ArithmeKit Answers

1

The essential maths toolkit

A collection of rich problem solving and reasoning activities designed to deepen children's understanding of the Number strands (place value and calculation) of the National Curriculum for Mathematics and improve their arithmetical proficiency.

Steve Lomax and Liz Hopkins
www.CanDoMaths.org

Make sure we have your direct email address so we can send you any updates or additional free resources.

Email: emma@buzzardpublishing.com

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Contents

Teacher notes

Have a look at our short videos on YouTube to get ideas for getting the best out the ArithmeKits

We have provided answers to many of the ArithmeKit activities.

Matching Activity 1

You will find colour coded boxes are used to match calculations and answers in the first Matching activity of each section. Where there are missing calculations or answers these have been inserted in red or blue text - sometimes, although a calculation is given there are other possibilities that would work.

What do you notice? Activity 2

Many of these activities are reliant on discussion and it is hoped that teachers will adjust the calculations and extend them to challenge their learners, so solutions are not always provided.

Empty Box Activity 5

Our videos on YouTube are particularly helpful for showing you how to get the best out of this style of activity. Answers are provided but there may be more than one way to solve the challenge.

Colin and Coco

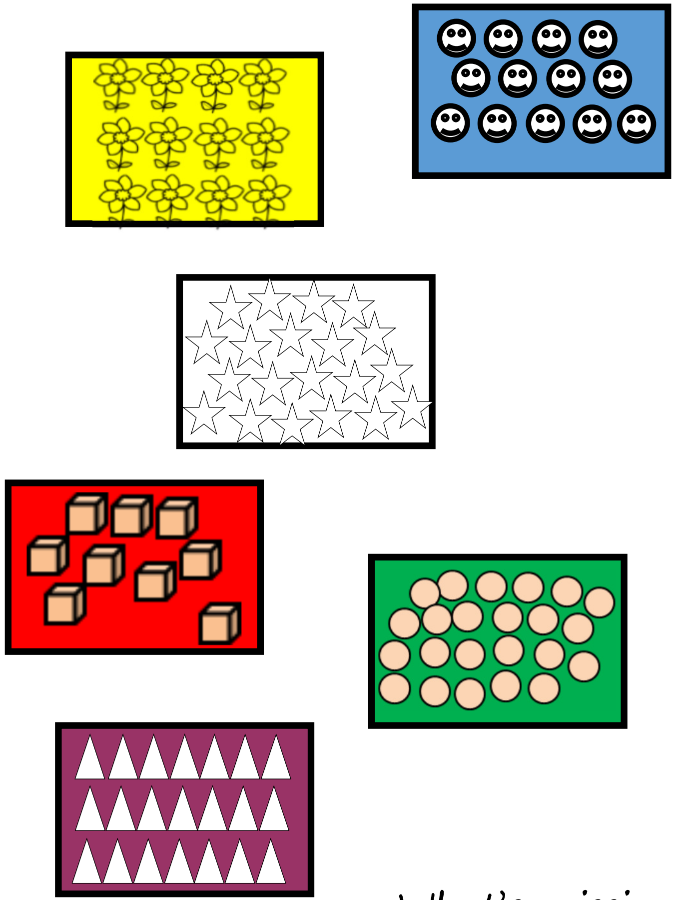
We have not provided solutions for the Convince Colin or Coco activities as a wide-ranging discussion is key to getting the best from these.

1

ArithmeKit 1

Count objects

Find the matching pairs:

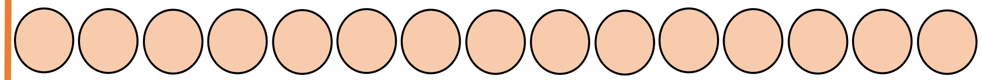


13
21
9
23
20
12

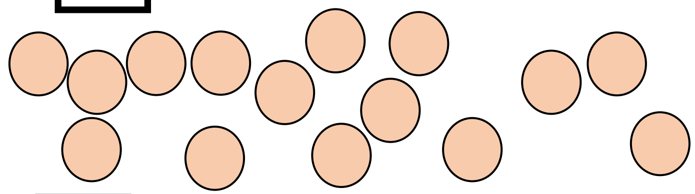
What's missing?

Create your own matching pairs.

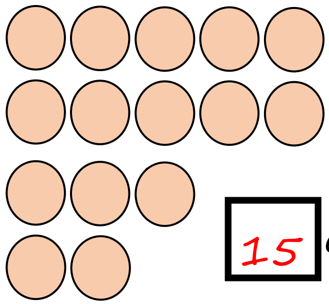
Write the missing numbers in the boxes:



$\boxed{15}$ counters

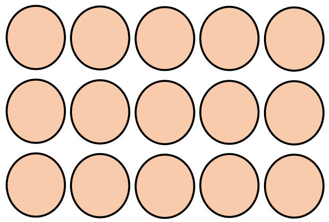


$\boxed{15}$ counters



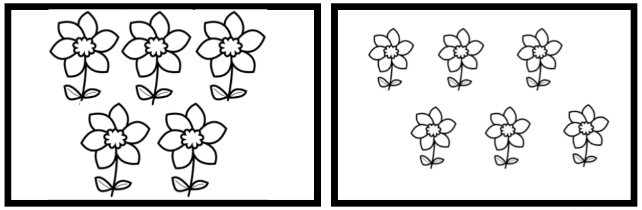
$\boxed{15}$ counters

What do you notice?



$\boxed{15}$ counters

Count objects



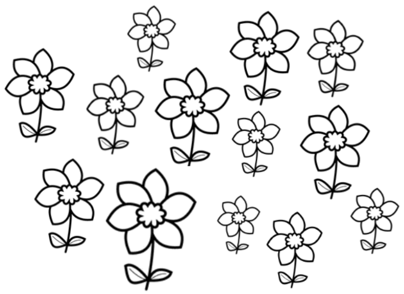
Colin says, "I've got more flowers than Coco."

Coco thinks Colin is wrong.

Do you agree with Colin?

Do you agree with Coco?

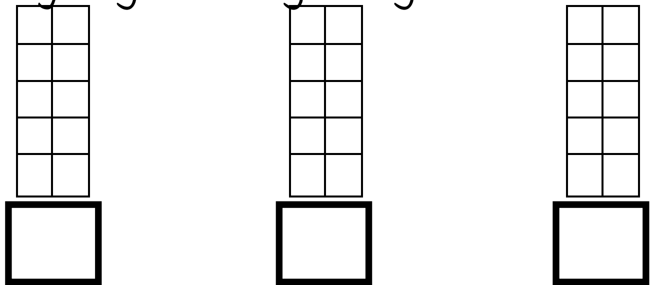
Convince Colin that there are 13 flowers.



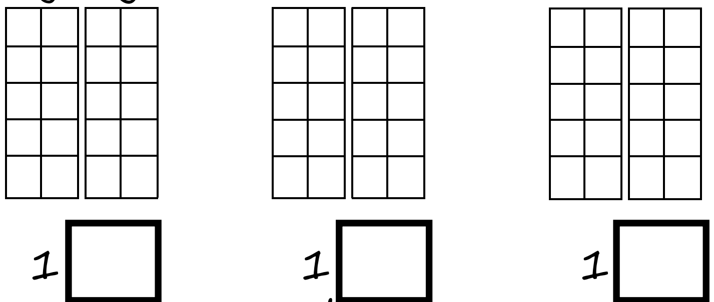
Grab some counters. Count them into tens frames.

How many have you got?

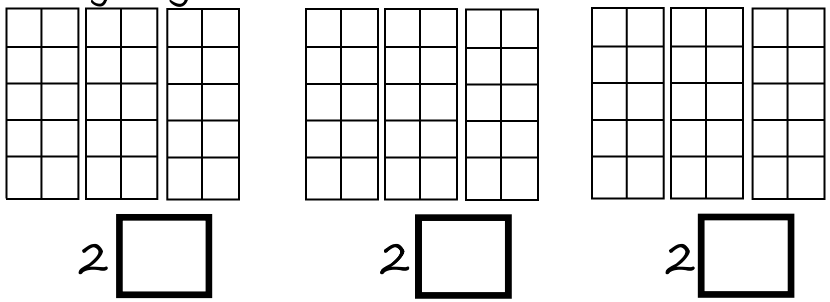
Can you get 3 single-digit numbers?



Can you get 3 numbers between 10 and 20?



