Problem Solving Week 1

Master The Curriculum

2

Problem Solving Teaching Slides

Place Value

Problem Solving

2

Problem Solving Teaching Slides

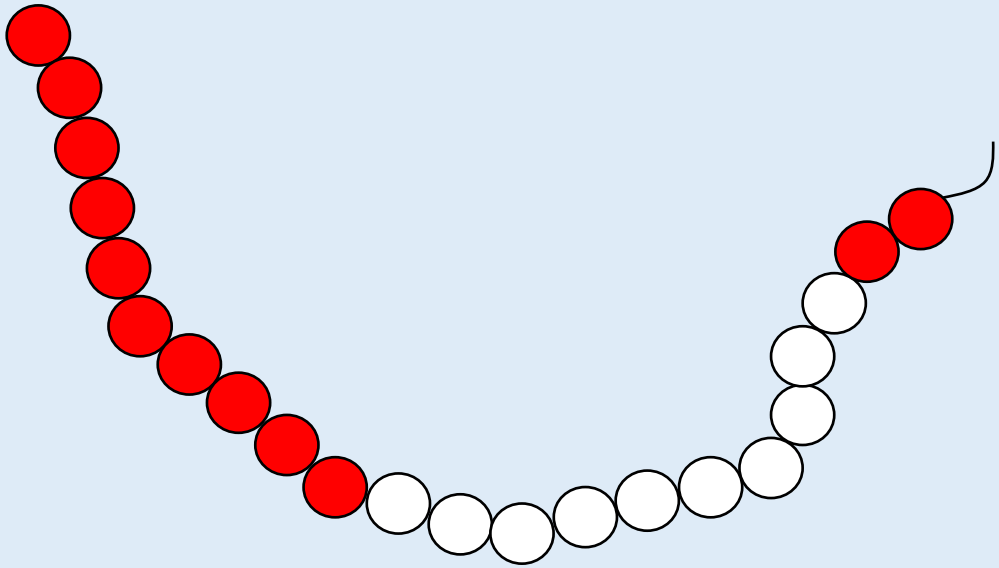
Activity 1

Problem Solving – Place Value

Here is part of Tia's bead string.

She wants to make 40.
How many more tens and ones does she need?

Tia



?

Discuss your strategy.

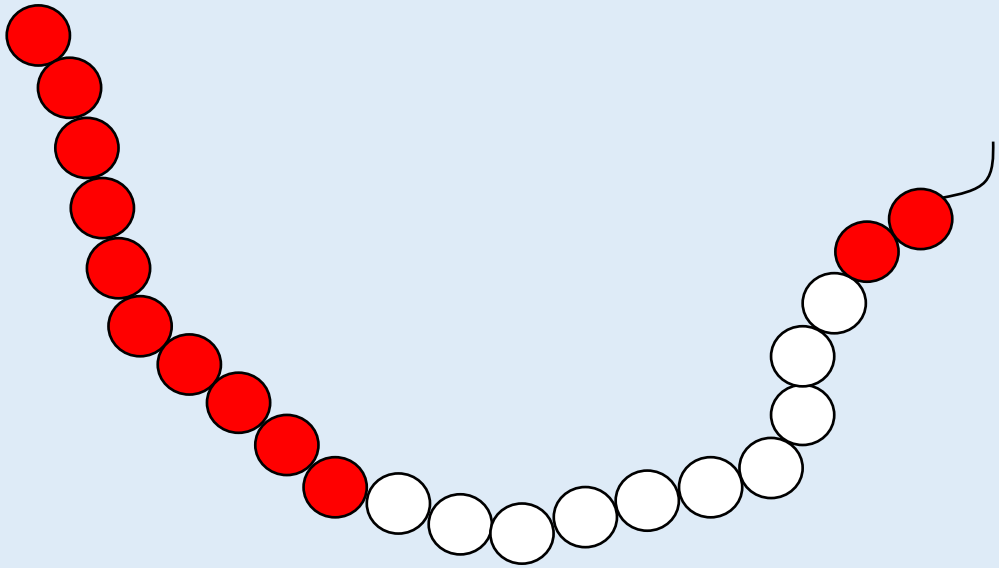
Activity 1

Problem Solving – Place Value

Here is part of Tia's bead string.

She wants to make 40.
How many more tens and ones does she need?

Tia

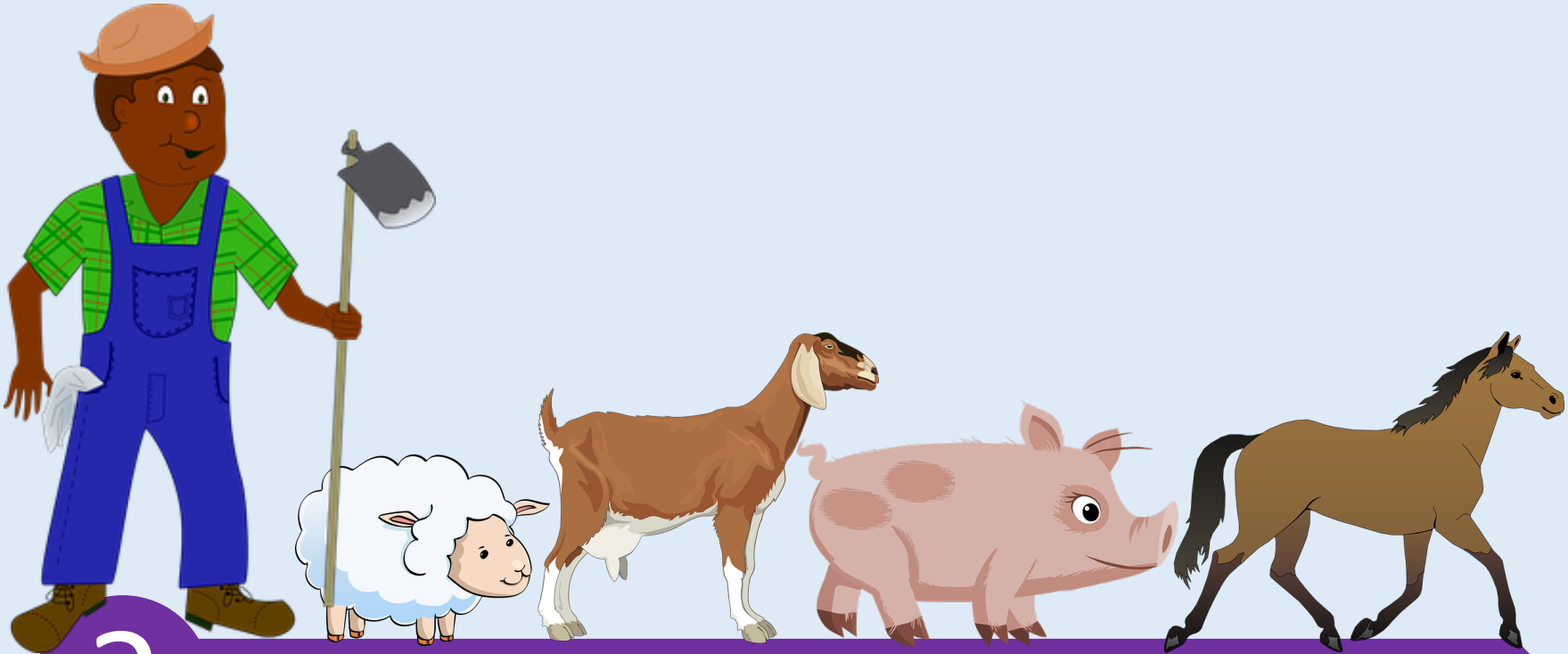


There are 22 beads.
To make 40, Tia needs 1 more ten and 8 more ones.

