

# Think Like a Scientist:

Observe, Research, Contemplate, Compare, Contrast, Apply

\* **WARNING** Before using flashcards to practice, get to know the numbers and the facts.



Identify two facts you do not know. Print flashcards for them.

Examine these facts like a scientist.

Google each number. Also google the answer (sum or product).

Example search: What are some things that come in groups of six?

Search for facts in your home, and in the things you like most.\*

**Contemplate:** Ask good questions:

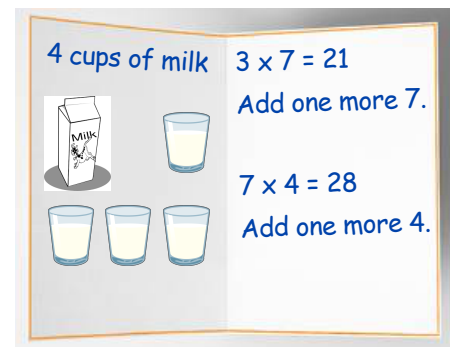
- Is this fact close to a fact I already know?
- Is there a strategy I can use to recall this fact? (*9s Rule, Doubles + 1*)
- Can I make up a story about this fact using information from my research?
- Can I get ideas from the ready-made Fluency Flaps in the library, or from my friends' flaps?

\* **Facts are all around us. Examples:**

- A cup has eight ounces. A quart has 32 ounces. There are four cups in a quart.
- A week has seven days. February has four weeks (when it's not a leap year). February has 28 days.
- In football, a field goal is worth three points. If you get seven field goals, you score 21 points.
- 12 is a dozen. If you use three eggs in each, you can make four omelets.
- In 1958 our flag had 48 stars. Eight columns, six stars in each column. (Alaska and Hawaii became states in 1959)

**Your printed and folded flashcards open like a book. You can add clues to the inside.**

When practicing, if you do not know the answer, you can open the card and look at one or more of the clues. Draw your own pictures or get them from magazines or online.



**Make an extra copy and tape it to the wall.**

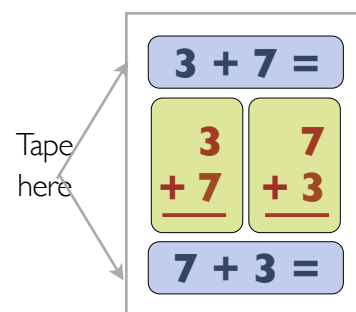
Tape the card on the left side. You can choose to open the card and see the clues, or flip it, and check your answer.

**Making clues and using them will help you understand the fact, and that will help you to remember the answer.**

Put your flaps in places where it's easy to review them often.

Examples: • Where you brush your teeth. • The fridge.

• Your bedroom door. • By your bed.



# Practice Like an Athlete

- 1) Stay focused. Get good at dealing with distractions.
- 2) Stay positive. Use self talk.
- 3) Be OK with making mistakes. Learn from them.

## Using flashcards

Use flashcards for facts you already understand.

Never count.

Focus on the card.

Think of how you know the fact. Take your time.

If you have a guess, go with it. It's fine if you are not correct.

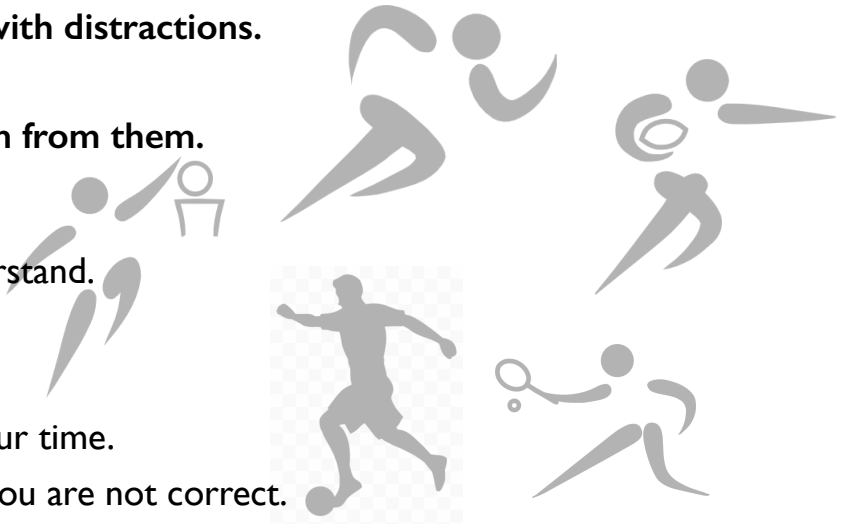
If you have no idea, and you are using Fluency Flaps, look at a hint.

