

count on us



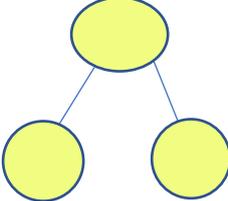
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CPA and Bar modelling workbook

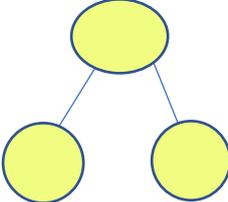
Bar Modelling and CPA Tasks

Intro Exercise

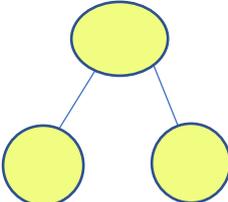
Show this with counters.

<u>Yellow faces</u>	<u>Red faces</u>	<u>Total</u>	<u>Number bond Pic</u>	<u>Abstract</u>
				

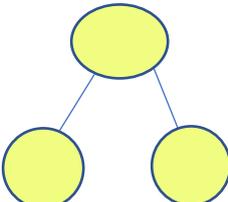
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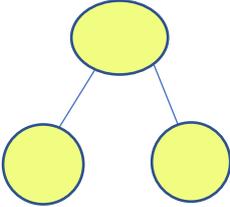
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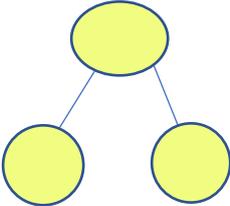
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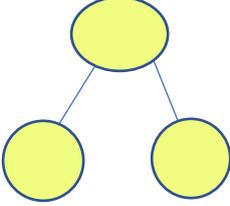
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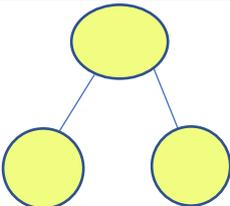
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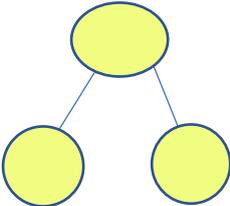
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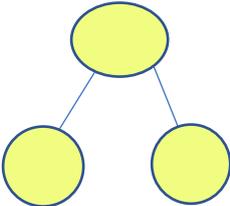
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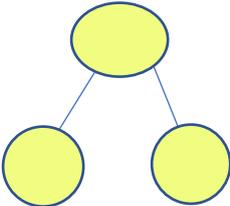
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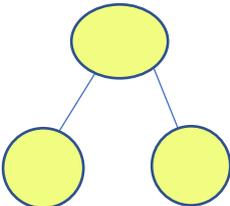
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Ex 1**Challenge 1**

Brian had 4 bits of pizza. Gillian had 3 bits of pizza. How many bits of pizza did they have altogether?

Challenge 2

In the school basketball team, there are 4 boys and 5 girls. How many players are in the school team?

Challenge 3

What is 1 more than 6?

Challenge 4

What is 2 more than 7?

Challenge 5

Susan and Ben have 9 marbles altogether. Ben has 6 marbles. How many marbles does Susan have?

Challenge 6

There are 10 rabbits playing in the field. There are 7 white rabbits and the rest are brown. How many brown rabbits are there?

Challenge 7

What is 2 less than 9?

Challenge 8

Richard has 9 sweets. Diane has 5 sweets.
How many more sweets does Richard have?

Challenge 9

Mr Castle has 5 boys in his class. He has 4 more girls than boys in his class. How many pupils are in his class?

Challenge 10

Nicola has 11 sweets. She eats 7 sweets.
How many sweets does she have left?

Challenge 11

Count out 27 cubes and make them into 10 trains and leave the rest as ones.

Challenge 12

Using the multi-link cubes.
Build a 9 train with blue cubes, build a 5 five train with black cubes and build a 6 train with red cubes. What do you notice? What do you wonder?

Ex 2**Challenge 1**

Marley buys 3 packets of Match Attack football cards from the shop.
There are 4 cards in each packet.
How many cards does Marley have altogether?

Challenge 2

There are 20 players that turn up for football practice. The coach splits them into teams of 5 a side. How many teams does the coach have?

Challenge 3

Ruben saves £30 for his summer holiday.
Ivan saves five times as much money for his holiday.
How much money does Ivan save for his holiday?

Challenge 4

Paul and Julie have 20 sweets between them. Paul has three times as many sweets as Julie.
How many sweets does Paul have?

Challenge 5

George has 39 pencils in his classroom.
David has 16 more pencils than George.
How many pencils does David have in his classroom?

Challenge 6

Beatrice scored 31 points in a quiz. Julie scored 13 points less. How many points did Julie score?

Challenge 7

Kirsty has £65 to spend on football hairdresser equipment.
She spends £25 on a hair dryer and then she buys 5 pairs of scissors with the rest. How much is one pair of scissors?

Challenge 8

There are 24 people that turn up for gymnastics club. The coach splits them into groups of 3. How many groups of 3 are there?

Challenge 9

Use the multi-link cube to build a 14 train and a 23 train. What is the total?

Challenge 10

Use the multi-link cube to build a 29 train and a 13 train. What is the total?

Challenge 11

Use the multi-link cube to build a 27 train and remove 12 cubes. What is left?