Activity 2

Problem Solving – Place Value

A farmer has 100 animals.
He has 35 pigs, 20 sheep, 35 goats and the rest are horses.
How many horses does he have?

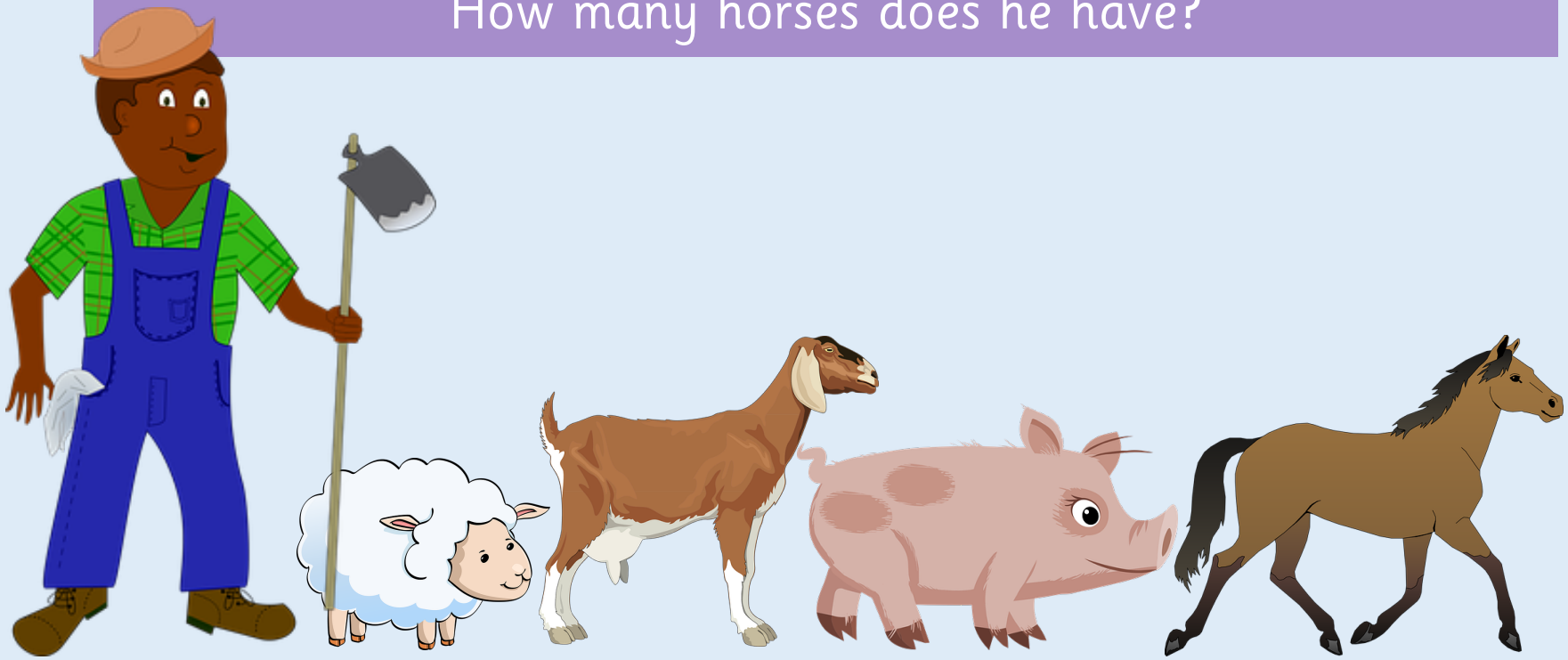


Discuss your strategy.

Activity 2

Problem Solving – Place Value

A farmer has 100 animals.
He has 35 pigs, 20 sheep, 35 goats and the rest are horses.
How many horses does he have?



Using place value knowledge, I know that 35, 20 and 35 is 90.
10 more makes 100, so there are 10 horses.

Activity 3

Problem Solving – Place Value

Malachi and Zach both need to represent the number 70 using place value counters.
How many more counters do they need?

Malachi

I have twenty-four ones.

I have 2 tens and 10 ones.

Zach

?

Discuss your strategy.

Activity 3

Problem Solving – Place Value

Malachi and Zach both need to represent the number 70 using place value counters.
How many more counters do they need?

Malachi

I have twenty-four ones.

I have 2 tens and 10 ones.

Zach

Malachi needs 46 to make 70.
He could use 4 tens and 6 ones or 46 ones.
Zach needs 40. He can use 4 tens or 40 ones.
Other answers totalling 70 accepted.

Activity 4

Problem Solving – Place Value

Esin is playing a matching game.
What card is Esin missing?

Esin

24 + 10

Forty-nine

49 + 10

Fifty-nine

Thirty-four

?

Discuss your strategy.

Activity 4

Problem Solving – Place Value

Esin is playing a matching game.
What card is Esin missing?

Esin

24 + 10

Forty-nine

49 + 10

Fifty-nine

Thirty-four

Esin is missing 39 + 10.

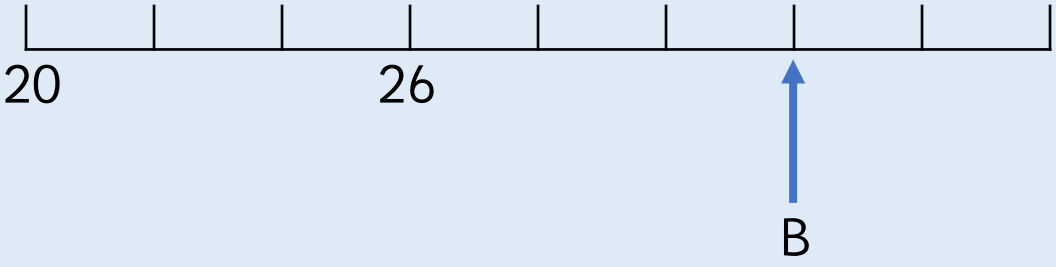
Activity 5

Problem Solving – Place Value

Look at the number line.

Work out the value of A.

Work out the value of A.



?

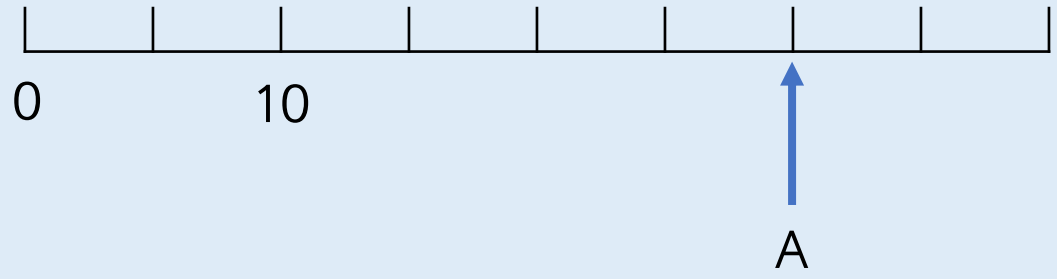
Discuss your strategy.

Activity 5 Problem Solving – Place Value

Look at the number line.

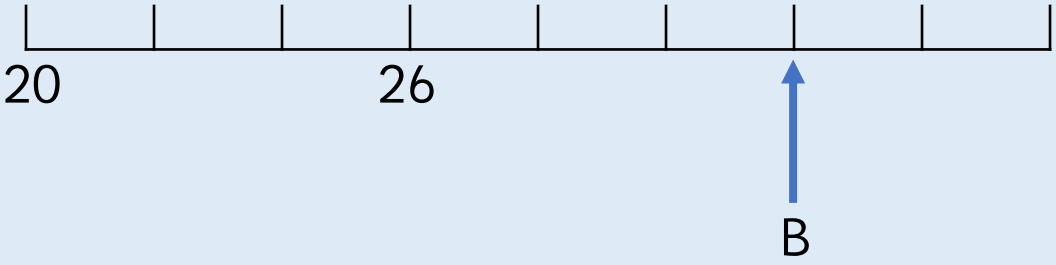
Work out the value of A.

