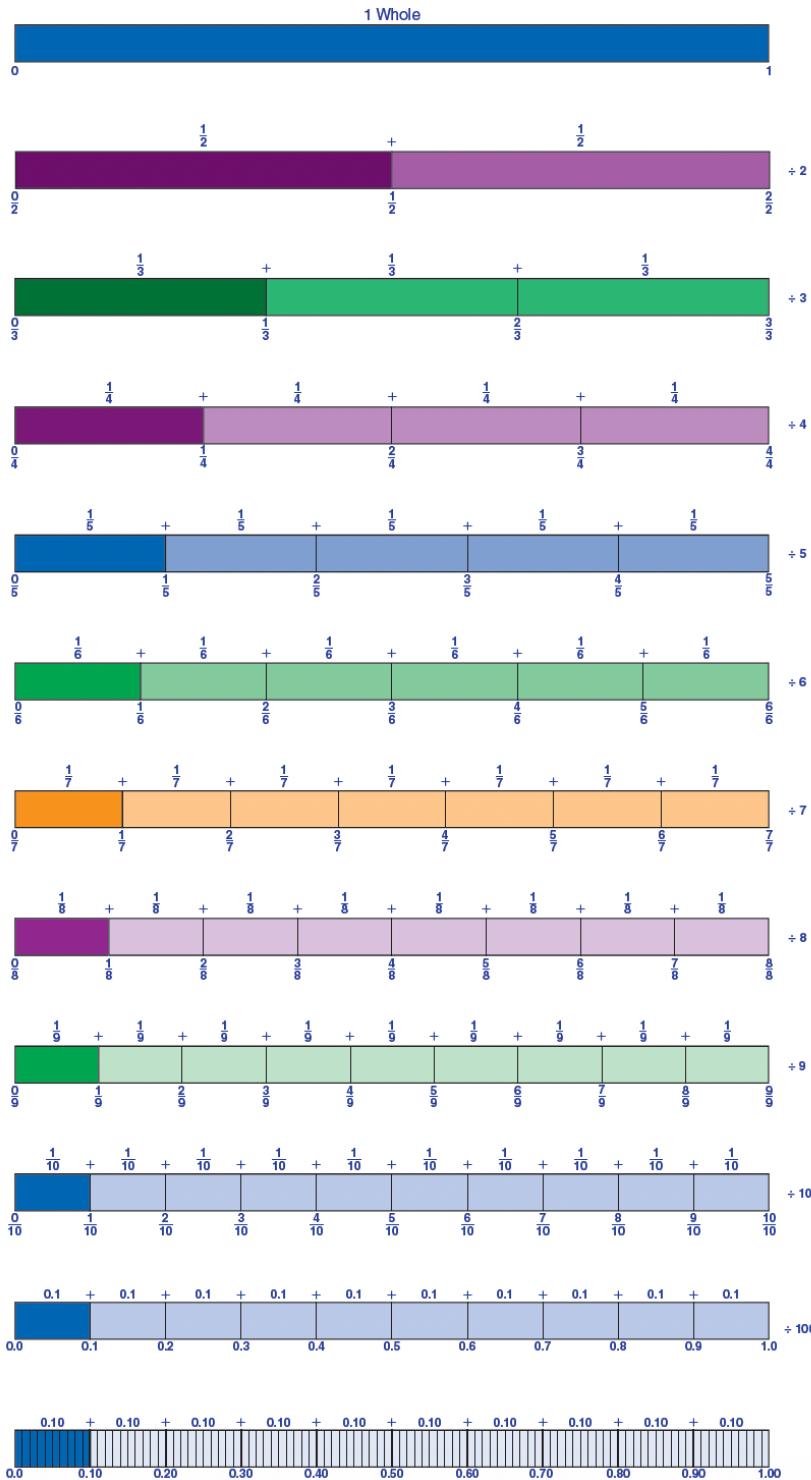


Fraction Poster: Grades 4, 5, and 6 are identical except for the bottom right corner. Print out the poster you want and have a copy shop print it out large enough for students to see it from across the classroom. Post it where students can point to parts of the poster.

