

Year 4 Maths Learning Sequence

3: Addition and Subtraction

Mental Fluency

(7 lessons) Rachel Ratibb 2020

17.09.2021

LO: To compare different mental strategies

Vocabulary:

ones

tens

hundreds

thousands

addition

Subtraction

addend

sum

minuend

subtrahend

difference

inverse

commutative

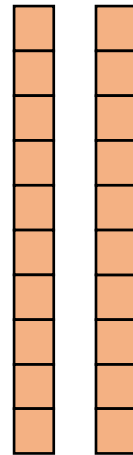
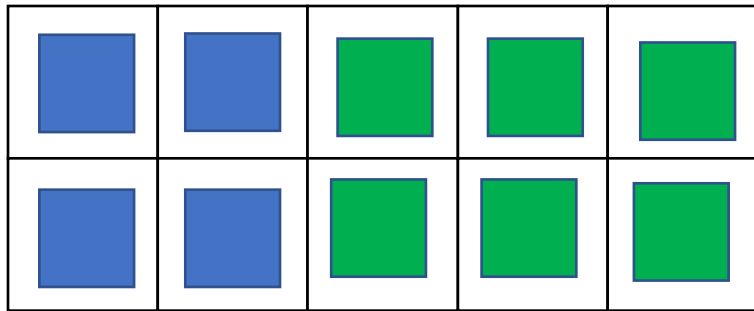


To add to the next 10

How do I get from my number to the next 10?

How do I get from my number to the next 10?

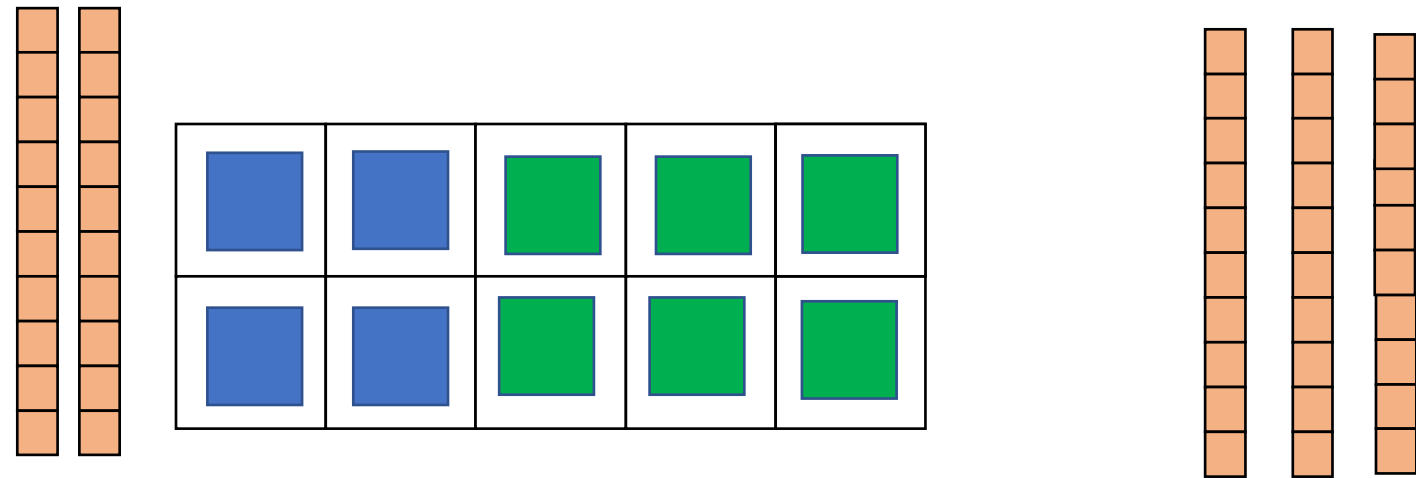
$$4 + _ = 10$$



The next 10 is 10
To get from 4 to 10 we
need 6
because 4 plus 6 equals
10
and 6 plus 4 equals 10

How do I get from my number to the next 10?

$$24 + \underline{\quad} = \underline{\quad}$$



$$24 + 6 = 30$$

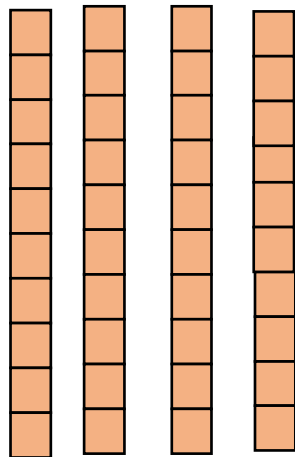
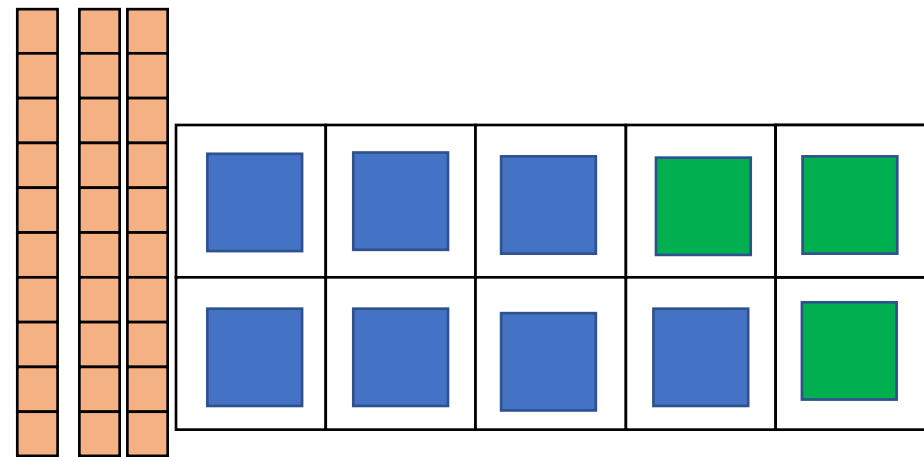
$$6 + 24 = 30$$

The next 10 is 30
To get from 24 to 30 we
need 6
because 24 plus 6 equals
30
and 6 plus 24 equals 30.

What do you notice about 4 to the next 10 and 24 to the next 10?

How do I get from my number to the next 10?

$$37 + \underline{\quad} = \underline{\quad}$$



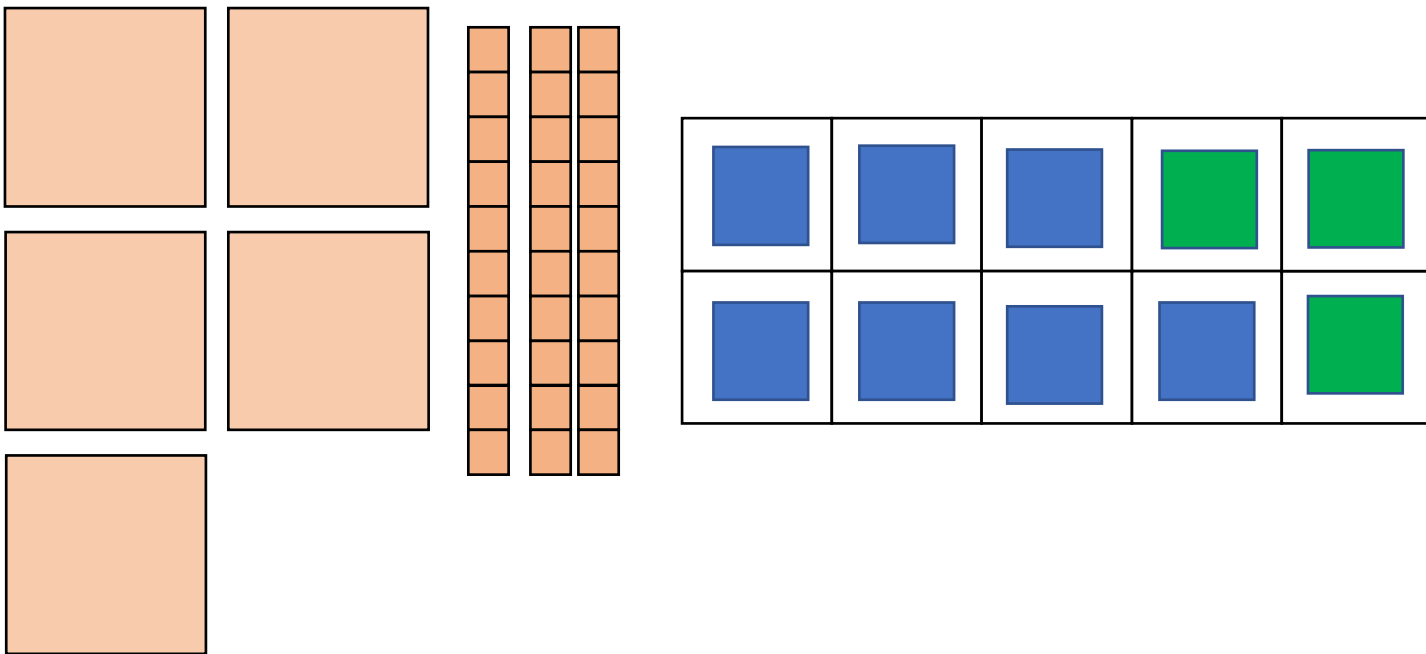
$$37 + 3 = 40$$

$$3 + 37 = 40$$

The next 10 is
To get from to we
need
because plus equals
and plus equals

How do I get from my number to the next 10?

