-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
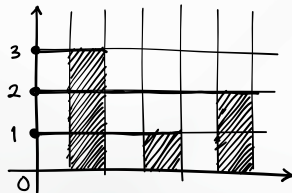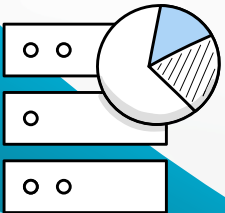
STEP-BY-STEP OPERATIONS

Students learn key relationships that are the building blocks of algebra and learn how to perform operations in a logical, step-by-step manner.

1 P B
2 G
3 E
4 M D
5 A S

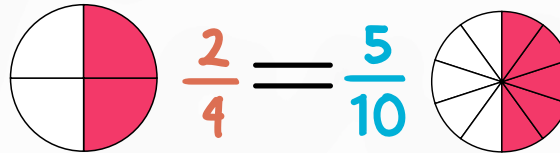## GRAPHS ARE USED TO REPRESENT AND COMPARE DATA

DIVISIBILITY AND MULTIPLES

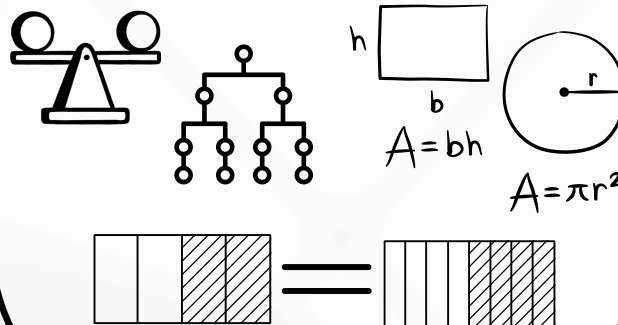Connecting multiplication and division fact families is a key idea in grades 6 and 7.

Multiplication Facts	Related Division Facts
$4 \times \underline{3} = 12$	$12 \div 4 = \underline{3}$
$3 \times \underline{4} = 12$	$12 \div 3 = \underline{4}$
$2 \times \underline{6} = 12$	$12 \div 2 = \underline{6}$
$1 \times \underline{12} = 12$	$12 \div 1 = \underline{12}$
$0 \times \underline{\textit{not possible}} = 12$	$12 \div 0 = \underline{\textit{not possible}}$

PROPORTIONS EQUATE FRACTIONS

$$\frac{2}{4} = \frac{5}{10}$$

EQUALITY (BALANCING EQUATIONS)

Equations can be modelled using scales, mobiles and familiar 2D shapes

h

b

$A = bh$

r

$A = \pi r^2$

CAMPBELL RIVER
School District 72

OPERATIONAL FLUENCY ✚ ━ ✖ ➗ ＝

GRADE 6/7

This brochure highlights some of the methods for developing computational fluency in grade 6 and 7.
For more information, visit
https://www.sd72.bc.ca/72learninghub/elementary-1

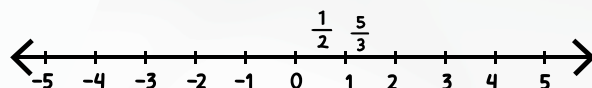## ESTIMATION BEFORE CALCULATION

Estimation is used before calculation to judge if a solution is reasonable.

Example 1: Place the decimal in a sum or difference using front-end estimation (e.g., for 4.5 + 0.73 + 256.458, think 4 + 256, so the sum is greater than 260).

Example 2: Place the decimal in a product using front-end estimation (e.g., for $12.33 x 2.4, think $12 x 2, so the product is greater than $24).

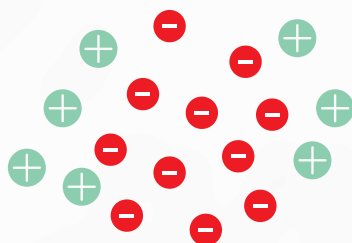Example 3: Place the decimal in a quotient using front-end estimation (e.g., for 51.50 m ÷ 2.1, think 50 m ÷ 2, so the quotient is approximately 25 m)

INTEGERS AND FRACTIONS ON A NUMBER LINE

Numbers are usually arranged from smallest to biggest from left to right.

Integers are sometimes modelled as charged particles (this example shows -11 + 7

INTEGER OPERATIONS RULES

$$+ \times - = -$$
$$+ \times + = +$$
$$- \times - = +$$

$$+ \div - = -$$
$$+ \div + = +$$
$$- \div - = +$$

COMPARING FRACTIONS

$$\frac{1}{6} < \frac{1}{2} < \frac{8}{10} < \frac{8}{5}$$
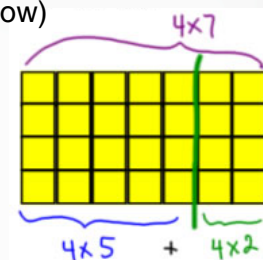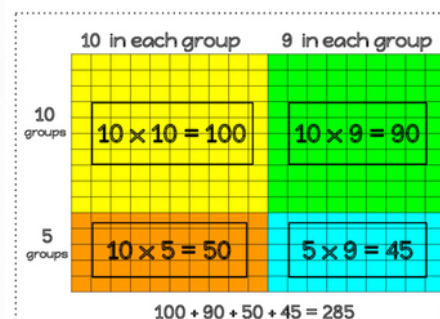
MULTIPLICATION: AREA / ARRAY

The area / array model for multiplication connects to the distributive property and can be used to solve multi-digit multiplication problems. (See the 3 examples below)

4 x 7

15 x 19

26 x 53