The intervals are going up in 5s.



Work out the value of A.

The intervals are going up in 2s.



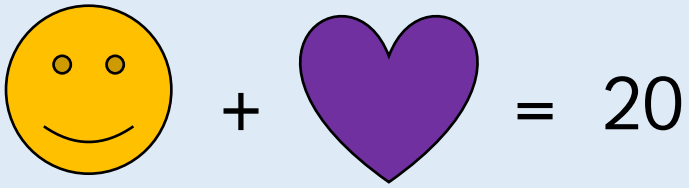
A = 30

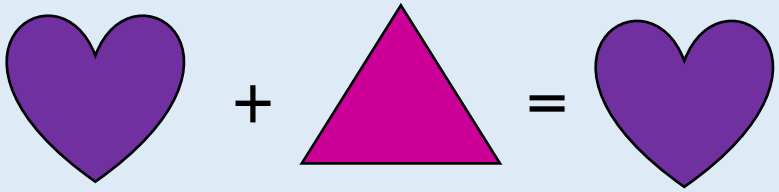
B = 32

Activity 6

Problem Solving – Place Value

Work out the value of each symbol.





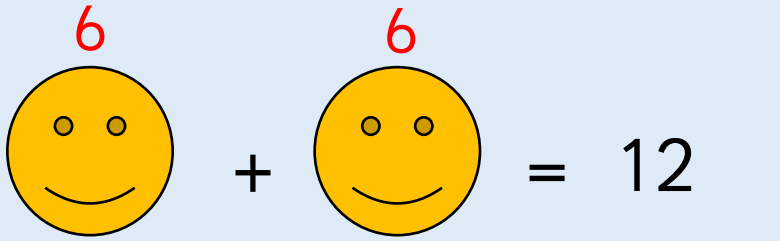
?

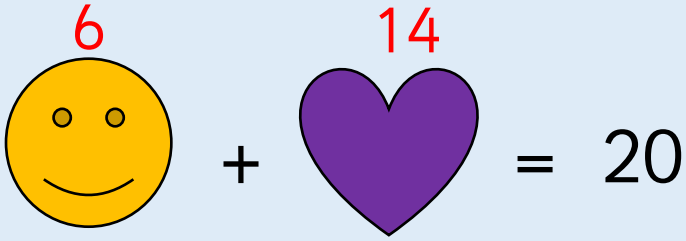
Discuss your strategy.

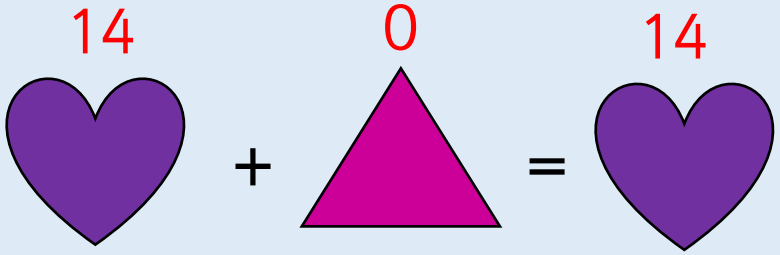
Activity 6

Problem Solving – Place Value

Work out the value of each symbol.







Addition & Subtraction

Problem Solving

2

Problem Solving Teaching Slides

Activity 1 Problem Solving – Addition & Subtraction

Rosie is selling the cakes below.

She sells nine of the cakes. How many are left?

?

Discuss your strategy.

Activity 1 Problem Solving – Addition & Subtraction

Rosie is selling the cakes below.

20 cakes – 9 cakes = 11 cakes

20 – 9 = 11

She sells nine of the cakes. How many are left?

?

Discuss your strategy.

Activity 2

Problem Solving – Addition & Subtraction

Rosie has 16 doughnuts to sell at the school bake sale.
Class 2 donate the doughnuts below.
How many treats does she have to sell altogether?

Rosie

?

Discuss your strategy.

Activity 2

Problem Solving – Addition & Subtraction

Rosie has 16 doughnuts to sell at the school bake sale.
Class 2 donate the doughnuts below.
How many treats does she have to sell altogether?

Rosie

16 + 23 = 39

16 doughnuts + 23 doughnuts = 39 doughnuts

?

Discuss your strategy.

Activity 3 Problem Solving – Addition & Subtraction

Leanna has four number cards.
She uses them to make two calculations.
Where do the numbers go?

Leanna

15	25	35	45

	+		= fifty

	–		= 20

?

Discuss your strategy.

Activity 3 Problem Solving – Addition & Subtraction

Leanna has four number cards.
She uses them to make two calculations.
Where do the numbers go?

Leanna

15	25	35	45

15 + 35 = fifty

45 – 25 = 20

?

Discuss your strategy.

Activity 4 Problem Solving – Addition & Subtraction

The ice-cream lady sells 26 ice-creams on Sunday.
On Monday, she sold 20 more ice-creams than she did on Sunday.
How many ice-creams were sold altogether?

?

Discuss your strategy.

Activity 4 Problem Solving – Addition & Subtraction

The ice-cream lady sells 26 ice-creams on Sunday.
On Monday, she sold 20 more ice-creams than she did on Sunday.
How many ice-creams were sold altogether?

20 more than 26 is 46.

26 + 46 = 72.

72 ice-creams were sold altogether.

?

Discuss your strategy.

Activity 5 Problem Solving – Addition & Subtraction

Look at the number cards.

13

29

44

31

Tia

I picked two of these numbers and added them together.
My answer ends in 0.

What are the numbers I picked?

?

Discuss your strategy.

Activity 5 Problem Solving – Addition & Subtraction

Look at the number cards.

13

29

44

31

Tia

I picked two of these numbers and added them together.
My answer ends in 0.

What are the numbers I picked?

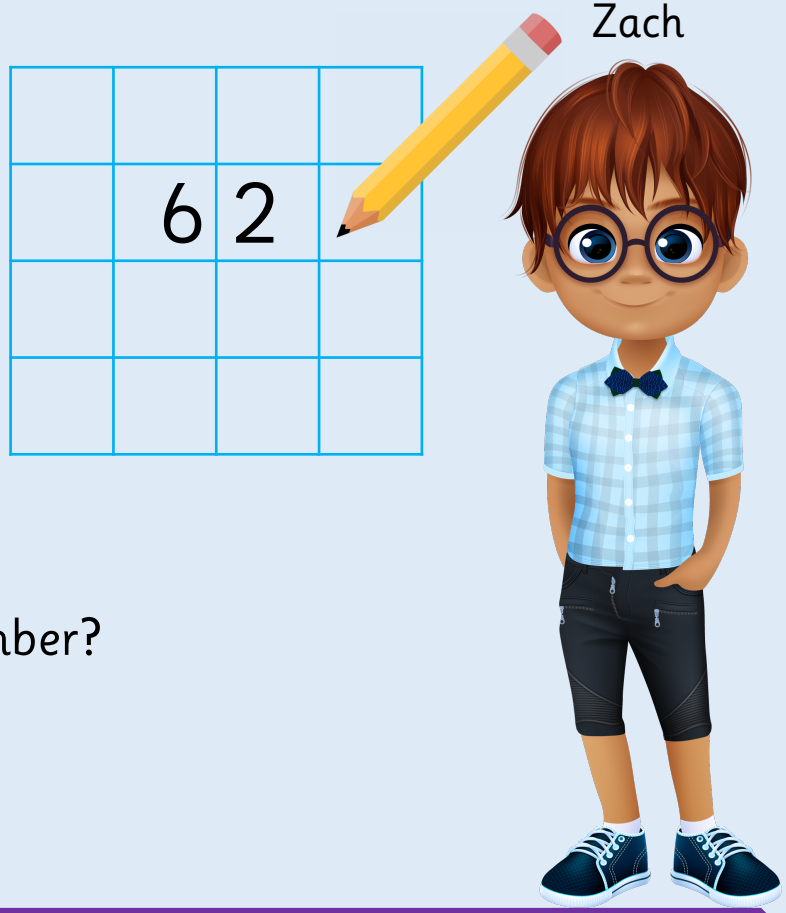
29 + 31 = 60

?