$$537 + \underline{\quad} = \underline{\quad}$$



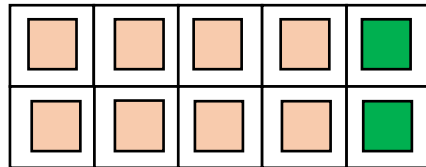
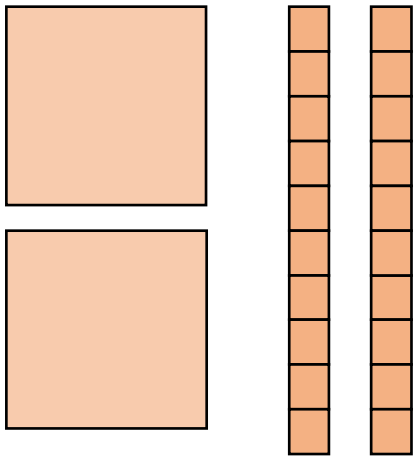
The next 10 is
To get from to we
need
because plus equals
and plus equals

What do you notice about 37 to the next 10 and 537 to the next 10?

To add to the next 100

How do I get from my number to the next 100?
TIP - Get to the next 10 first then the next 100.

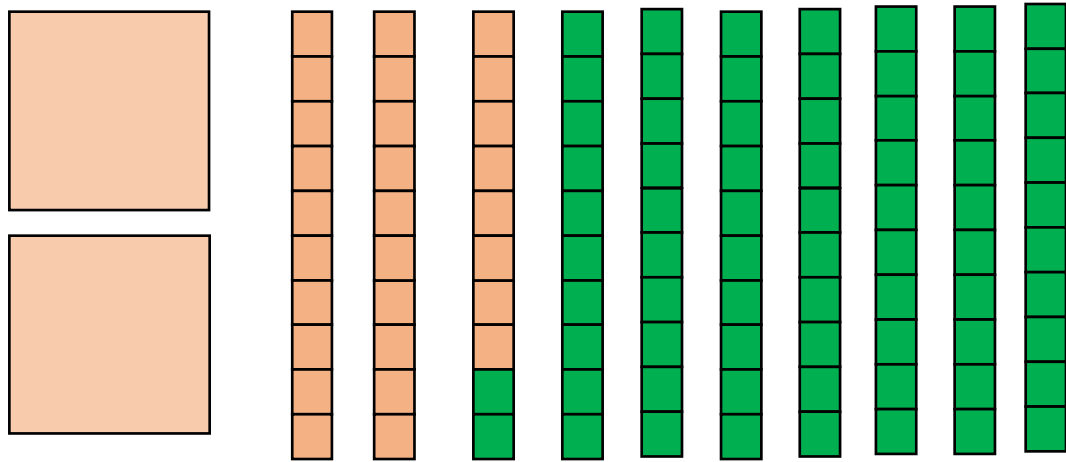
$$228 + \underline{\quad} = \underline{\quad}$$



The next 10 is 230
To get from 228 to 230
we need 2
because 228 plus 2
equals 230
and 2 plus 228 equals
230

How do I get from my number to the next 100?
TIP - Get to the next 10 first then the next 100.

$$228 + \underline{\quad} = \underline{\quad}$$

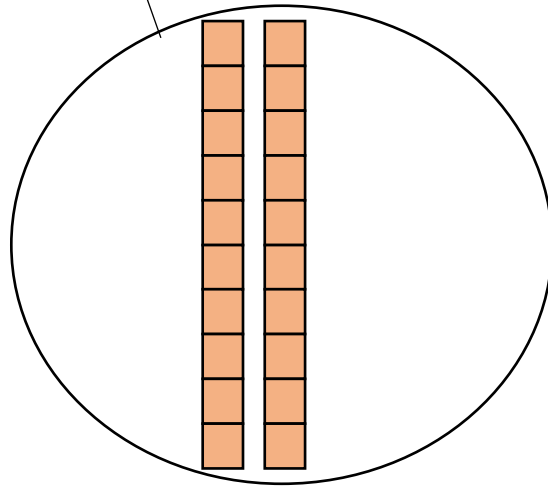
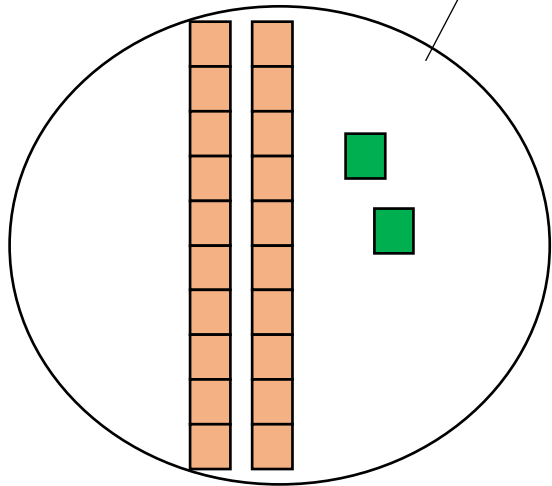
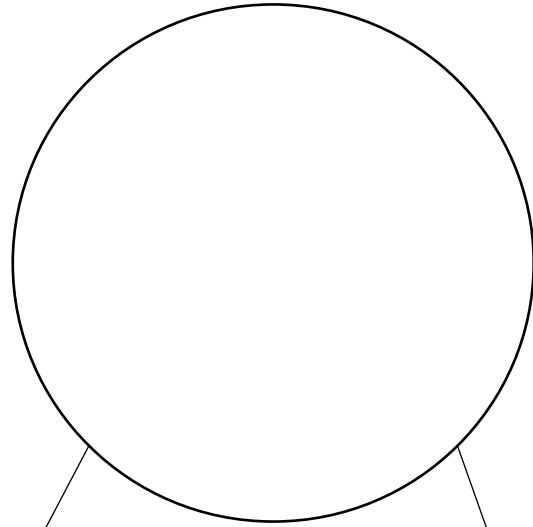


The next 100 is 300
To get from 230 to 300
we need seven tens (70)
because 230 plus 70
equals 300
and 70 plus 230 equals
300

