Considerations for Mathematics Intervention

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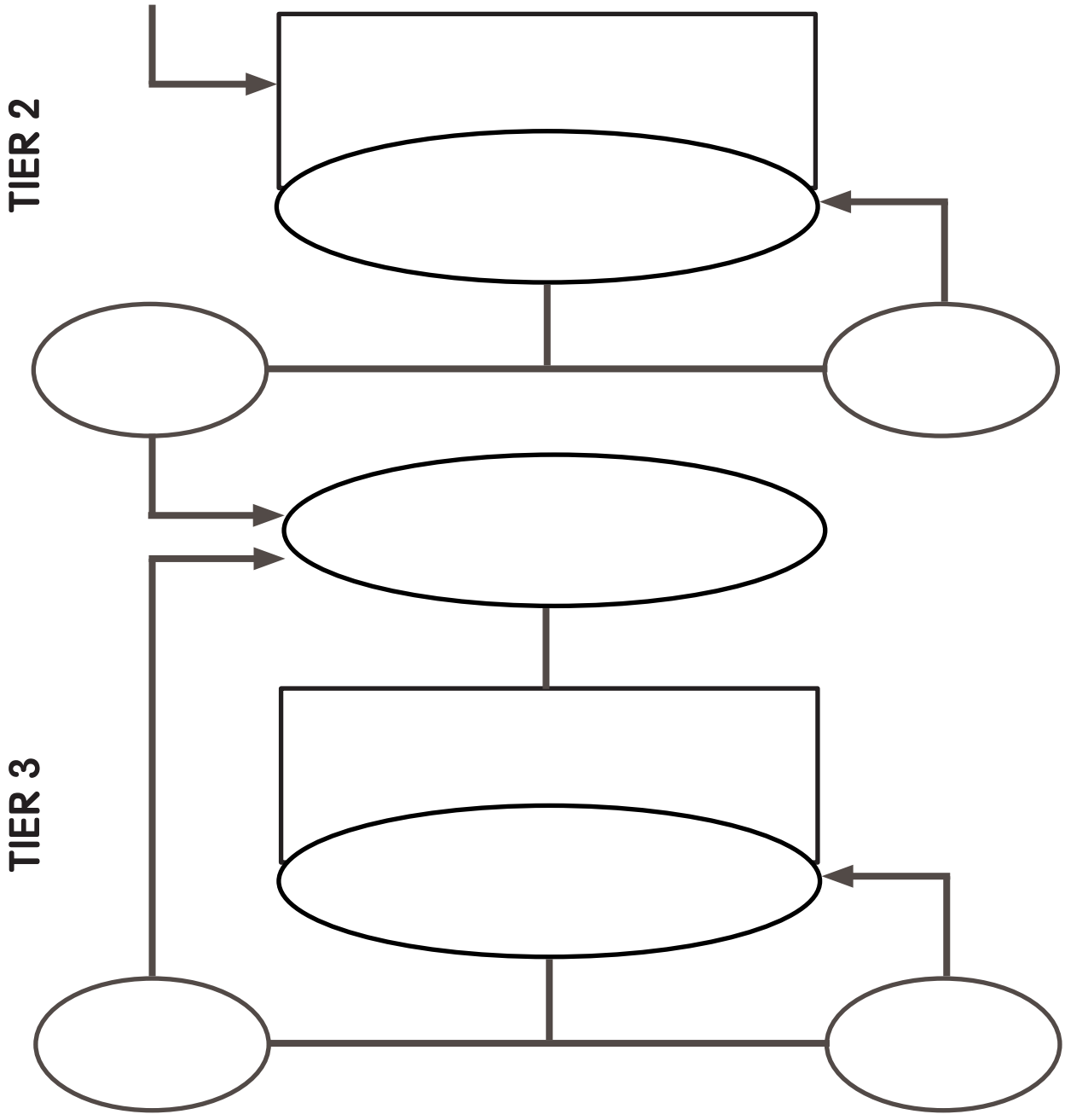
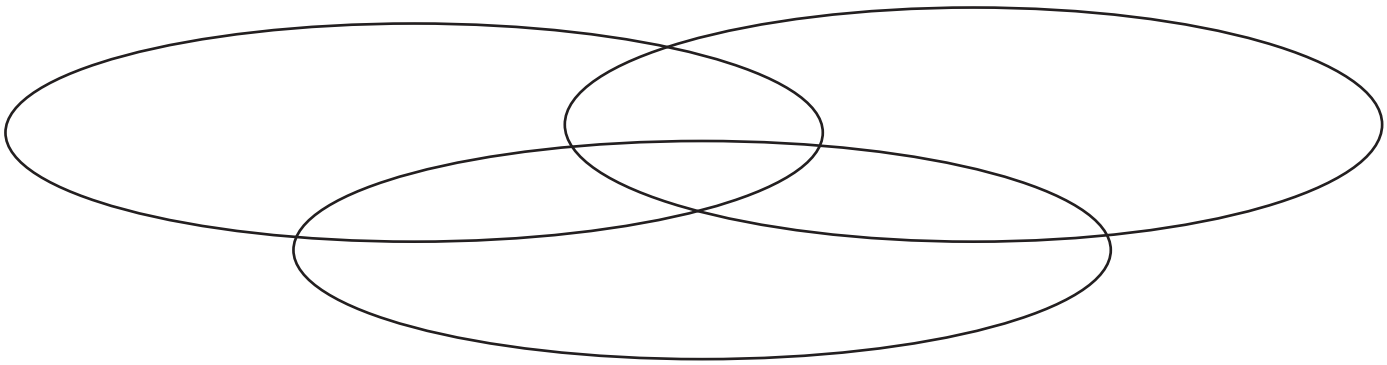


