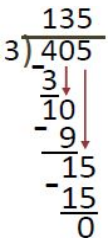
February 2021

Home Connections in Mathematics

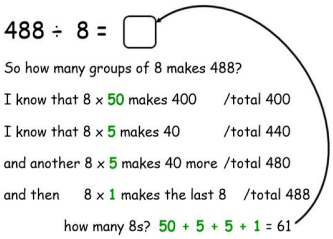
Supporting Understanding of Division

For many students, division is a procedure to be learned and an unfriendly one at that. Many of us learned to *Divide, Multiply, Subtract, Bring Down* in a digit-focused procedure.



Granted, some do become proficient at this procedure. For many students and adults, however, the concept of division is lost in replicating the procedure. How can we keep the focus for children on understanding the meaning of division and help them to be fluent in tasks requiring division at the same time?

First: Children need to understand that division and multiplication are related operations. Division shouldn't be scary. We want our children to think forwards and backwards in multiplicative situations and know they could use what they know about multiplication to handle division problems.



Second: Children need to get comfortable with a variety of situations where division makes sense.

Rate: Kyle earned $72 for his 6 hours of work at the Sub Shack on Friday night. How much does he make per hour?

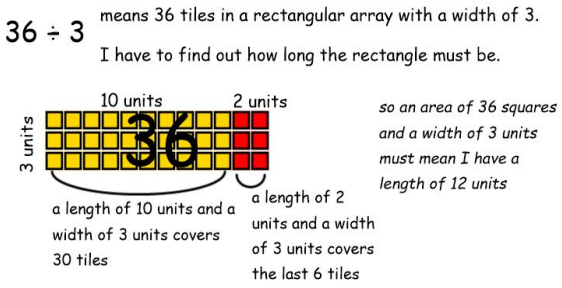
Comparison: Tina read 25 pages, which was 5 times as many pages as Gloria read. How many pages did Gloria read?

Area: The parallelogram covers 32 square units and has a base that is 8 units wide. How tall must the parallelogram be?

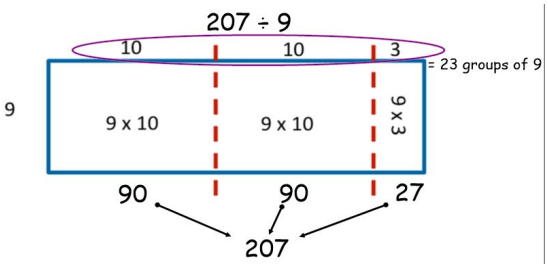
Combinations: Shirley's Pizza has 8 possible kids' combo meals with a main course and a side dish. If they offer 2 side dishes, how many main course dishes must they offer?

Third: Visuals and Strategies Help A Lot! Many children in Thames Valley schools are learning how to use arrays and number lines to facilitate their thinking in multiplication and division situations. These representations allow students to see and work with mathematical relationships and deepen understanding.

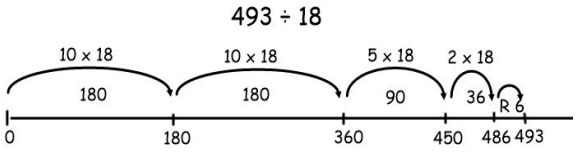
1) Building arrays are a particularly useful place for students to begin learning about



multiplication and division as they show equal rows and columns leading to a total number of squares. After building, our children can transition to using grids and open arrays to become more efficient.



2) Number Lines also support our children to keep a sense of the numbers as they work to find a solution for division questions. There is no one best way to handle division.



so ...I found there are 27 equal jumps of 18 with a remainder of 6 inside 493

Our children are much better off, however, if we encourage them to work from a place of understanding rather than rule-following.