Can you get 3 numbers between 20 and 30?

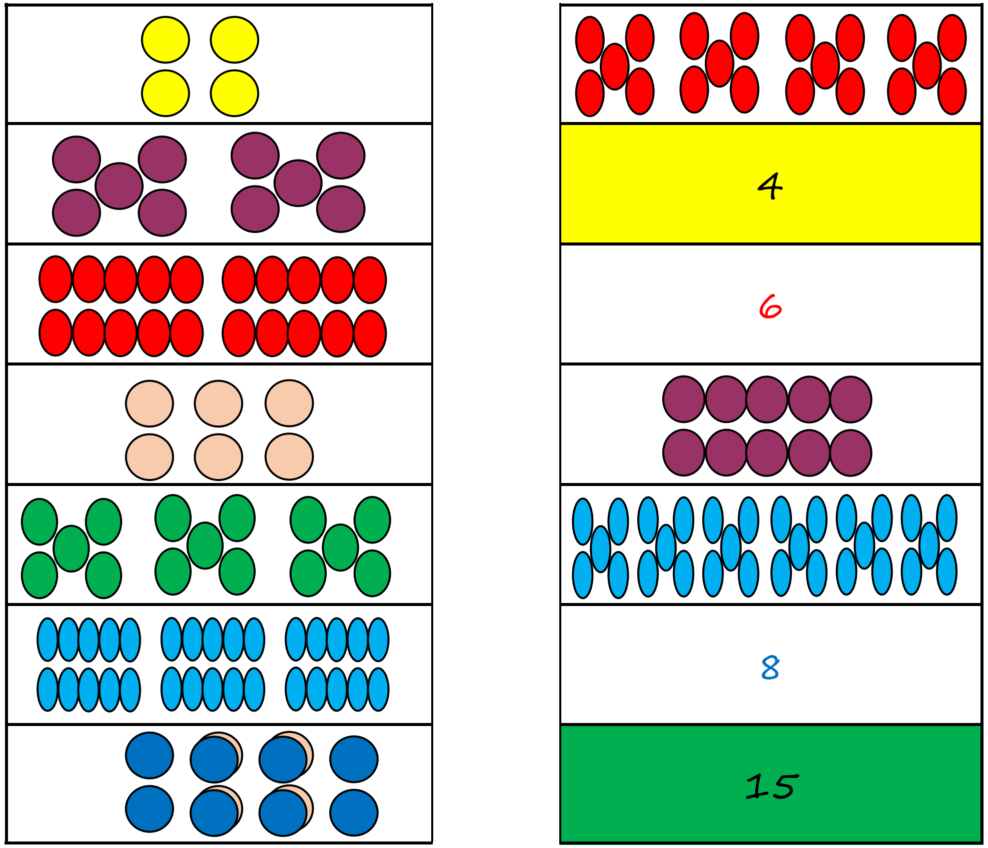


2

ArithmeKit 1

Count in multiples of 2, 5 and 10

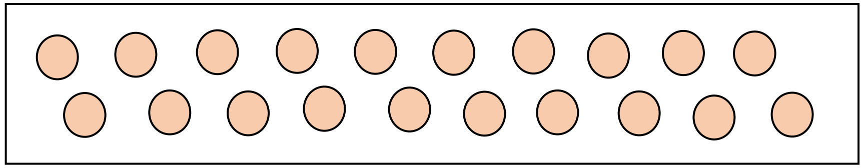
Find the matching pairs:



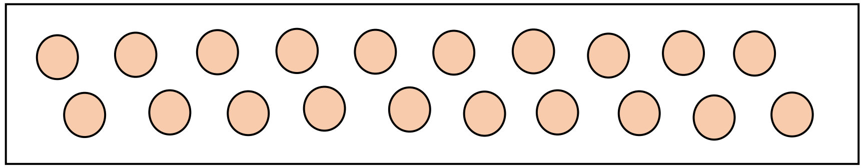
What's missing?

Create your own matching pairs.

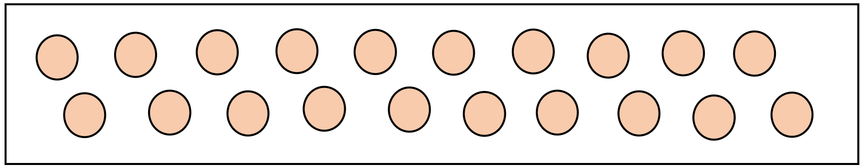
Count these in 1s:



Count these in 2s:

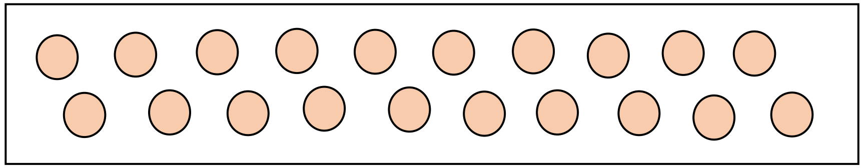


Now count in 5s:



What do you notice?

Now count in 10s:



How would you count 50 cubes?

ArithmeKit 1

Count in multiples of 2, 5 and 10

Coco thinks that when she counts 30 in 5s there are more than when she counts 30 in 10s.

Do you agree with Coco?

Put a digit in each box to make the statements true:

$\boxed{9}$ groups of 2 = $\boxed{1}\,\boxed{8}$

$\boxed{3}$ groups of 2 = $\boxed{6}$

8 groups of 10 = $\boxed{8}\,\boxed{0}$

$\boxed{7}$ groups of $\boxed{2}$ = $\boxed{1}\,\boxed{4}$

9 groups of $\boxed{5}$ = 45

Using practical resources convince Colin that he can't just use counting in 5s to count 52 cubes.

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 at least once each?

Create your own missing digit problem.

Read and write numbers

Find the matching pairs:

Three	14
Five	3
Four	12
Fifteen	5
Twelve	8
Fourteen	13
Twenty	15
Thirteen	4
Two	2
Eight	20

What's missing?

Create your own matching pairs.

Write the missing numbers in the boxes:

Four = $\boxed{4}$

Five = $\boxed{5}$

Six = $\boxed{6}$

Seven = $\boxed{7}$

Eight = $\boxed{8}$

Nine = $\boxed{9}$

Fourteen = $\boxed{14}$

Fifteen = $\boxed{15}$

Sixteen = $\boxed{16}$

Seventeen = $\boxed{17}$

Eighteen = $\boxed{18}$

Nineteen = $\boxed{19}$

What do you notice?

One = $\boxed{1}$

Two = $\boxed{2}$

Three = $\boxed{3}$

Eleven = $\boxed{11}$

Twelve = $\boxed{12}$

Thirteen = $\boxed{13}$

What do you notice?

Colin says, "This number is thirteen."

Coco thinks it is thirty.

30

Do you agree with Colin?

Do you agree with Coco?

Using practical resources convince Colin that forty and fourteen are NOT the same.

Put a digit in each box to make the statements true:

A number between 3 and 8 = 5

eighteen = 1 8

Sixteen = 1 6

Seven = 7

Twenty = 2 0

A number greater than twenty = 3 4

A Number between 15 and 20 = 1 9

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Count fluently from any number to and across 100

Find the matching pairs:

56, , 58	72
27, 28,	57
, 73, 74	100
99, , 101	29
38, 39,	60
100, 101, ___	40
58, 59,	75
, 76, 77	102
40, , 42	41
, 10, 11	9

What's missing?

Create your own matching pairs.

Write the missing numbers in the boxes:

53, 54, 55, 56, 57, 58

33, 34, 35, 36, 37, 38

73, 74, 75, 76, 77, 78

What do you notice?

67, 68, 69, 70, 71, 72

37, 38, 39, 40, 41, 42

97, 98, 99, 100, 101, 102

What do you notice?

5	ArithmeKit 1	Count fluently back from any number including across 100

Find the matching pairs:

34, 33,	96
101, 100,	25
98, 97,	8
45, 44,	32
61, 60,	43
27, 26, ____	56
10, 9,	99
83, 82,	81
58, 57,	59
76, 75,	74

What's missing?

Create your own matching pairs.

Count back. Write the missing numbers in the boxes:

49, 48, 47, 46, 45, 44

19, 18, 17, 16, 15, 14

79, 78, 77, 76, 75, 74

What do you notice?

33, 32, 31, 30, 29

63, 62, 61, 60, 59

103, 102, 101, 100, 99

What do you notice?

