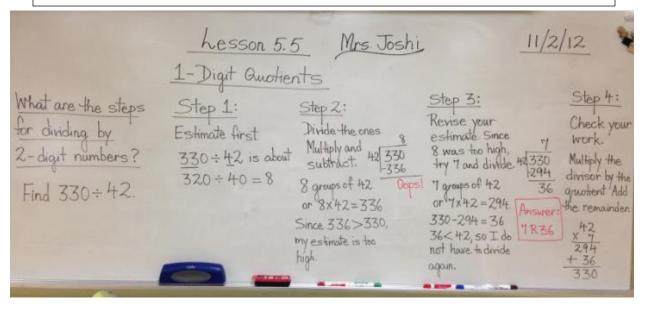
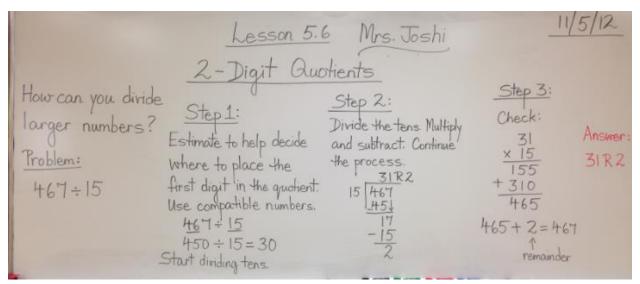
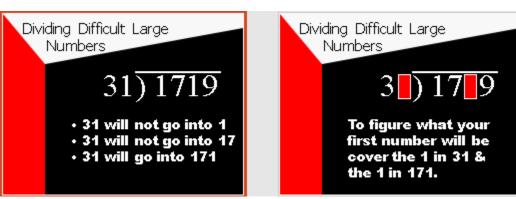
#### Dividing Multi-Digit Numbers-(6.NS.2)

#### **Divisibility Rules**

Divisor	Divisibility Condition	Example
2	The last digit is even (0, 2, 4, 6, or 8).	38:8 is even which is divisible by 2.
3	The sum of the digits is divisible by 3. For large numbers, digits may be summed iteratively.	4,053 => 4+0+5+3=12 and 1+2=3 which is clearly divisible by 3.
	Add the ones digit to twice the tens digit. (All digits to the left of the tens digit can be ignored.)	7,372 : 2 + (2 x 7) = 16 which is clearly divisible by 4.
4	The last two digits divisible by 4.	20,516 : 16 is divisible by 4.
	If the tens digit is even, and the ones digit is 0, 4, or 8. If the tens digit is odd, and the ones digit is 2, or 6.	728 : 2 is even, & the last digit is 8. 356 : 3 is odd, & the last digit is 6.
5	The last digit is 0 or 5.	1,285 : the last digit is 5.
6	If it is divisible by 2 and by 3.	2,562: 2 + 5 + 6 + 2 = 15, which it is divisible by 3, and the last digit is even which is divisible by 2, so the number is divisible 6.
8	If the last three digits are divisible by 8, then the entire number is also divisible by 8.	1,024 : 024 is divisible by 8 so, 1,024 is also divisible by 8.
9	The sum of the digits is divisible by 9. For large numbers, digits may be summed iteratively.	1,269 => 1+2+6+9=18 and 1+8=9 which is clearly divisible by 9.
10	The last digit has to end in zero.	20, 440, 560, 9940, 10,000





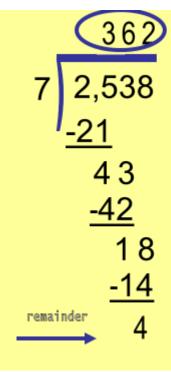




# Indicator 1 Class Notes by Mrs. Joshi Dividing Difficult Large Numbers Dividing Difficult Large Numbers Dividing Difficult Large Numbers Now multiply $31 \times 6$ . Place that 209 number next to the 5 in your quotient. Dividing Difficult Large Numbers 31) Subtract & your answer is 56 R23

- √Think of a your seven facts
- √7x3=21
- ✓ Place the 3 above the bar
- ✓ Subtract 21 from 25
- ✓ Bring down the next digit in the dividend ~ THREE

