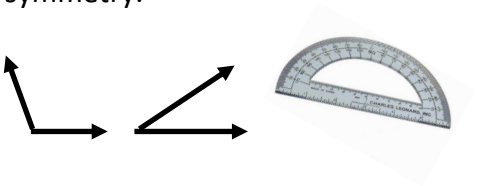
Angle Measures and Shapes

Students will explore angles, angle measurement, shapes, and patterns by drawing points, lines, segments, rays, and angles. They analyze figures based on attributes such as angle measurement, parallel and perpendicular lines, and symmetry.



Measurement

Students work with customary and metric systems of measurement. Within a single system, they will express measurements of a larger unit in terms of a smaller unit. For example, they know that 1 foot is 12 times as long as 1 inch.

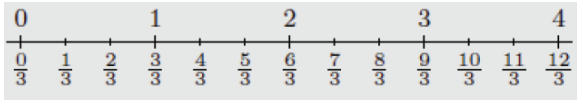
Students continue to apply area and perimeter formulas in real world and mathematical problems.

Fractions

Students understand the unit fraction and apply this knowledge to adding and subtracting fractions.

$$\frac{2}{8} + \frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{5}{8}$$

Students see fractions on a number line and develop an understanding of a fraction as a number. This number line is marked off in thirds.



Students understand equivalent fractions.

$$\frac{2}{3} = \frac{8}{12}$$

The left shape is divided horizontally into 3 equal rectangles. The shaded region shows 2/3 of the whole. The right shape is divided into 4 x 3 small rectangles of equal area, and the shaded area makes up 4 x 2 of these. It represents $\frac{4 \times 2}{4 \times 3}$

College and Career Ready Standards for Mathematics

Grade 4

Key Concepts

- Multi-digit multiplication & division
- Fraction operations & equivalence
- Angle measure & shapes
- Measurement & conversion within one system

View Grade 4 CCRSM Standards using the short URL or the QR Code below.

https://goo.gl/Nu6zcX

Multiplication Strategies

Students build on strategies from 3rd grade. They use related facts, arrays, or the distributive property.

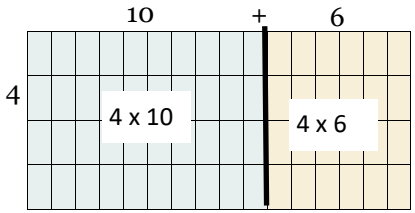
4 x 9 could be seen as

4 x 10 = 40 4 x 5 = 20

40 - 4= 36 **OR** 4 x 4 = 16

Students continue to use base ten blocks or area models.

This shows 16 x 4.



Students apply the distributive property to multiply 1-digit by 2-digit numbers.

4 x 16 =

(4 x 10) + (4 x 6) = 64

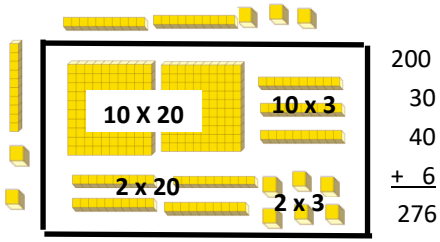
Students also apply the strategy to multiply 2 digit by 2 digit numbers.

12 x **23** = 276

(**10** x **20**) + (**2** x **20**) + (**10** x **3**) + (**2** x **3**)

Hands-On Area Models

Students build area models to solve 2-digit by 2-digit problems.



Partial Products

Students use partial products without hands-on models. They use the distributive property to find partial products then add to find the total product.

18 x 23 can be shown as

	10	8
20	200	160
3	30	24

18 x 23 = 200 + 160 + 30 + 24

= 414

Division Strategies

Partial Quotients

Students ask themselves how many groups of the divisor are in the entire dividend choosing the multiple of the divisor they are comfortable with as long as it is less than the dividend. They then subtract the multiple chosen from the dividend. Repeat the steps until the remainder is zero.

These partial quotients will be added together.

5) 485			
-400	80 x 5		80
85			10
-50	10 x 5		+ 7
35			
-35	7 x 5		97
0			

Multiplying Up

Students understand the relationship between multiplication and division. Multiplying up is a strategy that supports the connection.

624 ÷ 6

6 x 40 = 240

6 x 40 = 240

480

6 x 20 = 120

600

6 x 4 = 24

104 624

Think about helpful multiplication facts.

624 ÷ 6 = 104