If you were correct, confirm it to yourself. Yes,  $5 + 7 = 12$ . It's like  $(5 + 5) + 2$ .

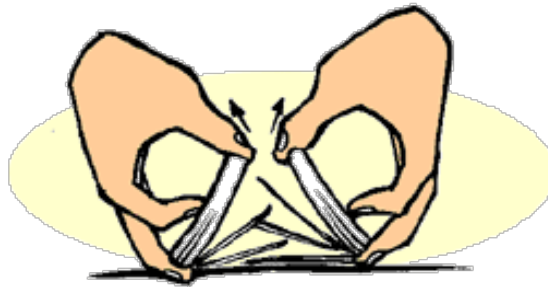
Good self-talk includes: 1) a Yes! 2) Say the question and answer. 3) State how you know.

If your answer was not correct, review your hints and strategies.

If you have not made a Fluency Flap, consider making one for this fact.



When you have gone through all the cards, shuffle and repeat.

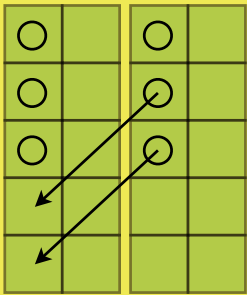


Each time you go through the cards, you learn them better.

## Three Common Mistakes When Using Flashcards

- 1) Counting. Counting prevents you from learning.
- 2) Failure to check the answer. Turn the card over and tap the answer.
- 3) Not taking enough time to think, before answering, and after an incorrect answer.

<b>3</b>	<b>Strategy</b>	<b>3</b>
<b>+ 3</b>	Doubles	<b>+ 3</b>
<hr style="width: 50%; margin: 0 auto;"/>		<hr style="width: 50%; margin: 0 auto;"/>
<b>6</b>		<b>6</b>



**3 3**



**3**



**3**

**Think About**

One more than 3 + 2.

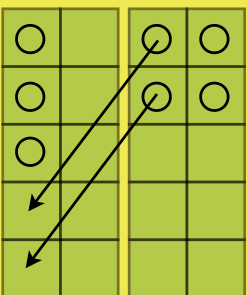
**3 + 3 =**

<b>3</b>
<b>+ 3</b>
<hr style="width: 50%; margin: 0 auto;"/>

<b>3</b>
<b>+ 3</b>
<hr style="width: 50%; margin: 0 auto;"/>

**3 + 3 =**

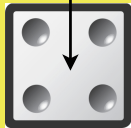
<b>3</b>	<b>Strategy</b>	<b>4</b>
<b>+ 4</b>	Doubles Plus One	<b>+ 3</b>
<hr style="width: 50%; margin: 0 auto;"/>	$(3 + 3) + 1$	<hr style="width: 50%; margin: 0 auto;"/>
<b>7</b>		<b>7</b>



**3 4**



**3**



**4**

**Think About**

One more than 3 + 3.  
Move a dot from the three to the four. What do you see?

**3 + 4 =**

<b>3</b>
<b>+ 4</b>
<hr style="width: 50%; margin: 0 auto;"/>

<b>4</b>
<b>+ 3</b>
<hr style="width: 50%; margin: 0 auto;"/>

**4 + 3 =**

<b>3</b>	Strategy	<b>5</b>
<b>+5</b>	Doubles Plus Two	<b>+3</b>
<b>8</b>	$(3 + 3) + 2$	<b>8</b>

$$3 + 5 =$$

$$\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ + 3 \\ \hline \end{array}$$

$$5 + 3 =$$

○		○	
○		○	
○		○	
		○	
		○	
		○	

3   5

●●●	3
●●●●●	5

**Think About**

Two less than ten.

<b>3</b>	Strategy	<b>6</b>
<b>+6</b>	Sum of Ten - 1	<b>+3</b>
<b>9</b>	$3 + 7 = 10$	<b>9</b>

$$3 + 6 =$$

$$\begin{array}{r} 3 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$$

$$6 + 3 =$$

○		○	○
○		○	○
○		○	○
		○	○
		○	○
		○	○

3   6

●●●	3
●●●●●	6

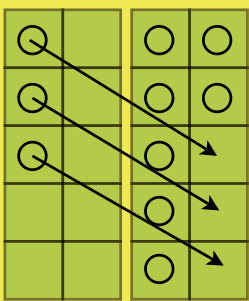
**Think About**

Move three circles and you have one less than ten.  
Move one dot and you have one less than ten.