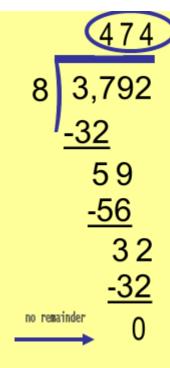
 $\checkmark$  43 ÷ 7 or how many 7's are in 43  $7 \times 6 = 42$ 



$$\sqrt{7}$$
 x 6 = 42 ~ Place the 6 above the division bar

- ✓ Subtract 42 from 43
- ✓ Bring down the next number in the dividend ~ EIGHT
- √How many 7's are in 18
- $\sqrt{7} \times 2 = 14$
- ✓ Place the 2 above the bar
- ✓ Subtract 14 from 18
- ✓ Our quotient is 362 with a remainder of 4

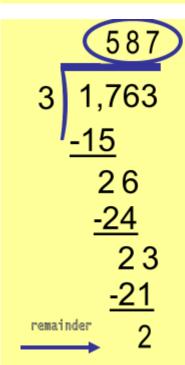
- √ 37 ÷ 8 or how many groups
  of 8 are in 37
- √Think of a your eight facts
- $\sqrt{8} \times 4 = 32$
- ✓ Place the 4 above the bar
- ✓ Subtract 32 from 37
- ✓Bring down the next digit in the dividend ~ NINE
- $\sqrt{59}$ ÷ 8 or how many 8's are in 59 8 x 7 = 56



- ✓8 x 7 = 56 ~ Place the 7 above the division bar
- ✓ Subtract 56 from 59
- ✓ Bring down the next number in the dividend ~ TWO
- √ How many 8's are in 32
- $\sqrt{8} \times 4 = 32$
- ✓ Place the 4 above the bar
- ✓ Subtract 32 from 32
- ✓ Our quotient is 474

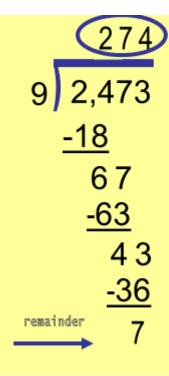
- √ 17 ÷ 3 or how many groups
  of 3 are in 17
- √Think of a your three facts
- $\sqrt{3} \times 5 = 15$
- ✓ Place the 5 above the bar
- ✓ Subtract 15 from 17
- ✓ Bring down the next digit in the dividend ~ SIX

 $\sqrt{26 \div 3}$  or how many 3's are in 26 8 X 3 = 24



- $\checkmark$ 3 x 8 = 24 ~ Place the 8 above the division bar
- ✓ Subtract 24 from 26
- ✓ Bring down the next number in the dividend ~ THREE
- √How many 3's are in 23
- $\sqrt{3} \times 7 = 21$
- ✓ Place the 7 above the bar
- ✓ Subtract 21 from 23
- ✓ Our quotient is 587 with a remainder of 2

- √ 24 ÷ 9 or how many groups
  of 9 are in 24
- √Think of a your nine facts
- $\sqrt{9} \times 2 = 18$
- ✓ Place the 2 above the bar
- ✓ Subtract 18 from 24
- ✓ Bring down the next digit in the dividend ~ SEVEN
- $\sqrt{67 \div 9}$  or how many 9's are in 67 9 x 7 = 63



- ✓9 X 7 = 63 ~ Place the 7 above the division bar
- ✓ Subtract 63 from 67
- ✓ Bring down the next number in the dividend ~ THREE
- √ How many 9's are in 43
- $\sqrt{9} \times 4 = 36$
- ✓ Place the 4 above the bar
- ✓ Subtract 36 from 43
- ✓ Our quotient is 274 with a remainder of 7

- ✓ Place the 2 above the bar
- ✓ Subtract 6 from 6
- ✓ Bring down the next digit in the dividend ~ EIGHT

$$\sqrt{8} \div 3$$
 or how many 3's are in 8  $3 \times 2 = 6$ 

$$\begin{array}{r}
2 & 2 & 8 & 1 \\
3 & 6,843 \\
 & \underline{-6} \\
0 & 8 \\
 & \underline{-6} \\
2 & 4 \\
 & \underline{-24} \\
0 & 3 \\
 & \underline{-3} \\
0
\end{array}$$

- ✓ Place the 2 above the bar
- ✓ Subtract 6 from 8
- ✓ Bring down the next digit in the dividend ~ FOUR
- √How many 3's are in 24
- ✓ Place the 8 above the bar
- ✓ Subtract 24 from 24
- ✓ Bring down the THREE
- $\checkmark$  3 x 1 = 3  $\sim$  Now subtract
- ✓Our quotient is 2,281