Place Value Method

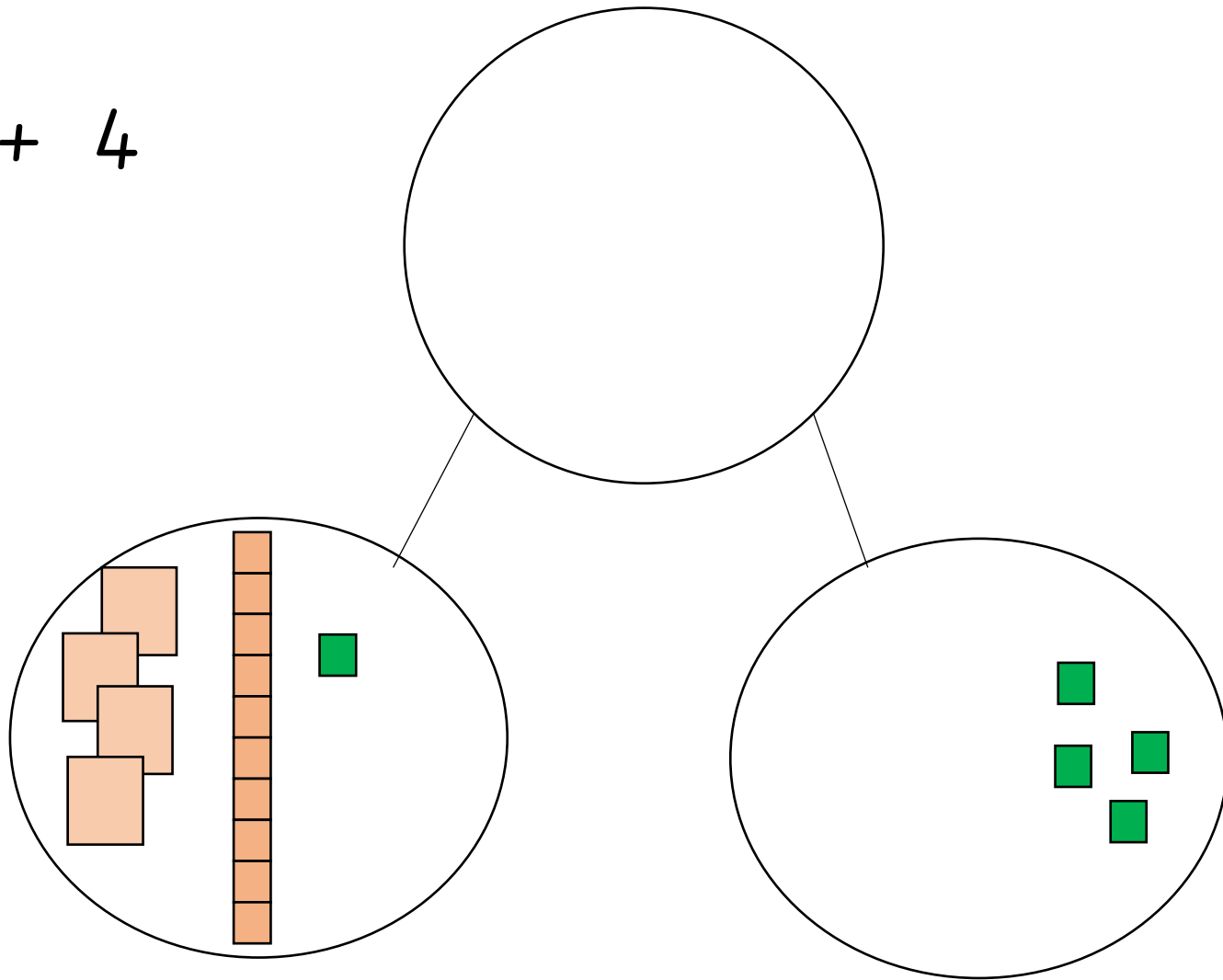
$$22 + 20$$

?	
22	20



$$\begin{aligned} 22 + 20 &= 42 \\ 32 + 20 &= 52 \\ 32 + 40 &= 72 \\ 132 + 40 &= 172 \\ 232 + 40 &= 272 \end{aligned}$$