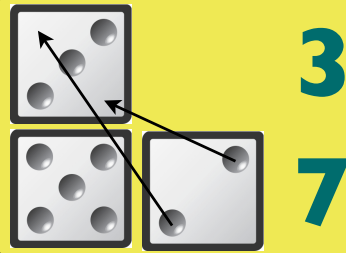
$$\begin{array}{r} 3 \\ + 7 \\ \hline 10 \end{array}$$

**Strategy**  
Sum of Ten

$$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$$



**3 7**



**3 7**

**Think About**

Combine 2 + 3 to make 5  
5 + 5 = 10.

$$3 + 7 =$$

$$\begin{array}{r} 3 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 3 \\ \hline \end{array}$$

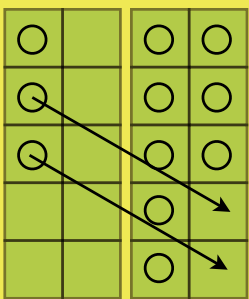
$$7 + 3 =$$

$$\begin{array}{r} 3 \\ + 8 \\ \hline 11 \end{array}$$

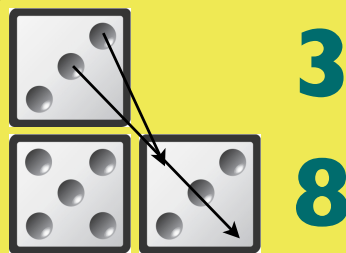
**Strategy**  
Eights Rule  
(3 + 10) - 2

$$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$$

Sum of Ten Minus One  
3 + 7 = 10    2 + 8 = 10



**3 8**



**3 8**

**Think About**

Move two dots and you  
have 10 + 1.

$$3 + 8 =$$

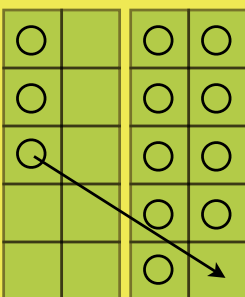
$$\begin{array}{r} 3 \\ + 8 \\ \hline \end{array}$$

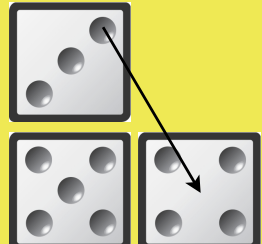
$$\begin{array}{r} 8 \\ + 3 \\ \hline \end{array}$$

$$8 + 3 =$$

$\begin{array}{r} 3 \\ + 9 \\ \hline 12 \end{array}$	<b>Strategy</b> Nines Rule Adding nine is the same as adding ten and taking one away. $(3 + 10) - 1$	$\begin{array}{r} 9 \\ + 3 \\ \hline 12 \end{array}$
--	---	--

© © StudySmart.com 2019


$3 + 9$

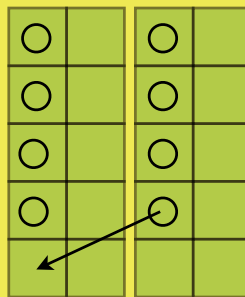
	$3 + 9$
---	---------


**Think About**

Move one dot to make  $(5 + 5) + 2$

$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$	<b>Strategy</b> Doubles	$\begin{array}{r} 4 \\ + 4 \\ \hline 8 \end{array}$
---	----------------------------	---

© © StudySmart.com 2019


$4 + 4$

	$4 + 4$
---	---------

**Think About**

Four plus four is two less than five plus five.  
Four plus four is equal to five plus three.

$$3 + 9 =$$

$$\begin{array}{r} 3 \\ + 9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 3 \\ \hline \end{array}$$

$$9 + 3 =$$

$$4 + 4 =$$

$$\begin{array}{r} 4 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 4 \\ \hline \end{array}$$

$$4 + 4 =$$

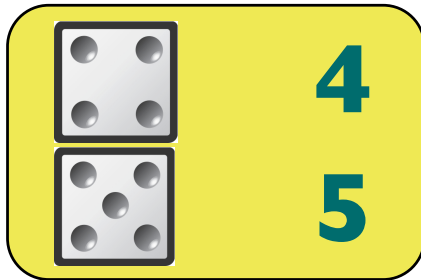
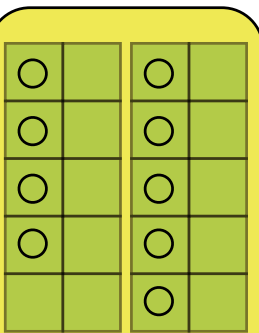
<b>4</b>	<b>Strategy</b>	<b>5</b>
<b>+5</b>	Doubles Plus One	<b>+4</b>
<hr/>	Sum of Ten - 1	<hr/>
<b>9</b>		<b>9</b>

**4 + 5 =**

<b>4</b>
<b>+5</b>
<hr/>

<b>5</b>
<b>+4</b>
<hr/>

**5 + 4 =**



**4 5**

**Think About**

One more than 4 + 4.  
One less than 5 + 5.