Explicit Instruction

Mathematical Language

Instead of that…	Say this…

Multiple Representations



Place Value

Hundreds	Tens	Ones

Fractions

Three Models

Fraction	Length	Area	Set
$\frac{2}{3}$			
$\frac{1}{4}$			
$1\frac{1}{2}$			
$\frac{3}{7}$			

Improper Fractions and Mixed Numbers

Equivalent Fractions

$\frac{1}{2}$ $\frac{1}{4}$

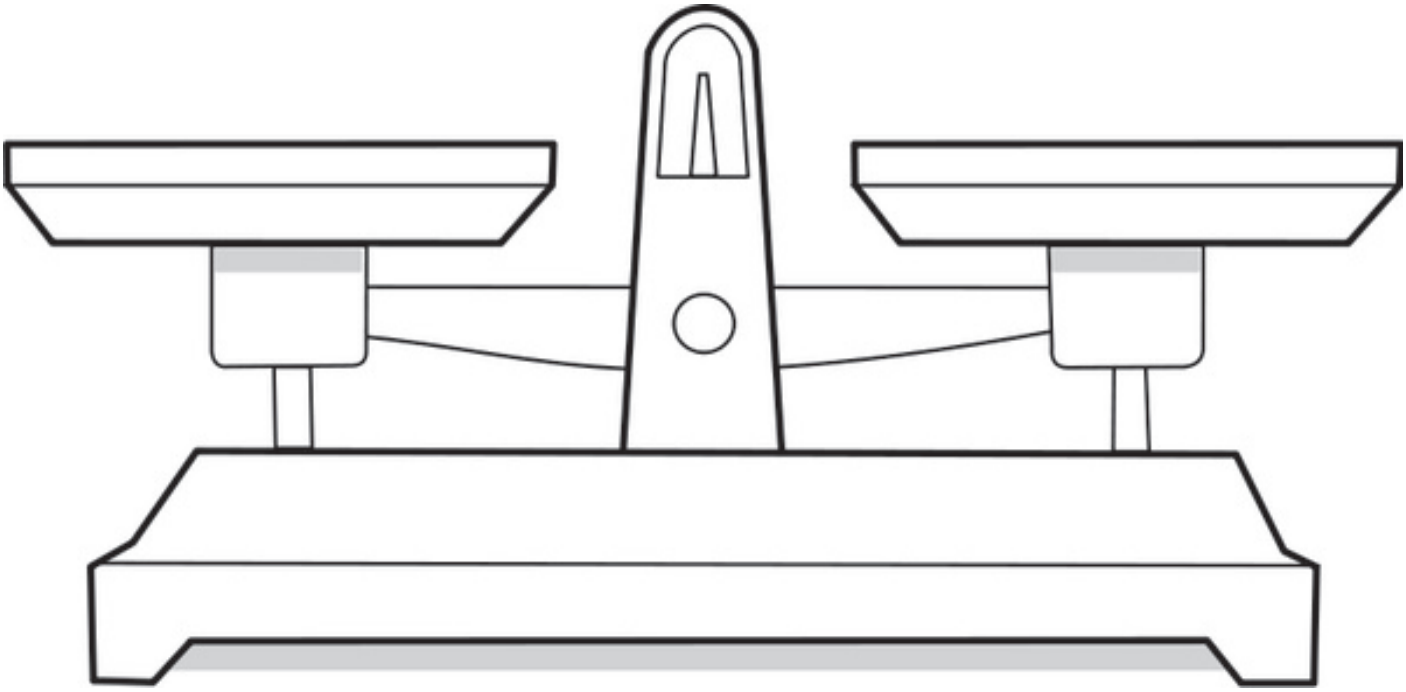
Comparing Fractions

