 = 12 tenths," "$3 \times 10^3 = 3$ thousands." "How many tens are in 323?" "32 tens." "What is the value of 32 tens?" "320." • specifies a unit when calculating area, when measuring length, weight or capacity, when measuring angles or temperature. • uses a ruler to draw a straight line between two points (kindergarten), measures or draws a straight line of a given length (2^{nd} grade), or uses a protractor to measure an angle (4^{th} or 5^{th} grade). • performs the long division algorithm with a 2-digit divisor and estimates the quotient, and then determines the precise value of the product and the value of the remainder. • estimates the size of a bar when drawing bar models comparing two quantities ("If this bar is 68, then a bar of 32 should be slightly less than half this bar.") and then determines the precise value of the difference or sum.
MP 7. Look for and make use of structure.	A student is practicing MP 7 every time he: • finds patterns in the sequence of problems in a *Sprint* and uses the pattern to improve. • compares and contrasts a set or pair of problems and look for patterns and connections that might help them to better understand and solve other related problems. "Compare 3 + 5 with 5 + 3." "Relate 7 × 8 to 5 × 8 + 2 × 8." • reconstructs the sequence of problems presented to him throughout the content lesson experience, especially when asked to specify and clarify the goal of that sequence during the *lesson debrief*. • uncovers and articulates the concept within a content lesson during the *lesson debrief*.

MP 8. Look for and express regularity in repeated reasoning.	A student is practicing MP 8 every time he: • computes and answers a set of problems and then considers the relationships of the problems. For example, after solving 5 problems adding 1, a first grader sees that adding one is finding the next number and writes 3 more analogous problems. • writes a third related problem based on a set of 2 or more problems. • applies a solution strategy to a different problem or situation, "To solve 8 + 6, I made 10 and added 4. To add 8 tens and 6 tens I can make 10 tens and add 4 tens, 140.

3 Modes of Delivery of Word Problems		
Modeling with Interactive Questioning The teacher models the whole process with interactive questioning, some choral response, "talk moves" such as "Explain Monique's thinking to your partner." After completing the problem, students might reflect with a partner on the steps the class used to solve the problem. "Students, think back on what we did to solve this problem. What did we do first?" etc. Students might then be given the same or similar problem or set of problems to solve immediately or for homework.	Guided Practice Each student has a copy of the question. Though guided by the teacher, they work independently at times and then come together again. Timing is important. Students might hear, "You have 2 minutes to do your drawing." Or "Put your pencils down. Time to work together again." The debrief might include selecting different student work to share.	Independent Practice The students are given a problem to solve and possibly a designated amount of time to solve it. The teacher circulates, supports, and is thinking about which student work to show to support the mathematical objectives of the lesson. When sharing student work, students are encouraged to think about the work with questions such as, "What do you see Jeremy did?" "What is the same about Jeremy's work and Sara's work?" "How did Jeremy show the 3/7 of the students?" "How does that relate to Sara's equations?" "Turn to your partner and compare your way of solving the problem to theirs."

3 Modes of Independent Work		
Independent Practice The classroom is quiet as the majority of the students work independently. The teacher might circulate or group a small set of students to interact with more regularly. This might be followed by a quick debrief sharing and analyzing student work or challenges faced. The teacher might collect the work and give immediate feedback the next day.	"Think, Pair, Share" Initially the classroom is quiet as students think and work completely independently, often for a very specific amount of time. "You have 2 minutes of think time." The teacher circulates and watches for progress. At a given moment, "You may now quietly show your work or explain your thinking to your partner." Following the pair share, another "independent think time" might ensue or a sharing out to the whole group.	Partner or Small Group Work The classroom is a bit louder as students are working collaboratively. From the beginning of independent work time, students are teamed or partnered in such a way as to promote maximum involvement by each person. For example, 4 sets of students might work in pairs on different problems at the board for 2 minutes and then share out their solutions to the larger group that has been working in pairs on the same problem set.