Fraction Poster



Meaning of Fractions and Fraction Addition

numerator	3 of the unit fractions
denominator	7 unit fractions made by dividing 1 whole into 7 equal parts

$$\frac{3}{7} = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} \qquad \qquad \frac{3}{7} = \frac{1}{7} + \frac{2}{7}$$

Add Fractions or Mixed Numbers

To add fractions with like denominators, add the numerators.
To add mixed numbers, add the whole numbers and fractions separately.
Make new wholes if necessary.

$$1\frac{3}{5} + 2\frac{4}{5} = 3\frac{7}{5} = 3\frac{5}{5} + \frac{2}{5} = 4\frac{2}{5}$$

Multiply a Fraction by a Whole Number

To multiply a fraction by a whole number, multiply the numerator by the whole number.

$$4 \cdot \frac{3}{5} = (4 \cdot 3) \cdot \frac{1}{5} = \frac{12}{5} = \frac{5}{5} + \frac{5}{5} + \frac{2}{5} = 2\frac{2}{5}$$

Equivalent Fractions

Equivalent fractions are made by:

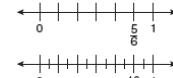
- a. more but smaller parts

$$\frac{5}{6} = \frac{5 \cdot 2}{6 \cdot 2} = \frac{10}{12}$$

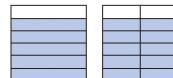
Fraction Bar Model



Number Line Model



Area Model



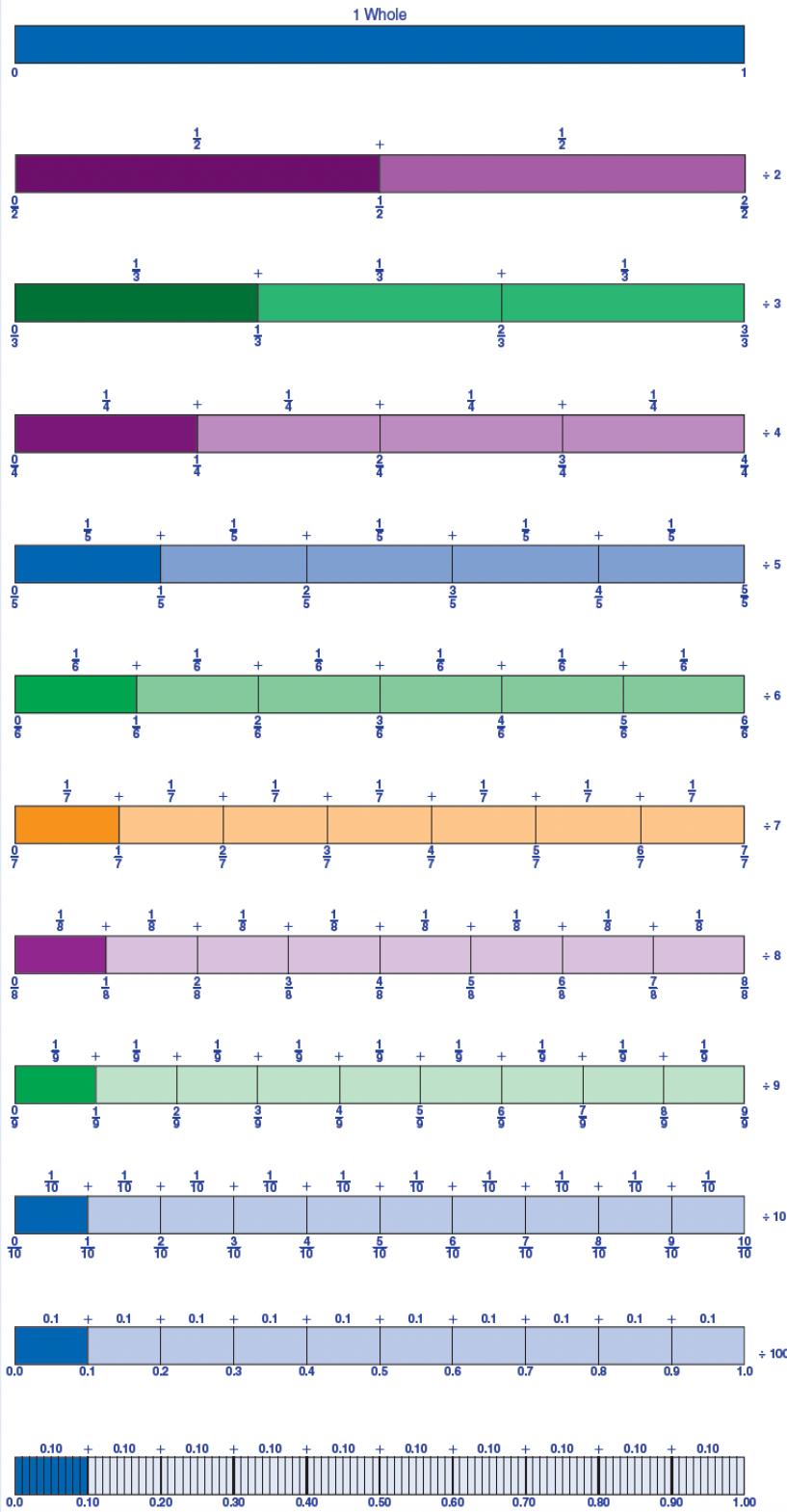
$$\begin{array}{cccccccccc}
 \bullet & 2 & \bullet & 3 & \bullet & 4 & \bullet & 5 & \bullet & 6 & \bullet & 7 & \bullet & 8 & \bullet & 9 \\
 5 & \nearrow & 10 & = & 15 & = & 20 & = & 25 & = & 30 & = & 35 & = & 40 & = & 45 \\
 6 & \searrow & 12 & = & 18 & = & 24 & = & 30 & = & 36 & = & 42 & = & 48 & = & 54 \\
 & \bullet & 2 & \bullet & 3 & \bullet & 4 & \bullet & 5 & \bullet & 6 & \bullet & 7 & \bullet & 8 & \bullet & 9
 \end{array}$$

- b. fewer but larger parts

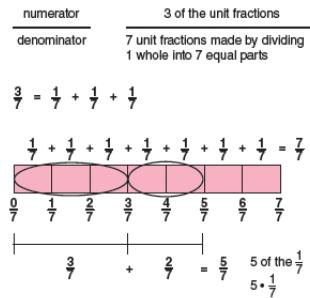
$$\frac{10}{12} = \frac{10 \div 2}{12 \div 2} = \frac{5}{6}$$



Fraction Poster



Meaning of Fractions

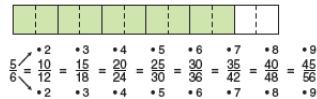


Equivalent Fractions

Equivalent fractions are made by:

a. more but smaller parts

$$\frac{5}{6} = \frac{5 \cdot 2}{6 \cdot 2} = \frac{10}{12}$$



b. fewer but larger parts

$$\frac{10}{12} = \frac{10 \div 2}{12 \div 2} = \frac{5}{6}$$

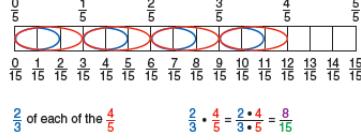


Multiplying Fractions

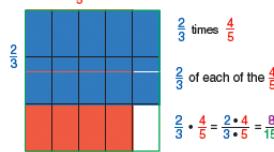
Multiplying a number by a fraction < 1 gives a smaller number because you are taking part.

$$\frac{2}{3} \cdot \frac{4}{5} \quad \frac{2}{3} \text{ times } \frac{4}{5} \quad \frac{2}{3} \text{ of } \frac{4}{5}$$