Count fluently from any number to and across 100

Colin says,

"After every number that is □9 the tens change."

Always true?

Never true?

Sometimes true?

Convince Coco that the pattern of the numbers from 20 to 30 is the same as the pattern of the numbers from 50 to 60

Put a digit in each box to make the statements true:

If you keep counting from this number...		...you will say this number:
1	→	$\boxed{8}$
1 0	→	1 $\boxed{3}$
2 8	→	2 $\boxed{9}$
6 8	→	$\boxed{7}$ 1
7 $\boxed{0}$	→	7 $\boxed{6}$
$\boxed{4}$ 2	→	$\boxed{5}$ 2
1 1	→	$\boxed{2}$ $\boxed{1}$

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

5

ArithmeKit 1

Count fluently back from any number including across 100

Coco thinks that when you count backwards in ones the tens digit stays the same.

Always true?

Never true?

Sometimes true?

Using practical resources convince Colin that if you count back in ones after each ☐0 number the tens change.

Put a digit in each box to make the statements true:

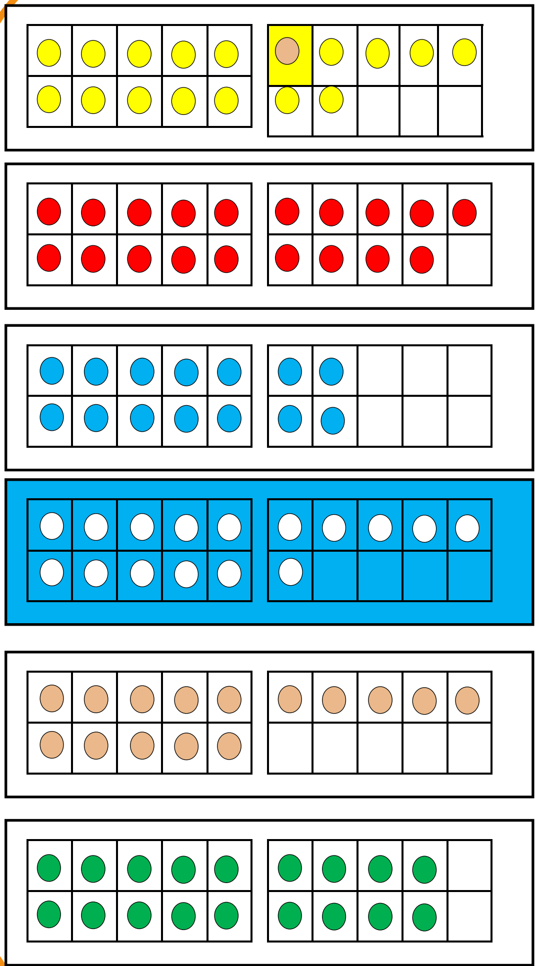
If you keep counting back from <u>this number</u>...		...you will say <u>this number:</u>
1 5	→	$\boxed{1}$ 4
3 6	→	3 $\boxed{5}$
7 2	→	$\boxed{6}$ $\boxed{8}$
4	→	$\boxed{0}$
1 0 1	→	$\boxed{9}$ $\boxed{4}$
4 0	→	$\boxed{3}$ 8
$\boxed{2}$ $\boxed{7}$	→	2 5

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

6	ArithmeKit 1	Know teens are ten and 'the rest'

Find the matching pairs:



18
15
16
19
17
14

What's missing? Create your own challenge.

Write the missing digits in the boxes:

16 = 1 ten and 6 ones

13 = 1 ten and 3 ones

18 = 1 ten and 8 ones

17 = 1 ten and 7 ones

15 = 1 ten and 5 ones

What do you notice?

1 4	
10	4

1 3	
10	3

1 6	
10	6

1 7	
10	7

1 9	
10	9

1 8	
10	8

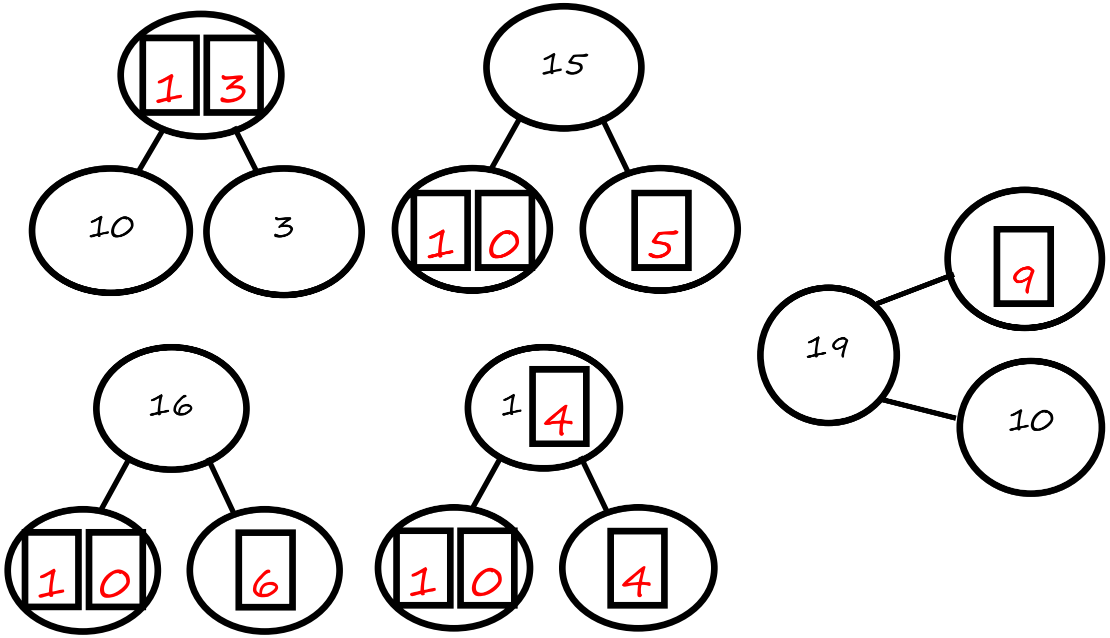
What do you notice?

Know teens are ten and 'the rest'

Coco thinks 12 is twoteen.

Colin has 10p – he wants to buy a
bouncy ball which costs 14p.
He thinks he needs 4p more.
Using practical resources convince
Colin he is right.

Put a digit in each box to make the statements true:



Can you show these as number sentences?

Is there only one way to solve this problem?

How many different digits can you use?

Create your own missing digit problem.

7	ArithmeKit 1	Compare numbers

Sort the numbers:

52 23 74 31 67

15 20 50 19

25 35 28 99 5

More than 25	Less than 25

Can you sort them all?

Create your own sorting challenge.

Compare the numbers.

Write 'more' or 'less' in the spaces:

27 is ___less___ than 28

37 is ___less_____ than 39

19 is ___more____ than 16

16 is ___more____ than 13

What do you notice?

24 is ___more_____ than 18

35 is ___more_____ than 27

43 is ___more_____ than 39

52 is ___more_____ than 46

What do you notice?

Put a digit in the box:

3 ☐ is more than 36

Can you complete this in 4 different ways?

Compare numbers

Colin says, "Numbers with a 9 as the ones digit are bigger than numbers with a 5 as the ones digit."

When is this true?

Do you agree with Colin?

Using practical resources convince Coco that 21 and 12 are not equal to each other.

Put a digit in each box to make the statements true:

$\boxed{5}$ 7 is equal to 5 7

1 1 is less than $\boxed{1}$ 2

$\boxed{6}$ 4 is more than 3 4

4 3 is equal to $\boxed{4}$ $\boxed{3}$

3 $\boxed{2}$ is more than 3 1

2 $\boxed{0}$ is more than 1 $\boxed{9}$

1 $\boxed{7}$ is less than 1 $\boxed{8}$

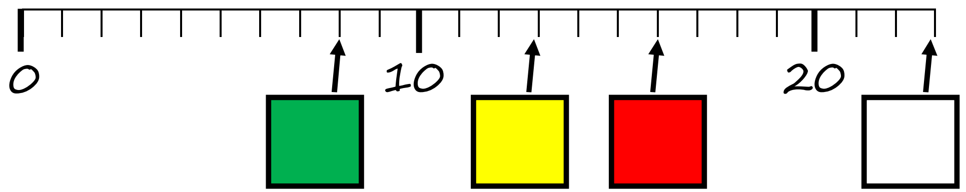
Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

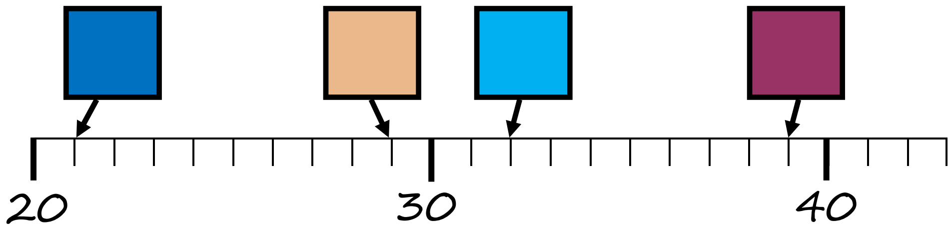
Create your own missing digit problem.

