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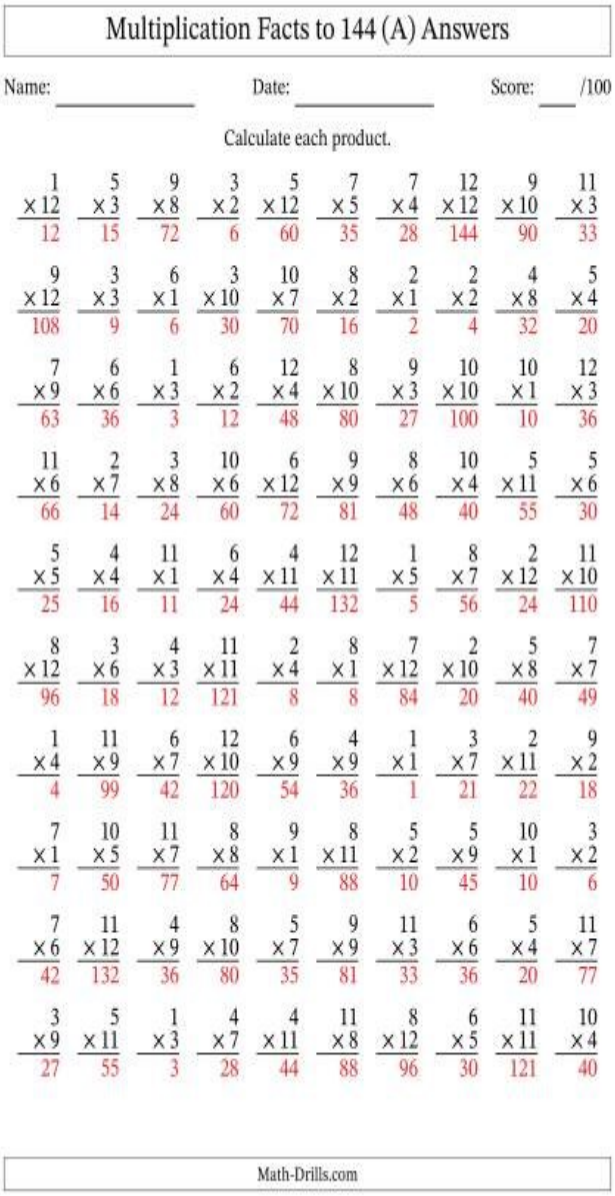
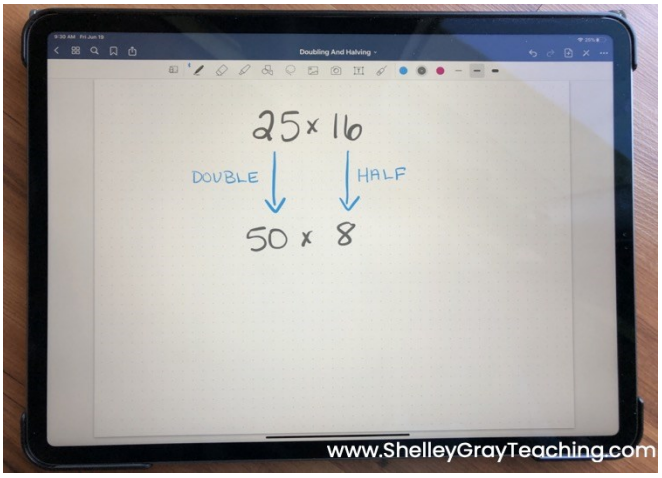
BASIC 8

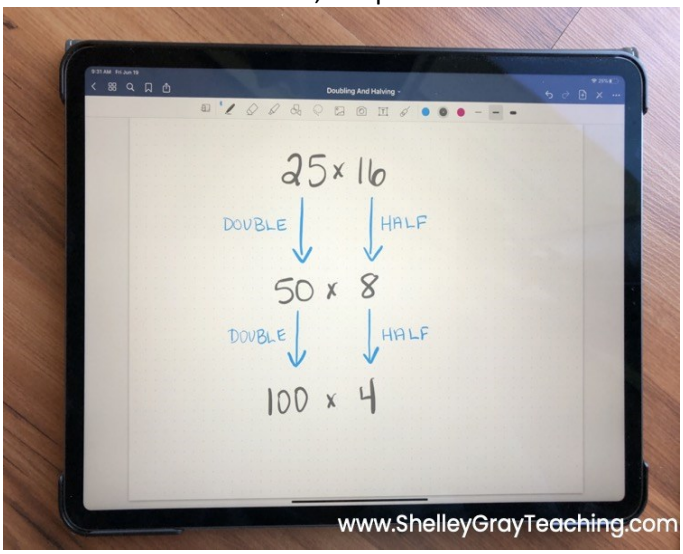
WEEKLY LESSON PLAN – WEEK 2

Strand:	Number	**Sub-Strand:**	Number Operations		
Content Standard:	B8.1.2.1 Apply mental mathematics strategies and number properties used to solve problems				
Indicator (s)	B8.1.2.1.1 Multiply and divide by multiples of 10 including decimals and the benchmark fractions B8.1.2.1.2 Apply mental mathematics strategies and number properties to do calculation B8.1.2.1.3 Apply mental mathematics strategies to solve word problems.			**Performance Indicator:** Learners can apply mental mathematics strategies to solve word problems.	
Week Ending	07-07-2023				
Class	B.S.8	**Class Size:**		**Duration:**	
Subject	Mathematics				
Reference	Mathematics Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook.				
Teaching / Learning Resources	Charts, Pictures, Posters		**Core Competencies:**	Demonstrate a thorough understanding of a generalized concept and facts specific to task or situation	
DAY/DATE	**PHASE 1 : STARTER**	**PHASE 2: MAIN**			**PHASE 3: REFLECTION**

MONDAY	Learners brainstorm to identify examples of multiplication facts.	1. Assist Learners to identify multiplication facts up to 144. 2. Learners brainstorm to identify decimal names of the benchmark fractions converted to decimals or percentages (and vice versa). 3. Demonstrate multiplying decimals by 10, 100 and 1000. 4. Learners practice multiplying decimals by 10, 100 and 1000. Multiplication Facts to 144 (A) Name: _____ Date: _____ Score: ___ /100 Calculate each product. 1 × 12, 5 × 3, 9 × 8, 3 × 2, 5 × 12, 7 × 5, 7 × 4, 12 × 12, 9 × 10, 11 × 3 9 × 12, 3 × 3, 6 × 1, 3 × 10, 10 × 7, 8 × 2, 2 × 1, 2 × 2, 4 × 8, 5 × 4 7 × 9, 6 × 6, 1 × 3, 6 × 2, 12 × 4, 8 × 10, 9 × 3, 10 × 10, 10 × 1, 12 × 3 11 × 6, 2 × 7, 3 × 8, 10 × 6, 6 × 12, 9 × 9, 8 × 6, 10 × 4, 5 × 11, 5 × 6 5 × 5, 4 × 4, 11 × 1, 6 × 4, 4 × 11, 12 × 11, 1 × 5, 8 × 7, 2 × 12, 11 × 10 8 × 12, 3 × 6, 4 × 3, 11 × 11, 2 × 4, 8 × 1, 7 × 12, 2 × 10, 5 × 8, 7 × 7 1 × 4, 11 × 9, 6 × 7, 12 × 10, 6 × 9, 4 × 9, 1 × 1, 3 × 7, 2 × 11, 9 × 2 7 × 1, 10 × 5, 11 × 7, 8 × 8, 9 × 1, 8 × 11, 5 × 2, 5 × 9, 10 × 1, 3 × 2 7 × 6, 11 × 12, 4 × 9, 8 × 10, 5 × 7, 9 × 9, 11 × 3, 6 × 6, 5 × 4, 11 × 7 3 × 9, 5 × 11, 1 × 3, 4 × 7, 4 × 11, 11 × 8, 8 × 12, 6 × 5, 11 × 11, 10 × 4 Math-Drills.com	Learners brainstorm to identify division facts up to 144.

			
TUESDAY	Discuss with Learners on the mental mathematics strategies and number properties	1. Assist Learners to use annexing then adding zero to multiply two digits by two digits. 2. Demonstrate using halving and doubling to multiply two digits by two digits. 3. Learners to practice using halving and doubling to multiply two digits by two, three and four digits. 4. Assist Learners to use the distributive property to multiply two digits by two, three and four digits. **Annexing by Addition**	Learners brainstorm to solve word problems involving multiplication using the mental mathematics strategies **Exercise;** 1. 24 folders each has 56 sheets of

		If you start off with the equation: 2x + 6 = 4y + 16 You may add a number to either side of the equation. For example, you may add 4 to either side: 2x + 10 = 4y + 20 Here annexing simply means adding. **Annexing by Mulitplication** If you start off with the equation: 44,670 x 5 = 223,350 You can multiply either side of they equation by annexing zero: 446,700 x 5 = 2,233,500 In this case annexing means multiplication. **USING DOUBLING AND HALVING** Doubling and halving works best when one of the factors is even, and when the other factor is a number like 5, 10, 25, or 50. For example, doubling and halving would be an efficient strategy for: • 50×18 • 120×5 • 25×20 To use halving and doubling, you simply **half** one of the factors and **double** the other. Take this example. To solve 25×16, we could double the 25 to make 50 and then half the 16 to make 8. Suddenly this problem becomes much easier to solve!  We could actually take this one step further if we wanted to, by doubling the 50 to make 100 and halving the 8 to make 4. Now	paper inside them. How many sheets of paper are there altogether? 2. A carton holds 24 packets of biscuits. Each packet has 12 biscuits. How many biscuits can be packed in 45 cartons? 3. A bicycle costs $ 215. How much will be paid for 87 such bicycles? 4. The monthly salary of a man is $ 2,625. What is his annual income by salary?