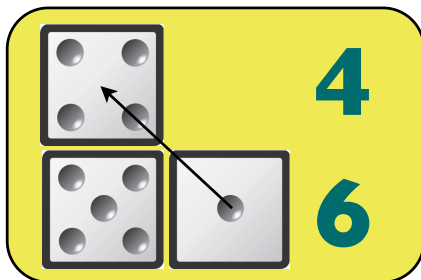
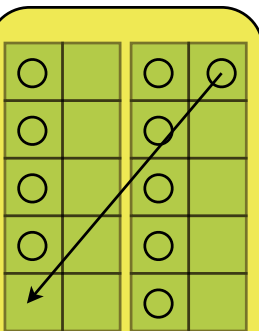
**4 + 6 =**

<b>4</b>
<b>+6</b>
<hr/>

<b>6</b>
<b>+4</b>
<hr/>

**6 + 4 =**

<b>4</b>	<b>Strategy</b>	<b>6</b>
<b>+6</b>	Doubles Plus Two	<b>+4</b>
<hr/>	Sum of Ten	<hr/>
<b>10</b>		<b>10</b>

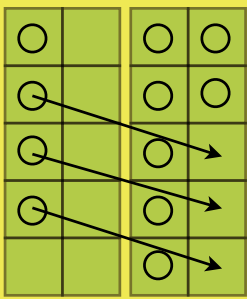


**4 6**

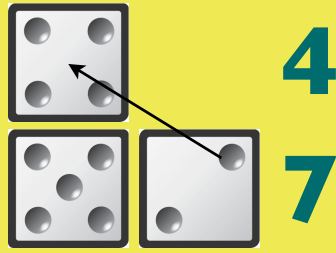
**Think About**

Two more than 4 + 4.  
Combine the four and one  
to make five plus five.

<b>4</b>	<b>Strategy</b>	<b>7</b>
<b>+7</b>	Sum of Ten + 1	<b>+4</b>
<hr style="border: 1px solid black;"/>	(4 + 6) + 1 (3 + 7) + 1	<hr style="border: 1px solid black;"/>
<b>11</b>		<b>11</b>



**4 7**



**Think About**

Move three and you have ten plus one more.

Move one and you have ten plus one more.

$$4 + 7 =$$

$$\begin{array}{r} 4 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 4 \\ \hline \end{array}$$

$$7 + 4 =$$

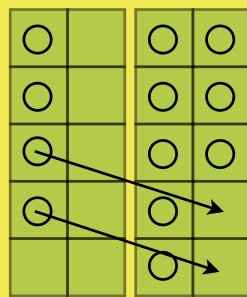
$$4 + 8 =$$

$$\begin{array}{r} 4 \\ + 8 \\ \hline \end{array}$$

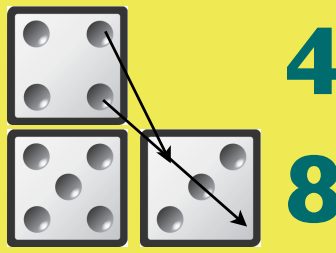
$$\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$$

$$8 + 4 =$$

<b>4</b>	<b>Strategy</b>	<b>8</b>
<b>+8</b>	Eights Rule Adding eight is the same as adding ten and taking two away.	<b>+4</b>
<hr style="border: 1px solid black;"/>	(4 + 10) - 2	<hr style="border: 1px solid black;"/>
<b>12</b>		<b>12</b>



**4 8**



**Think About**

Move two dots and you have 10 + 2.



$$\begin{array}{r} 4 \\ + 9 \\ \hline 13 \end{array}$$

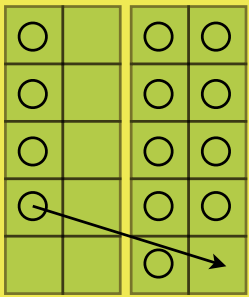
**Strategy**

Nines Rule  
Adding nine is the same as adding ten and taking one away.