Order numbers and position them on a number line

Match the numbers in the middle to the empty boxes on the number line:



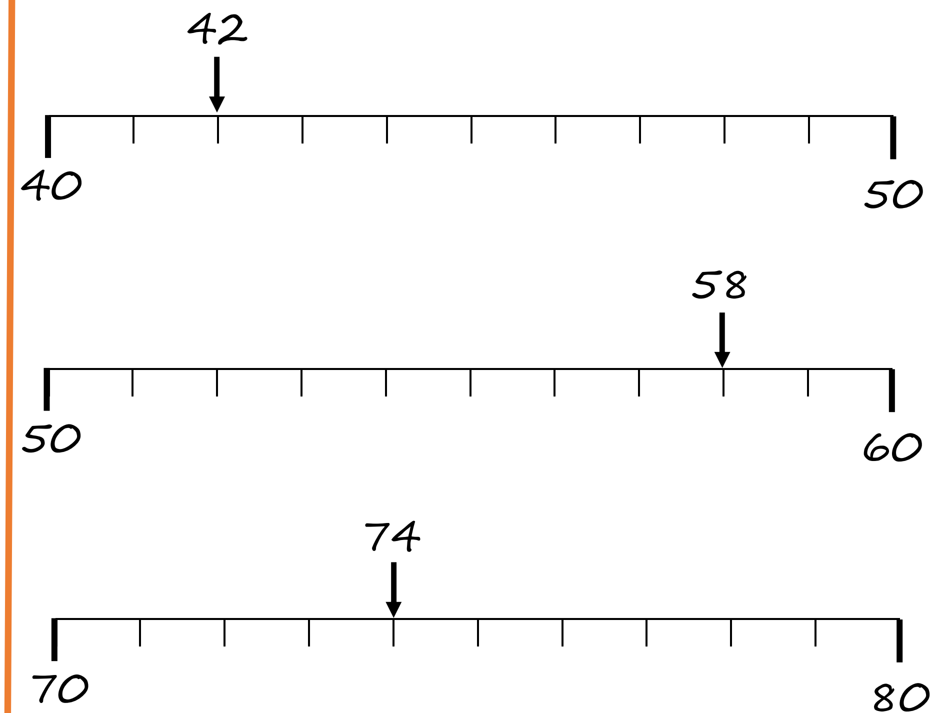
8	16	12	21	13	29	23	39	32



What's missing?

Create your own matching pairs.

Plot three more numbers on each line:



What do you notice?

8

ArithmeKit 1

Order numbers and position them on a number line

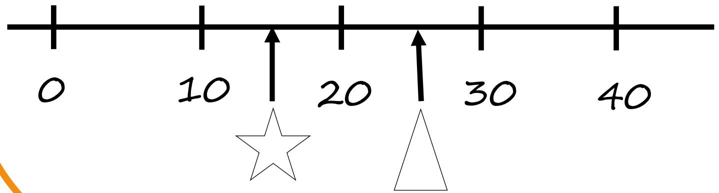
Coco thinks the ones digit gets bigger as you count along the number line.

Always true?

Sometimes true?

Never true?

Convince Colin that the number represented by △ is larger than the number represented by ☆



Put a digit in each box to make a list of numbers in order from smallest to largest:

$\boxed{5}$, 7, $\boxed{9}$, 12, $\boxed{1}\boxed{6}$, 20, $\boxed{2}\boxed{3}$,

2$\boxed{8}$, 3$\boxed{0}$, $\boxed{4}\boxed{7}$,

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

Know 1 more than numbers

Match the number on the left to the number that is 1 more:

18	15
24	30
14	43
5	6
19	22
16	20
21	19
9	17
29	25
42	10

What's missing?

Create your own matching pairs involving finding 1 more.

Calculate these:

6 + 1 = 7
16 + 1 = 17
26 + 1 = 27
36 + 1 = 37
46 + 1 = 47
56 + 1 = 57
66 + 1 = 67

What do you notice?

9 + 1 = 10
19 + 1 = 20
29 + 1 = 30
39 + 1 = 40
49 + 1 = 50
59 + 1 = 60
69 + 1 = 70

What do you notice?

Know 1 more than numbers

Colin says, "When you work out 1 more than a given number only the ones digit changes."

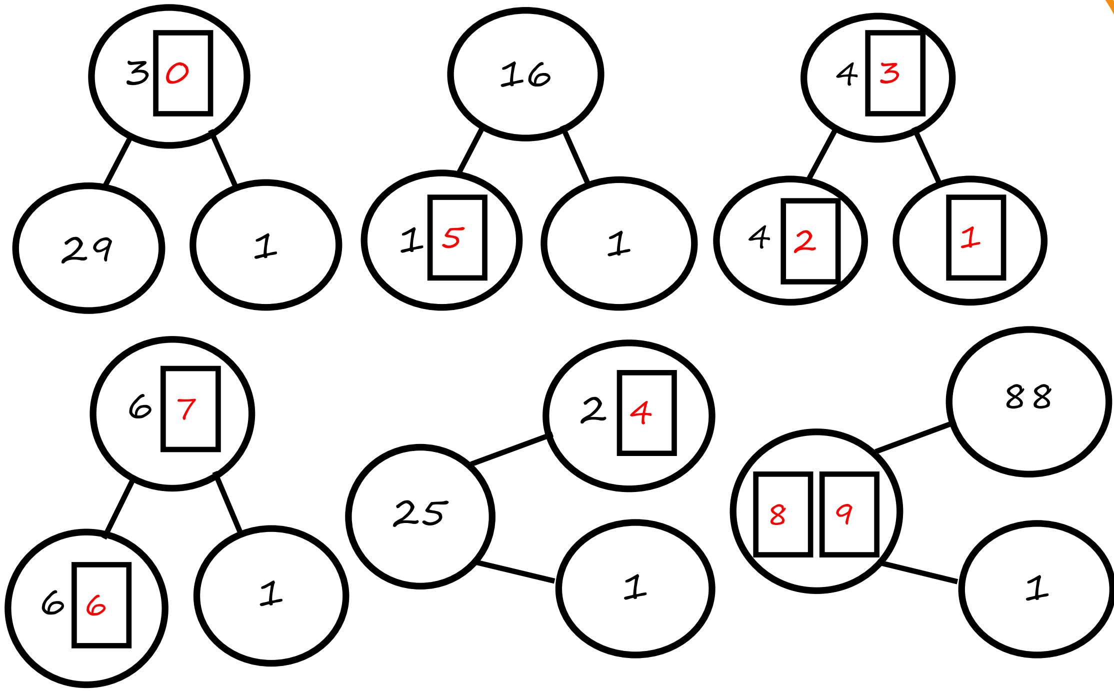
Always true?

Never true?

Sometimes true?

Using practical resources convince Coco that 1 more than an odd number is an even number.

Put a digit in each box to make the diagrams true:



Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

Recall and use addition facts of 6

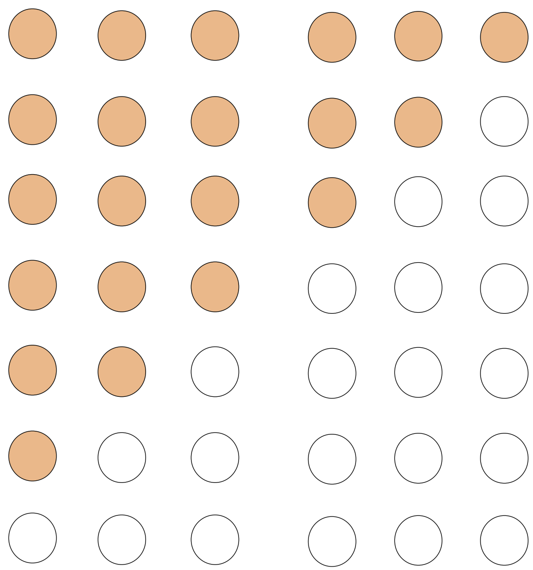
Find the matching pairs to total 6:

3	4
5	6
2	2
4	0
0	5
1	3
6	1

What's missing?