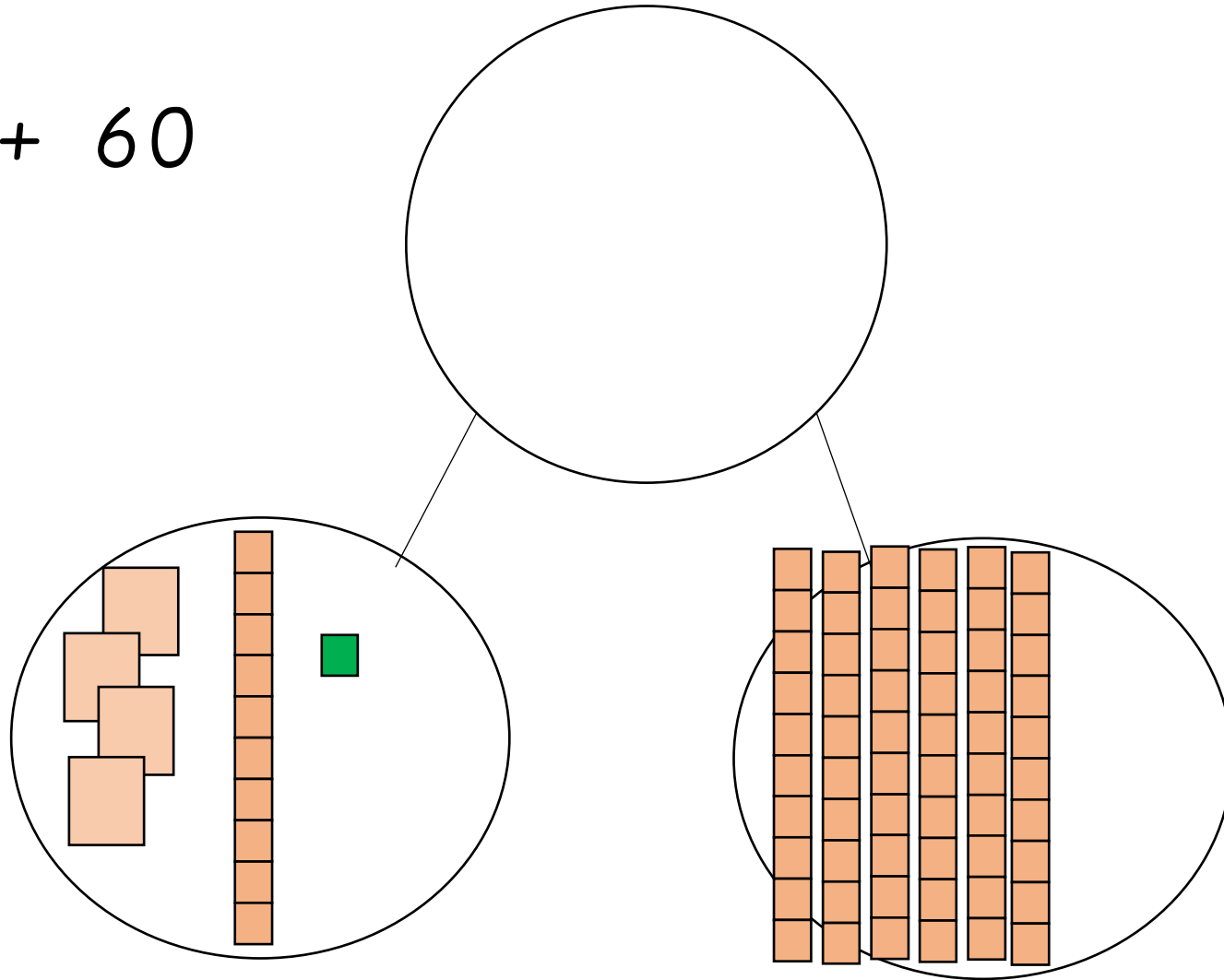
$$411 + 4$$



?	
411	4

$$411 + 4 = 415$$

$$411 + 60$$

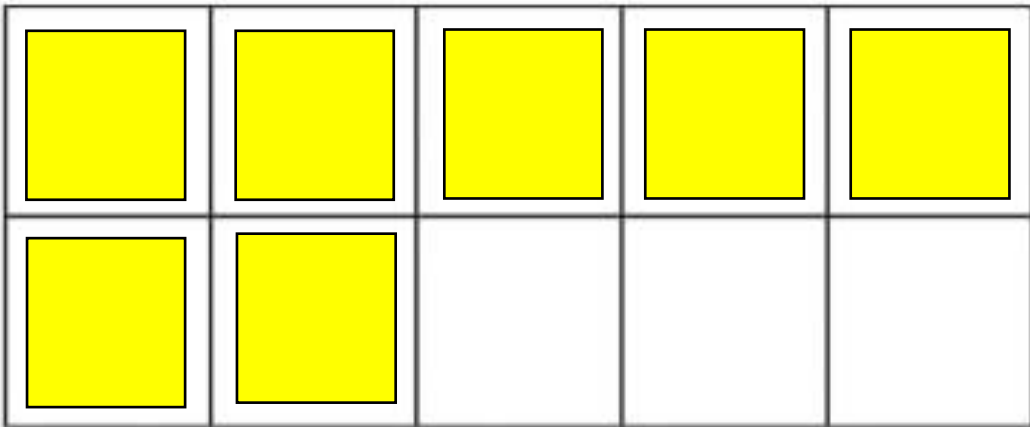
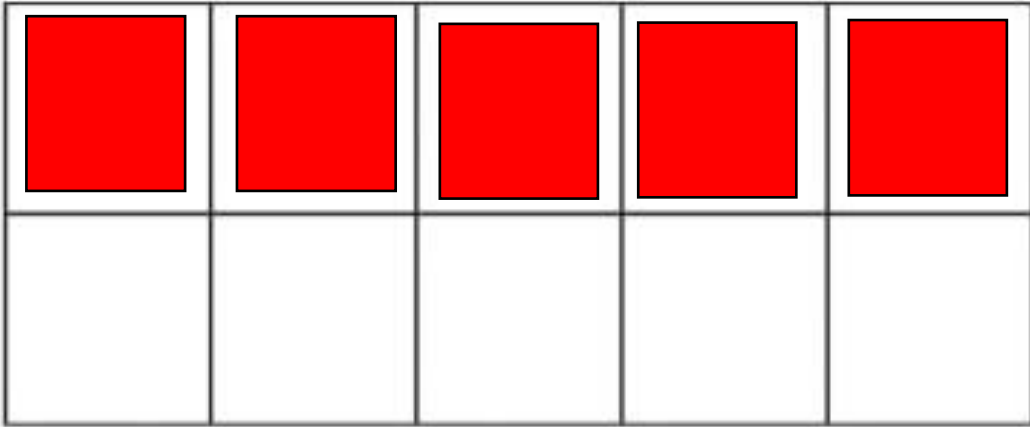


?	
411	60

$$411 + 60 = 471$$

Regrouping

$$5 + 7 =$$



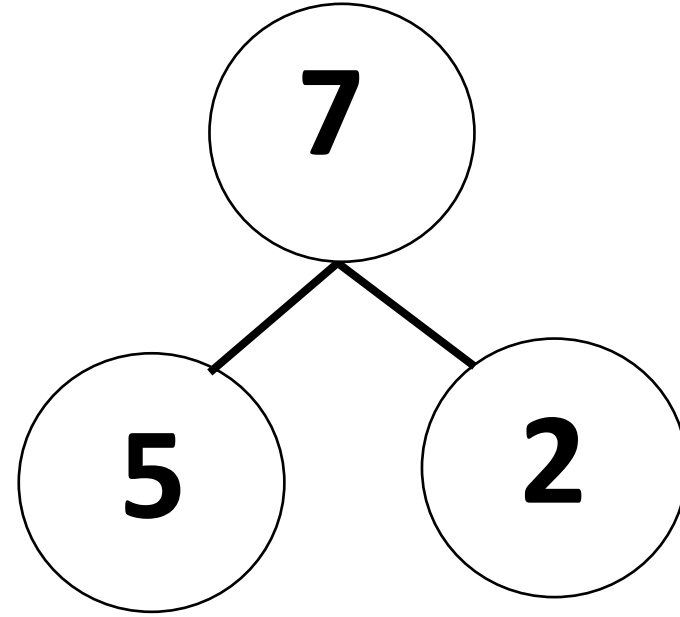
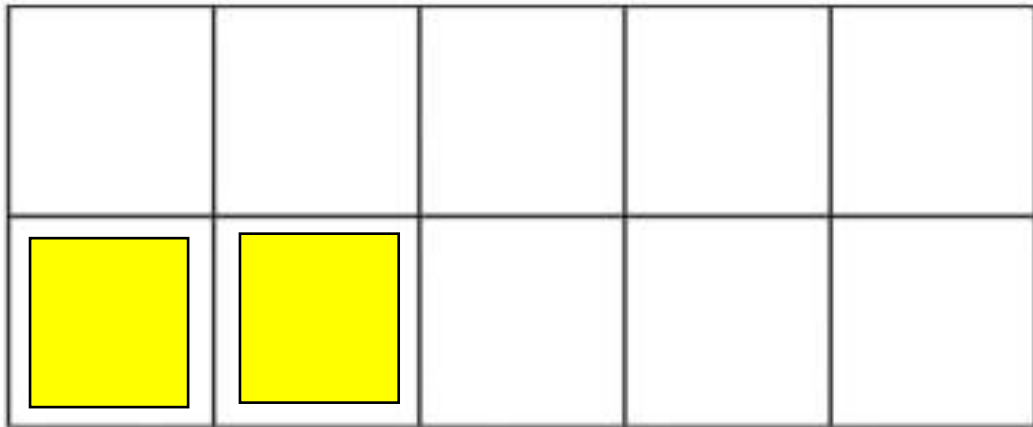
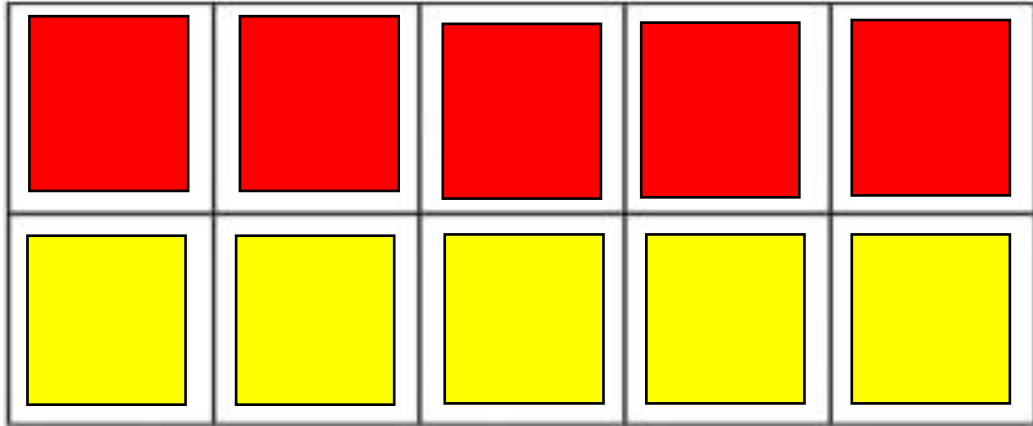
How could this question be easier?

How can I use number bonds to 10 to help?

What do we add to 5 to make 10?

Does 7 have a 5 in it? Yes

$$5 + 7 =$$



We can partition 7 into 5 and 2
5 plus 5 is 10.

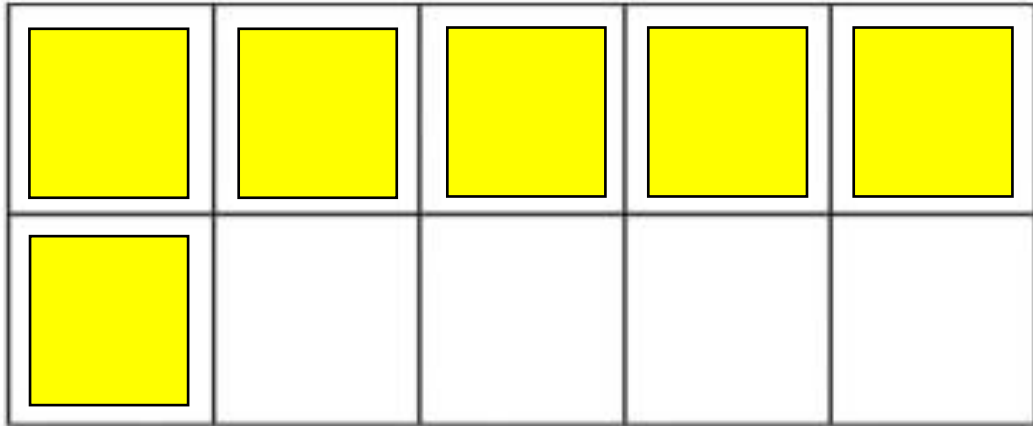
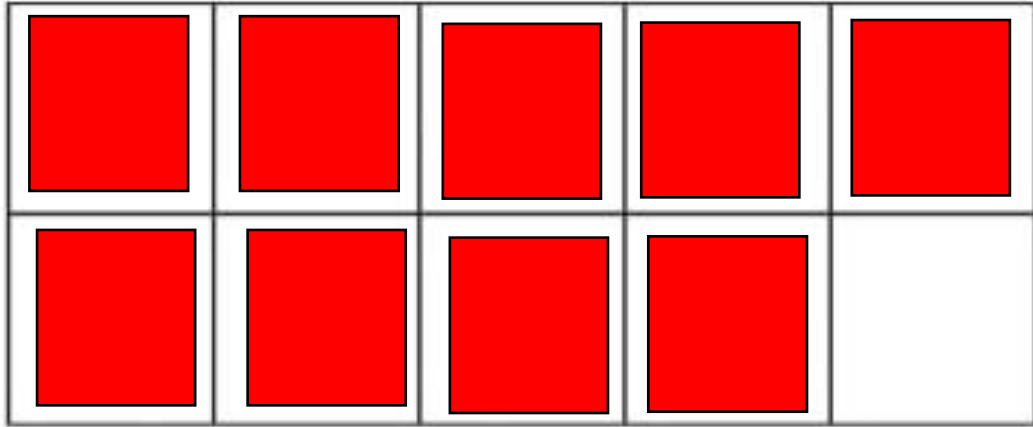
We can then rename the sum 10
plus 2 equals 12.

