

4,5,6 Math Strategies: Where's the Math

Strategy: Column-up Division

Example: Divide 3,749 by 7; $7 \overline{)3749}$; 7 divided into 3,749

1		5	3	5	r 4
2		2	1		
3		2	1	2	
4		1	1	3	
5	7	3	7	4	9
6	-	7			
7		3	0		
8	-	1	4		
9		1	6		
10	-	1	4		
11		2	4		
12	-		7		
13		1	7		
14	-		7		
15		1	0		
16	-		7		
17			3	9	
18			- 2	1	
19			1	8	
20			- 1	4	
21				4	

The Process:

Have students compare the divisor (7) and the first digit (3) in the dividend 3749

- $7 > 3$
so, you cannot divide

Have students compare the divisor (7) and the first two digits in the dividend (37)

- $7 < 37$
so, you can divide

If a student does not know exactly how many times 7 goes into 37 then have them start by using the numeral 1 (see row 4)

Multiply the numeral 1 (see row 4) by the divisor 7 to get a number to subtract from (37)

After subtracting, compare the divisor (7) with (row 7), you find:

- $7 < 30$
so, continue dividing

The process continues until the divisor (7) becomes larger than the numeral being divided into (2) (see row 11)

- $7 > 2$
so, bring down the next number in the dividend (4) (see row 11)

Compare:

- $7 < 24$
so, divide (7) into 24 and put the numeral above that dividend's numeral (4) (see row 4) in the quotient

Repeat the process until there are no more subsequent numbers in the dividend

Conclude by adding the numerals of each column in the quotient

Consider writing your answer as $535\frac{4}{7}$

Where's the Math?

POSITION VALUE IS THE KEY

Students will develop a deep understanding that all quotient numerals above the dividend's numeral seven have a position value of one hundred. Hence, the numerals in rows 6, 8, and 10 are really 700, 1400, and 1400 respectively. Equally important are the remaining quotient numerals and their respective dividend numerals in the tens position and ones position.

Emphasize to students that vertical lines maintain a separation between the different position values. Students can easily create vertical lines by turning their lined paper sideways.