Create your own matching pairs that total 6

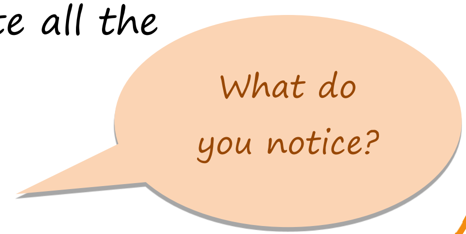
Use counters to show a total of 6 in different ways. How could you record them?



Use the diagrams to write all the number sentences:

6 + 0 =

5 + 1 =



Recall and use addition facts of 6

Coco says, "2 + 4 = 3 + 3"

Do you agree with Coco?

Using practical resources convince Colin that 6 can be made in 7 different ways if you use pairs of numbers.

Choose from the digits 0, 1, 2, 3, 4, 5 and 6 to complete these number sentences:

$\boxed{2} + \boxed{4} = 6$

$\boxed{0} + 6 = \boxed{6}$

$\boxed{5} + \boxed{1} = 6$

Which number will be left over and why?

Now complete these number sentences:

$2 + \boxed{3} + \boxed{1} = 6$

$\boxed{0} + 3 + \boxed{3} = 6$

$\boxed{1} + \boxed{1} + \boxed{4} = 6$

Is there only one way to solve this problem? Find more solutions.

Recall and use addition facts of 7

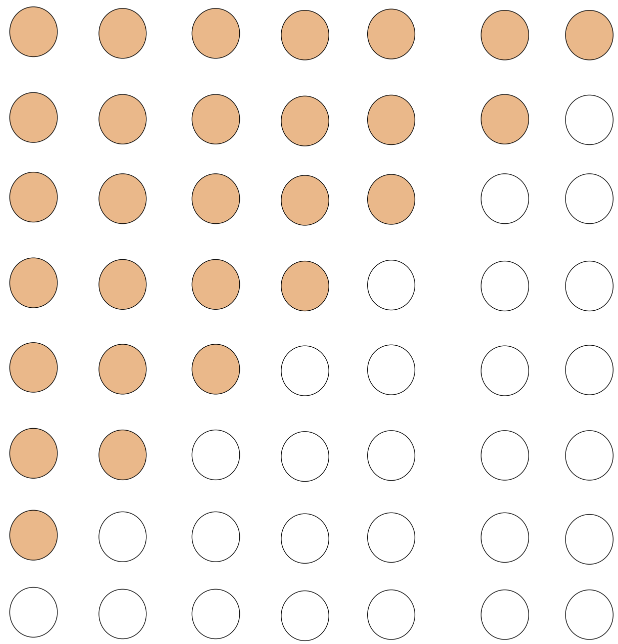
Find the matching pairs to total 7:

0	5
6	2
3	6
5	7
4	0
2	4
1	1
7	3

What's missing?

Create your own matching pairs that total 7

Use counters to show a total of 7 in different ways. How could you record them?



What do you notice?

Use the diagrams to write all the number sentences:

7 + 0 =

6 + 1 =

What do you notice?

11	ArithmeKit 1	Recall and use addition facts of 7

Colin says, "You cannot add 2 of the same whole number together to make 7"

Do you agree with Colin?

Why?

Using practical resources convince Coco that

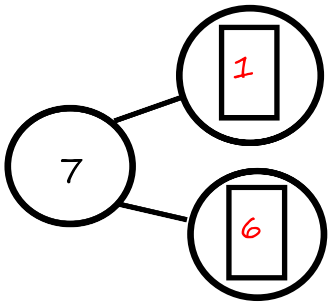
5 + 2 = 4 + 3

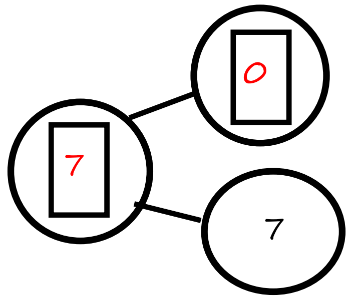
And that 3 + 4 = 6 + 1

Choose from the digits 0, 1, 2, 3, 4, 5, 6 and 7 to complete the diagrams:

7	
3	4

7	
5	2





Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6 and 7 once each?

Create your own missing digit problem.

Recall and use addition facts of 8

Check Coco's work:

7 + 1 = 8

4 + 3 = 8

6 + 2 = 8

2 + 6 = 8

8 = 8 + 0

0 + 7 = 8

1 + 8 = 8

8 + 4 = 8

8 = 3 + 5

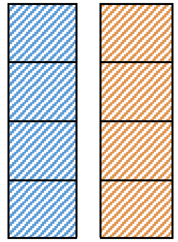
Can you correct the wrong answers Coco has written?

Create your own list of calculations using the facts of 8

Get 8 cubes, 4 in one colour and 4 in another.

Record the number sentence:

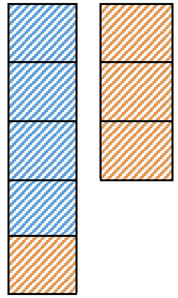
$\boxed{4} + \boxed{4} = \boxed{8}$



Move one cube from one tower to the other.

Record your new number sentence:

$\boxed{5} + \boxed{3} = \boxed{8}$



What do you notice?

Continue moving cubes and recording the new number sentences.

What do you notice?

Recall and use addition facts of 8

Coco thinks that you cannot add two odd numbers to make 8

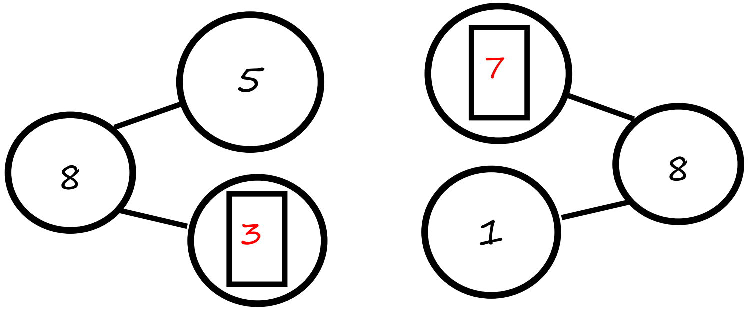
Always true?

Never true?

Sometimes true?

Using practical resources convince Colin that there are more ways to make 8 than there are to make 7

Put a digit in each box to make these all true:



$\boxed{0} + \boxed{8} = 8$ $\quad 4 + \boxed{4} = 8$

$\boxed{6} + 2 = 8$

8		
2	1	5

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7 and 8 once each?

Create your own missing digit problem.

13

ArithmeKit 1

Recall and use addition facts of 9

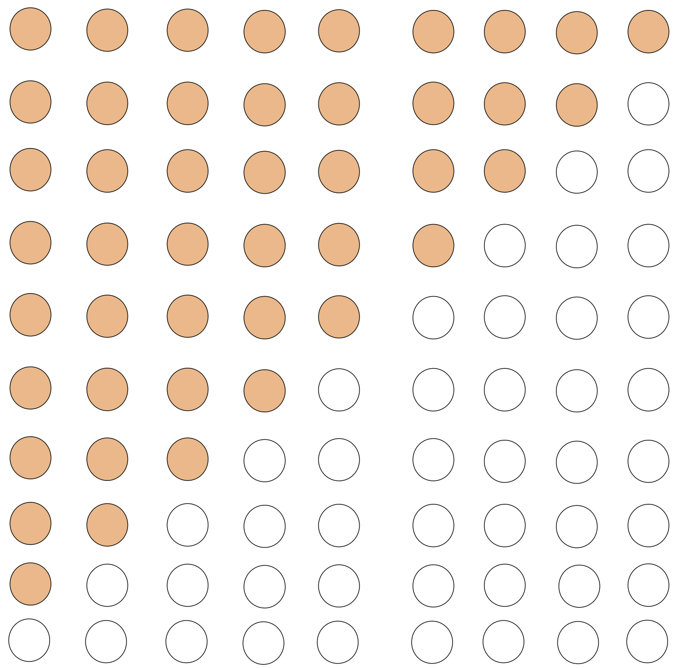
Find the matching pairs to total 9:

8	5
3	9
0	1
1	2
2	4
9	0
6	7
7	3
5	6
4	8

What's missing?