$$5 + 5 = 10$$

$$10 + 2 = 12$$

$$5 + 7 = 12$$

$$9 + 6 =$$



We can partition 6 into 1 and 5

9 plus 1 is 10.

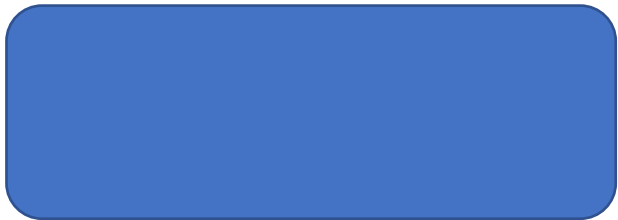
$$9 + 1 = 10$$

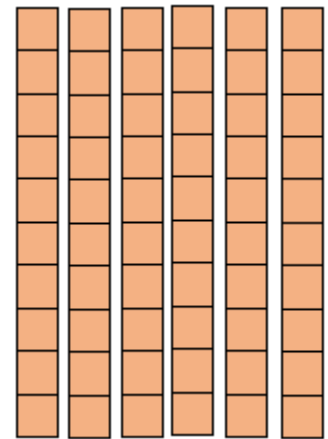
We can then rename the sum 10 plus 5 equals 15.

$$10 + 5 = 15$$

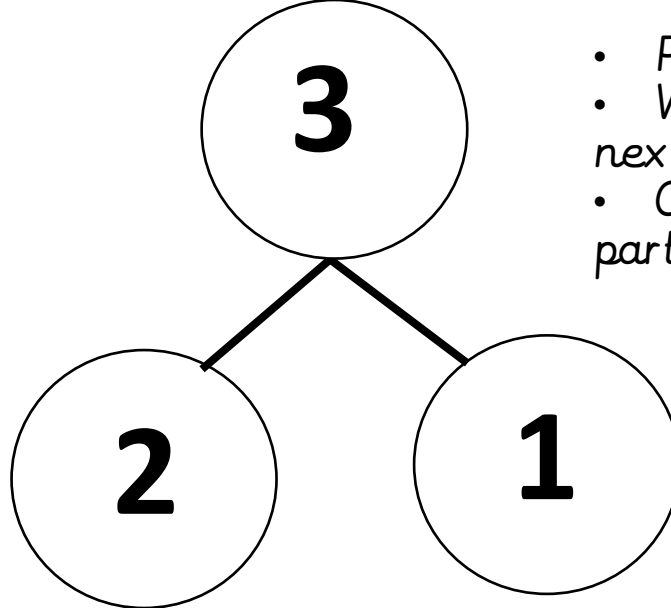
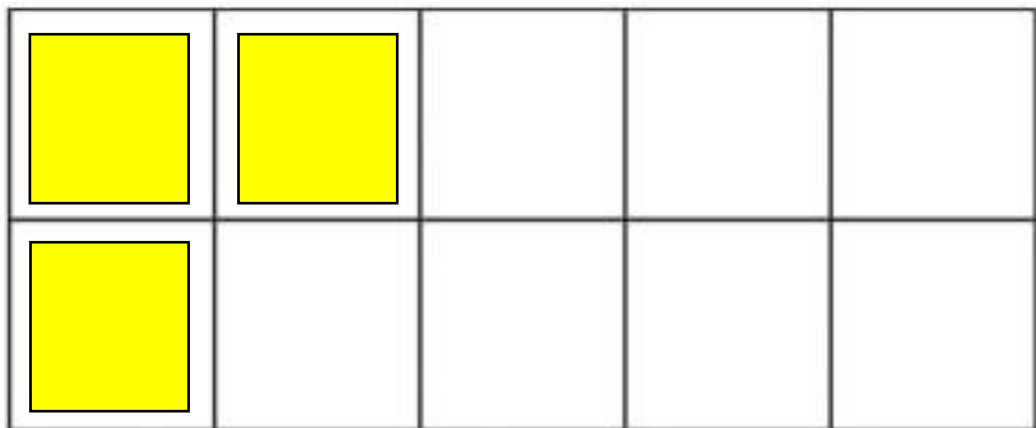
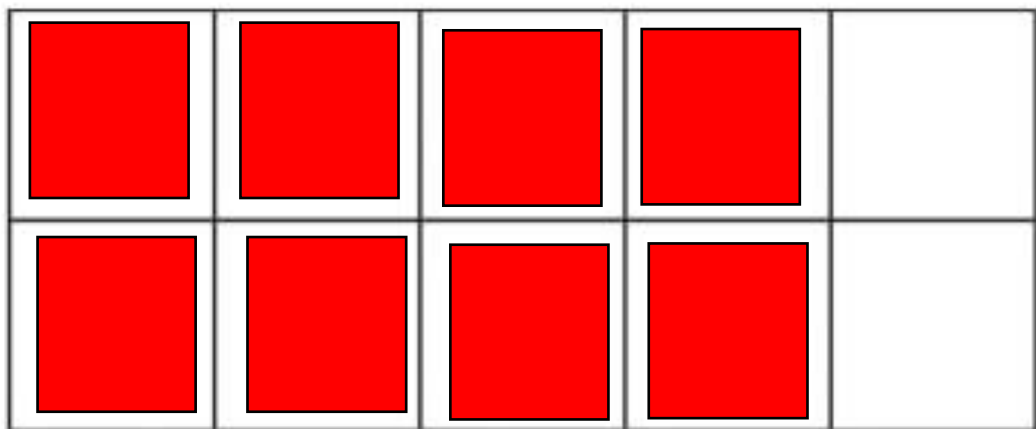
What is the same and what is different?

$$5 + 7 = 12$$





$$68 + 3 =$$
$$60 + 8 + 3 =$$



- Partition to just look at the ones.
- What do we need to get to the next 10?
- Can the other number be partitioned to include this?

We can partition 3 into 2 and 1
8 plus 2 is 10.

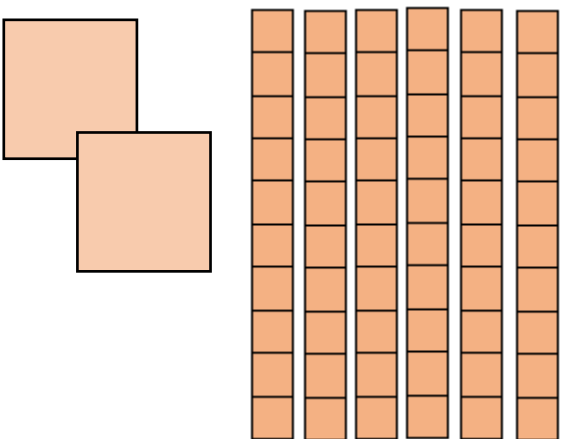
$$8 + 2 = 10$$

We can then rename the sum 10
plus 1 equals 11.