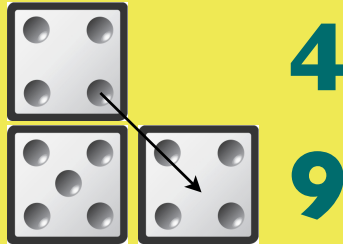
$$(4 + 10) - 1$$

©© StudySmart.com 2019

$$\begin{array}{r} 9 \\ + 4 \\ \hline 13 \end{array}$$



4 9



4 9

**Think About**

It's like having four cents, getting a dime, and giving back a penny.

$$4 + 9 =$$

$$\begin{array}{r} 4 \\ + 9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 4 \\ \hline \end{array}$$

$$9 + 4 =$$

$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$

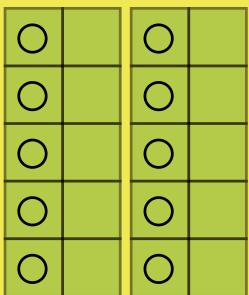
©© StudySmart.com 2019

**Strategy**

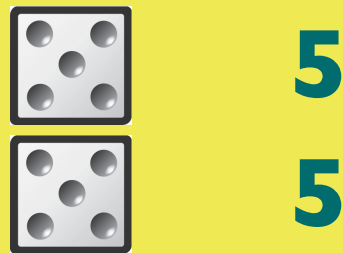
Doubles

Sum of Ten

$$\begin{array}{r} 5 \\ + 5 \\ \hline 10 \end{array}$$



5 5



5 5

**Think About**

Why is this fact so important? Look at your fingers.

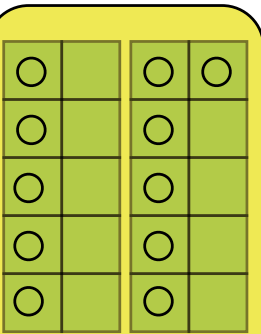
$$5 + 5 =$$

$$\begin{array}{r} 5 \\ + 5 \\ \hline \end{array}$$

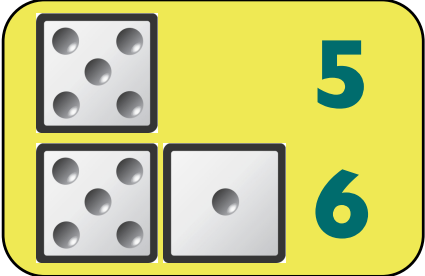
$$\begin{array}{r} 5 \\ + 5 \\ \hline \end{array}$$

$$5 + 5 =$$

<b>5</b>	<b>Strategy</b>	<b>6</b>
<b>+6</b>	Doubles Plus One	<b>+5</b>
<hr style="width: 50px; margin: 0 auto;"/>	Sum of Ten + 1	<hr style="width: 50px; margin: 0 auto;"/>
<b>11</b>		<b>11</b>



**5 6**



**5**

**6**

**Think About**  
 $(5 + 5) + 1$

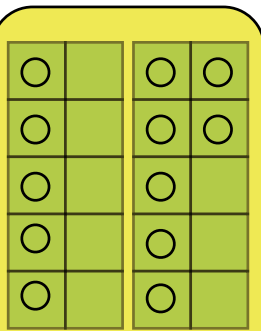
**5 + 6 =**

$$\begin{array}{r} 5 \\ + 6 \\ \hline \end{array}$$

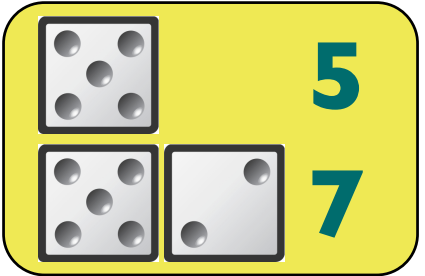
$$\begin{array}{r} 6 \\ + 5 \\ \hline \end{array}$$

**6 + 5 =**

<b>5</b>	<b>Strategy</b>	<b>7</b>
<b>+7</b>	Doubles Plus Two	<b>+5</b>
<hr style="width: 50px; margin: 0 auto;"/>	$(5 + 5) + 2$	<hr style="width: 50px; margin: 0 auto;"/>
<b>12</b>		<b>12</b>



**5 7**



**5**

**7**

**Think About**  
Five plus five plus two.

**5 + 7 =**

$$\begin{array}{r} 5 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 5 \\ \hline \end{array}$$

**7 + 5 =**

$$\begin{array}{r} 5 \\ + 8 \\ \hline 13 \end{array}$$

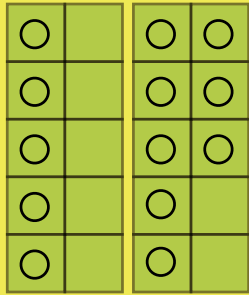
### Strategy

**Eights Rule**  
Adding eight is the same as adding ten and taking two away.

$$(5 + 10) - 2$$

© StudySmart.com 2019

$$\begin{array}{r} 8 \\ + 5 \\ \hline 13 \end{array}$$



5 8



5



8

### Think About

$$5 + (5 + 3)$$

Two fives are ten, plus three more.

