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Technology Integration Workshop
2020

Unit Title: Numbers and Operations
Grade Level: 4th
Subject Area: Math
Duration/Length/Number of class periods: 5 Days (add to Math Review)
Description: multiply a multi-digit number by 4.
Established Goals **(National, State, Local):** Numbers and Operation Demonstrate mastery of multiplication and division basic facts; multiply multi-digit numbers; solve real-world and mathematical problems using arithmetic. 4.1.1.1 multiply basic facts

What Enduring Understandings are desired? Number sense develops through experience and practice.
What Essential Questions will be considered? How can you use multiplication outside of school? When should you multiply? How does multiplication help solve division problems?

Students will know / be able to: SWBAT Multiply basic facts, multi-digit numbers, solve real world problems using multiplication.

Description The goal of this 5-day Multiplication Kick-Off is to review multiplication facts and to build a deep understanding of why we multiply! These five lessons provide a gradual learning progression that slowly increases with complexity. After teaching these lessons, I could then implement daily fact and algorithm homework practice (1-digit x multi-digits).	Formative	Summative	Introductory Activity	Learning Activity	Student Technology Used	Teacher Technology Used	ISTE Standards
Day 1 (NUMBER TALK) Monster Plate creation. The goal of this activity is to help make multiplication understandable, fun, and memorable! I want to give students a context to discuss multiplication in the upcoming lessons. Not only that, students will be creating monster paper plates so student engagement is high! For each of the following lessons, students will have monster paper plates around the room as a reference and visual aid. Students will continually go back to their monster problem to reason with multiplication. Create monster plates (6x8 is 48 so don't hate) 1. Introduce opening activity by having a large group partner to partner share Q: How many numbers can you and your partner find rhyming words to? Write the numbers and the rhyming word or phrase that goes with it(ie 2/shoe, 3/tree, 48 don't hate, 30/dirty)			**x**	**x**		**Doc cam**	

2. Scholars will then pick their favorite combination, use a multiplication to find a multiplication problem to use table and create a plate for display around the room 3. Share answers and record 4. Show a finished plate. Pic of monster and 6x8 is 48 so close the gate 5. Allow work time. 6. http://www.imagechef.com/meme-maker (DL Option)							
Day 2 (NUMBER TALK) 1. start by teaching x0, x1, and x2 as these are the easiest multiplication facts. Many of my students will still mixing up 5 x 0 and 5 x 1. They usually don't truly understand the meaning behind x0 and x1. 2. Students use both a number line on paper and unix cubes to show how to multiply by 0, 1, and 2. The goal is for students to make the connection between repeated addition (something students are very familiar with) and multiplication. 3. To further build number sense and a deeper understanding of multiplication, students analyzed patterns they noticed between counting by ones and counting by twos. https://www.ixl.com/math/grade-4				**x**			
Day 3(NUMBER TALK) 1. we move onto x4 facts so that we could build upon previous learning of x2 facts. It's easier for students to learn their x4 facts when they understand x2 facts. They quickly catch on that 4 x 6 is when you "just take two jumps of 6 and then double it."				**x**			

2. Students will use both a number line on paper and unfix cubes to show how to multiply by 4. The goal was for students to make the connection between repeated addition (something students are very familiar with) and multiplication. 3. To further build number sense and a deeper understanding of multiplication, students analyze patterns they notice between counting by fours and counting by twos. 4. Finally, we will apply new learning to a simple algorithm. Again, students grasp this concept quickly and usually very successful. https://www.youtube.com/watch?v=UJY1_fzzM6Y							
Day 4 (NUMBER TALK) 1. teach x3 and x6 next as students can use the x3 facts to get to x6 facts. To solve 5 x 6, you can first take five jumps of three (5x3) and then double it to get 5 x 6. For this reason, it's easier for students to learn x6 facts right alongside x3 facts. 2. Students use both a number line on paper and unix cubes to show how to multiply by 3 and how to multiply by 6. The goal is for students to make the connection between repeated addition (something students are very familiar with) and multiplication. 3. To further build number sense and a deeper understanding of multiplication, students analyzed patterns they noticed between counting by threes and counting by fours. Finally, we will apply new learning to a simple algorithm. https://www.youtube.com/watch?v=aivn0Lh4M9E	X	X		X			

Day 5 We will move onto x10, x5, and x9. Students discover how to use 10 to better understand x5 and x9 facts. “Times five” is just “half of x 10.” For example, to find 7 x 5, you can “take seven jumps of ten and then split the product in half.” Students also learn that 6 x 9 is the same as “six jumps of ten – six.” For this reason, it’s easier for students to learn x9 and x5 facts alongside x10 facts. 2. Students use both a number line on paper and unix cubes to show how to multiply by 3 and how to multiply by 6. The goal is for students to make the connection between repeated addition (something students are very familiar with) and multiplication. 3. To further build number sense and a deeper understanding of multiplication, students analyzed patterns they noticed between counting by fives and counting by tens as well as counting by nines and counting by tens. 4. Finally, we apply new learning to a simple algorithm. https://www.ixl.com/math/grade-4 Final project is to create a multiplication game https://www.weareteachers.com/22-fun-hands-on-ways-to-teach-multiplication/							

Materials, tools and resources: cubes ipads doc cam number lines *get number talks in order, Check on IXL account (September)
Unit Plan Author Chris Pierce, Obama Elementary
Additional credit given to: