

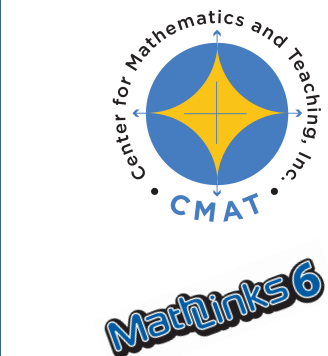
Packet 7: Fraction Multiplication and Division

Dear Parents/Guardians,

Packet 7 reviews important fraction concepts from grades 4 and 5. In Lesson 1, students will represent multiplication of fractions on a number line and as an area model to develop fraction multiplication procedures. In Lessons 2 and 3, students will explore the meaning of fraction division, building from the visual representation to the multiply-by-the-reciprocal rule.

Strategies for Multiplying Fractions

Strategy/Properties	Expression	Diagram	Number Sentence
Grouping Multiplication can be thought of as forming equal groups	$3 \times \frac{2}{5}$ "3 groups of $\frac{2}{5}$."		$\frac{2}{5} + \frac{2}{5} + \frac{2}{5}$ $= \frac{6}{5}$ or $1 \frac{1}{5}$
Commutative Property The factors being multiplied can be reversed and still give the same product.	$\frac{1}{3} \times 2 = 2 \times \frac{1}{3}$ "One-third groups of two is the same as two groups of one-third."		$\frac{1}{3} + \frac{1}{3}$ $= \frac{2}{3}$
Distributive Property The factors being multiplied is the same as multiplying one factor by the sum of the parts of the other factor.	$2 \times 1 \frac{3}{7}$ $= 2 \left(1 + \frac{3}{7} \right)$ "2 multiplied by $1 \frac{3}{7}$ is the same as finding the sum of the product of $2(1)$ and $2 \left(\frac{3}{7} \right)$."		$2 \left(1 + \frac{3}{7} \right)$ $= 2(1) + 2 \left(\frac{3}{7} \right)$ $= 2 + \frac{6}{7}$ $= 2 \frac{6}{7}$
Multiply Across The product of two fractions can be found by multiplying across.	$\frac{1}{2} \times \frac{1}{2}$ "Take half of a half."		$\frac{1}{2} \times \frac{1}{2}$ $= \frac{1 \times 1}{2 \times 2}$ $= \frac{1}{4}$



By the end of the packet, your student should know...

How to multiply fractions and mixed numbers, using a diagram and a number sentence [Lesson 7.1](#)

How to use the divide-across strategy for dividing fractions [Lesson 7.2](#)

Understand and use the multiply-by-the-reciprocal strategy for dividing fractions [Lesson 7.3](#)

Additional Resources

Resource Guide (RG)
Part 1, Pages 44-49

<http://www.mathtv.com/#>
Click "Basic Mathematics"
Click "Fractions"
Click "Multiplying" or "Dividing"
(These video tutorials only show the multiply-across and divide by multiplying-by-the-reciprocal strategies.)

The Divide Across Strategy

Students will explore a divide-across strategy with diagrams and expressions.

Words	Diagram	Computation
How many groups of $\frac{1}{3}$ are in 2?		$2 \div \frac{1}{3}$ $\frac{6}{3} \div \frac{1}{3} = \frac{6 \div 1}{3 \div 3}$ $= 6$
How many groups of $\frac{2}{5}$ are in $\frac{7}{10}$?		$\frac{7}{10} \div \frac{2}{5}$ $\frac{7}{10} \div \frac{2}{5} = \frac{7 \div 4}{10 \div 10}$ $= \frac{7}{4}$ or $1 \frac{3}{4}$