Fraction-Bar Length Model



Area Model



Dividing with Unit Fractions

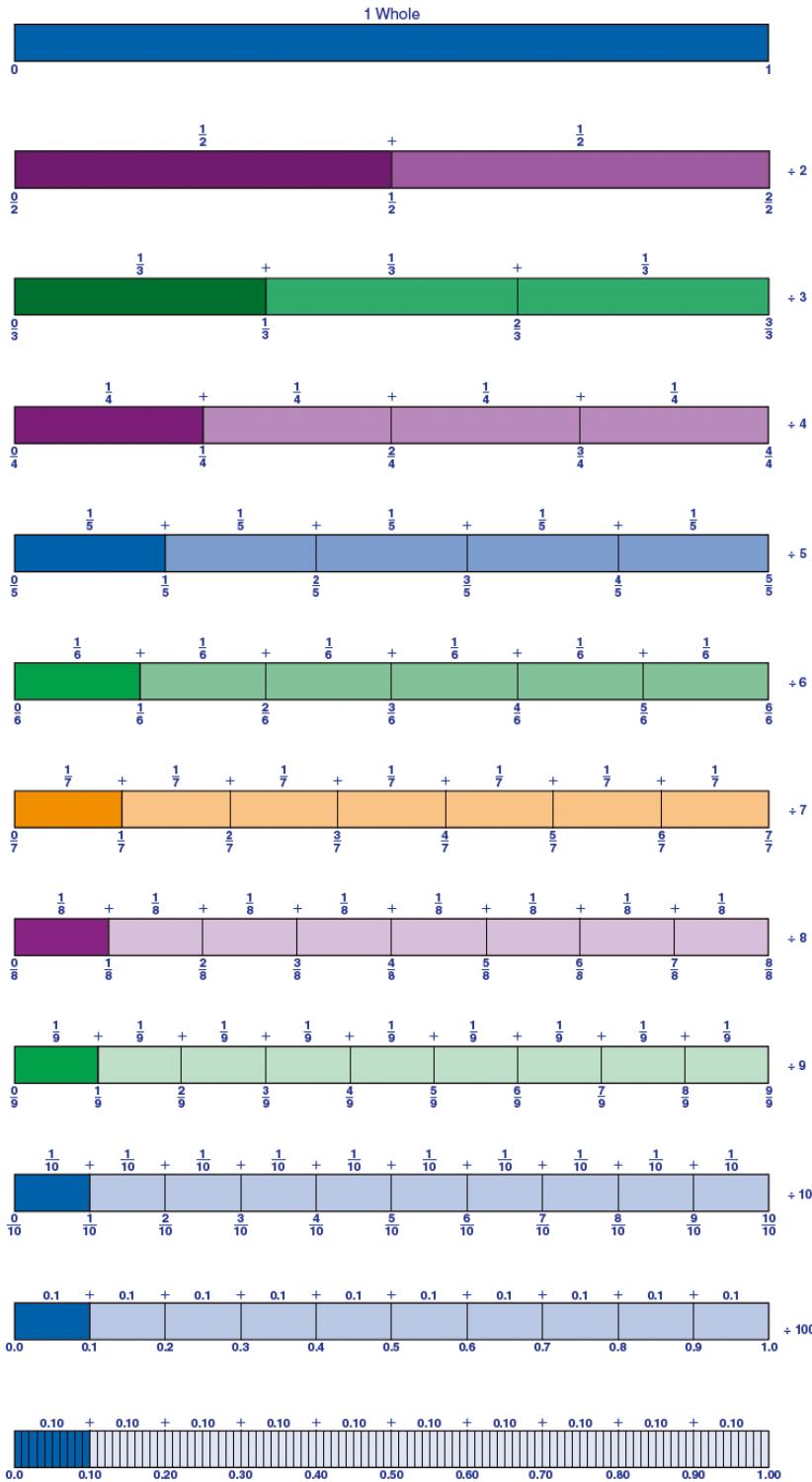
To divide a whole number w by a unit fraction $\frac{1}{d}$, multiply w by d .

$$6 \div \frac{1}{5} = 6 \cdot 5 = 30 \quad \text{There are 5 fifths in 1, so there are } 6 \cdot 5 \text{ fifths in 6.}$$

To divide a unit fraction $\frac{1}{d}$ by a whole number w , multiply $\frac{1}{d}$ by $\frac{1}{w}$.

$$\frac{1}{5} \div 6 = \frac{1}{5} \cdot \frac{1}{6} = \frac{1}{30} \quad \text{Dividing a fifth into six parts gives thirty-sixths.}$$

Fraction Poster



Meaning of Fractions

numerator 3 of the unit fractions
denominator 7 unit fractions made by dividing 1 whole into 7 equal parts

$$\frac{3}{7} = \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$$

$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{7}{7}$$

0 7 1 2 3 4 5 6 7

$\frac{3}{7} + \frac{2}{7} = \frac{5}{7} = 5 * \frac{1}{7}$

Equivalent Fractions

Equivalent fractions are made by:

a. more but smaller parts

$$\frac{5}{6} = \frac{5 \cdot 2}{6 \cdot 2} = \frac{10}{12}$$

0 12 1 2 3 4 5 6 7 8 9 10 11

$\frac{5}{6} * \frac{2}{2} = \frac{10}{12}$

b. fewer but larger parts

$$\frac{10}{12} = \frac{10 \div 2}{12 \div 2} = \frac{5}{6}$$

0 6 1 2 3 4 5 6

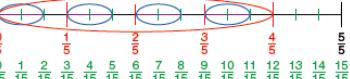
$\frac{10}{12} = \frac{5}{6}$

Multiplying Fractions

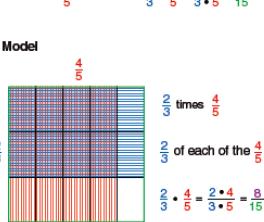
Multiplying by a fraction < 1 makes it smaller because you are taking part.

$$\frac{2}{3} \cdot \frac{4}{5} \quad \frac{2}{3} \text{ times } \frac{4}{5} \quad \frac{2}{3} \text{ of } \frac{4}{5}$$

Number Line Length Model



Area Model



Dividing Fractions

Multiply by the reciprocal of the divisor (flip the factor).

$$\frac{2}{5} + \frac{3}{7} = \frac{2}{5} \cdot \frac{7}{3} = \frac{14}{15}$$

Sometimes you can divide numerators and divide denominators.

$$\frac{2}{3} \cdot \frac{8}{15} = \frac{8}{15} \cdot \frac{2}{3} = \frac{8 \div 2}{15 \div 3} = \frac{4}{5}$$