$$10 + 1 = 11$$

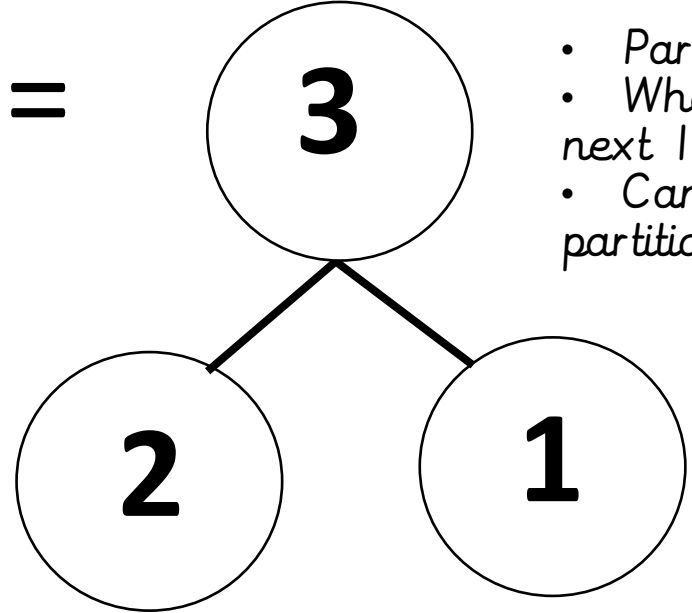
We can then add the 60.

$$60 + 11 = 71$$

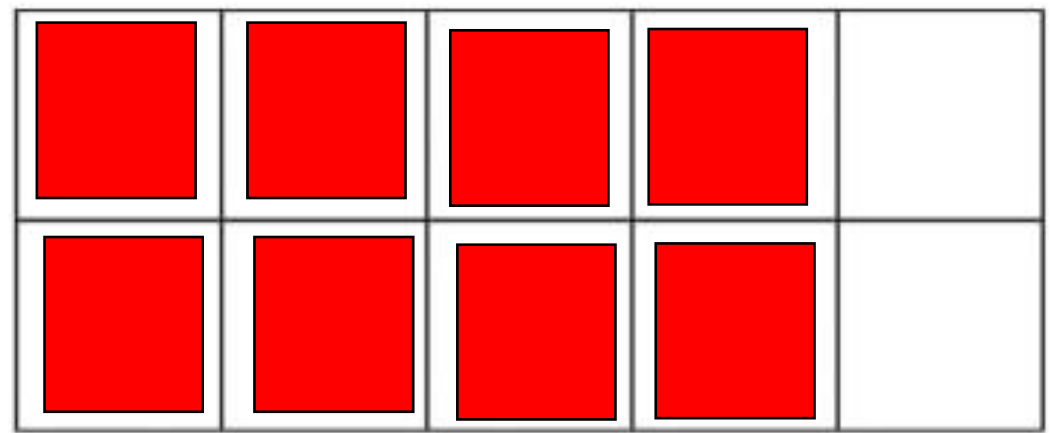


$$268 + 3 =$$

$$260 + 8 + 3 =$$



- Partition to just look at the ones.
- What do we need to get to the next 10?
- Can the other number be partitioned to include this?



We can partition 3 into 2 and 1
8 plus 2 is 10.

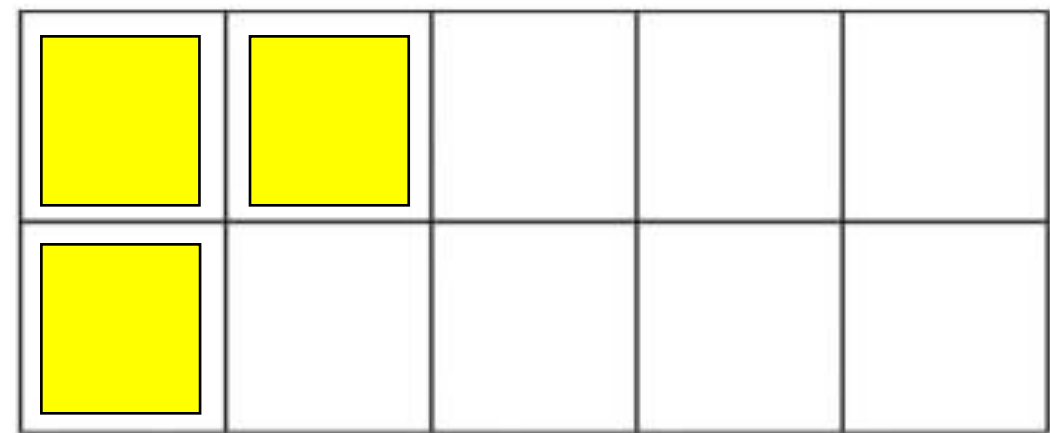
$$8 + 2 = 10$$

We can then rename the sum 10
 plus 1 equals 11.

$$10 + 1 = 11$$

We can then add the 260.

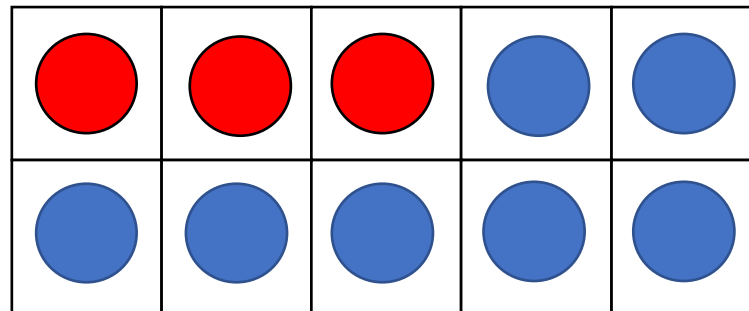
$$260 + 11 = 271$$



Compliments

What is a compliment?

If I am finding a compliment to 10

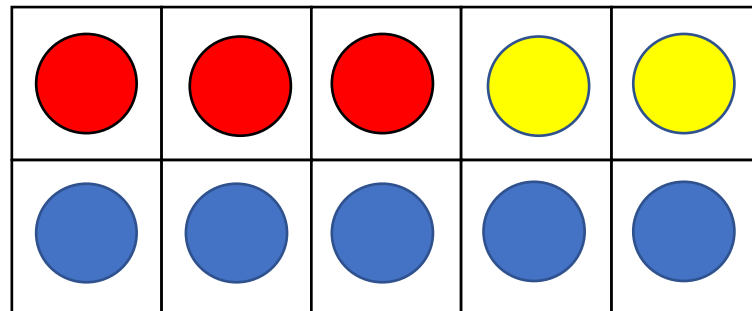


What calculation have we represented?

Is there another way of writing this

What is a compliment?

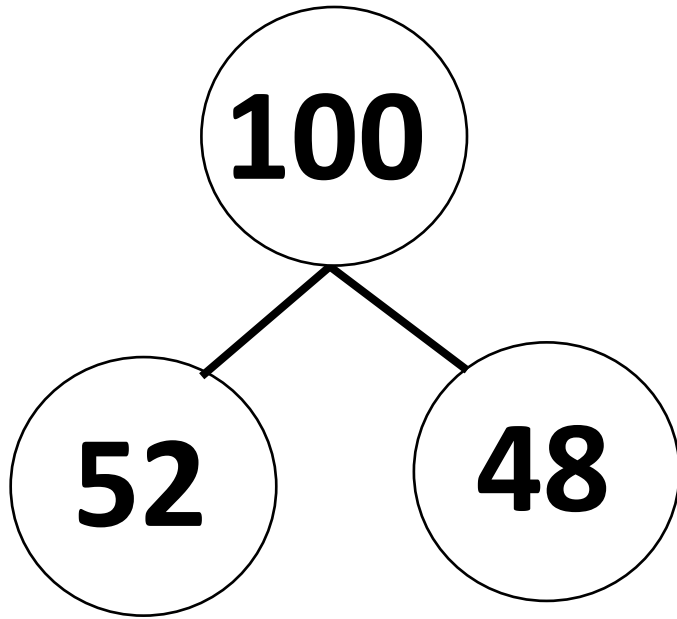
If I am finding a compliment to 10



What calculation have we represented?

Is there another way of writing this

How many are hidden to make 100?



What is the compliment to get to the next 10?

8 because $2 + 8 = 10$ so $52 + 8 = 60$

What is the compliment to get to the next 100?

