

Dear Parents,

As you probably noticed, your son or daughter has used a variety of methods for solving multi digit multiplication problems other than the algorithm. We wanted to give you some information about how we have introduced long division and will continue teaching it for a week or so. Our Indiana Standard states:

MA.4.C.3 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. Describe the strategy and explain the reasoning.

This does not include using the algorithm for division, so we will be using other strategies. Indiana Standards now place the algorithm in 6th grade. We have worked with the students to find out what strategies they were already using. These strategies are what they gave us.

Example problem  $50 \div 3$

1. Skip counting 3, 6, 9, 12, ...
2. Circles- drawing three circles and putting tally marks or numbers inside to show groups.
4. Repeated subtraction-  $50-3 = 47$ ,  $47-3 = 44$ , ...
5. Guess and check  $15 \times 3 = 45$ ,  $16 \times 3 = 48$ ,  $17 \times 3 = 51$

As we move into bigger numbers, the students changed or needed to add onto strategies.

1. Circles- this time writing larger numbers in the circle.
2. Place Value- Breaking apart the numbers into thousands, hundreds, tens, ones.
3. Partial Quotient- Breaking apart the number into multiplication problems we may know.
4. Area Method - this is the reverse of the method we used for multiplication.
5. Number bonds-Breaking apart the number into "division friendly" numbers.

We understand this is very different from the way we learned long division in school, but this should lead to a better understanding of the algorithm and division in the long run. We have also placed videos made by our math coach on our websites. To access these, go to [www.mcsin-k12.org](http://www.mcsin-k12.org), and click on student links on the left sidebar. Next choose HIS and scroll down to click on a teacher's picture to get to the website. Also during this time, we will be providing logic opportunities to do along with multiplication and division fact practice for at home practice.

Thanks for your help!

4th Grade Math Teachers