Create your own matching pairs that total 9

Use counters to show a total of 9 in different ways. How could you record them?



What do you notice?

Use the diagrams to write all the number sentences:

9 + 0 =

8 + 1 =

What do you notice?

13

ArithmeKit 1

Recall and use addition facts of 9

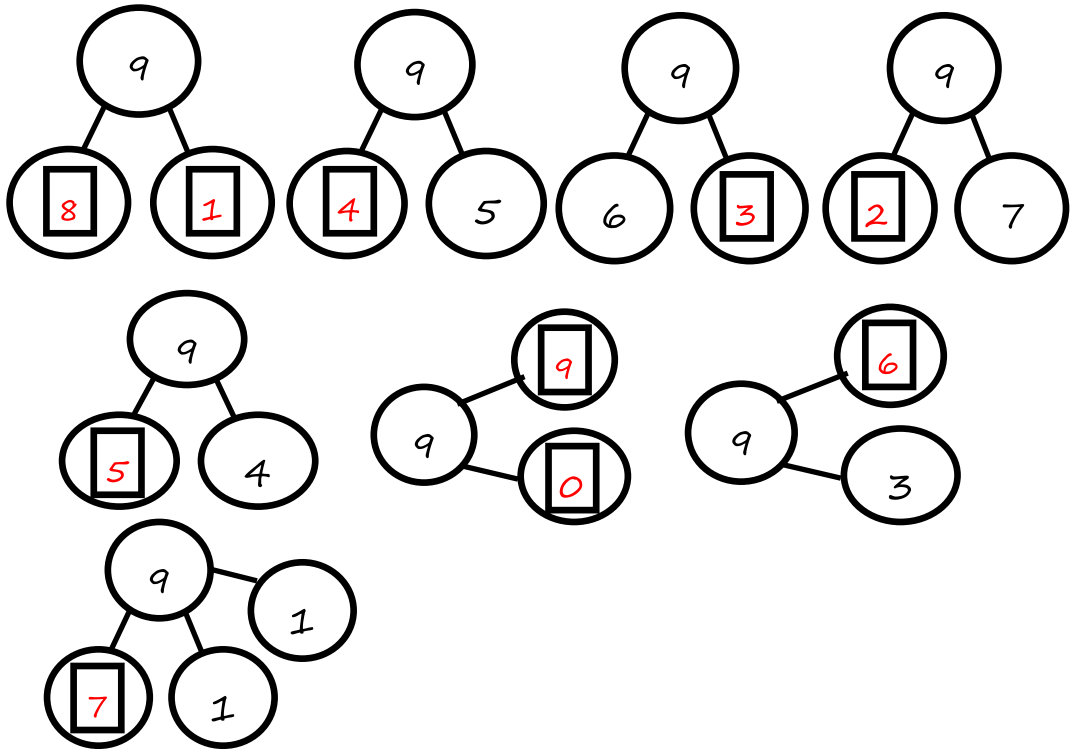
Colin says, "There are 9 ways to make 9"

Do you agree with Colin?

Prove it using resources.

Using practical resources convince Coco that if 5 + 5 = 10 then 5 + 4 = 9

Put a digit in each box to make the diagrams true:



Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

ArithmeKit 1

Recall and use addition facts of 10

Find the matching pairs to total 10:

10	1
6	7
8	5
3	0
9	8
0	6
1	2
7	10
2	9
4	4
5	3

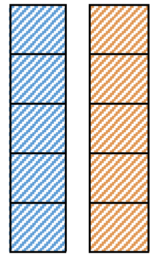
What's missing?

Create your own matching pairs that total 10

Get 10 cubes, 5 in one colour and 5 in another.

Record the number sentence:

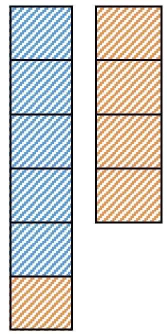
$\boxed{5} + \boxed{5} = \boxed{10}$



Move one cube from one tower to the other.

Record your new number sentence:

$\boxed{6} + \boxed{4} = \boxed{10}$



What do you notice?

Continue moving cubes and recording the new number sentences.

What do you notice?

14

ArithmeKit 1

Recall and use addition facts of 10

Coco thinks that you add two even numbers to make 10

Always true?

Never true?

Sometimes true?

Using practical resources convince Colin that 10 + 0 is 10

Put a digit in each box to make the statements true:

$\boxed{0}$ + 10 = 10

$\boxed{1}$ + $\boxed{9}$ = 10

$\boxed{7}$ + 3 = 10

$\boxed{4}$ + $\boxed{6}$ = 10

2 + $\boxed{8}$ 10

$\boxed{2}$ + $\boxed{3}$ + $\boxed{5}$ = 10

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

ArithmeKit 1

Use number facts to calculate others

Find the matching pairs:

6 + 6	10
6 + 7	11
8+2	12
4 + 5	13
3 + 7	5
3 + 8	4
10 − 5	10
9 − 5	20
5 + 5	10
15 + 5	9

What's missing?

Create your own matching pairs using number facts.

Calculate these:

3 + 3 = 6 5 + 5 = 10 4 + 4 = 8

3 + 4 = 7 5 + 6 = 11 4 + 5 = 9

What do you notice?

6 + 4 = 10 7 + 3 = 10 8 + 2 = 10

6 + 5 = 11 7 + 4 = 11 8 + 3 = 11

What do you notice?

10 − 4 = 6 10 − 7 = 3 10 − 8 = 2

11 − 4 = 7 11 − 7 = 4 11 − 8 = 3

What do you notice?

15

ArithmeKit 1

Use number facts to calculate others

Coco thinks that if he adds a number to 5, the answer will be bigger than adding a number to 4

Always true?

Sometimes true?

Never true?

Using practical resources convince Colin that if we know

$10 + 10 = 20$

then we can use it to calculate $10 + 9 = ☆$

Put a digit in each box to make the statements true:

If $7 + 3 = 1\boxed{0}$
then $7 + \boxed{5} = 1\boxed{1}$

If $6 + \boxed{6} = 1\boxed{2}$
then $6 + \boxed{7} = 1\boxed{3}$

If $4 + 4 = \boxed{8}$
then $4 + \boxed{5} = \boxed{9}$

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

16

ArithmeKit 1

Add 10 to a number

Add ten to the number on the left and match to the answer:

12	20
7	21
11	46
2	70
9	38
10	22
60	12
28	55
45	17
36	19

What's missing?

Create your own matching pairs involving adding ten.

Calculate these:

6 + 10 = 16

16 + 10 = 26

26 + 10 = 36

36 + 10 = 46

46 + 10 = 56

56 + 10 = 66

What do you notice?

4 + 10 = 14

14 + 10 = 24

24 + 10 = 34

34 + 10 = 44

44 + 10 = 54

What do you notice?

Add 10 to a number

Colin says, "When you add 10 to a number the ones digit stays the same."

Always true?

Never true?

Sometimes true?

Using practical resources convince Coco that 35 + 10 is not 36

Put a digit in each box to make the statements true:

$\boxed{2}4 + 10 = \boxed{3}\boxed{4}$

$\boxed{8}6 + 10 = \boxed{9}6$

$17 = \boxed{7} + 10$

$10 + 30 = 4\boxed{0}$

$51 = 4\boxed{1} + 10$

$\boxed{6}9 = \boxed{5}9 + 10$

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each?

Create your own missing digit problem.

17

ArithmeKit 1

Know 1 less than numbers

Match the number on the left to the number that is 1 less:

15	19
10	24
40	16
6	18
21	14
20	20
19	39
17	5
25	12
13	9

What's missing?

Create your own matching pairs involving finding 1 less.

Write the missing numbers in the boxes:

One less than 7 is 6

One less than 17 is 16

One less than 27 is 26

One less than 37 is 36

One less than 47 is 46

What do you notice?

One less than 10 is 9

One less than 20 is 19

One less than 30 is 29

One less than 40 is 39

One less than 50 is 49

What do you notice?

ArithmeKit 1

Know 1 less than numbers

Coco thinks that one less than an odd number is odd.

Always true?

Sometimes true?

