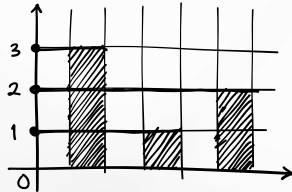
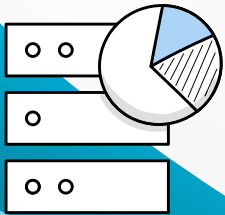


STEP-BY-STEP OPERATIONS

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



GRAPHS ARE USED TO REPRESENT AND COMPARE DATA

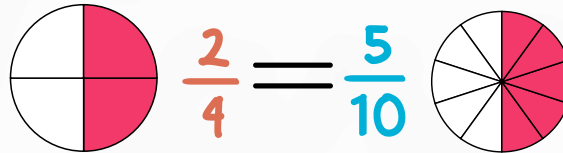


DIVISIBILITY AND MULTIPLES

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

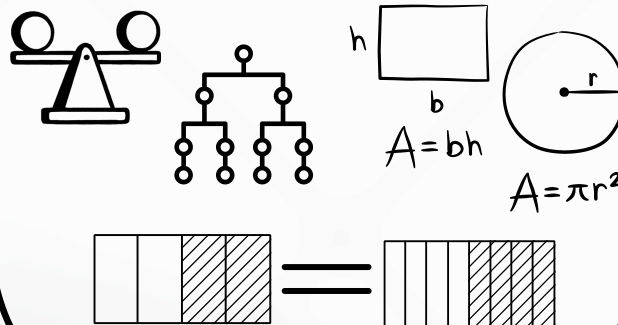
Multiplication Facts	↔	Related Division Facts
$4 \times \underline{3} = 12$		$12 \div 4 = \underline{3}$
$3 \times \underline{4} = 12$		$12 \div 3 = \underline{4}$
$2 \times \underline{6} = 12$		$12 \div 2 = \underline{6}$
$1 \times \underline{12} = 12$		$12 \div 1 = \underline{12}$
$0 \times \underline{\text{not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

PROPORTIONS EQUATE FRACTIONS



EQUALITY (BALANCING EQUATIONS)

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



CAMPBELL RIVER
School District 72

**GRADE 6/7
MATH**

OPERATIONAL FLUENCY

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/middle-school-2>





ESTIMATION BEFORE CALCULATION

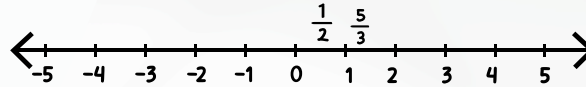
Estimation is used before calculation to judge if a solution is reasonable.

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 $\$12.33 \times 2.4$, think $\$12 \times 2$, so the product is greater than $\$24$).

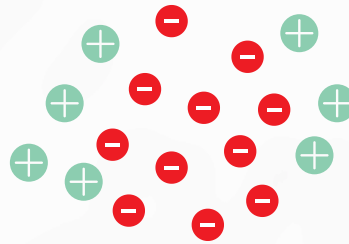
Example 3: Place the decimal in a quotient using front-end estimation (e.g., for $51.50 \text{ m} \div 2.1$, think $50 \text{ m} \div 2$, so the quotient is approximately 25 m)

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

$$\begin{array}{ll} + \times - = - & + \div - = - \\ + \times + = + & + \div + = + \\ - \times - = + & - \div - = + \end{array}$$

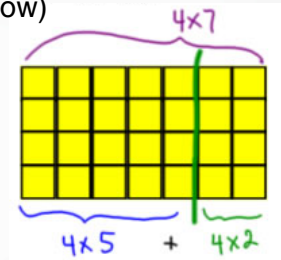
COMPARING FRACTIONS

$$\frac{1}{6} < \frac{1}{2} < \frac{8}{10} < \frac{8}{5}$$

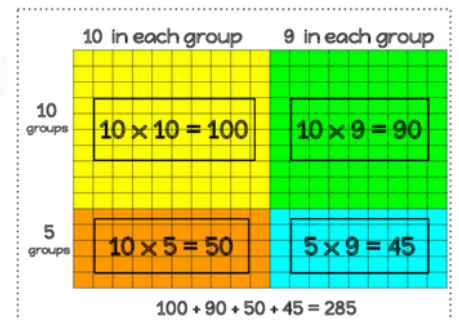
MULTIPLICATION: AREA / ARRAY

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)

$$4 \times 7$$



$$15 \times 19$$



$$26 \times 53$$