Discuss your strategy.

Activity 6 Problem Solving – Addition & Subtraction

Zach writes down a number.



First, he subtracts 5 from the number.

He then subtracts 3 tens from the number.

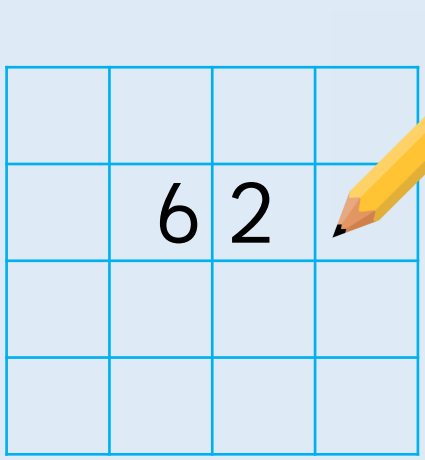
What is the sum of the digits in the new number?

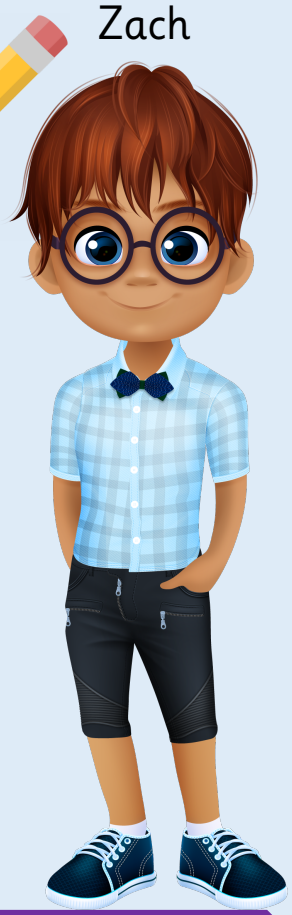
?

Discuss your strategy.

Activity 6 Problem Solving – Addition & Subtraction

Zach writes down a number.





First, he subtracts 5 from the number.

$62 - 5 = 57$

He then subtracts 3 tens from the number.

$57 - 30 = 27$

What is the sum of the digits in the new number?

$27 \longrightarrow 2 + 7 = 9$

?

Discuss your strategy.

Multiplication & Division

Problem Solving

2

Problem Solving Teaching Slides

www.masterthecurriculum.co.uk

Activity 1

Problem Solving – Multiplication & Division

The vases below are arranged end to end along a table.
The distance between each vase is 12 cm.
How long is the table?

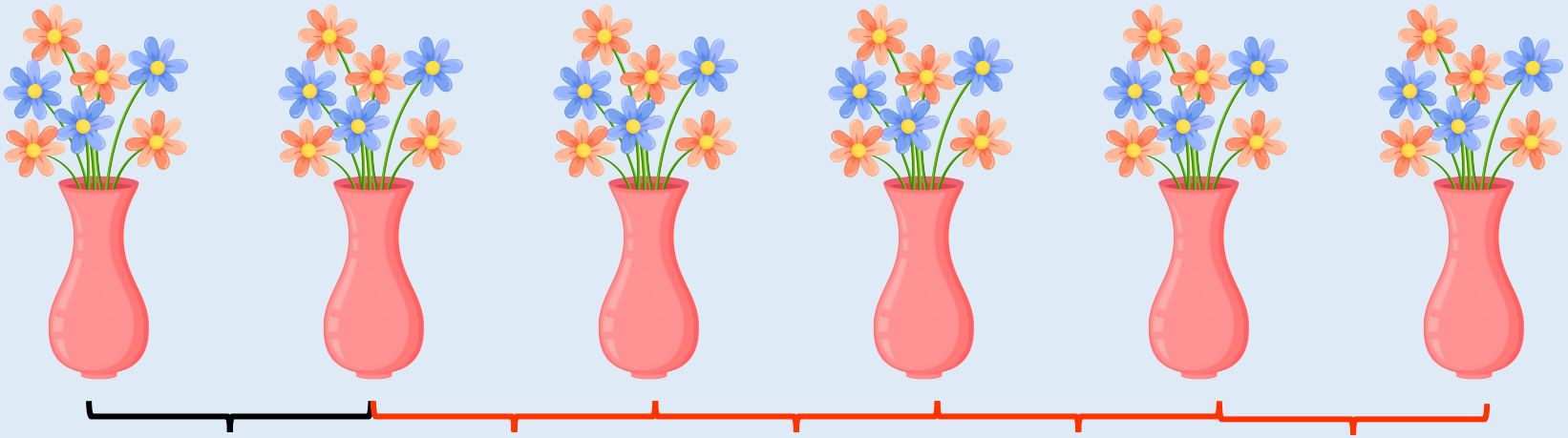
?

Discuss your strategy.

Activity 1

Problem Solving – Multiplication & Division

The vases below are arranged end to end along a table.
The distance between each vase is 12 cm.
How long is the table?



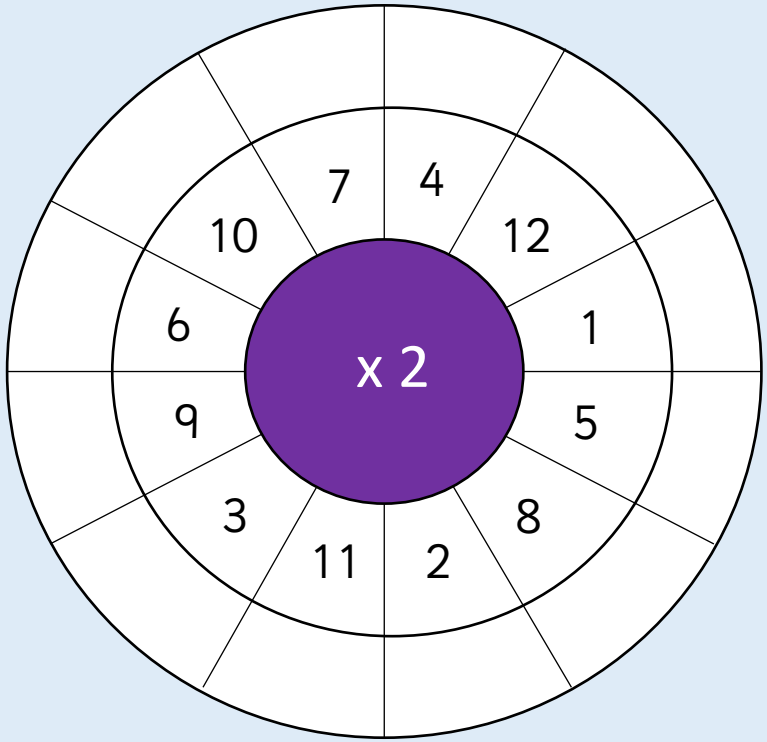
12 cm x 5 = 60 cm

Activity 2 Problem Solving – Multiplication & Division

Esin needs to fill this multiplication wheel.
Write out the calculations Esin does not know.

Esin

I only know how to multiply even numbers by 2.

