NBT. 5 Multi-Digit Multiplication Goal: I will be able to multiply multi-digit whole numbers in 3 ways and identifyerrors in all 3 methods.

Vocab

- ① factor: Numbers being multiplied ② product: answer to multiplication problem

 - 3 partial product: numbers add to get final product

4th Grade Review

Is 4,000 a reasonable estimate for the product of 312 × 9? Why or why not?

estimate.

No. 40001s

No. 40001s

Not a reasonable
$$300 \times 10 = 3,000$$

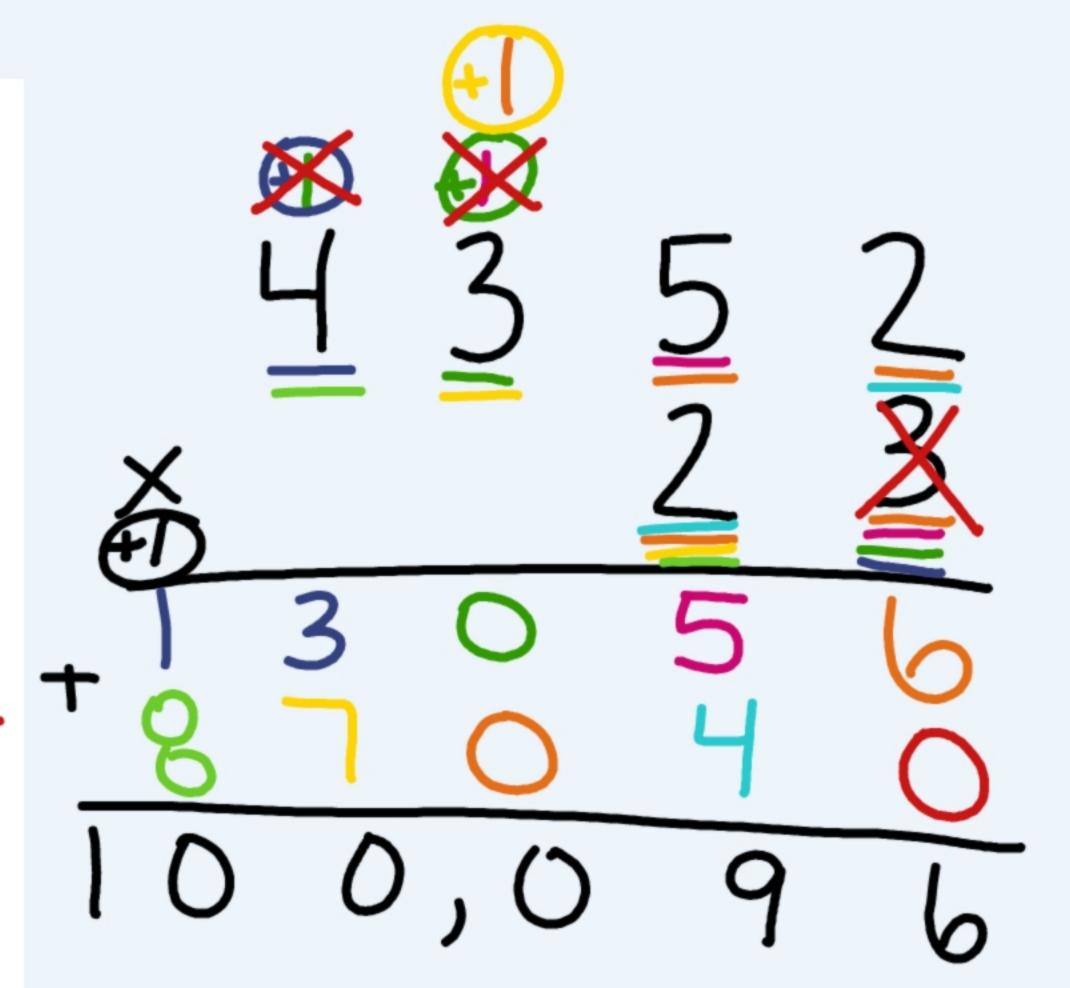
Setween or near these 2 estimates

Steps to Success for Standard Algorithm

- 1. Multiply the bottom ones digit by the top ones digit.
 - --Write ones digit below and carry any tens digit to top of next place value.
- 2. Multiply bottom ones digit by the top tens digit, and add any digit that was carried.
 - --Write ones digit below and carry any tens digit to top of next place value.
- 3. Multiply bottom ones digit by the top hundreds digit, and add any digit that was carried.
 - -- Write ones digit below and carry any tens digit to top of next place value.
- 4. Repeat same process if there is a thousands digit in the top.

ain ones bottom digit

- 5. Cross out what you carried, cross out what you multiplied by, and add a zero below the partial product in the ones place if more than one digit in the bottom number.
- 6. Multiply the bottom tens digit by the top ones, tens, hundreds, and thousands digit.
 - --Write ones digit below and carry any tens digit to top of next place value.
- 7. Repeat cross out process and adding zeros to partial product if need to multiply by bottom hundreds digit.
- 8. Add the partial products making sure all are aligned by place value.



Practice Problems