$\frac{1}{2}$ $\frac{3}{10}$ $\frac{2}{6}$ $\frac{4}{6}$ $\frac{2}{3}$ $\frac{2}{5}$

Ordering Fractions

$\frac{6}{8}$ $\frac{3}{5}$ $\frac{1}{3}$

Algebraic Reasoning



___ + 3 = 7

6 = 2 + ___

3 + 5 = 4 + ___

5 + 4 = ___ + 2

7 = ___

9 – ___ = 6

6 = ___ – 2

9 – 6 = 7 – ___

6 – ___ = 7 – 3

Solving Equations

With Plates and Manipulatives

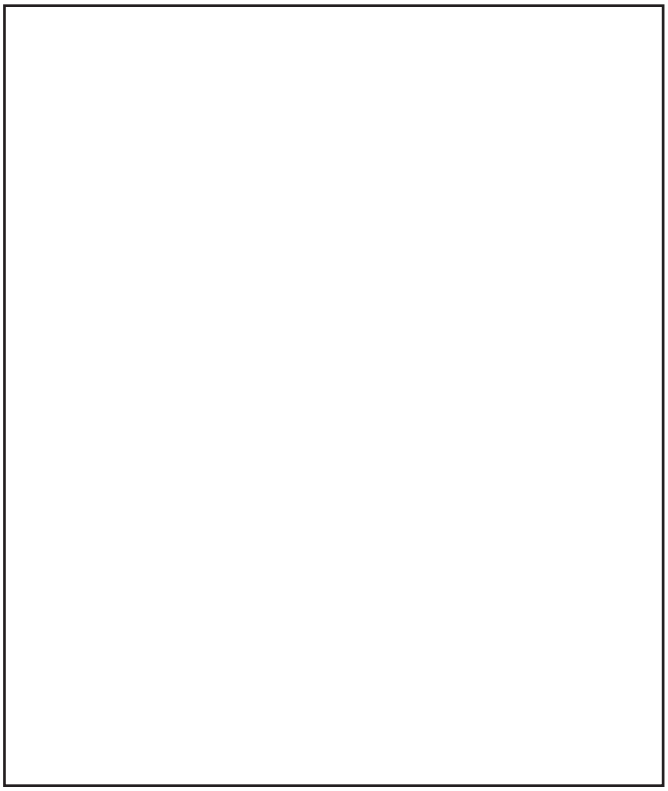
Problem	Representations
$x + 2 = 5$	
$x + 2 = 5$	
$4 + x = 6$	
$5 = x - 3$	
$-2 = x + 3$	