Never true?

Using practical resources convince Colin that one less than 20 is 19

Put a digit in each box to make the statements true:

$$20 - 1 = \boxed{1}\boxed{9}$$

$$9 - 1 = \boxed{8}$$

$$7\boxed{3} - 1 = 7\boxed{2}$$

$$\boxed{4}1 - 1 = 4\boxed{0}$$

$$3\boxed{6} - 1 = 3\boxed{5}$$

$$9\boxed{7} - 1 = 96$$

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

Recall and use all the subtraction facts of 6

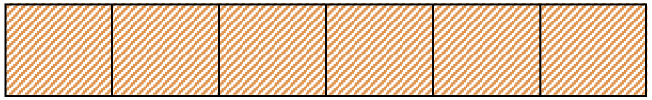
Find the matching pairs:

6 – 5	3
6 – 1	1
6 – 3	6
6 – 0	4
6 – 2	2
6 – 4	5
6 – 6	0

What's missing?

Create your own matching pairs involving subtraction facts for 6

Start with 6 cubes.



Snap some off.

How many are left?

How could you record all the possibilities?

Start	Snap	Left
6	0	6
6	1	
6		

6 – 0 = 6

6 – 1 =

6 –

What do you notice?

Recall and use all the subtraction facts of 6

Colin says, "6 – 6 = 6"

Is this true?

How do you know?

Using practical resources convince Coco that if you start with 6 cubes and subtract different amounts, then you can end up with 7 different answers.

Put a digit in each box to make the statements true:

$6 - 3 = \boxed{3}$

$6 - \boxed{2} = \boxed{4}$

$\boxed{5} = 6 - 1$

$\boxed{6} - \boxed{0} = 6$

$6 - 5 = \boxed{1}$

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5 and 6 once each?

Create your own missing digit problem.

19

ArithmeKit 1

Recall and use all the subtraction facts of 7

Find the matching pairs:

7 – 7	2
7 – 5	4
7 – 6	1
7-0	3
7 – 1	6
7 – 3	7
7 – 2	5
7 – 4	0

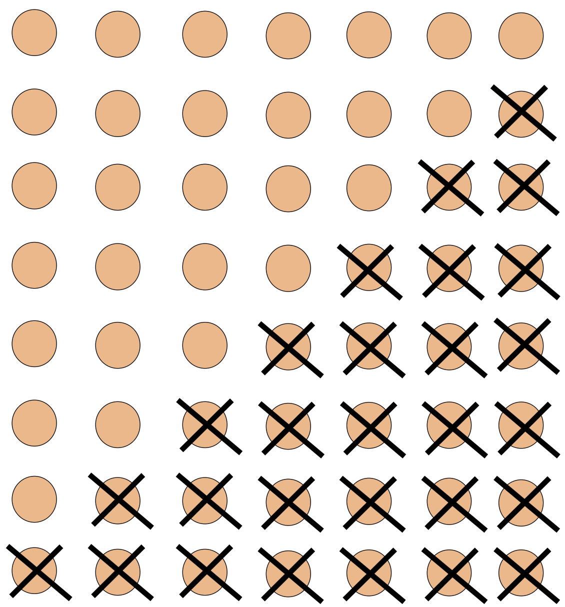
What's missing?

Create your own matching pairs involving subtraction facts for 7

Start with 7 counters. Take some away.

How many different possibilities are there?

How could you record them?



What do you notice?

Use the diagrams to write all the number sentences:

7 - 0 = 7

7 - 1 =

What do you notice?

Recall and use all the subtraction facts of 7

Coco has 7 cars and gives some to Colin. Coco thinks they have the same number of cars each.

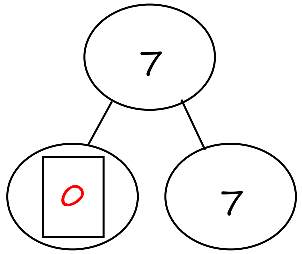
Do you agree with Coco?

Coco says, "I have 7 sweets and I ate 4 of them. Now I have 3 left."

Using practical resources convince Colin that Coco is right.

Put a digit in each box to make the statements true:

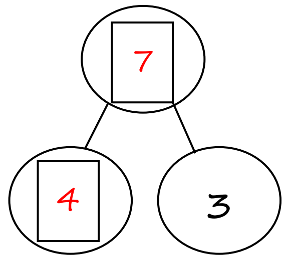
7	
1	6



7	
4	3

7	
2	5

7	
6	1



Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6 and 7 once each?

Create your own missing digit problem.

ArithmeKit 1

Recall and use all the subtraction facts of 8

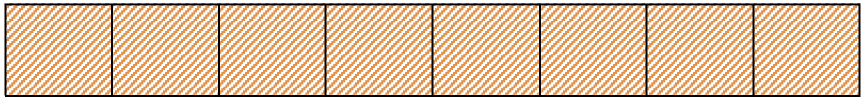
Find the matching pairs:

8 – 8	8
8 – 5	6
8 – 2	7
8 – 0	5
8 – 1	3
8 – 3	1
8 – 6	0
8 – 4	2
8 – 7	4

What's missing?

Create your own matching pairs involving subtraction facts of 8

Start with 8 cubes.



Snap some off.

How many are left?

How could you record all the possibilities?

Start	Snap	Left	
8	0	8	8 – 0 = 8
8	1		8 – 1 =
8			8 –

What do you notice?

20

ArithmeKit 1

Recall and use all the subtraction facts of 8

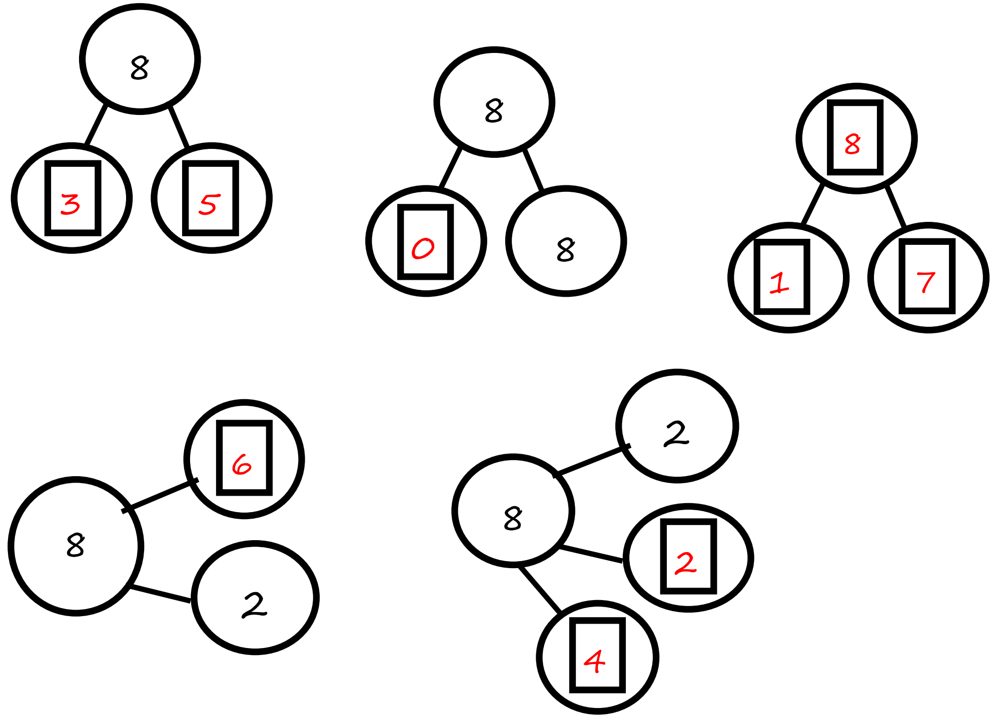
Colin says, "There are only 8 subtraction facts for 8"

Is this true?

How do you know?

Using practical resources convince Coco that 8 - 0 = 8

Put a digit in each box to make the statements true:



Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, and 8 once each?

Create your own missing digit problem.

Recall and use all the subtraction facts of 9

Find the matching pairs:

9 – 2	6
9 – 6	3
9 – 1	4
9 – 4	9
9 – 5	5
9 – 8	0
9 – 3	8
9 – 9	1
9 – 0	2
9 – 7	7

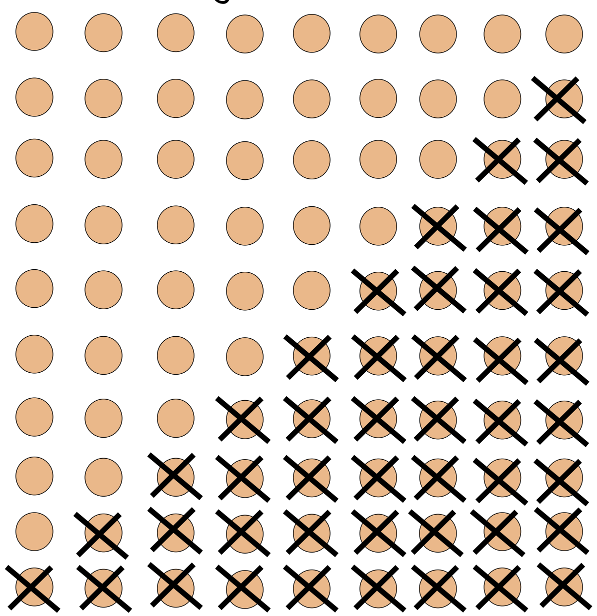
What's missing?

Create your own matching pairs involving subtraction facts for 9

Start with 9 counters. Take some away.

How many different possibilities are there?

How could you record them?



What do you notice?

Use the diagrams to write all the number sentences:

9 – 0 = 9

9 – 1 =

What do you notice?

Recall and use all the subtraction facts of 9

Coco thinks whichever number you subtract from 9, you end up with a smaller number.

Always true?

Sometimes true?

Never true?

Put a digit in each box to make the statements true:

$9 - \boxed{3} = \boxed{6}$

$2 = 9 - \boxed{7}$

$9 - \boxed{2} = 7$

$9 - 5 = \boxed{4}$

$9 - \boxed{8} = \boxed{1}$

$9 - 9 = \boxed{0}$

$9 - 4 = \boxed{5}$

$9 = \boxed{9} - 0$

Using practical resources convince Colin that there are ten numbers you can subtract from nine.

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

22	ArithmeKit 1	Recall and use all the subtraction facts of 10

Find the matching pairs:

10 – 2	2
10 – 7	9
10 – 4	8
10 – 1	3
10 – 10	6
10 – 8	5
10 – 5	4
10 – 0	7
10 – 9	10
10 – 3	1
10 –6	0

What's missing?

Create your own matching pairs.

Calculate these:

10 – 3 = 7　　10 – 7 = 3

10 – 1 = 9　　10 – 9 = 1

10 – 4 = 6　　10 – 6 = 4

10 – 0 = 10　　10 – 10 = 0

What do you notice?

Can you find some other subtraction pairs?

ArithmeKit 1

Recall and use all the subtraction facts of 10

Coco had 10 cubes and she hid some under her wing. She thinks she can still see an odd number of cubes.

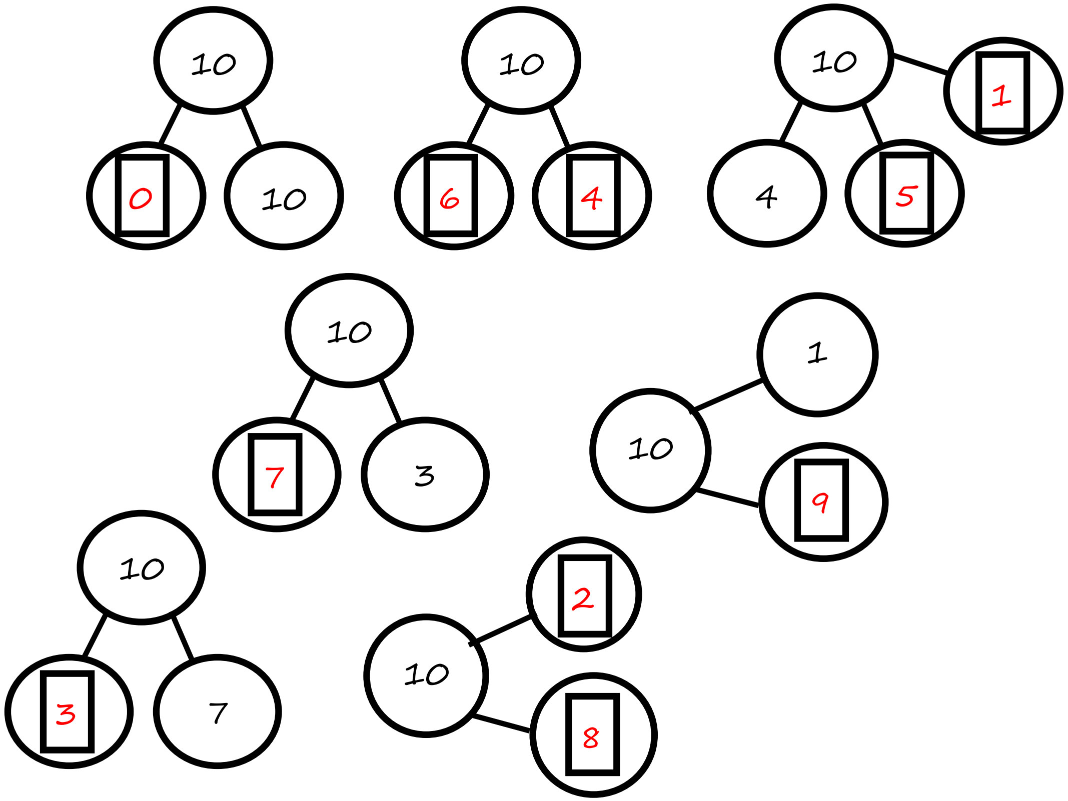
Is this always true?

When could Coco be right?

Colin has 10 sweets.

Using practical resources convince Colin that if Coco took 5 of his sweets, he will still have 5 left.

Put a digit in each box to make the statements true:



Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.

23

ArithmeKit 1

Subtract a single digit number from a teens number

Find the matching pairs:

8	13 - 4
12	18 - 6
10	18 - 2
6	15 - 5
16	14 - 8
8	18 - 9
9	15 - 7
16	19 - 3
9	17 - 9
10	14 - 4

What's missing?

Create your own matching pairs involving subtraction of a single digit number from a teens number.

Calculate these:

15 - 1 = 14

15 - 2 = 13

15 - 3 = 12

15 - 4 = 11

15 - 5 = 10

15 - 6 = 9

15 - 7 = 8

15 - 8 = 7

15 - 9 = 6

What do you notice?

Now try starting with 16

What do you notice?

ArithmeKit 1

Subtract a single digit number from a teens number

Colin says, "13 – 5 = 9"

1	2	3	4	5	6	7	8	9	10	11	12	13

Do you agree with Colin??

Why?

Using practical resources convince Coco that if you have a teens number and you subtract the number of ones, you will always end up with 10

Put a digit in each box to make the statements true:

$1\boxed{7} - \boxed{6} = 11$

$16 - 6 = 1\boxed{0}$

$\boxed{5} = 13 - 8$

$12 - \boxed{9} = \boxed{3}$

$1\boxed{8} - 8 = 10$

$15 - \boxed{4} = 1\boxed{1}$

$11 - \boxed{2} = 9$

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each?

Create your own missing digit problem.

Subtract ten from a number

Subtract ten from the number on the left and match to the answer:

12	32
31	12
30	40
21	9
33	23
19	2
22	20
24	11
50	14
42	21

What's missing?

Create your own matching pairs.

Calculate these:

85 - 10 = 75

75 - 10 = 65

65 - 10 = 55

55 - 10 = 45

What do you notice?

72 - 10 = 62

62 - 10 = 52

52 - 10 = 42

42 - 10 = 32

12 - 10 = 2

What do you notice?

24

ArithmeKit 1

Subtract ten from a number

Coco thinks that when you subtract 10 from a number the ones digit does not change.

Is this always true?

Do you agree with Coco?

Using practical resources convince Colin that if you subtract 10 from a teens number you always have a single digit number.

Put a digit in each box to make the statements true:

$22 - 10 = \boxed{1}\boxed{2}$

$\boxed{7}0 - 10 = \boxed{6}0$

$\boxed{5}4 - 10 = \boxed{4}4$

$10 - 10 = \boxed{0}$

$\boxed{3}1 - 10 = 21$

$78 - 10 = 6\boxed{8}$

$1\boxed{9} - 10 = 9$

Is there only one way to solve this problem?

Can you do it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each?

Create your own missing digit problem.