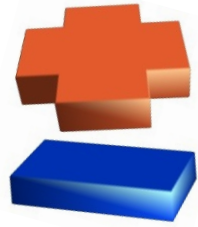




Addition & Subtraction Study Guide



Vocabulary

- **Addend** – a number that is added to another number. Ex: In the problem $7 + 9 = 16$, the numbers 7 and 9 are addends.
- **Sum** – the result of adding one number to another. Ex: In the problem $7 + 9 = 16$, the number 16 is the sum.
- **Difference** – the result of subtracting one number from another. Ex: In the problem $16 - 9 = 7$, the number 7 is the difference.

Fact Families

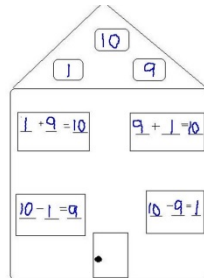
- All fact families have **FOUR** number equations – two addition, two subtraction. For example:

$$15 + 5 = 20$$

$$5 + 15 = 20$$

$$20 - 15 = 5$$

$$20 - 5 = 15$$



Properties of Addition

- **Commutative** – “Flip-Flop” rule – When two numbers are added, the sum is the same regardless of the order of the addends. Ex: $4 + 2 = 2 + 4$
- **Associative** – “Buddy” rule – When three or more numbers are added, the sum is the same regardless of the grouping of the addends. Ex: $(2 + 3) + 5 = 2 + (3 + 5)$
- **Identity** – “Me and Only Me” rule – The sum of any number and zero is the original number. Ex: $7 + 0 = 7$

In/Out Boxes

- Find the rule of the In/Out box, then fill in the correct numbers

In	14	20	32		53
Out	10		28	40	

Rule: Subtract 4

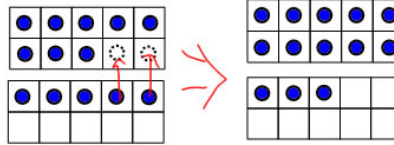
*Answers from Left to Right: 16, 44, 49



Strategies for Adding

- **Make 10**

- Add up to a 10's place
 - $26 + 7 = ?$
 - $26 + 4 = 30$
 - $30 + 7 = 37 - 4 = 33$
- Make 10 using the addends
 - $8 + 5 = ?$
 - $8 + 2 = 10 // 5 - 2 = 3$
 - $10 + 3 = 13$



- **Make doubles**

- $7 + 8 = ?$ Make a double to help you mentally solve!
- $7 + 7 + 1 = 15$

- **Break Apart**

- $45 + 34 = ?$
- Break apart the two addends:
 - $45 = 40 + 5$
 - $34 = 30 + 4$
- Then, add your new 10's and 1's places:
 - $40 + 30 = 70$
 - $5 + 4 = 9$



- $70 + 9 = \underline{79}$
- Need a visual? See this tutorial: <http://www.youtube.com/watch?v=8N4N2EE1uYg>

- **Rounding to estimate**

- Round to nearest 10:
 - $75 + 22 = ?$
 - $80 + 20 = 100$
 - Estimate: My answer will be close to 100
- Round to nearest 100:
 - $524 + 364 = ?$
 - $500 + 400 = 900$
 - Estimate: My answer will be close to 900
- Round to nearest 10:
 - $642 + 237 = ?$
 - $640 + 240 = 880$
 - Estimate: My answer will be close to 880.