		we are left with 100×4. So, the product of 25 and 16 is 400.  	
THURSDAY	Through questions and answers, review Learners knowledge on the previous lesson.	1. Assist Learners to apply problem solving strategies to calculate mathematics word problems 2. Learners brainstorm to use mental strategies to Play mental maths word games. 3. Provide opportunities for learners to use mental strategies, short methods and sundry tables to develop fluency in solving problems **How to use a problem-solving strategy to solve word problems;** 1. Read the problem. 2. Identify what you are looking for. 3. Name what you are looking for. 4. Translate into an equation. 5. Solve the equation using proper algebra techniques. 6. Check the answer in the problem to make sure it makes sense. 7. Answer the question with a complete sentence. Mental Math—- Tricks and strategies 1. Mental Math strategies for addition: Break a big number into smaller parts to simplify addition. **For example, how will we do it in our head if someone asks us to add 35 and 59?** • We break 34 and 58 into small numbers. 35 is 30 + 5 and 59 is 50 + 9	Reflect on the application of mental mathematics strategies.

		• It is now easy for us to add 30 and 50. 30 and 50 add up to 80 • We know that 5 + 9 is 14 • Finally, we add 80 and 14 to our brain • So, the answer is 94 Abacus mental math might be tricky for many students. **For that, let us try this Mental Math trick with another example. Let us use this technique to add up 68 and 45** • We break 68 and 45 into smaller numbers. 68 is 60 + 8 and 45 is 40 + 5 • It is now easy for us to add 60 and 40. 60 + 40 is 100 • We know that 8 + 5 is 13 • We add up 100 and 13 in our brain • The answer turns out to be 113 **Now let us try adding up three-digit numbers using this technique. Add 175 + 258** • 175 is 100 + 70 + 5 • 258 is 200 + 50 + 8 • First, let us begin by adding 100 and 200. It comes out to be 300. • Now, if we add 70 and 50, how much is that? We know that 7 + 5 is 12. So, 70 + 50 is 120. • Now let us add 5 and 8. It is 13. • Finally, we add up 300, 120, and 13. What is 120 + 13? That's 133. • And if we add 300 to 133. The answer is 433. • We can confirm our answer by taking a calculator and adding 175 and 258. The answer is 433. **Another example: Add 548 and 678** • We break 548 into 500, 40 and 8 • We divide 678 into 600, 70 and 8 • Let us add up 500 and 600. The result is 1100. • Add 70 and 40. We get 110. • Now let us add up 8 and 8. We get 16. • Add all the results. 1100 + 110 + 16 = 1226 2. Mental Math strategies for subtraction: Break a big number into smaller ones to simplify subtraction. **For example, subtract 38 from 75.**	

		• Split 75 into 70 and 5. Split 38 into 30 and 8. • 70 – 30 = 40 • 5 – 8 = -3 • 40 – 3 • So, the answer is 37. 3. **Mental Math strategies for multiplication: What is** six times four? We know that it equals 20 because we have learned **multiplication tables. But suppose we don't know the tables, and we are asked to solve this simple multiplication equation. How will we proceed?** • Multiplication means repeated addition. So, six times 4 means that we add 4 six times. • 4 + 4 + 4 + 4 + 4 + 4 = 24. So, six times four is 24. The value for 4 times six is the same. **Let us find the value for six times five.** • 5 + 5 + 5 + 5 + 5 + 5 = 30 • So, 6 times 5 is 30. • It is the same as 5 times 6. **Another example: What is seven times three?** • 3 + 3 + 3 + 3 + 3 + 3 + 3 = 21 • So, seven times three is 21. **Let us step a little, using these Mental Math tricks with two-digit numbers. What are 20 times 13?** • Sometimes it might be useful to think of Math in terms of money. So, imagine if you have 13 twenty-dollar bills. • What is the value of 13 twenty-dollar bills? We know the value of five twenty-dollar bills is 100. Another set of five-dollar bills is another 100. So, that is ten twenties. We have three twenties left over. • Three twenties are sixty. • Let us add up all the results. • 100 + 100 + 60 = 260 • So, 13 times 20 or 20 times 13 is 260. • Another way we can get the same answer is if we break down 13 into 10 + 3 and multiply the smaller parts with 20. • 20 (10 + 3) = (20 * 10) + (20 * 3) • 200 + 60 = 260. So, we get the same answer this way.	

		What is 99 * 80? • (100 – 1) 80 • (100*80) – (1*80) • 8000 – 80 • (7900 + 100) – 80 = 7900 + 20 = 7920 • So, the answer to 99 times 80 is 7920. We will get the same value if we confirm the answer using a calculator. 4. **Mental Math strategies for division: Let us divide 324 by 2. How can we do so mentally?** • The trick is to divide the first two digits, 32 by 2. We get 16. • Now divide the third digit four by 2. We get 2. • Combine the two results. The answer is 162. • We get the same result if we solve this equation using a calculator.	

Name of Teacher: ***School:*** ***District:***