$$5 + 8 =$$

$$\begin{array}{r} 5 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 5 \\ \hline \end{array}$$

$$8 + 5 =$$

$$\begin{array}{r} 5 \\ + 9 \\ \hline 14 \end{array}$$

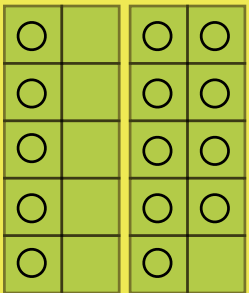
### Strategy

**Nines Rule**  
Adding nine is the same as adding ten and taking one away.

$$(5 + 10) - 1$$

© StudySmart.com 2019

$$\begin{array}{r} 9 \\ + 5 \\ \hline 14 \end{array}$$



5 9



5



9

### Think About

Two 5's make ten plus four.

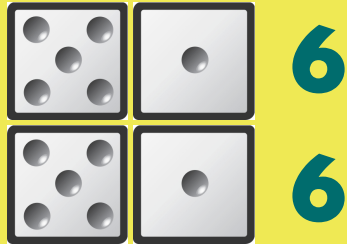
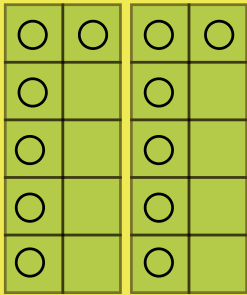
$$5 + 9 =$$

$$\begin{array}{r} 5 \\ + 9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$$

$$9 + 5 =$$

<b>6</b>	<b>Strategy</b>	<b>6</b>
<b>+6</b>	Doubles	<b>+6</b>
<hr style="width: 50%; margin: 0 auto;"/>		<hr style="width: 50%; margin: 0 auto;"/>
<b>12</b>		<b>12</b>



**6 6**

**Think About**

Five and five plus two more.  
(5 + 5) + (1 + 1)

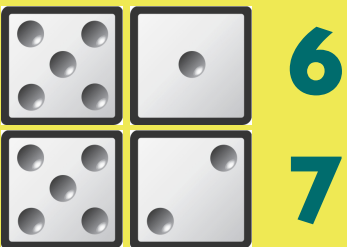
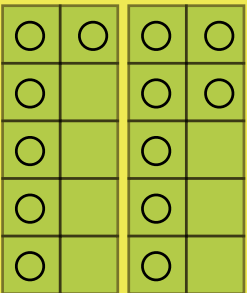
**6 + 6 =**

$$\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$$

**6 + 6 =**

<b>6</b>	<b>Strategy</b>	<b>7</b>
<b>+7</b>	Doubles Plus One	<b>+6</b>
<hr style="width: 50%; margin: 0 auto;"/>	(6 + 6) + 1	<hr style="width: 50%; margin: 0 auto;"/>
<b>13</b>		<b>13</b>



**6 7**

**Think About**

Six plus six plus one  
(5 + 5) + (1 + 2)

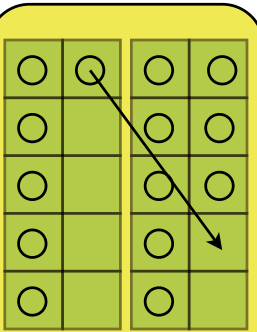
**6 + 7 =**

$$\begin{array}{r} 6 \\ + 7 \\ \hline \end{array}$$

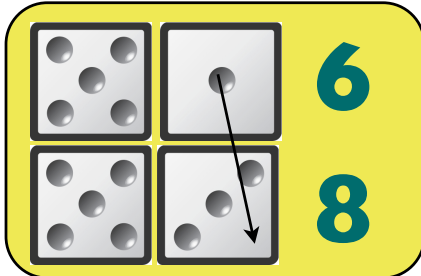
$$\begin{array}{r} 7 \\ + 6 \\ \hline \end{array}$$

**7 + 6 =**

<b>6</b>	<b>Strategy</b>	<b>8</b>
<b>+ 8</b>	Doubles Plus Two	<b>+ 6</b>
<hr/>	Eights Rule	<hr/>
<b>14</b>		<b>14</b>