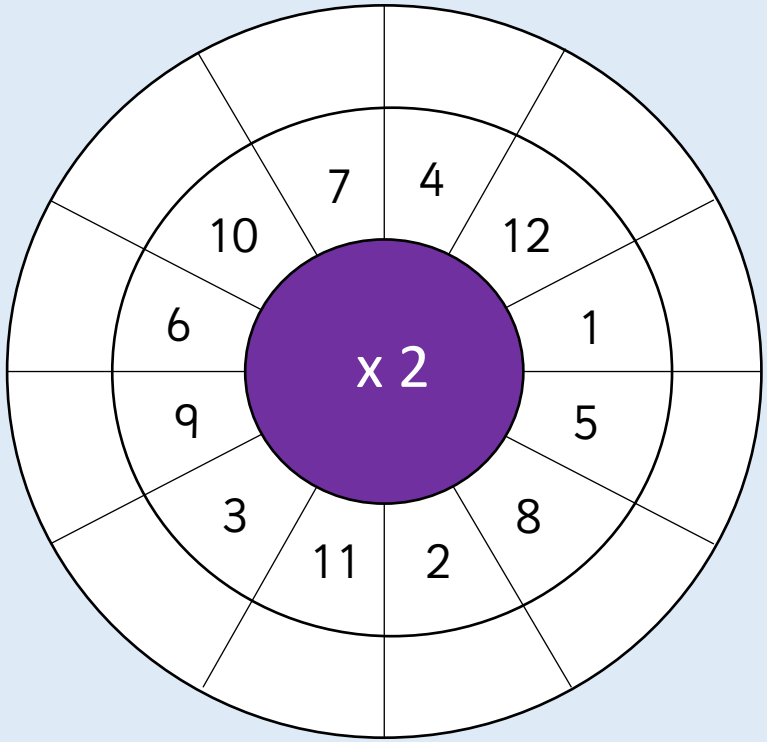


Discuss your strategy.

Activity 2 Problem Solving – Multiplication & Division

Esin needs to fill this multiplication wheel.
Write out the calculations Esin does not know.

I only know how to multiply even numbers by 2.



2 x 1 = 2
2 x 3 = 6
2 x 5 = 10
2 x 7 = 14
2 x 9 = 18
2 x 11 = 22

?

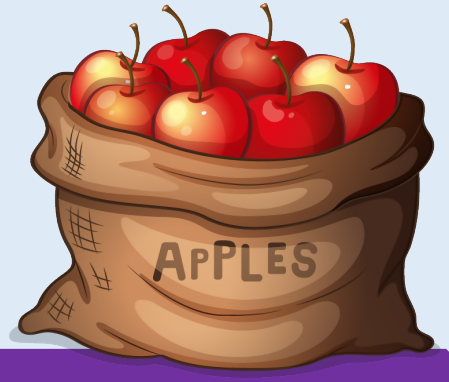
Discuss your strategy.

Activity 3

Problem Solving – Multiplication & Division

There are 20 apples in one bag.
Malachi has three of these bags to share between his ten horses.

How many apples will each horse get?



?

Discuss your strategy.

Activity 3

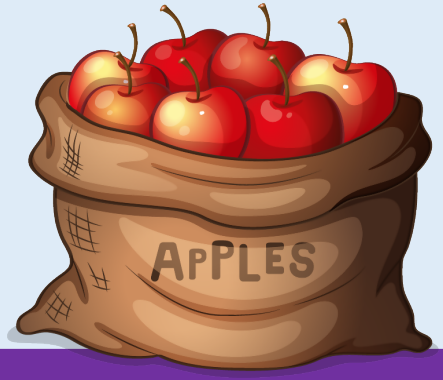
Problem Solving – Multiplication & Division

There are 20 apples in one bag.
Malachi has three of these bags to share between his ten horses.

How many apples will each horse get?

2 x 3 = 6
20 x 3 = 60

60 apples divided by 10 = 6 apples



?

Discuss your strategy.

Activity 4

Problem Solving – Multiplication & Division

There are 10 steps. Tia jumps up them 2 at a time.
How many jumps will it take to reach the top?

?

Discuss your strategy.

Activity 4

Problem Solving – Multiplication & Division

There are 10 steps. Tia jumps up them 2 at a time.
How many jumps will it take to reach the top?

$10 \div 2 = 5$

5 jumps

?

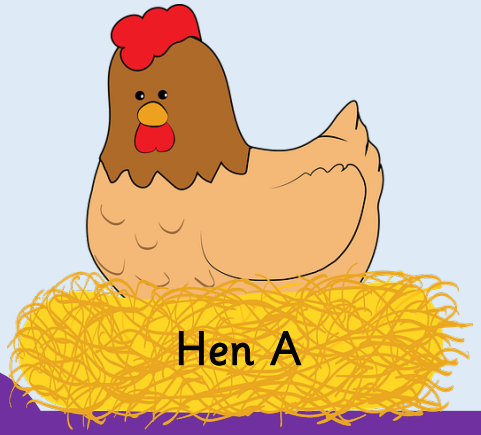
Discuss your strategy.

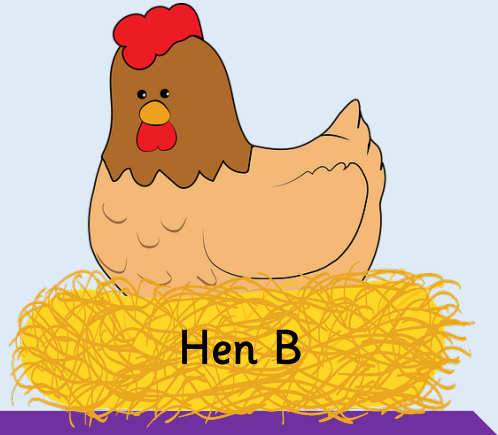
Activity 5

Problem Solving – Multiplication & Division

Hen A always lays 2 eggs in a set.
Hen B always lays 3 eggs in a set.

There are 18 eggs.
Work out the amount of sets both hens have laid.





?

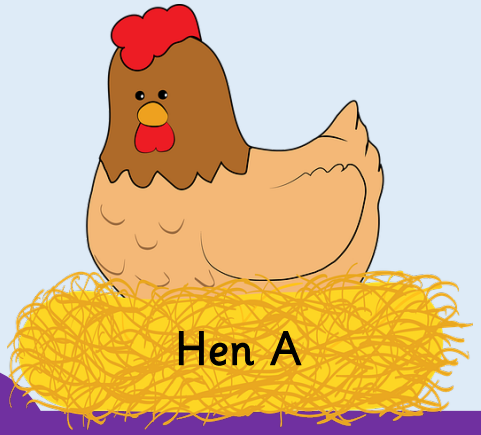
Discuss your strategy.

Activity 5 Problem Solving – Multiplication & Division

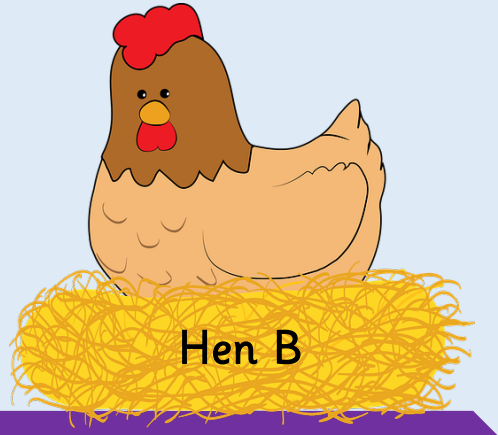
Hen A always lays 2 eggs in a set.
Hen B always lays 3 eggs in a set.

There are 18 eggs.
Work out the amount of sets both hens have laid.

