Grade Level	4th Grade	Content Area	Math
Course Title (grades 9-12 Only)			
Length of Unit	**5 days**	**Time of Year**	**2nd Quarter**
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Students should be able to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division* (4.NBT.1). Students should be able to fluently add and subtract multi-digit whole numbers using the standard algorithm (4.NBT.4). Students must have the skills to needed to multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Students should be able to illustrate and explain the calculation by using equations, rectangular arrays, and/or area models (4.NBT.5).		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	The following methods of instruction are aligned to the Program of Instruction: (1) Common Core State Standard: instruction aligned to K.NBT.1. (2) Direct Instruction: teacher-led and driven instruction. (3) Understanding by Design (UbD): UbD lesson plan template used; title/objective identified for every lesson. (4) RTI & Differentiated Instruction: RTI tier-2 and 3 students identified with DOMA screenings and/or formative assessments. Tier-2 and 3 students provided with differentiated instruction respectively in small group or one-on-one using the intrinsic RTI remedial properties of Singapore Math; that is: (a) Scaffolding: concrete-to-pictorial-to-abstract approach, math problems go from 1 step to 2 steps to multistep; (b) Visual representation: use of the bar modeling method; (c) Differentiation resources: modeling of proficient problem solving, reteaching opportunities, extra-practice, tips for helping struggling students, modeling with thinkalouds, corrective feedback and frequent cumulative review.		
Standard Number and Description *List the Number* and full description for the required Standard.*	**4.NBT.6** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.		
Summative Assessment *Describe a cumulative and comprehensive activity, clearly separate from instruction and guided or independent practice, which allows each student to individually demonstrate mastery of the required Standard. A copy of the summative assessment must be attached to the curriculum sample.*	Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. Students will illustrate and explain the calculation by using equations, rectangular arrays, and an area model. The assessment includes 8 questions.		
Scoring Scale and Mastery Level *Explain how the assessment is scored, to include points per question, how points are awarded, total points possible, criteria necessary to demonstrate mastery, and grading scale. A copy of the answer key and scoring rubric (whichever*	Students earn 1 point for each question for items 1-6, and 2 points for items 7 and 8 (1 point for correct work, 1 point for correct model/explanation). The assessment is worth a total of 10 points. At an 80% mastery level, students need to score 8/10 points to be considered to have mastered the assessed performance objective.		

applicable) must be attached to the curriculum sample.	
Materials/Resources Needed	Unifix cubes, number disks, clear plastic cups, student white boards, teacher white board, white board markers, 9-sided dice. Singapore Math instructional materials.

Lesson (add as needed)	**Instruction**	**Student Activities**
1	**Objective**: **Students will build conceptual understanding of division by creating equal groups from a whole amount of unifix cubes.** • Tell the students, we will begin our study of division by splitting an amount of cubes into equal groups. Invite students to represent the whole number 25. Tell students this whole number is called the dividend. • Explain to students that we are now going to split the 25 cubes into 3 equal groups. On the white board, write 25 ÷ 3. **Guided Practice**: Model putting 1 cube in each of 3 cups until there is a remainder of 1 cube. Model think-aloud during demonstration. Invite students to do the same. Ask students to count the number of cubes in each cup. Write 8, and tell students we call this number the quotient. Ask students if we were able to use all of the cubes. Write R1 next to the quotient. • Repeat this process with several division problems with 2 digit dividends and 1-digit divisors, and model using pictorial representation. **Assessment**: Use DOMA curriculum-based platform to identify tier-2 and 3 students (at-risk students). Provide them with small group or one-on-one differentiated instruction with scaffolding and differentiation tools such as concrete-to-pictorial-to-abstract examples, bar modeling method, modeling with thinkalouds, reteaching opportunities, extra-practice, tips for helping struggling students, corrective feedback and frequent cumulative review. **Independent Practice**: Tell students they will now practice dividing using pictures instead of manipulatives. Distribute Practice Page 1 and explain directions. • Collect Practice Page 1 and check for accuracy and understanding.	Students will show a group of 25 unifix cubes. Students will count the number of cubes in each cup (8). Students will respond no, there is a remainder of 1. Students will divide 2 digit dividends by a 1-digit divisor. Students will group items equally to determine the quotient and remainder. Students will create a pictorial representation to solve division problems.