**6**   **8**



**Think About**

$(6 + 6) + 2$   
 $(10 + 6) - 2$   
 $10 + (3 + 1)$

$$6 + 8 =$$

$$\begin{array}{r} 6 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 6 \\ \hline \end{array}$$

$$8 + 6 =$$

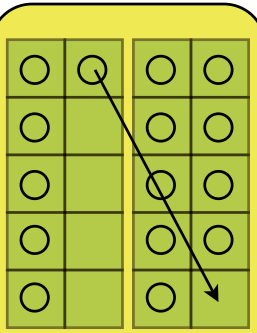
$$6 + 9 =$$

$$\begin{array}{r} 6 \\ + 9 \\ \hline \end{array}$$

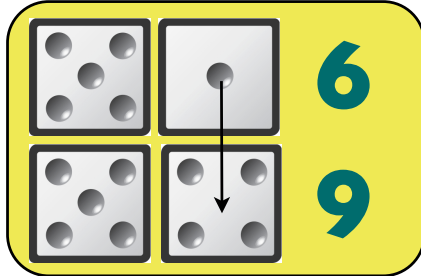
$$\begin{array}{r} 9 \\ + 6 \\ \hline \end{array}$$

$$9 + 6 =$$

<b>6</b>	<b>Strategy</b>	<b>9</b>
<b>+ 9</b>	Nines Rule	<b>+ 6</b>
<hr/>	Adding nine is the same as adding ten and taking one away.	<hr/>
<b>15</b>	$(6 + 10) - 1$	<b>15</b>



**6**   **9**



**Think About**

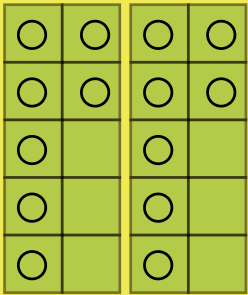
Move one dot to make  
 $(5 + 5) + 5$

$$\begin{array}{r} 7 \\ +7 \\ \hline 14 \end{array}$$

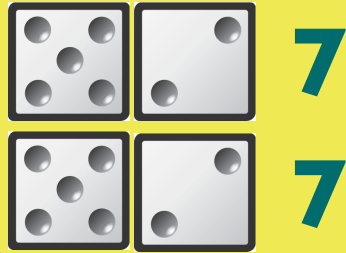
**Strategy**

Doubles

$$\begin{array}{r} 7 \\ +7 \\ \hline 14 \end{array}$$



7 7



**Think About**

Five and five plus four more.  
(5 + 5) + (2 + 2)

$$7 + 7 =$$

$$\begin{array}{r} 7 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +7 \\ \hline \end{array}$$

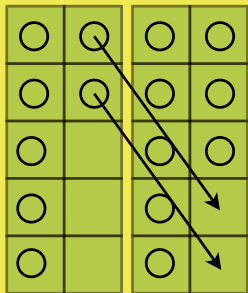
$$7 + 7 =$$

$$\begin{array}{r} 7 \\ +8 \\ \hline 15 \end{array}$$

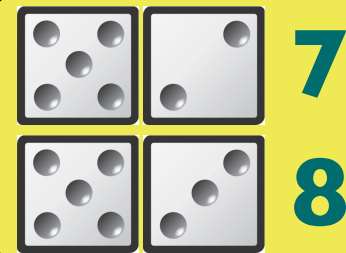
**Strategy**

Doubles Plus One  
Eights Rule

$$\begin{array}{r} 8 \\ +7 \\ \hline 15 \end{array}$$



7 8



**Think About**

(7 + 7) + 1  
(5 + 5) + (3 + 2)  
(10 + 7) - 2

$$7 + 8 =$$

$$\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$$

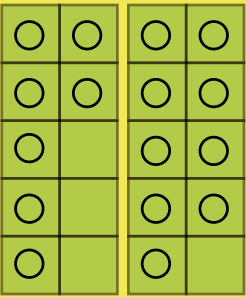
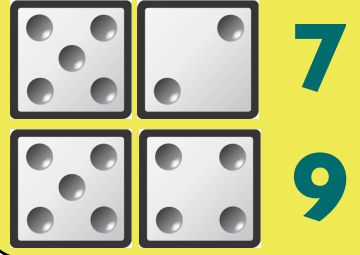
$$\begin{array}{r} 8 \\ +7 \\ \hline \end{array}$$

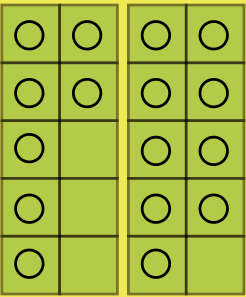
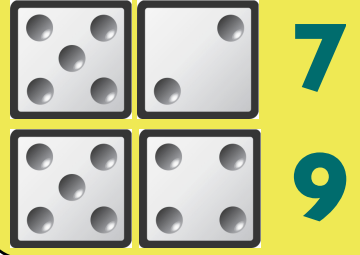
$$8 + 7 =$$

<b>7</b>	<b>Strategy</b>	<b>9</b>
<b>+ 9</b>	Nines Rule	<b>+ 7</b>
<hr style="width: 50%; margin: 0 auto;"/>	Adding nine is the same as adding ten and taking one away.	<hr style="width: 50%; margin: 0 auto;"/>
<b>16</b>	(7 + 10) - 1	<b>16</b>