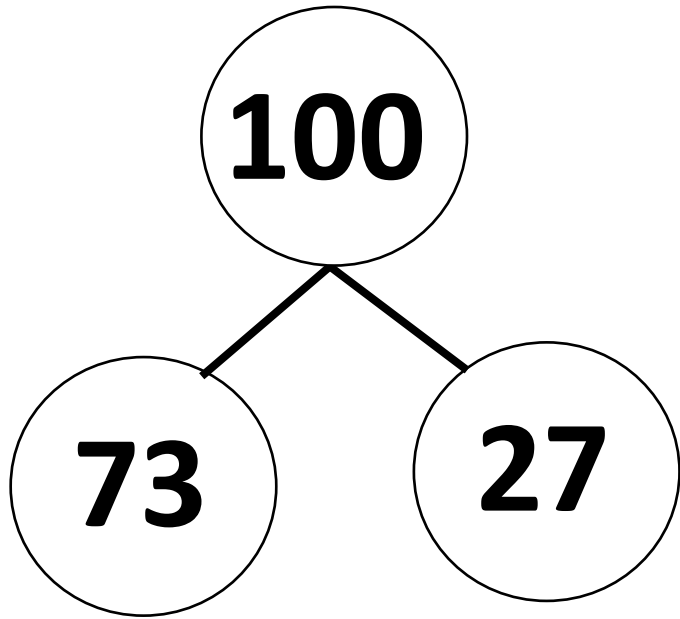
40 because $60 + 40 = 100$

So $8 + 40$ is hidden which is 48.

I can see 52 beads, there must be 48 more to 100.

$$52 + \square\square = 100$$

How many are hidden to make 100?



What is the compliment to get to the next 10?

7 because $3 + 7 = 10$ so $73 + 7 = 80$

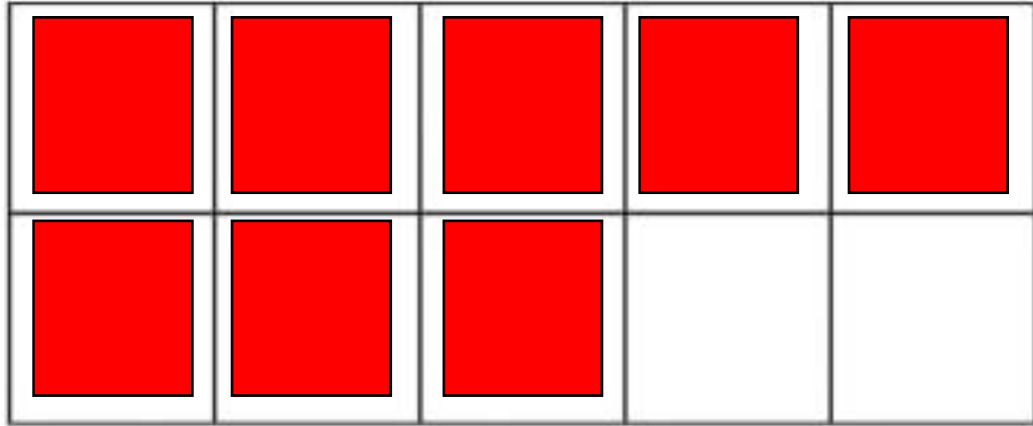
What is the compliment to get to the next 100?

20 because $80 + 20 = 100$

So $7 + 20$ is hidden which is 27.

Compensation Strategy

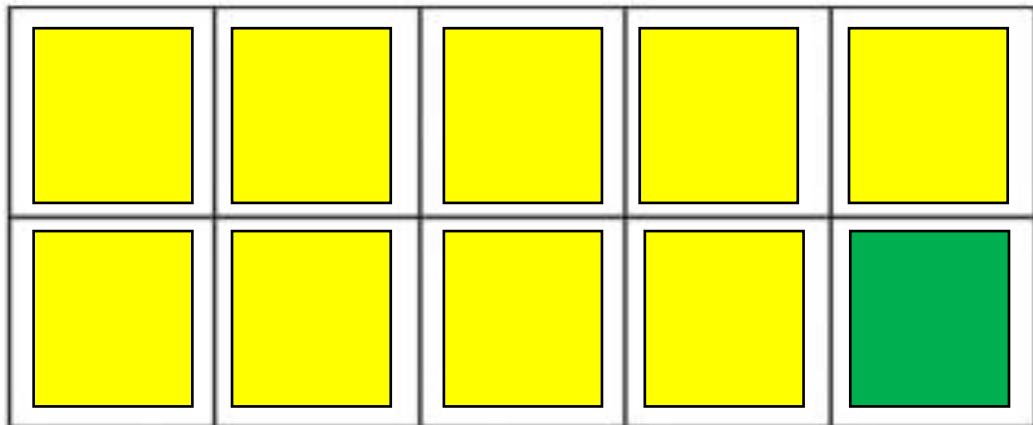
$$8 + 9$$



- TIP – adding 9 is the same as adding 10 then subtracting 1

$$8 + 10 = 18$$

$$- 1 = 17$$



Try these using the same method:

$$17 + 9 =$$

$$45 + 9 =$$

$$9 + 86 =$$

Place Value

$$876 - 70$$



$$1. 356 - 6 =$$

$$2. 784 - 80 =$$

$$3. 425 - 400 =$$

$$4. 692 - 90 =$$

SUBTRACTION



$$17 - 8 = 9$$

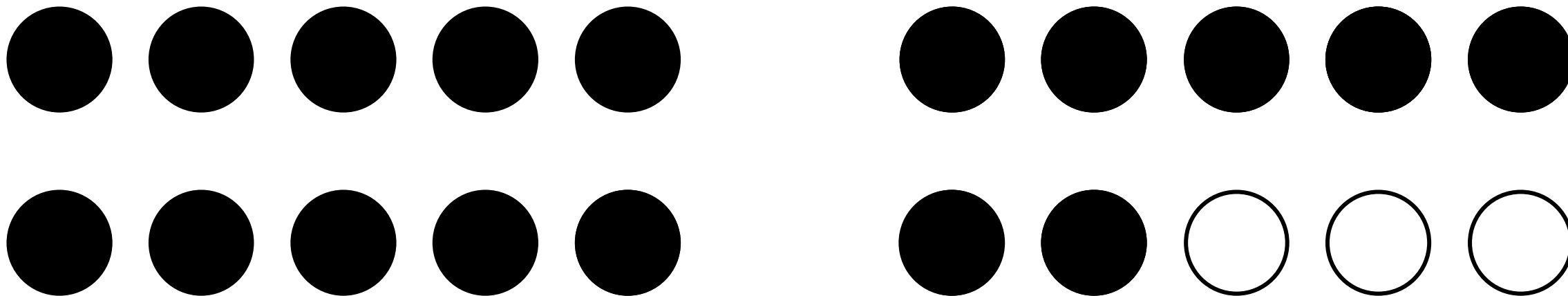
The number 8 is partitioned into 7 and 1.

What do we need to subtract from 17 to make 10?

Does 8 have that number in it?

We regroup or partition 8 into 7 and 1

Bridging through 10



Partition 8 into 7 and 1.
Take away 7 and then
take away 1.

Now demonstrate the method to your partner using the counters and tens frames



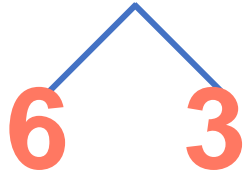


1. Have a try

$$16-9=7$$

Bridge through 10

$$16-9=7$$



$$16-6=10$$

$$10-3=7$$

Partition into and .
Take away and then
take away .