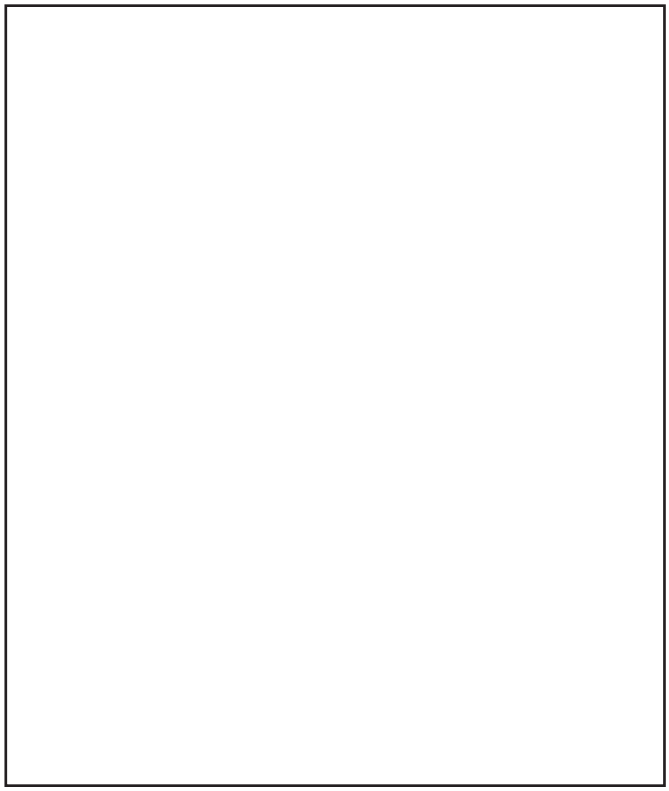
With Algebra Tiles

Problem	Representations
$x + 2 = 5$	
$4 + x = 6$	
$5 = x - 3$	
$-2 = x + 3$	

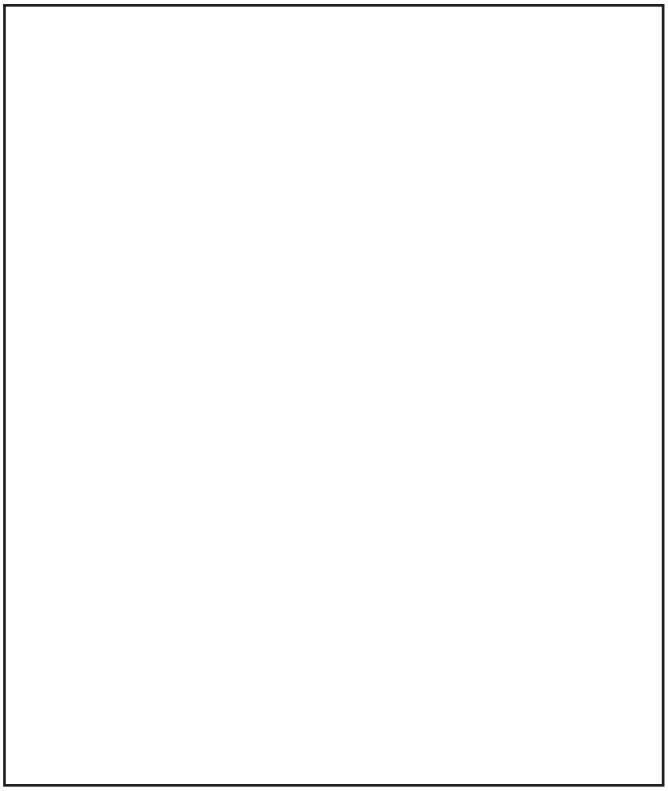
Fluency

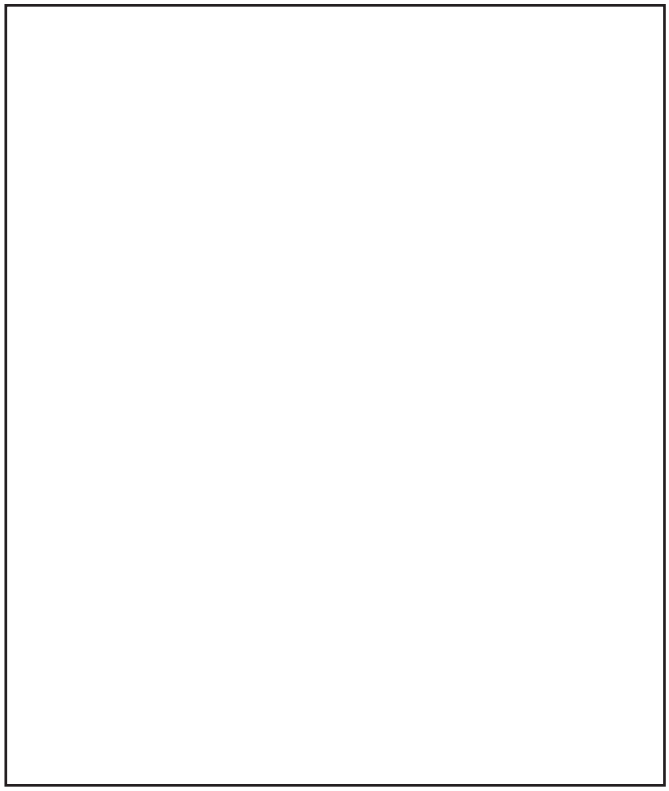
Addition



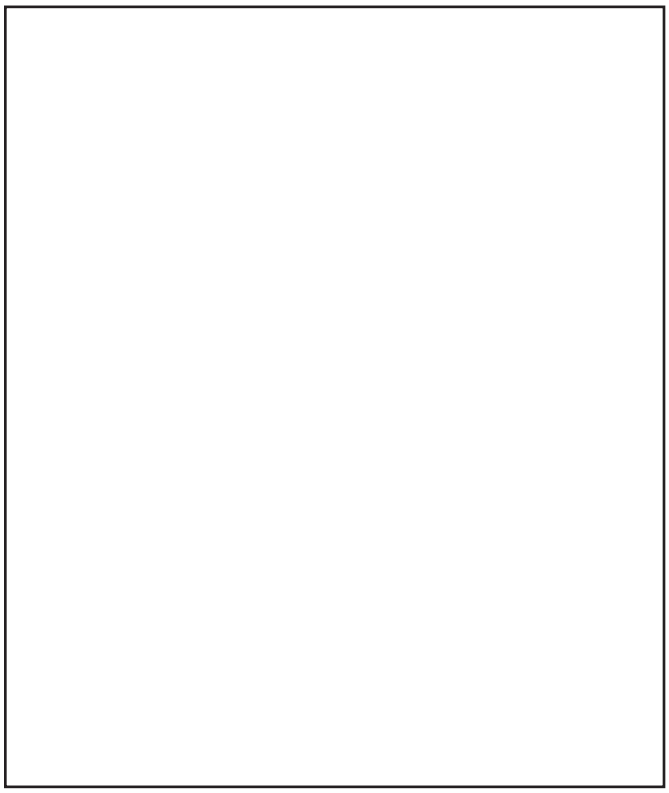