$18 \div 2 = 9$
9 sets



$18 \div 3 = 6$
6 sets



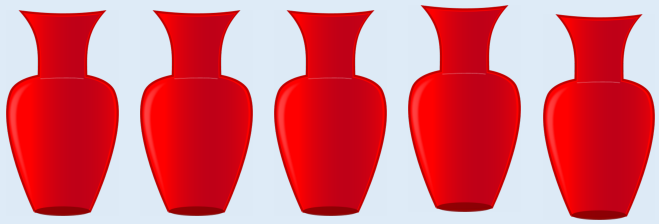
?

Discuss your strategy.

Activity 6

Problem Solving – Multiplication & Division

I can fit 7 flowers in each vase. I want to fill each vase with the most amount of flowers.
How many flowers should I buy?



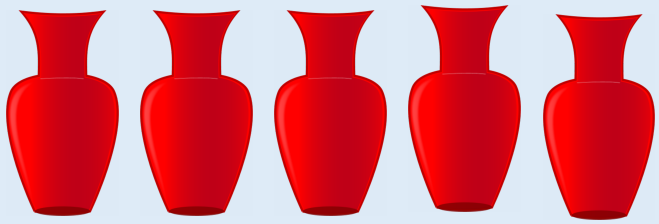
?

Discuss your strategy.

Activity 6

Problem Solving – Multiplication & Division

I can fit 7 flowers in each vase. I want to fill each vase with the most amount of flowers.
How many flowers should I buy?



7 x 5 = 35
35 flowers are needed.

?

Discuss your strategy.

Fractions

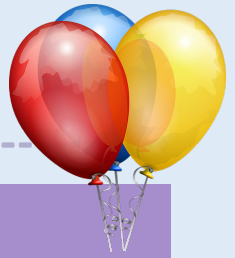
Problem Solving

2

Problem Solving Teaching Slides

Activity 1

Problem Solving – Fractions



Malachi decorated a cake for his mum's birthday.
He has orange and blue candles and puts 40 candles on the cake.
Half were orange.
How many were blue?

Malachi

?

Discuss your strategy.

Activity 1

Problem Solving – Fractions

Malachi decorated a cake for his mum's birthday.
He has orange and blue candles and puts 40 candles on the cake.
Half were orange.
How many were blue?

Malachi

Half of 40 is 20.
There were 20 orange candles and 20 blue candles.

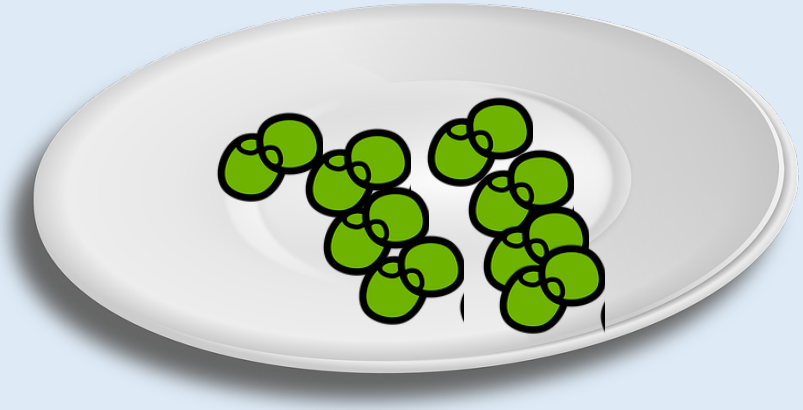
?

Discuss your strategy.

Activity 2

Problem Solving – Fractions

Leanna will not eat her peas for dinner!
She has 16 peas on her plate and needs to eat one quarter of them. How many peas will be left on her plate?

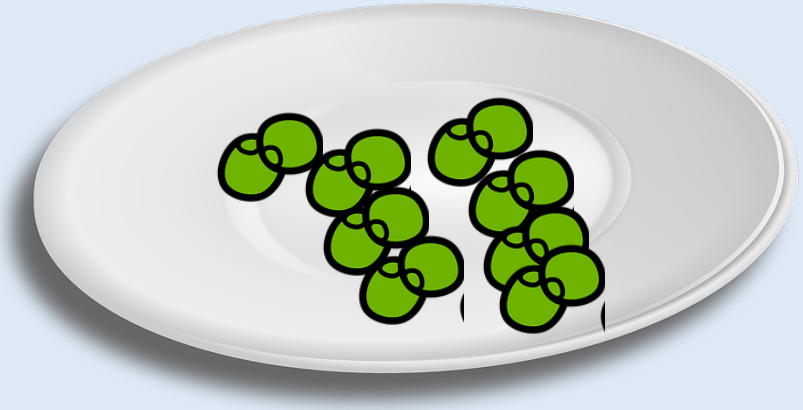


?

Discuss your strategy.

Activity 2 Problem Solving – Fractions

Leanna will not eat her peas for dinner!
She has 16 peas on her plate and needs to eat one quarter of them. How many peas will be left on her plate?



¼ of 16 is 4. If she eats 4 then there will be 12 peas left on the plate.
16 – 4 = 12

Activity 3 Problem Solving – Fractions

Children sit on tables of 4. The teacher gives out some pencils and says to share them out equally.

What fraction of the pencils do they get each?

?

Discuss your strategy.

Activity 3 Problem Solving – Fractions

Children sit on tables of 4. The teacher gives out some pencils and says to share them out equally.

What fraction of the pencils do they get each?

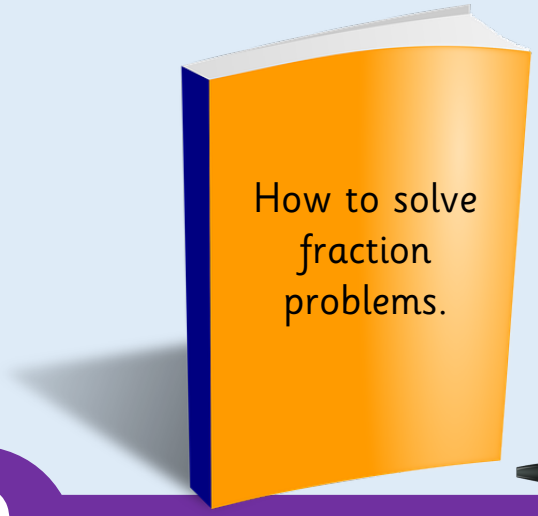
They will get one quarter each.

?

Discuss your strategy.

Activity 4 Problem Solving – Fractions

Rosie brings £10 on her shopping trip.
She buys a book for £4 and a pencil case for £1.
What fraction of her money does she have left?

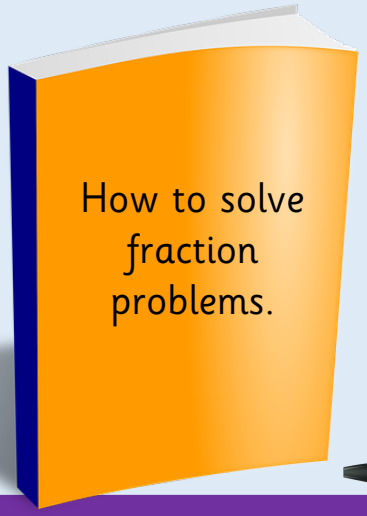


?

Discuss your strategy.

Activity 4 Problem Solving – Fractions

Rosie brings £10 on her shopping trip.
She buys a book for £4 and a pencil case for £1.
What fraction of her money does she have left?



Rosie has half of her money left.
She had £10 and spent £5.
Half of 10 is 5.

?

Discuss your strategy.

Activity 5 Problem Solving – Fractions

Tia has 15 pennies in her purse.

She spends $\frac{1}{3}$ of her money.

How much money has she got left?

Tia

?

Discuss your strategy.

Activity 5 Problem Solving – Fractions

Tia has 15 pennies in her purse.

She spends $\frac{1}{3}$ of her money.

How much money has she got left?