$$35 - 7$$

Bridge through 10

Partition _____ into

_____ and _____

Take away _____ and

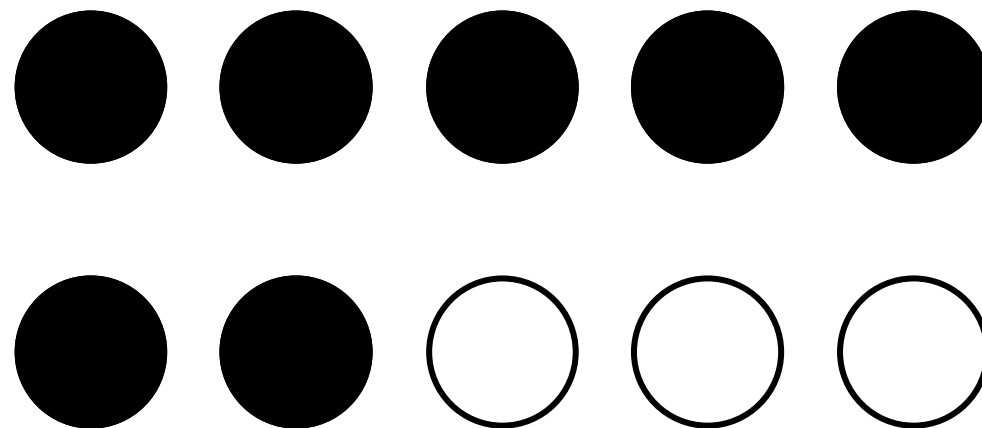
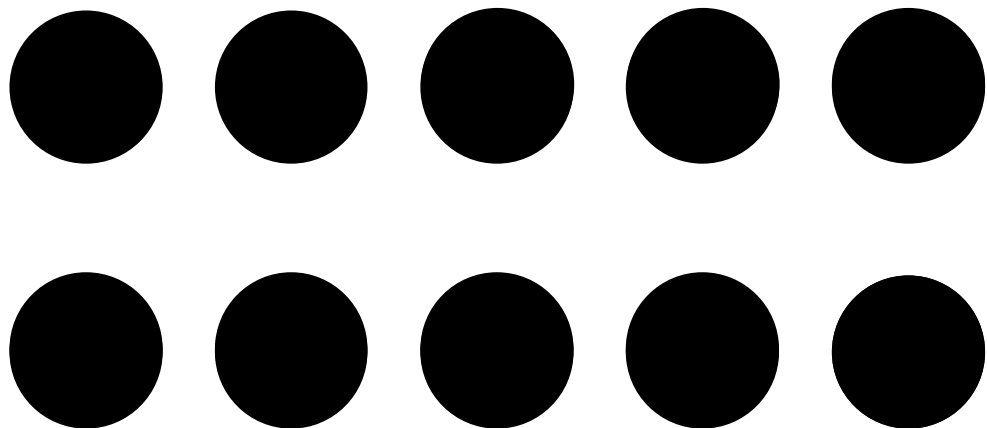
then take away _____



Subtracting from 10

$$17 - 8 = 9$$

Diagram showing the number 17 broken down into 10 and 7. A blue line connects the 1 and 7 in 17, with a red '10' below the 1 and a red '7' below the 7.



17 is 10 and 7.
Take away 8 from 10,
then put 2 and 7 together.

Now demonstrate the method to your partner using the counters and tens frames



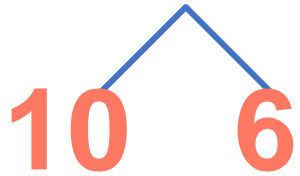


1. Have a try

$$16-9=7$$

Subtract from 10

$$16-9=7$$



$$10-9=1$$

$$1+6=7$$

_____ is _____ and _____.
Take away _____ from _____,
then put _____ and _____ together.



What's the same and what's different?

$17 - 8$

$37 - 8$

$317 - 8$

Subtraction regrouping strategy

$$70 - 67$$

$$\begin{array}{r} 80 - 67 \\ \swarrow \quad \searrow \\ 70 \quad 10 \end{array}$$

The next ten after 67 is 70
Can 80 be regrouped into
70 and something?

Take 67 from 70
Put the 3 and 10 together

$$= 3$$

$$+ \quad = 13$$

$$80 - 67 =$$

$$\begin{array}{r} 90 - 67 \\ \swarrow \quad \searrow \\ 70 \quad 20 \end{array}$$

$$= 3$$

$$+ \quad = 23$$

$$90 - 67 =$$

The next ten after 67 is 70
Can 90 be regrouped into
70 and something?

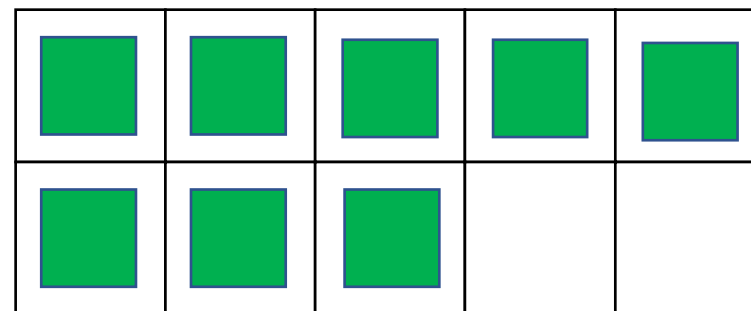
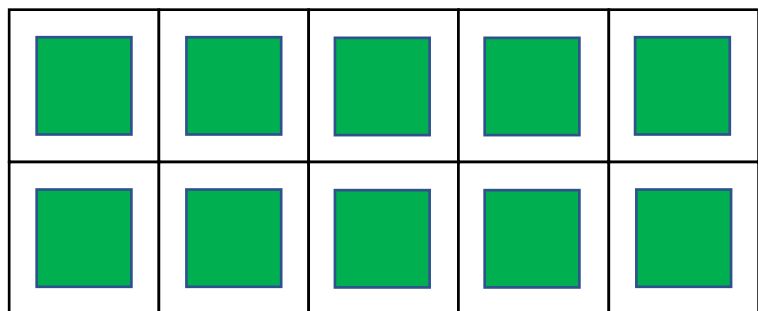
Take 67 from 70

Put the 3 and 20 together



$$17 - 9 = 8$$

Compensation



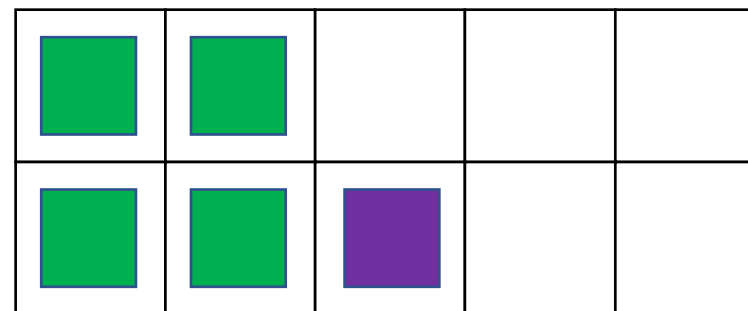
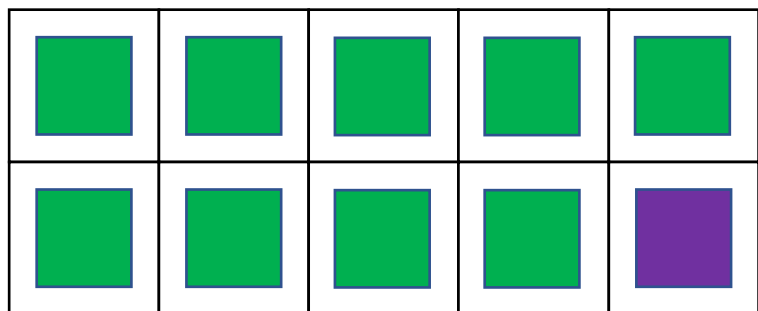
We don't like subtracting
9 but we do like
subtracting 10 and adding 1

Now demonstrate the method to your partner using the counters and tens frames





$$14 - 9 = 5$$



We don't like subtracting
9 but we do like
subtracting 10 and adding 1

Now demonstrate the method to your partner using the counters and tens frames



$$1.27 - 9$$

$$2.45 - 9$$

$$3.86 - 9$$

We don't like subtracting 9 but we do like subtracting 10 and adding 1

What would we say for

$27 - 8 =$ We don't like subtracting 8 but we do like subtracting 10 and adding 2

$35 - 7 =$ We don't like subtracting 7 but we do like subtracting 10 and adding 3

$42 - 6 =$ We don't like subtracting 6 but we do like subtracting 10 and adding 4

We don't like subtracting but we do like subtracting 10 and adding

<p>The sum of thirty-eight and seventy four</p>	<p>$48 + 325$</p>	<p>Three more than sixty-nine</p>	<table border="1"> <tr> <td>80</td> <td>40</td> </tr> <tr> <td colspan="2">?</td> </tr> </table>	80	40	?	
80	40						
?							
<p>$3 + 69$</p>	<p>The difference between 8 and 76</p>	<p>$120 - 7$</p>	<p>$45 + 13 + 27 + 15$</p>				
<p>$450 - 57$</p>	<p>Two less than seven hundred and seven</p>	<p>$370 + 210 + 30$</p>	<p>$156 - 34$</p>				