Challenge 12

Use the multi-link cube to build a 32 train and remove 19 cubes. What is left?

Ex 3**Challenge 1**

Tommy saves 4 times as much money as Freddy.
Rae saves £15 less than Tommy.
Freddy saves £35.
How much money does Rae save?

Challenge 2

Messi, Ronaldo and Bale are playing in the CL.
Bale and Messi both score the same number of goals.
Ronaldo scores three times as many goals as Messi.
Ronaldo scored 10 more goals than Messi.
How many goals did they all score together?

Challenge 3

Martin and Craig have 72 marbles altogether. Martin loses 15 marbles to Craig during a game. At the end of the game, Craig has twice as many marbles as Martin.
How many marbles did Craig have to begin with?

Challenge 4

Chris and Jordan share sweets in the ratio 2:3.
If Chris has 28 sweets how many sweets does Jordan have?

Challenge 5

Jim, David and Anna are taking part in a darts competition
Jim scored double the number of points as David.
Anna scored four times as many points as David.
Jim scored 36 points
How many points did Anna and David score?

Challenge 6

Claire, Susan and Molly are taking part in a gymnastics competition
Claire scored double the number of points as Molly.
Susan scored three times as many points as Molly.
They scored 30 points altogether.
How many points did Anna and David score?

Challenge 7

James and Jack are playing in a basketball tournament
Jack scores five times as many points as James.
Jack scored 24 more points than James.
How many points did they all score together?

Challenge 8

Jane, Emma and Brian are taking part in a dance competition
Jane and Brian both score the same number of points
Emma scores four times as many points as Jane.
Emma scored 15 more points than Jane.
How many points did they all score?

Challenge 9

Abby saves 4 times as much money as Gillian.
Nicola saves £17 less than Abby.
Gillian saves £43.
How much money does Nicola save?

Challenge 10

Craig thinks of a number.
If he thirds his number, he gets 8.
What is half of the number he is thinking about?

Ex 4 challenges

Challenge 1

There is twice as much orange juice as lemonade and twice as much lemonade as brandy.
There is three times as much red wine as brandy.
If there is 90ml of lemonade juice, what is the volume of the Sangria?

Challenge 2

Gerry and Theresa split money in the ratio 3:4
One of them ends up with £24.
There are two possibilities of how much money the other person can get. What are the two possibilities?

Challenge 3

A large box weighs 4 times as much as a small box.
Two large boxes and one small box weigh 27 kg.
How much does one large box weigh?

Challenge 4

Scotland football team had an equal number of orange footballs and white footballs.
They lost 12 orange footballs in 1 training session and as a result they were left with 5 times as many white balls than orange balls.
How many footballs did they have at the start of training?

Challenge 5

The ratio of the number of Rose's marbles to Chris's marbles is 7:5
Rose is given 24 more marbles.
Rose now has twice as many marbles as Chris.
How many marbles did Rose have to begin with?

Challenge 6

John, Brian and Chris sell golf balls.
John sells $\frac{1}{3}$ of the golf balls.
Brian sells 70% of the remaining golf balls. Brian sells 21 golf balls.
How many did they sell altogether?
How many golf balls did Chris sell?

Challenge 7

Stacey booked a holiday and the manager gave her a discount of 30%. Her holiday cost £2800.
What was the price of the holiday before the discount?

Challenge 8

A plumber is buying a bathroom suite to fit for a customer. The price is £3600 INC VAT (vat at 20%)
What was the price of the bathroom suite before VAT was charged?

Algebra exercise**Challenge 1**

Use a bar model and algebra tiles to represent $2x + 4 = 14$

Challenge 2

Use a bar model and algebra tiles to represent $3x + 5 = 11$

Challenge 3

Use a bar model to represent $x - 2 = 6$

Challenge 4

Use a bar model to represent $2x - 4 = 12$

Challenge 5

Given that $x = 3$ use a bar model to evaluate
 $2x + 1$

Challenge 6

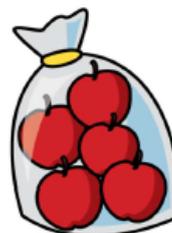
Given that $x = 2$ use a bar model to evaluate
 $4x + 3$

Challenge 6

Given that $x = 3$ use a bar model to evaluate (Hint: You need to make a square)
 $x^2 + 1$

1 In Class 2 there are 18 boys.
There are 13 girls in the class.
How many more boys than girls
are there in Class 2?

2 Max has 6 bags of apples.
Each bag has
5 apples.



Max gives his
friend 13 apples.
How many apples does he have
left?

3 Here are 2 number cards.



A is 4 times as big as B.
The difference between A and B is 84
What is the sum of the two cards?

4 Three jars contain some chocolates.

- The 2nd jar contains $\frac{4}{5}$ the number of chocolates in the 1st jar.
- The 2nd jar contains $\frac{1}{2}$ the number of chocolates in the 3rd jar.
- There are 90 more chocolates in the 3rd jar than the 1st.

How many chocolates are in the 2nd jar?

5

In a wood there are 3 types of trees, ash, oak and fir.

- $\frac{3}{8}$ of the trees are ash trees.
- There are twice as many oak trees as fir trees.
- There are 252 more ash trees than fir trees.

How many oak trees are there?

