

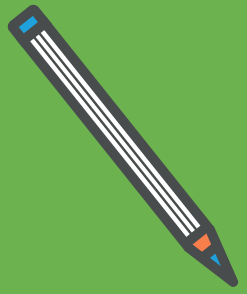
Mathvember

By Whizz Education


Daily challenges

KS1

Questions 1 - 22

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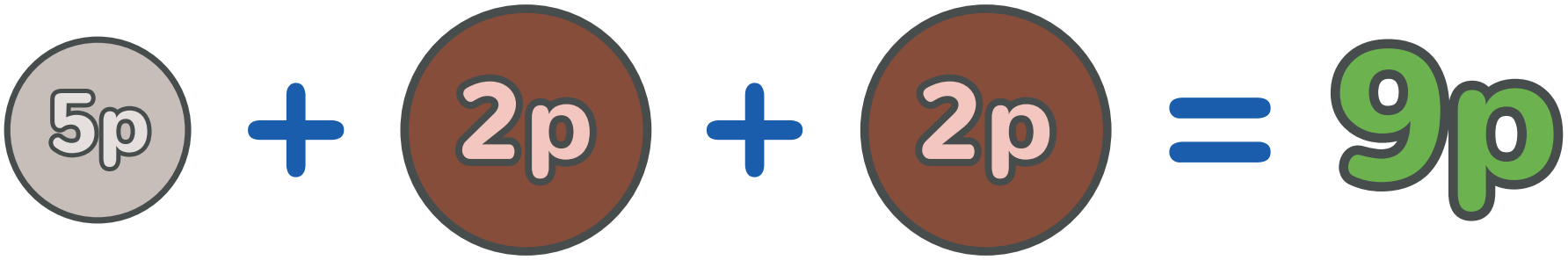
Day 1
Question

Using any combination of 2p and 5p coins, what amounts of money **cannot** be made up to 20p?

For example, you can make 9p since 5p + 2p + 2p = 9p

You may want to use some 2p and 5p coins to experiment.



Not possible: 1p, 3p

These are how some of the amounts can be made

2p - 

4p - 

5p - 

6p - 

11p - 

And so on

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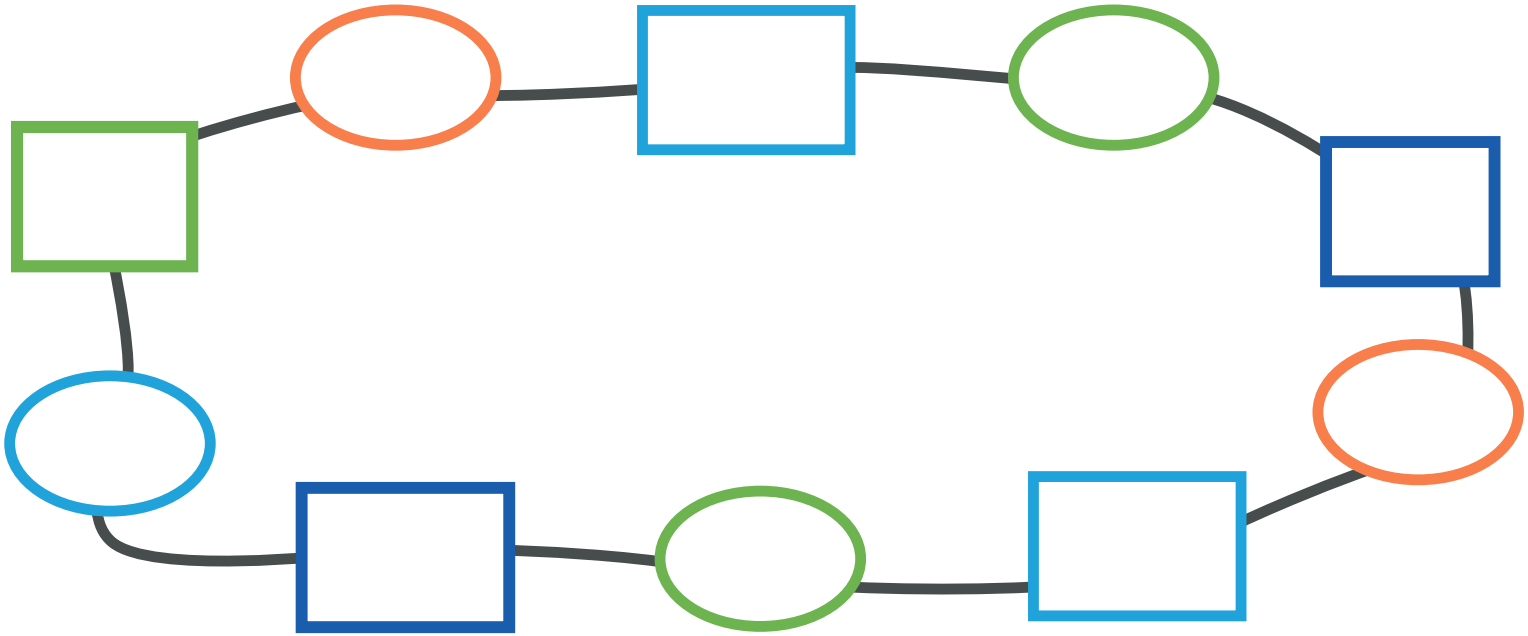
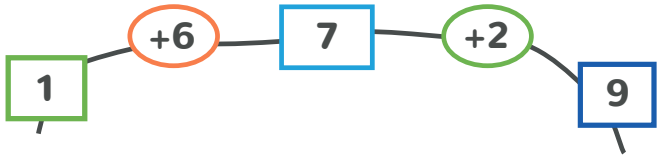
Day 2 Question



Copy or print the bracelet or draw your own.

Write any numbers between 1 and 10 in the rectangles, then write in the appropriate operation in the circle going clockwise round the bracelet. For example:



Extend this to numbers to 20, 100.
Can you make the bracelet shorter or longer?

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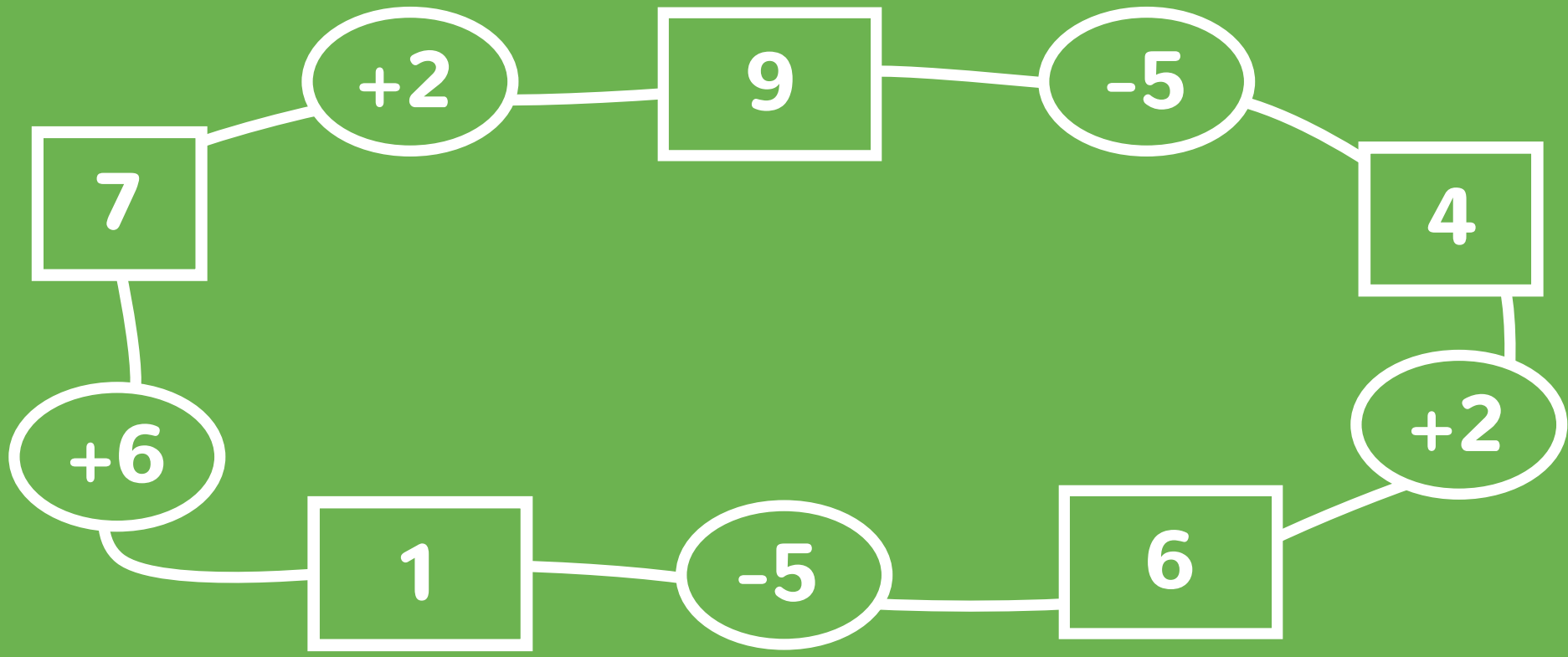
Day 2
Answer

Here is an example, answers will vary



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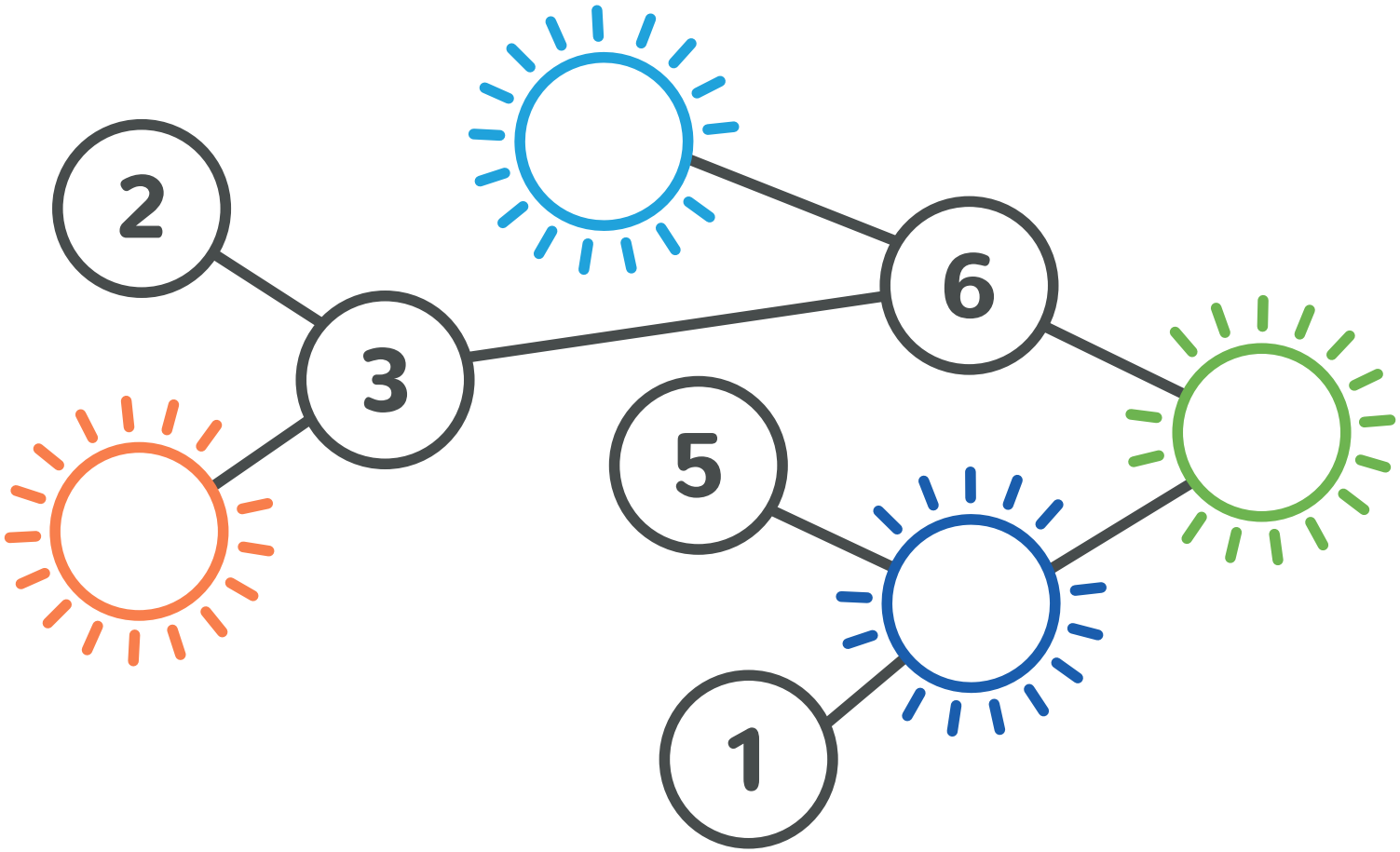
Day 3
Question

Some numbers have exploded into fireworks. Find the missing numbers.

Which number are you going to start with? How did you work out the missing numbers?



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Day 3
Answer

This is one answer where the rule is 'add the numbers linking into the circle'.

You can apply any other operation or rule - so perhaps invite students to offer multiple answers?

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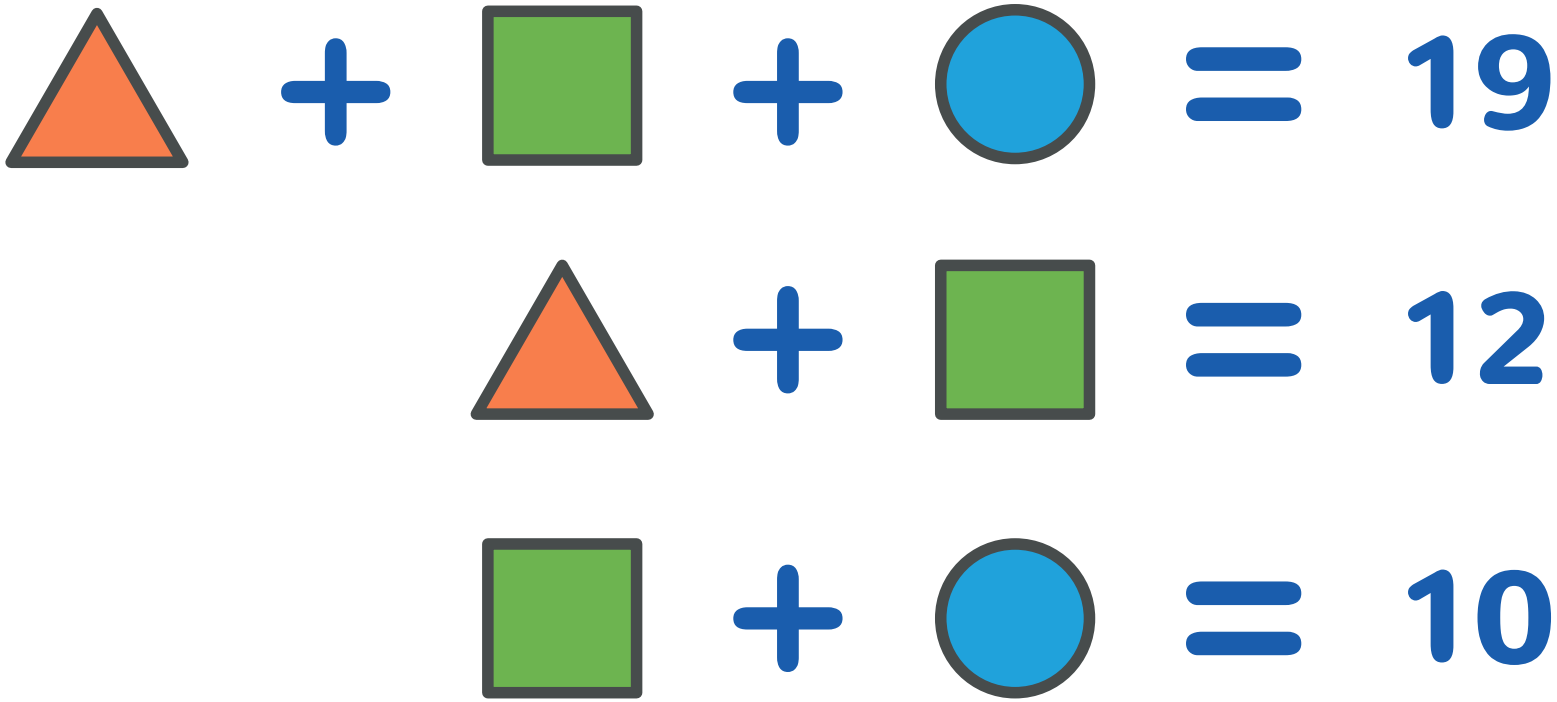
Day 4
Question

Find the missing numbers.
Each shape represents the same number in the number sentences.



Use the shapes to make another missing number problem for your partner.
Maybe try subtraction as well.

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Day 4
Answer

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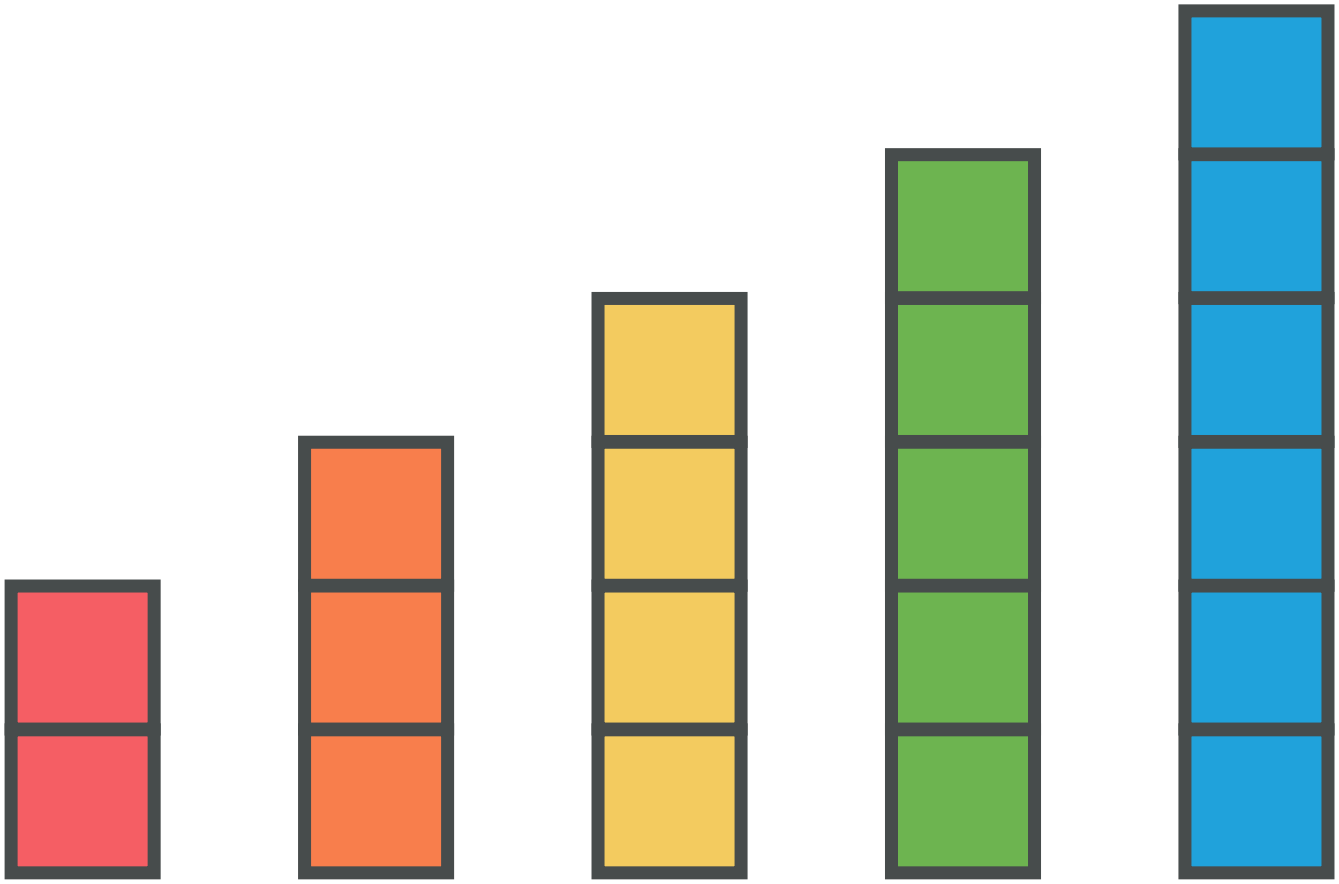
Day 5
Question

Use all these cuisenaire rods to make two equal lengths by placing the rods end to end.

Choose different rods and explore what other equal lengths you can make.

How could you record this?



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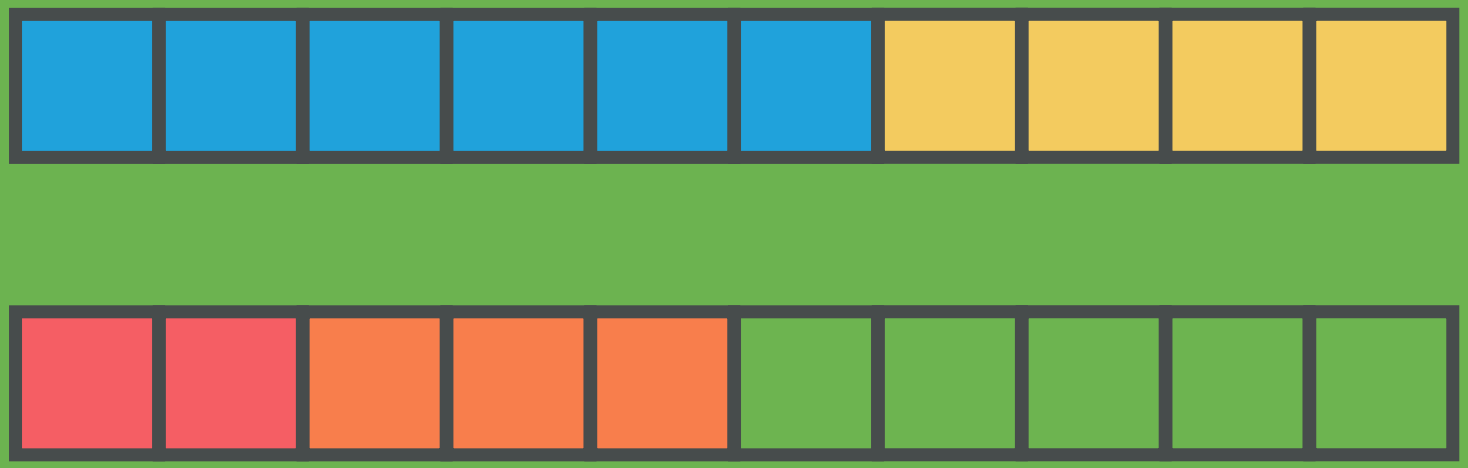
Day 5
Answer

$$2 + 3 + 5 = 6 + 4$$



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Day 6
Question

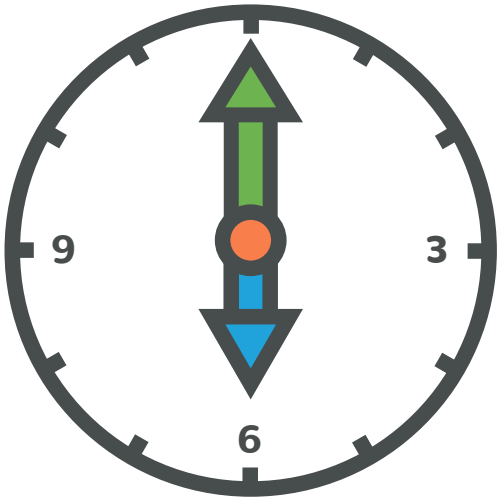
Set the time on the clock to 6 o'clock to start the game.

Decide who will go first (player 1) and who will go second (player 2).
Take it in turns to choose to move the hands of the clock on by half an hour or by one hour. For example, player 1 could choose half an hour, so the clock hands move to 6.30, then player 2 might choose 1 hour, moving the clock hands to 7.30 ... etc.

The winner is the first player who moves the hands exactly onto 12 o'clock.

Is there a winning strategy?

You could investigate choosing a different starting time or the amount of time you can move - quarter of an hour, three-quarters of an hour



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Day 6
Answer

The aim is to get to 7.30, then 9.00, then 10.30 - after that you have won.

If player one goes to 6.30 you would go 1 hour to 7.30.

If player 1 goes to 7.00 on their opening move you would then go half an hour to 7.30.

Get the students to think about whether it is best to start, or to go second?

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Day 7
Question

Each object stands for a number less than 5. The total of each row and column is shown.

What number does each object stand for?

			10
			7
			12
10	9	10	

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Day 7
Answer

3

4

2

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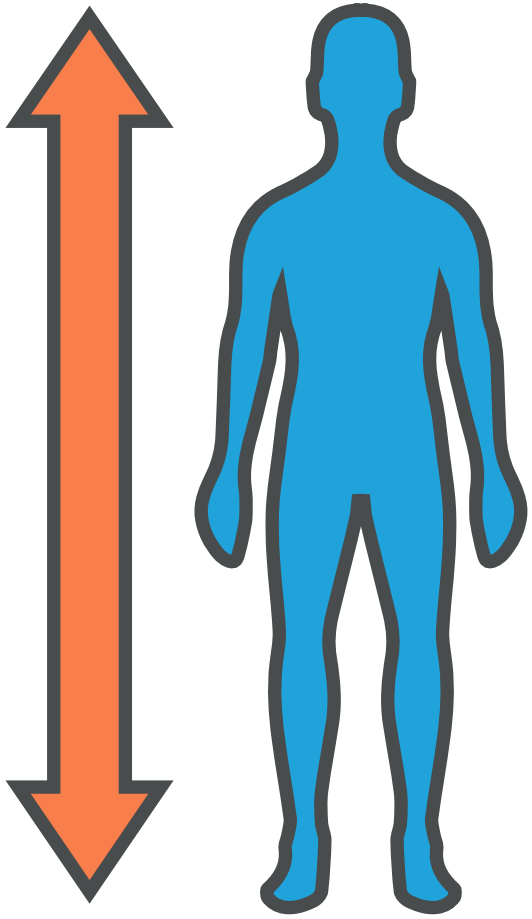
Day 8
Question

True or False?

"Your arm span is approximately equal to your height"



Convince me.

What do you have to find out?

How can you measure your arm span and height?

Can you find more than one way?

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Day 8
Answer

"Your arm span is equal to your height"

TRUE

Investigate further;

Are there any parts of the body that have the same length?

The length of a person's foot is about equal to the length of his or her forearm.

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Day 9
Question

Jack

Ten 1p coins is worth more than a 10p coin because I have more coins

Jill

Ten 1p coins has the same value as a 10p coin

Who is right? Give reasons why.

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Day 9
Answer

Who is right?

Give reasons why.

The value of the coins determines their worth, not the number of coins.

subtract two equals eight

subtract  equals four

So  equals _____

and  equals _____

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Day 10
Answer

 equals 10

 equals 6

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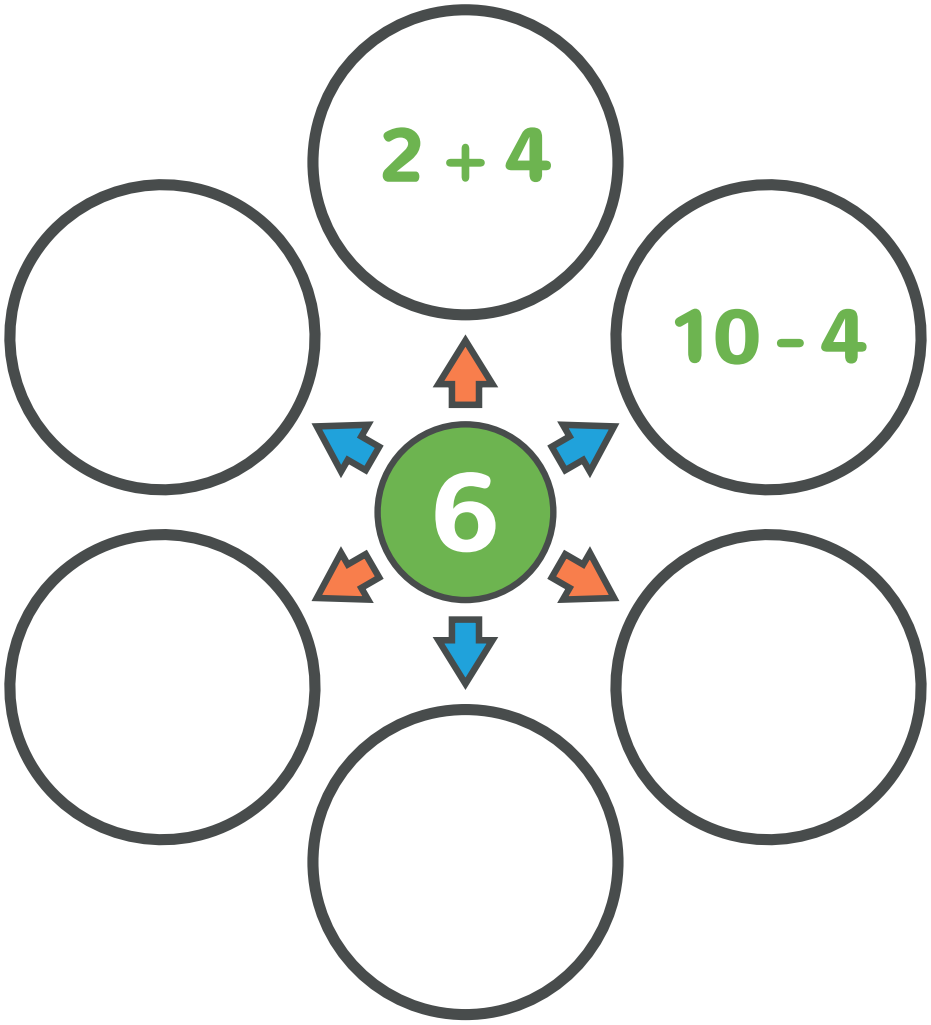
Day 11
Question



What other facts do you know? Write them in the empty circles

Can you write some facts in words?

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Day 11
Answer

Some examples of key facts where the answer is 6:

2 x 3

2 + 1 + 1 + 1 + 1

20 - 14

2 x 3

Number of biscuits shared between two dogs if they each get 3 biscuits

12 - 6

two plus two plus two

12÷2

3 + 3

one times six

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Day 12
Question

If I start on 0 and count on in tens will I say the number 45?

If I start on 8 and count on in twos will I say the number 21?

If I start at 50 and count backwards in fives will I say 15?

If I start at 27 and count back in twos will I say 7?

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Day 12
Answer

If I start on 0 and count on in tens will I say the number 45?

NO

(I'll jump from 40 to 50)

If I start on 8 and count on in twos will I say the number 21?

NO

(I'll only say even numbers, and 21 is odd)

If I start at 50 and count backwards in fives will I say 15?

YES

(I'll say 50, 45, 40 .....20, **15**, 10)

If I start at 27 and count back in twos will I say 7?

YES

(I'll say 27, 25, 23, ...9, **7**, 5)

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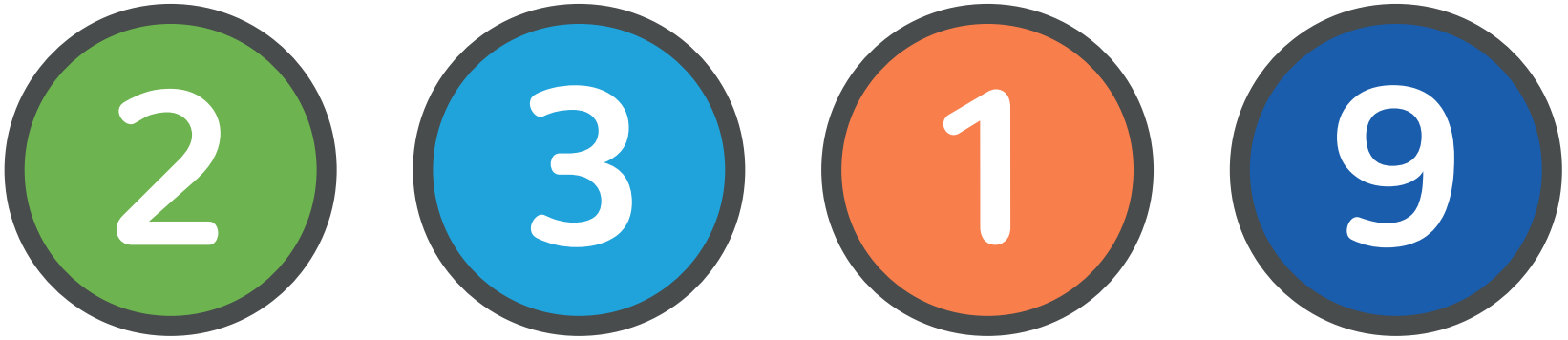
Day 13
Question



Choose from these numbers.

Pick two numbers and add them together.

Write the number sentence.

Pick a different pair of numbers and write the number sentence.

Keep doing it.

How many different answers can you get?

Now do the same with subtraction.

Systematic working helps to ensure all possibilities have been considered.

Six different answers:

$2 + 3 = 5$, $2 + 1 = 3$, $2 + 9 = 11$

$3 + 1 = 4$, $3 + 9 = 12$

$9 + 1 = 10$

Five different answers as 3-2 and 2-1 have the same answer:

$9 - 1 = 8$, $9 - 3 = 6$, $9 - 2 = 7$

$3 - 1 = 2$, $3 - 2 = 1$

$2 - 1 = 1$

Dad and Ruby are talking about birthdays.

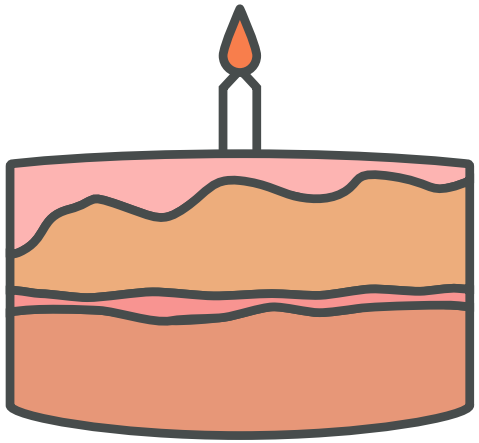
They take Ruby's age and double it.

Then add 5.

The answer is 35.

Dad says that is his age.

How old is Ruby?



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Day 14
Answer

Encourage the students to work backwards

35 subtract 5 = 30

Half of 30 is 15

Ruby is 15

Knowing 35 is the Dad's age is irrelevant information and a discussion around why with students will support their reasoning with numbers.

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Day 15
Question

Ben makes two 2-digit numbers using all the following digit cards.

The difference between the numbers is 56

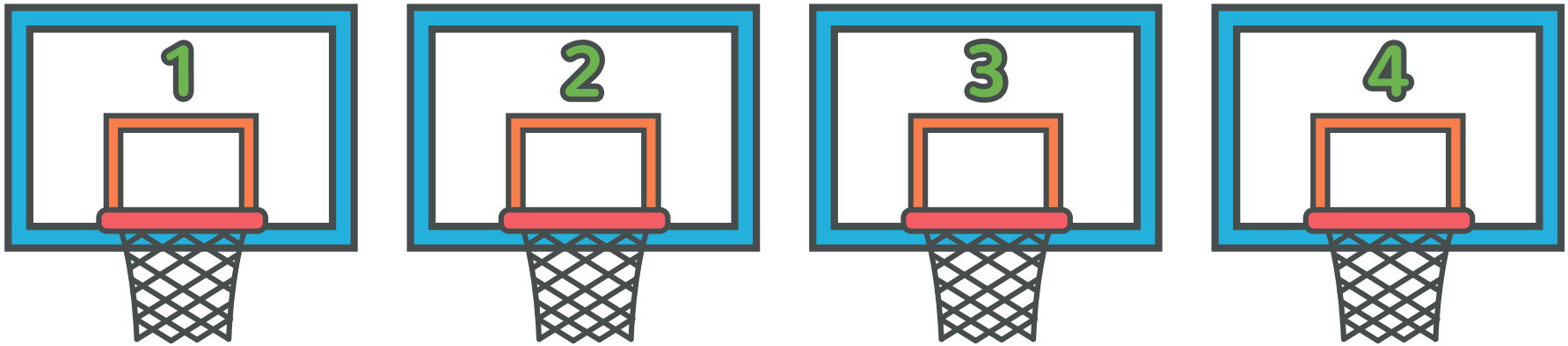
What two numbers did he make?

This is not as straightforward as it appears.

The students need to think of the combinations that give 6 in the ones column.

For example 8 - 2 = 6,

85 - 29 = 56



Brad had 3 balls.

Each ball went into a basket.

More than one ball can be thrown in each basket.

The number of points for each basket is written on the backboard.

What is the highest number of points Brad can get ?

Find three ways to score 6.

Find three ways to score 9.

What other scores could Brad get?

The highest score is 12 (3 balls in basket 4)

Score 6:

4, 1, 1

1, 2, 3

2, 2, 2

Score 9:

1, 4, 4

2, 3, 4

3, 3, 3

Other possible scores are 3, 4, 5, 7, 8, 10

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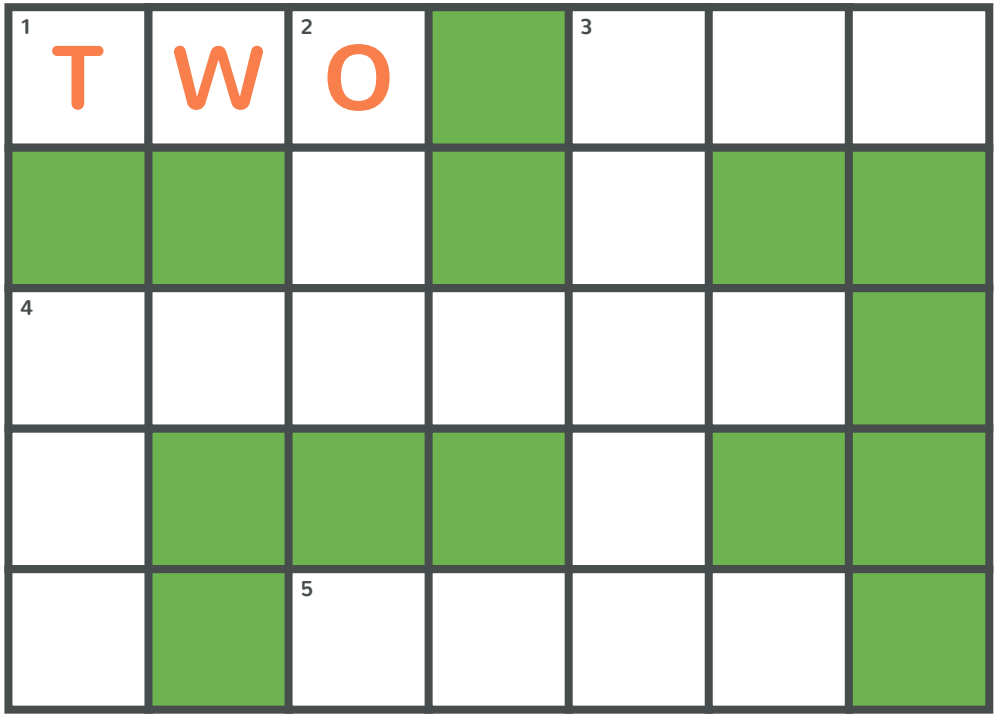
Day 17
Question

Write the answers to this problem in words. For example one, two, three...



Across

1. 7 - 5 = two

3. 2 + 5 - 1 =

4. 4 + 4 + 4 =

5. 13 - 4 =

Down

2. 3 + 4 - 6 =

3. 9 - 2 =

4. 11 - 4 + 3 =

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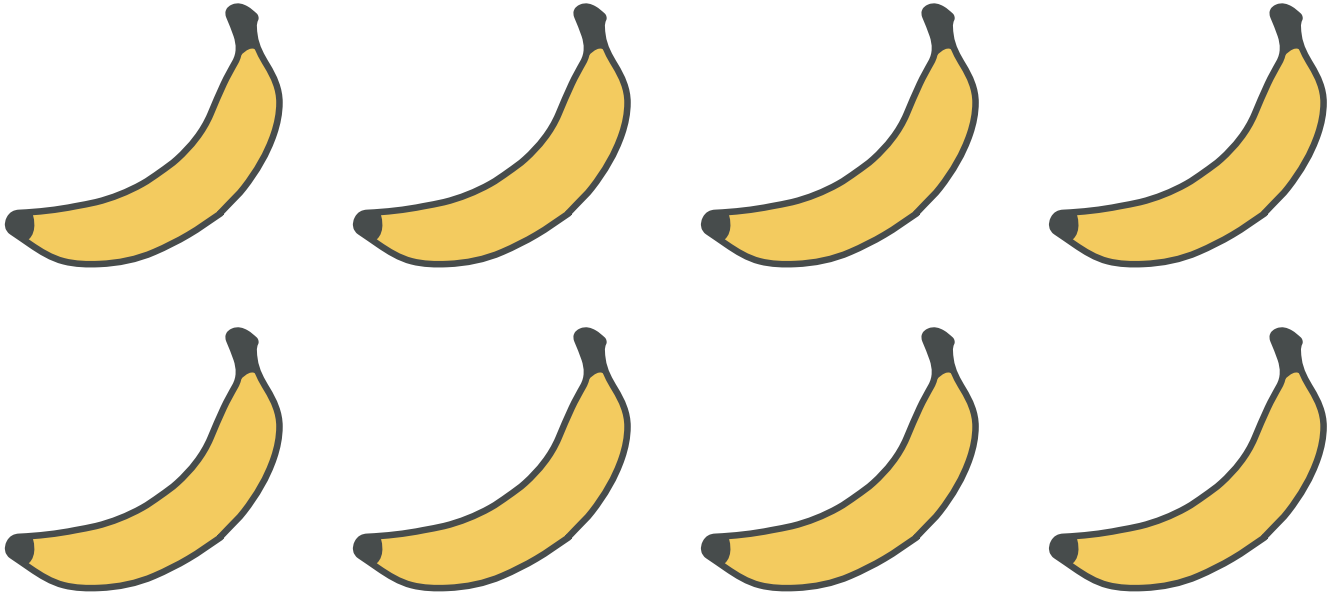
Day 17
Answer

Ruby has some bananas.

She gives $\frac{1}{2}$ of her bananas away.

She has these bananas left.



How many bananas did she start with?

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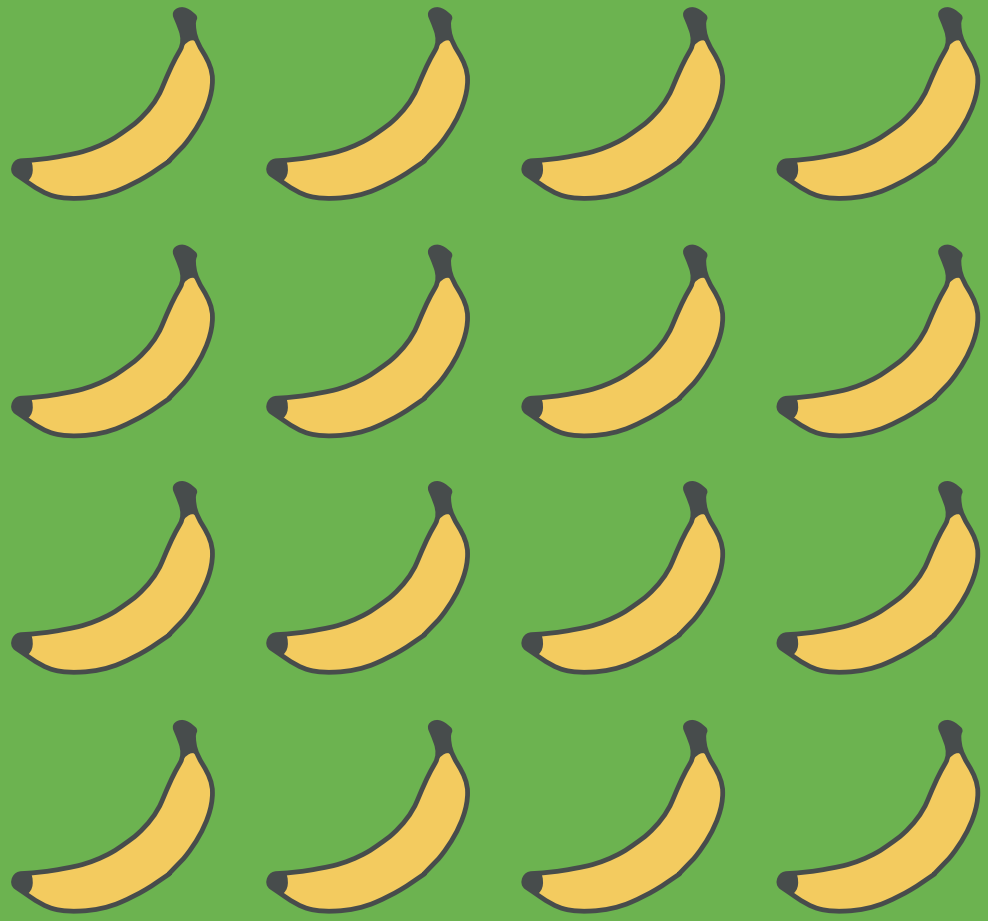
Day 18
Answer

Ruby started with 16 bananas



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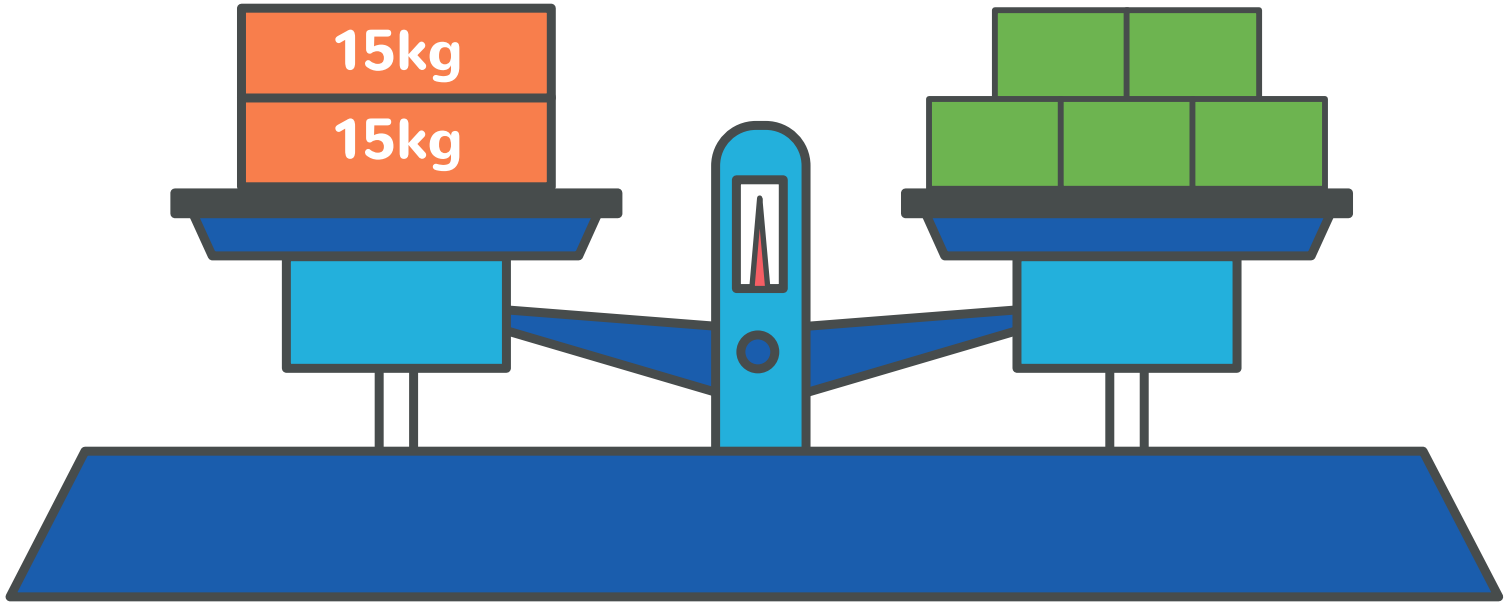
Day 19
Question



The scales are balanced.

Each green block has the same mass.

What is the mass of one of the blocks?

Total one side of the balance is 15 + 15 = 30kg

There are 5 boxes the other side, so 30 has to be shared/ grouped equally by 5

30 ÷ 5 = 6

One block is 6kg

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Day 20
Question

What do you notice?

6 8 10 12 14 16 18

What would be the next three numbers?

Using the same rule -

Now start with 5, what would the pattern be?

Now start with 21 and go backwards.

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Day 20
Answer

The numbers are going up in twos. The numbers are even.

The next three numbers are 20, 22, 24

Now start with 5, what would the pattern be?

5, 7, 9, ...

Now start with 21 and go backwards.

21, 19, 17, ...

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Day 21
Question

If the answer is ‘0’ what is the question?

Why did you choose that question?

Now think of another question, and another...

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Day 21
Answer

This problem is securing students' understanding of zero.

It's important they give lots of questions supported with reasons.

For example:

$1 - 1 = 0$

$2 \times 0 = 0$

I have 5 sweets and I eat them all. How many have I got left?

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Day 22
Question

You need a partner.

Together count from 1 to 30,

Now count from 1 - 30 clapping on the numbers in the 2 times table.

Count from 1 - 30 again but this time you are clapping on the numbers in the 5 times table.

Count from 1 - 30 again but now one of you claps the 2 times table and your partner claps the 5 times table at the same time.

Who claps the most? Why?

Predict which numbers would have no claps?

Which numbers would you both be clapping on?

How could you record this?

Choose another pair of tables and repeat what you have just done.

Answer the questions again.

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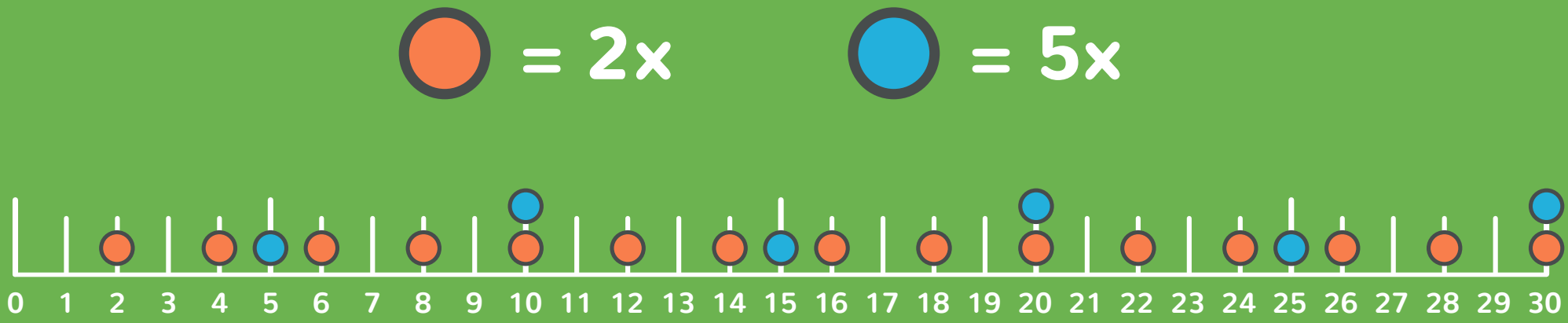
Day 22
Answer



Who claps the most? Why?

2x because there are more multiples

Which numbers would have no claps?

1, 3, 7, 9, 11, 17, 19, 21, 23, 27, 29

Which numbers would you both be clapping on?

10, 20, 30

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