2	**Objective**: **Students will divide larger 2 digit dividends by a 1-digit divisor using number disks. Students will practice dividing using the algorithm.** • Tell students they will practice dividing larger numbers today. Explain that they will use number disks to divide into equal groups in a more efficient way. Invite students to represent 87 using number disks. This will be the dividend. Write 87 ÷ 4 on the white board. • Model dividing first the tens, then ones into 4 cups. Invite students to do the same in order to determine the quotient and remainder. Write 21 R3 on the white board. Show students how to check for accuracy by using their multiplication skills (21 x 4 = 84 + 3 = 87) • Show students how this concrete representation transfers to use of the division algorithm. Write (87 ÷ 4) using the division bar. Model for students the procedure on dividing the tens first, then ones. (8÷4 = 2; 7÷4=1R3). Explain the procedure of dividing, multiplying, subtracting, and bringing down the next place value. **Guided Practice**: Repeat the above process with additional problems. Provide several opportunities for students to encounter the need to rename remaining (10)s as (1)s (e.g., 51 ÷ 2). Students will use the algorithm to check their work. Students will show their working on student white boards. **Assessment**: Circulate the class to monitor student progress. Provide at-risk students with small group (tier-2) or one-on-one (tier-3) differentiated instruction with scaffolding and differentiation tools such as concrete-to-pictorial-to-abstract examples, bar modeling method, modeling with thinkalouds, reteaching opportunities, extra-practice, tips for helping struggling students, corrective feedback and frequent cumulative review. **Independent Practice**: Students will practice the procedure (algorithm) for long division using a teacher-created Practice Page 2.	Students will show 8 (10)s and 7 (1)s. Students will divide 87 such that there are 2 (10)s and 1 (1) in each cup. Students will answer, the quotient is 21 and the remainder is 3. Students will use number disks to divide 2-digit numbers by a 1-digit divisor. Students will write the quotient and remainder as well as the procedural calculations (÷, x, -, bring down) Students will practice the long division algorithm by completing Practice Page 2.
	Objective: **Students will divide 3-digit numbers by a 1-digit divisor. Students will transfer concrete representation to algorithmic solving.** • Tell students that today they will apply their knowledge of dividing two-digit dividends to dividing with three-digit dividends. Invite students to use their number disks to represent the dividend 437. Write	Students will use 4 (100)s, 3 (10)s, and 7 (1)s to show the dividend 437. Students will divide the 100s, 10s, then 1s using number disks. Students will write the problem using the algorithm on student white boards. Students will check for accuracy using multiplication and addition.

3	(437 ÷ 2) on the white board using the division bar. • Model the division of this whole into 2 equal groups. First divide the (100)s by placing 2 in each cup. Write 2 above the hundreds. Continue the long division procedure. After each step (dividing 100s, 10s, and 1s), give students an opportunity to replicate what you have modeled using their own number disks and student white boards. When the whole number quotient and remainder has been found, check for accuracy using multiplication and addition. **Guided Practice**: Work through several other examples of three-digit long division using number disks and the algorithm. Encourage students to share strategies with their base group members while working. If students are "stuck", they must ask assistance from their team members before requesting assistance from the teacher. **Assessment**: Circulate the class to monitor student progress. Provide at-risk students with small group (tier-2) or one-on-one (tier-3) differentiated instruction with scaffolding and differentiation tools such as concrete-to-pictorial-to-abstract examples, bar modeling method, modeling with thinkalouds, reteaching opportunities, extra-practice, tips for helping struggling students, corrective feedback and frequent cumulative review. **Independent Practice**: Students will practice the procedure (algorithm) for long division using a teacher-created Practice Page 3. • Collect Practice Page 3 to assess for accuracy and understanding.	Students will practice dividing three-digit dividends by one-digit divisors. Students will work together to problem solve and share strategies. Students will practice the long division algorithm by completing Practice Page 3.
4	**Objective**: **Students will divide four-digit numbers by a one-digit divisor. Students will transfer concrete representation to algorithmic solving.** • Tell students that today they will apply their knowledge of dividing two and three-digit dividends to dividing with four-digit dividends. Invite students to use their number disks to represent the dividend 7122. Write (7122 ÷ 3) on the white board using the division bar. • Model the division of this whole into 3 equal groups. First, divide the (1000s)s by placing 2 in each cup. Write 2 above the hundreds. Continue the long division procedure. After each step (dividing 1000s, 100s, 10s, and 1s), give students an opportunity to replicate what you have modeled using their own number disks and student white boards. When	Students will show 7122 with 7 (1000)s, 1 (100), 2 (10)s, and 2 (1)s. Students will divide the 1000s, 100s, 10s, then 1s using number disks. Students will write the problem using the algorithm on student white boards. Students will check for accuracy using multiplication and addition. Students will practice dividing four-digit dividends by one-digit divisors. Students will work together to problem solve and share strategies. Student will create a pictorial representation of this problem on graph paper before solving.

