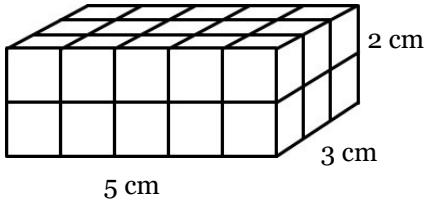
Volume

Students recognize volume as an attribute of solid figures. They work with unit cubes, understanding that a cube with a side length of 1 unit is said to have "one cubic unit" of volume and can be used to measure volume.

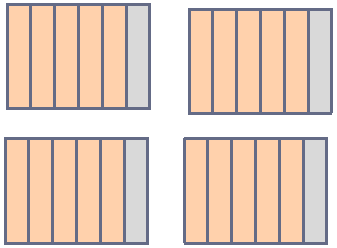
Students fill rectangular prisms with centimeter cubes, counting the number of cubes in each layer and the number of layers to build towards the volume formula. They discover that volume of a rectangular prism can be found by multiplying the length and width of the first layer (the base) by the number of layers (the height).



Fractions

Students solve word problems that involve adding, subtracting, multiplying, and dividing fractions. Students may solve problems like the ones below:

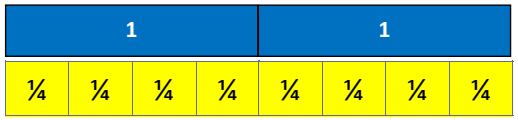
There are 4 sheets of colored paper and I need to use $\frac{5}{6}$ *of each sheet to finish an art project. How much paper will I use?*



$\frac{5}{6}$ four times means that $\frac{20}{6}$ of the paper is used.
This means 3 whole sheets and $\frac{2}{6}$ of the last sheet are used.

Students divide with fractions. Using fraction strips as a model helps build conceptual understanding.

2 ÷ ¼ =



2 ÷ ¼ = 8

College and Career Ready Standards for Mathematics

Grade 5

Key Concepts

- Division with two-digit divisors
- Operations with decimals and fractions
- Volume

View Grade 5 CCRSM Standards using the short URL or QR Code below.

https://goo.gl/Sg37CV

Working with Decimals

Students apply strategies from 3rd and fourth grade when working with decimals.

Place Value

2.8 + 3.62 =

2 + 0.8 + 3 + 0.6 + 0.02

Add numbers based on place value:

2 + 3 = 5 (add the ones)

0.8 + 0.6 = 1.4 (add the tenths)

1. 4 + 5 = 6.4 (add the two sums above)

6.4 + 0.02 = 6.42 (add the new sum to the remaining hundredths)

Students may also use this with subtraction of decimals.

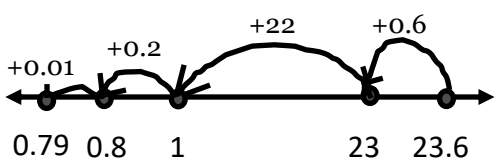
2.62 - 1.4 =

2 - 1 = 1

1.62 - 0.4 = 1.22

Open Number Line

Students solve decimal subtractions problems using an open number line. The number line below is used to solve 23.6 - 0.79 = 22.81



Doubling and Halving

The doubling and halving strategy is applied to multiplying with decimals.

8 x 2.5

÷ 2 x 2

4 x 5.0

÷ 2 x 2

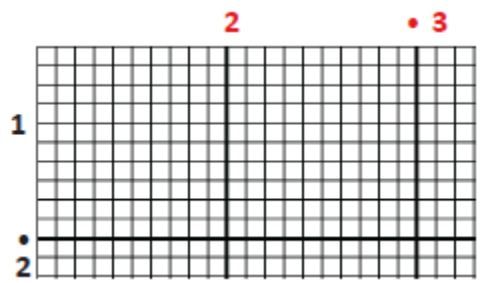
2 x 10.0

= 20.0

Grid Models

Students use grid models to solve problems.

1.2 x 2.3 = 2.76



Distributive Property

Students apply knowledge from 4th grade to multiplying decimals.

1.2 x 2.3 = 2.76

(1.0 x 2.0) + (1.0 x 0.3) + (0.2 x 2.0) + (0.2 x 0.3) =

2.0 + 0.3 + 0.4 + 0.06 = 2.76

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 smaller than the divisor.

These partial quotients will be added together.

26 ⟌ 634	10 x 26	10
-260		
374	10 x 26	10
-260		
114	2 x 26	2
-52		+ 2
62	2 x 26	24
-52		
10 remainder		

Answer: 24 R 10

Proportional Reasoning

Students divide both the divisor and dividend by a smaller number that goes evenly into both numbers.

624 ÷ 16

÷2 ÷2

312 ÷ 8

÷2 ÷2

156 ÷ 4

÷2 ÷2

78 ÷ 2

÷2 ÷2

39 ÷ 1 = 39