© © StudySmart.com 2019

$$7 + 9 =$$

	
<b>7</b>	<b>9</b>

	
<b>7</b>	<b>9</b>

**Think About**

See (5 + 5) + (4 + 2)

$$\begin{array}{r} 7 \\ + 9 \\ \hline \end{array}$$

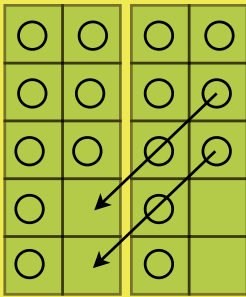
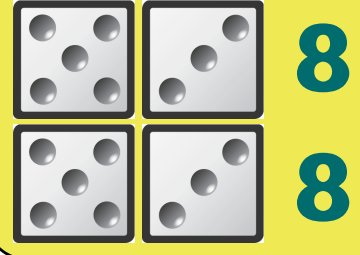
$$\begin{array}{r} 9 \\ + 7 \\ \hline \end{array}$$

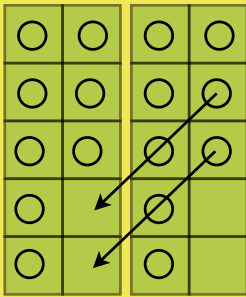
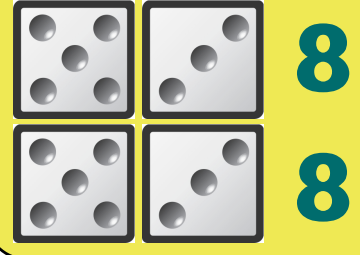
$$9 + 7 =$$

<b>8</b>	<b>Strategy</b>	<b>8</b>
<b>+ 8</b>	Doubles	<b>+ 8</b>
<hr style="width: 50%; margin: 0 auto;"/>	Eights Rule	<hr style="width: 50%; margin: 0 auto;"/>
<b>16</b>		<b>16</b>

© © StudySmart.com 2019

$$8 + 8 =$$

	
<b>8</b>	<b>8</b>

	
<b>8</b>	<b>8</b>

**Think About**

Five and five plus six more.  
 (5 + 5) + (3 + 3)  
 (8 + 10) - 2  
 10 + 6

$$\begin{array}{r} 8 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 8 \\ \hline \end{array}$$

$$8 + 8 =$$

<b>8</b>	<b>9</b>
<b>+ 9</b>	<b>+ 8</b>
<hr style="width: 50%; margin: 0 auto;"/>	<hr style="width: 50%; margin: 0 auto;"/>
<b>17</b>	<b>17</b>

**Strategy**

Doubles Plus One  
Eights Rule  
Nines Rule

**8 + 9 =**

**8**

**+ 9**

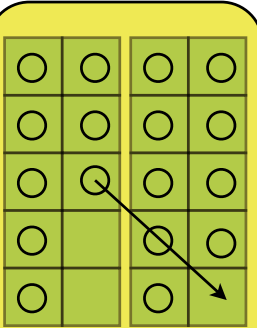
---

**9**

**+ 8**

---

**8 + 9 =**



**8 9**

**Think About**

(8 + 8) + 1  
(5 + 5) + (3 + 4)  
(10 + 8) - 1  
(10 + 9) - 2

**9 + 9 =**

**9**

**+ 9**

---

**9**

**+ 9**

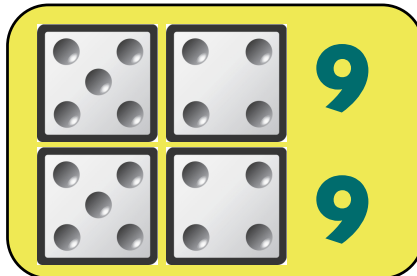
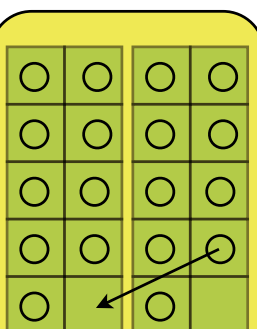
---

**9 + 9 =**

<b>9</b>	<b>9</b>
<b>+ 9</b>	<b>+ 9</b>
<hr style="width: 50%; margin: 0 auto;"/>	<hr style="width: 50%; margin: 0 auto;"/>
<b>18</b>	<b>18</b>

**Strategy**

Doubles  
Nines Rule



**9 9**

**Think About**

(9 + 10) - 1  
(5 + 5) + (4 + 4)  
10 + 8