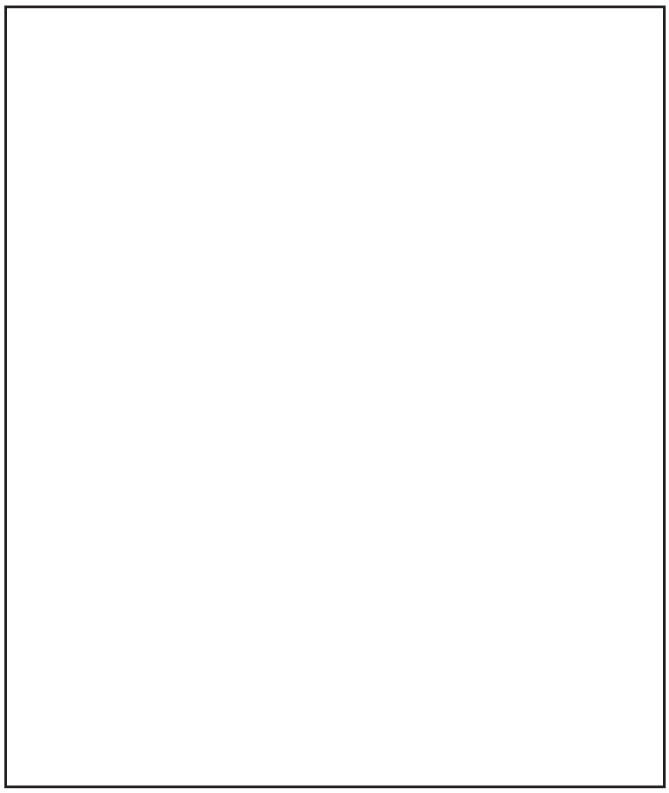
Subtraction



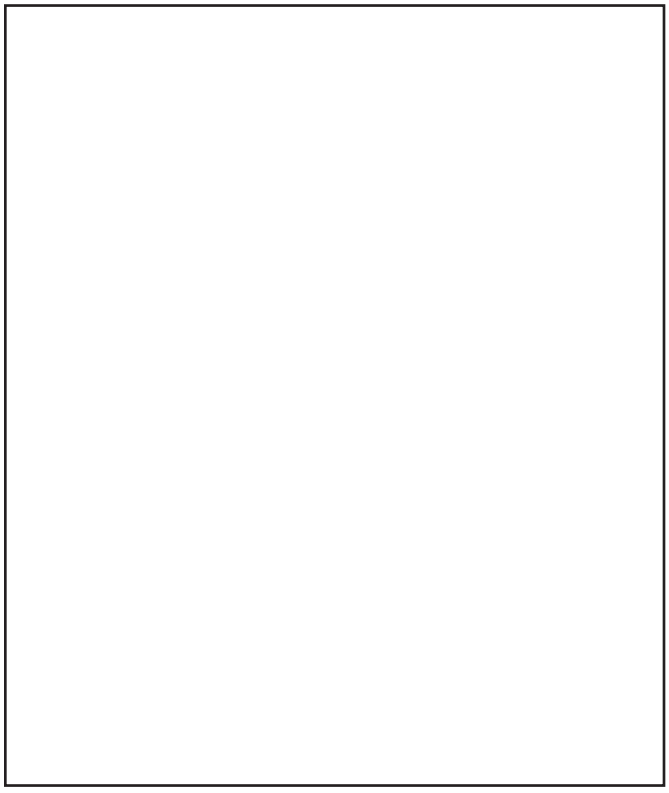


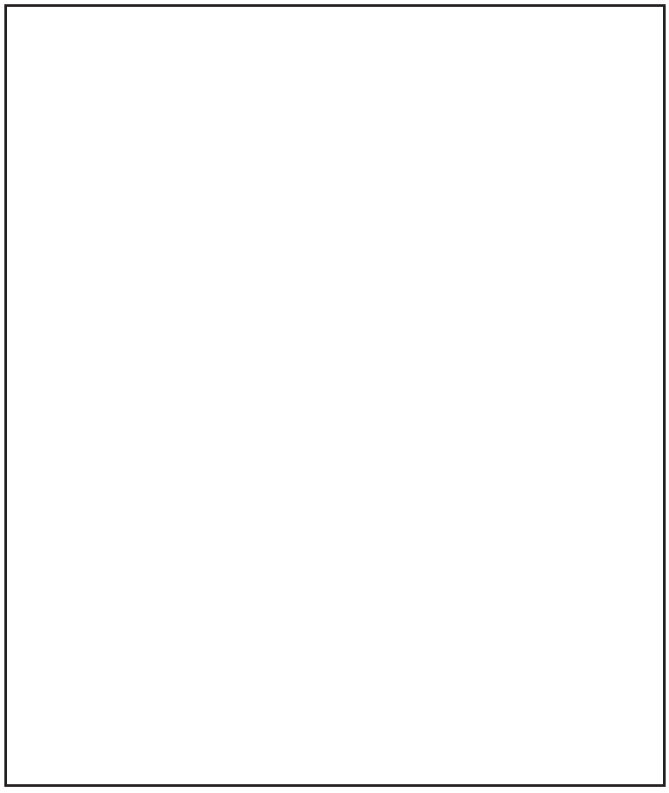
Multiplication





Division





Computation: Addition and Subtraction

227 + 185 =	232 – 164 =

Computation: Multiplication and Division

183 x 27 =	815 ÷ 16 =

Fractions

Addition and Subtraction

Problem	Representation
$\frac{1}{5} + \frac{3}{5}$	
$\frac{2}{3} + \frac{2}{3}$	
$\frac{1}{2} + \frac{1}{4}$	
$\frac{1}{4} + \frac{4}{6}$	
$\frac{4}{5} - \frac{1}{5}$	
$\frac{6}{5} - \frac{2}{5}$	
$\frac{7}{8} - \frac{2}{4}$	
$\frac{1}{2} - \frac{2}{5}$	