Tia

$\frac{1}{3}$ of 15p = 5p

15p – 5p = 10p

Tia has 10p left.

?

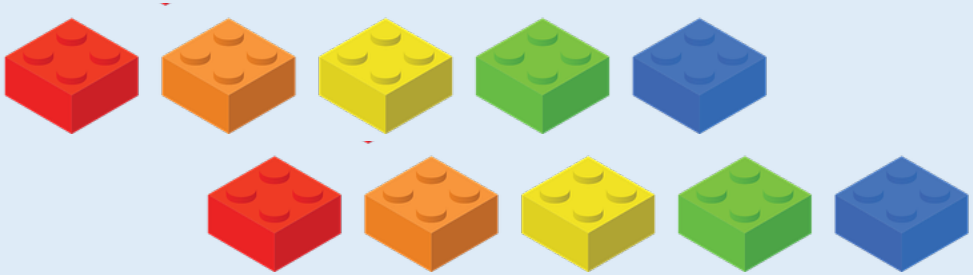
Discuss your strategy.

Activity 6

Problem Solving – Fractions

Zach has a problem. He has too many lego pieces in his pocket.
He takes a third of the lego and puts it into his toy box.
The pieces he put away are below.
How many pieces did he have in his pocket?

Zach



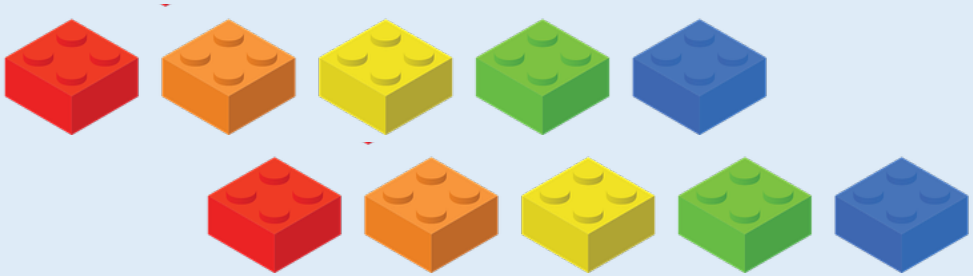
Discuss your strategy.

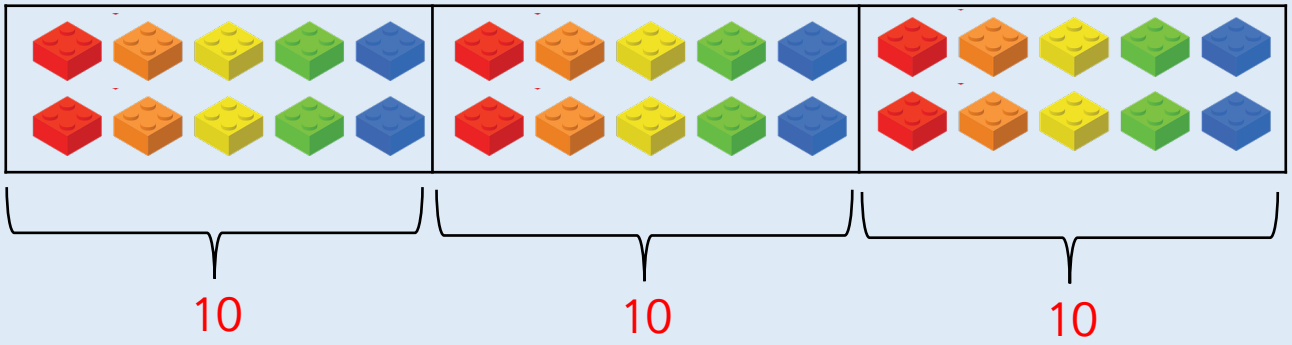
Activity 6

Problem Solving – Fractions

Zach has a problem. He has too many lego pieces in his pocket.
He takes a third of the lego and puts it into his toy box.
The pieces he put away are below.
How many pieces did he have in his pocket?

Zach





If there are 10 pieces in one third, he had 30 pieces in his pocket.

Money

Problem Solving

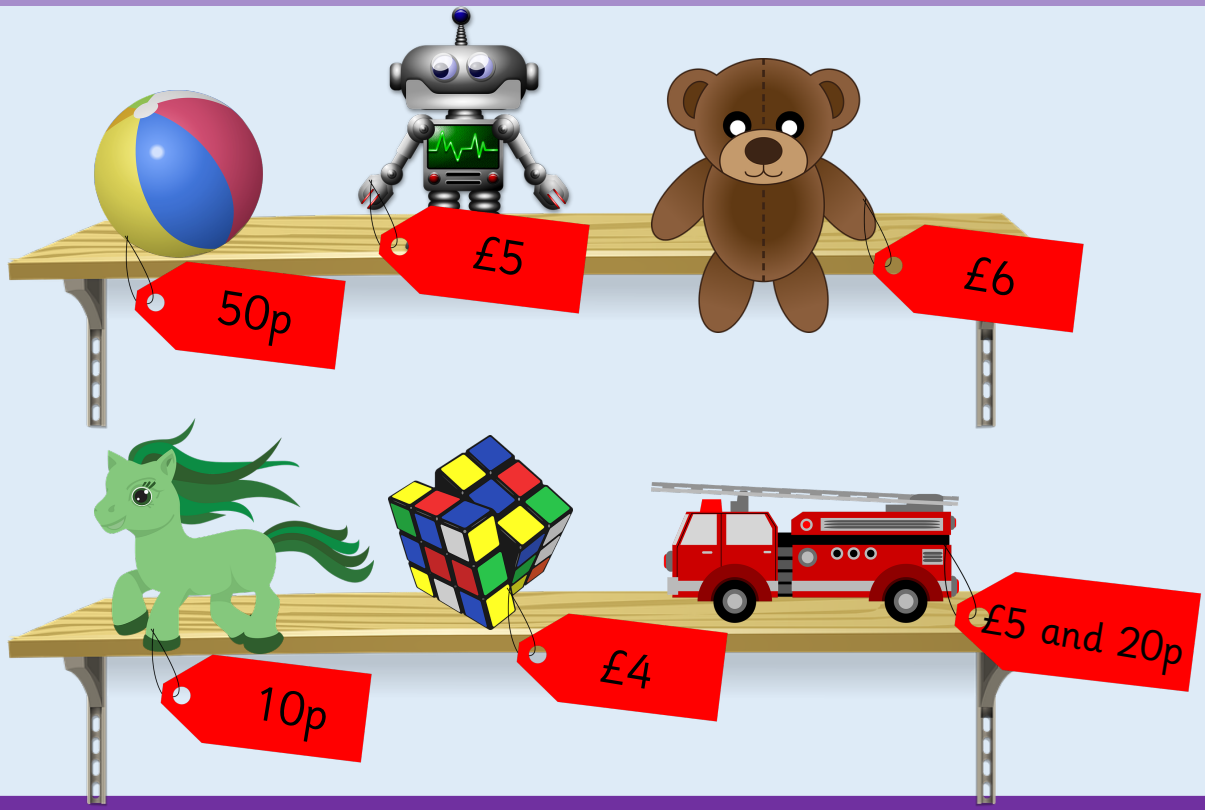
2

Problem Solving Teaching Slides

Activity 1

Problem Solving – Money

Malachi is in a toy shop.
He has five 2p coins and five £1 coins.
What can he buy? What can he not buy?



?

Discuss your strategy.