	the whole number quotient and remainder has been found, check for accuracy using multiplication and addition. **Guided Practice**: Work through several other examples of four-digit long division using number disks and the algorithm. Encourage students to share strategies with their base group members while working. If students are "stuck", they must ask assistance from their team members before requesting assistance from the teacher. • Model for students the use of area models to represent and solve division problems. (e.g., A builder has purchased 34 square acres to build a housing community. He would like the land equally spaced for each property. He hopes to build 9 houses on this land. How much property will each home get? How much space will be left over to build a business center?) • Circulate the class to monitor student progress. Provide at-risk students with small group (tier-2) or one-on-one (tier-3) differentiated instruction with scaffolding and differentiation tools such as concrete-to-pictorial-to-abstract examples, bar modeling method, modeling with thinkalouds, reteaching opportunities, extra-practice, tips for helping struggling students, corrective feedback and frequent cumulative review. **Independent Practice**: Tell students they will now practice their long division skills for 2 to 4-digit dividends. The teacher will write a dividend on the board. Student will copy this whole number onto their student white boards. Each student will roll his or her 9-sided die to determine the divisor. Students will use the algorithm for long division to solve the practice problems. If a student should finish their problem quickly, they may roll their die again and divide using a different divisor. • Monitor student progress to check for accuracy and understanding.	Students will accurately solve 2 to 4-digit dividends by a 1-digit divisor using the long division algorithm.
5	**Objective**: **Students will find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. Students will illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.**	Students will complete the summative assessment to determine skill mastery.

Practice Page 2: Complete the problems below. Please show all of your workings.

1. $2\overline{)63}$

2. $3\overline{)74}$

3. $4\overline{)89}$

Practice Page 1

1. Draw (10) and (1) number disks to show 28 ÷ 2.

Quotient: _____ Remainder: _____

2. Draw (10) and (1) number disks to show 53 ÷ 4.

Quotient: _____ Remainder: _____

3. Draw (10) and (1) number disks to show 80 ÷ 6.

Quotient: _____ Remainder: _____

Practice Page 3: Complete the problems below. Please show all of your workings.

$$2\overline{)285}$$

$$5\overline{)134}$$

$$6\overline{)769}$$

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Summative Assessment

4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.)

Directions: Complete the problems below. Please show all of your workings in the space provided.

1. 38 ÷ 3 =
2. 91 ÷ 7 =
3. 127 ÷ 5 =
4. 562 ÷ 4 =
5. 2047 ÷ 6 =
6. 6390 ÷ 8 =
7. Nadine needed to cut a piece of paper into small pieces, for each one of her friends. The paper is 14 inches long and 8 inches wide. If she wants each piece to be one square inch, how many friends will be able to receive a piece of paper . Write the equation you will use to solve this problem, and use a picture (area model) to help explain your answer.
8. Mac needed to paint his 1720 square foot garage floor. Each container of paint can cover 9 square feet. How many cans of paint will he need to paint the floor completely? Draw an array on graph paper to represent this problem, and then solve.

Answer Key:

1. 12 R2
2. 13
3. 25 R2
4. 140 R2
5. 341 R1
6. 796 R2
7. 112 friends
8. 192 cans