Fractions

Multiplication

Problem	Representation
$2 \times \frac{1}{4}$	
$\frac{1}{2} \times \frac{4}{4}$	
$\frac{1}{2} \times \frac{2}{4}$	
$\frac{1}{2} \times \frac{3}{4}$	
$\frac{2}{3} \times \frac{3}{3}$	
$\frac{4}{5} \times \frac{5}{6}$	
$\frac{2}{3} \times \frac{3}{4}$	
$\frac{1}{4} \times \frac{1}{3}$	

Fractions

Division

Problem	Representation
$\frac{3}{3} \div 3$	
$\frac{3}{3} \div \frac{1}{3}$	
$\frac{2}{3} \div \frac{1}{3}$	
$\frac{5}{6} \div \frac{1}{2}$	
$\frac{7}{8} \div \frac{3}{4}$	
$\frac{1}{4} \div \frac{1}{2}$	
$\frac{3}{4} \div \frac{2}{3}$	
$\frac{4}{5} \div \frac{1}{2}$	

Problem Solving

Three Things to Remember

Attack Strategies

Additive Word Problems

Problem type	Definition	Examples			Equation	Graphic organizer
Total		Total unknown	Part unknown			
Difference		Difference unknown	Greater unknown	Lesser unknown		
Change (increase)		End unknown	Start unknown	Change unknown		
Change (decrease)		End unknown	Start unknown	Change unknown		

Additive Word Problems

A. Megan baked 28 sugar cookies and 24 chocolate chip cookies. Enter the total number of cookies Megan baked in all.	B. A banana farm received a total of 12 millimeters of rain in March and April. If 11 millimeters of rain fell on the farm in March, how many millimeters of rain fell on the farm in April?
C. Jana has 107 wooden beads and 68 glass beads. How many more wooden beads than glass beads does Jana have?	D. Farmer Hank has 6 more cows than horses. He has 4 horses. He also has 9 chickens. How many cows does he have?

Additive Word Problems

E.
A bus had 13 passengers. At the next stop, more passengers got on the bus. Now, there are 28 passengers. How many passengers got on the bus?

F.
Martina had some money. Then, she spent $42 on a sweater. Now, she has $13. How much money did she have to start with?

Problem type	Definition	Examples			Equation	Graphic organizer
Equal Groups						
Comparison						
Combinations						
Ratios and Proportions						

Multiplicative Word Problems

Multiplicative Word Problems

A. Ms. Thompson sold 6 cartons of cherries at the Farmers' Market. Each carton holds 25 cherries. How many cherries did she sell?	B. Jane bought 24 light bulbs. The light bulbs come in packs of 4. How many packs of light blubs did Jane buy?
C. Isabella has 2 times as many DVDs as Emma. Emma has 6 DVDs. How many DVDs does Isabella have?	D. There are 176 slices of bread in 8 loaves. If there are the same number of slices in each loaf, how many slices of bread are in 5 loaves?

Multiplicative Word Problems

E. A sea turtle made 460 dives in 12 hours. At this rate, how many dives did the sea turtle make in 3 hours?	F. Yvette correctly answers 85% of the total questions on her science test. She correctly answers 34 questions. What was the total number of questions on Yvette's science test?
G. A crocodile is 18 feet long. An alligator is 3/4 of that length. How long is the alligator?	H. Susan has 3 times as many books as Mary. Mary has 18 books. Which equation can be solved to figure out how many books Susan has?

Multiplicative Word Problems

I. Matt bought 1 orange and 3 apples for a total of $2.25 The orange cost $0.60. The apples each cost the same amount. What amount did Matt pay to buy each apple?	J. There are 12 apple trees. Alex picks 11 apples from each tree. He eats 8 of the apples that he picked. How many apples does Alex have left?
K. A teacher buys 6 bages of snack mix. Each bag contains 2.5 cups of snack mix. The snack mix is shared evenly among 30 students. How many cups of snack mix will each student receive?	