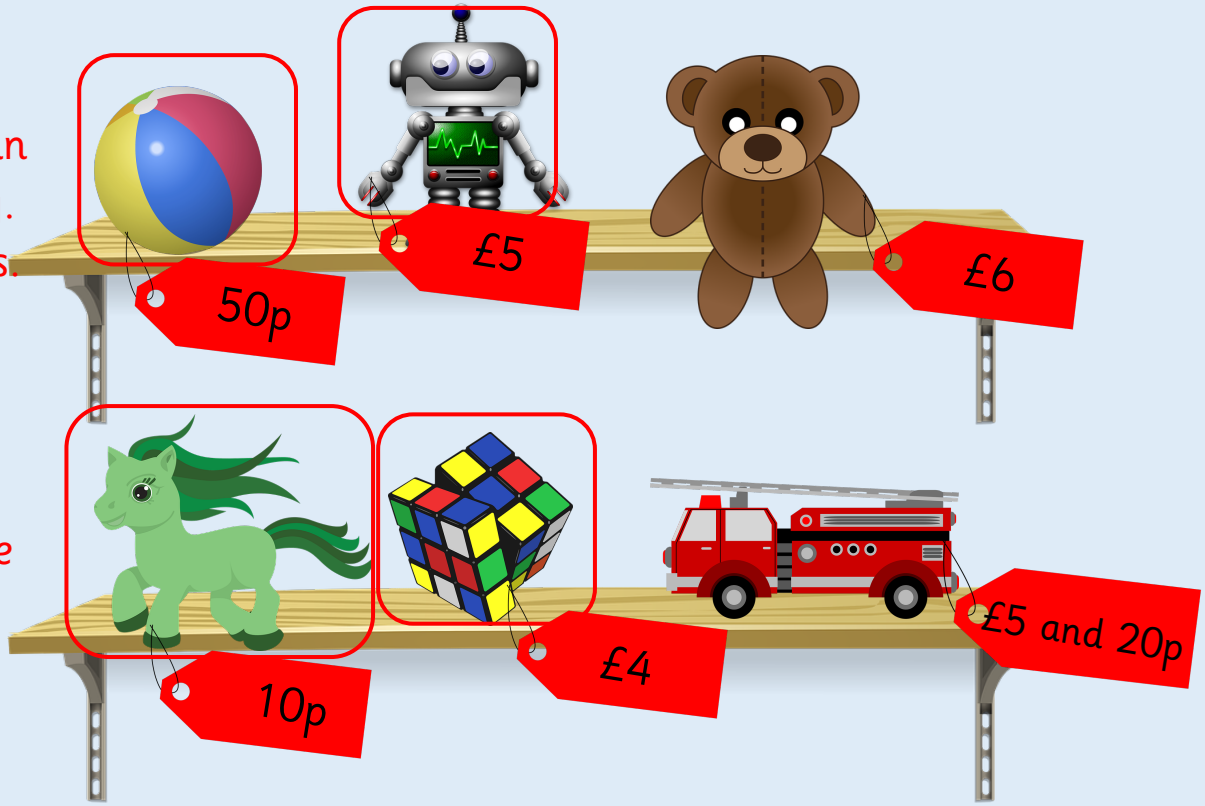
Activity 1 Problem Solving – Money

Malachi is in a toy shop.
He has five 2p coins and five £1 coins.
What can he buy? What can he not buy?

Malachi has £5 and 10p. He can buy any circled item separately. He could also buy combinations.

- The ball and pony
- The robot and pony
- The cube and pony
- The cube and ball

He cannot buy the teddy or the fire engine.



Activity 2 Problem Solving – Money

Leanna has been saving the money her mum gives to her.
How much did she save that week?

I put these coins in my piggy bank.

Monday	Wednesday	Wednesday
		

?

Discuss your strategy.

Activity 2 Problem Solving – Money

Leanna has been saving the money her mum gives to her.
How much did she save that week?

I put these coins in my piggy bank.

Monday	Wednesday	Wednesday
		
8p	20p	21p

8p + 20p + 21p = 49p

Leanna saved 49p.

Activity 3 Problem Solving – Money

How much money does Esin have after the 5 days?

Everyday, for 5 days, I have put this coin in my piggy bank.

?

Discuss your strategy.

Activity 3 Problem Solving – Money

How much money does Esin have after the 5 days?

Esin has 100p or £1 after 5 days.

Activity 4 Problem Solving – Money

Look at the amount of money each child has.
How much change will they get when they purchase the items they want?

Tia


Rosie


Zach


?

Discuss your strategy.

Activity 4 Problem Solving – Money

Look at the amount of money each child has.
How much change will they get when they purchase the items they want?

20p change

Tia


£2 change

Rosie


55p change

Zach


?

Discuss your strategy.

Activity 5 Problem Solving – Money

Malachi was paying the shopkeeper 86p when his bag of money spilt on the counter.
What coins should the shopkeeper select so that Malachi does not have to have any change?

Discuss your strategy.

Activity 5 Problem Solving – Money

Malachi was paying the shopkeeper 86p when his bag of money spilt on the counter.
What coins should the shopkeeper select so that Malachi does not have to have any change?

Discuss your strategy.

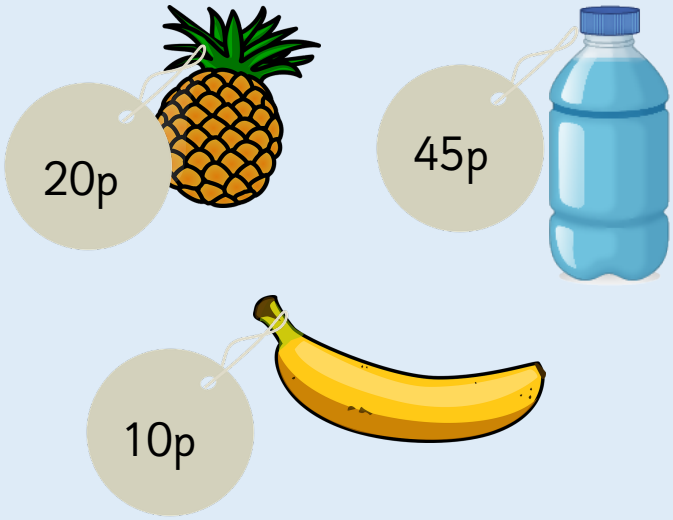
Activity 6 Problem Solving – Money

Look at Zach's shopping list.
He doesn't need the bananas anymore. How much will he spend?

SHOPPING LIST

2 pineapples
3 bananas
1 bottle of water

One of each:



Discuss your strategy.

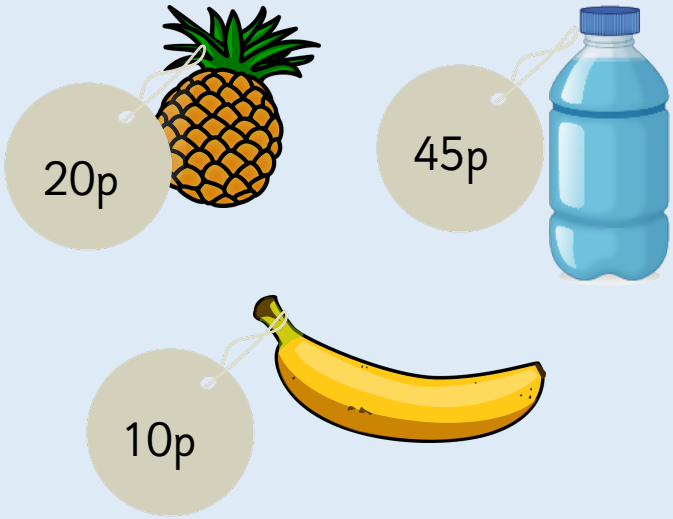
Activity 6 Problem Solving – Money

Look at Zach's shopping list.
He doesn't need the bananas anymore. How much will he spend?

SHOPPING LIST

2 pineapples
3 bananas
1 bottle of water

One of each:



One pineapple costs 20p, so 2 will cost 40p. 1 bottle of water costs 45p.
40p and 45p = 85p