Multiplication and Division Home Learning Booklet

Multiples of 10

1) Which values are missing from the 10 times table facts?

□ × 10 = 60

12 × 10 = □

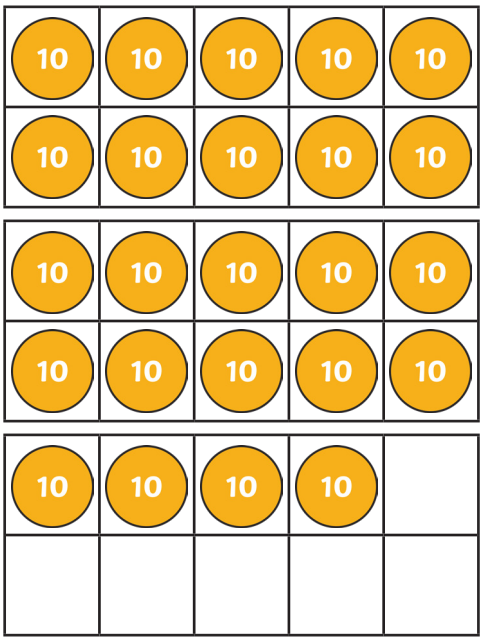
10 × □ = 110

2) Anton can bake 10 cakes on a tray.

How many cakes can he bake on 9 trays?

3) Sweets come in bags of 10. A shopkeeper has 140 sweets. How many bags does the shopkeeper have?

4) Can you complete the sentence stems to describe the ten-frame representation?



There are □ counters.

□ × □ = □

□ is a multiple of 10.

5) Can you complete each number track with the missing multiples of 10?

	160			190

210				

Related Calculations

Practise solving related calculations by playing this dice game.

You will need:

- a dice (if you don't have a dice, you could use this free interactive 3D Dice Roller. You can find it on the Twinkl website. https://www.twinkl.co.uk/resource/3d-dice-roller-t-m-1635323995

How to play:

- Roll a dice twice to create a 1-digit number multiplied by a 1-digit number calculation.
- Find the product of this calculation.
- Make one of the digits ten times bigger and then solve this second calculation.

Here's an example:

5 × 6 = 30 50 × 6 = 300

How many can you do?

Have a go at writing them down.

Extra Challenge

Can you write division statements for each of your multiplication statements?

Reasoning About Multiplication

Instructions:

- **Cut out the multiplication expression cards.**
- Can you compare the multiplication expressions to complete the statements below?
- **You could stick them into the correct spaces.**

	=	
	<	
	>	

Is there more than one answer for each statement? **Have a go at writing them down.**

2×4	1×8	3×2
10×5	8×4	5×3

Multiply a 2-Digit Number by a 1-Digit Number with No Regrouping

1) Use the place value charts to help you complete the multiplication questions.

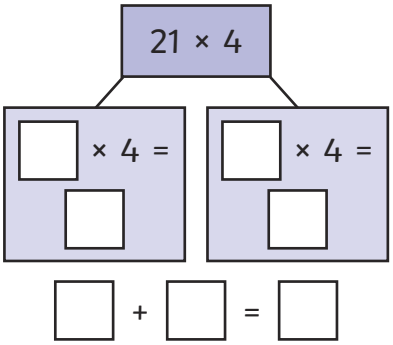
33 × 3 = ☐

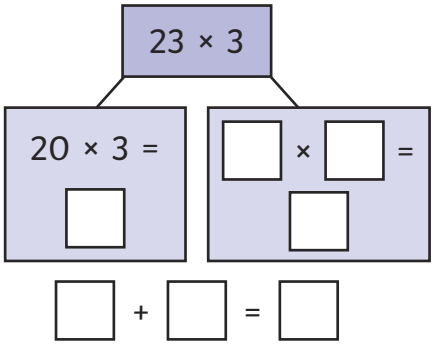
30	3
Tens	**Ones**
10 10 10	1 1 1
10 10 10	1 1 1
10 10 10	1 1 1

☐ × ☐ + ☐ × ☐

☐ + ☐ = ☐

2) Complete the missing numbers to find the partial products and add them together to complete the multiplication.





3) Use the digit cards to create calculations multiplying 2-digit numbers by 1-digit numbers. How many can you make and solve?

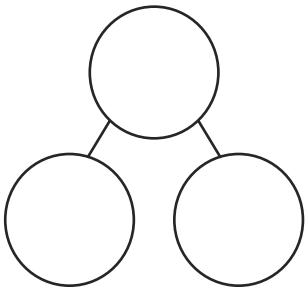
1	2	3	1	2	3

Multiply a 2-Digit Number by a 1-Digit Number with Regrouping

1) Use the place value chart and part-whole model to help you complete the calculation.

☐ × ☐ = ☐

Tens	Ones
10 10	1 1 1 1 1 1
10 10	1 1 1 1 1 1
10 10	1 1 1 1 1 1
10 10	1 1 1 1 1 1

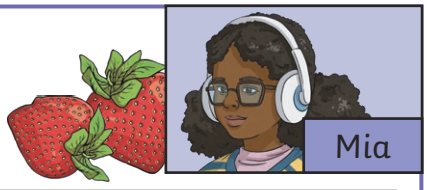


☐ × ☐ = ☐

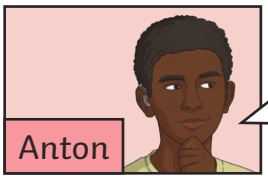
☐ × ☐ = ☐

☐ + ☐ = ☐

2) Mia is making fruit skewers for her birthday party. She is making 28 skewers and would like 3 strawberries on each. How many strawberries will she need? **Show your working.**



3) Anton and Ajani are comparing their football sticker collection books.



I have filled 21 pages with 9 stickers on each page.

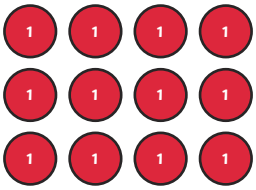
I have filled 24 pages with 8 stickers on each page.

Who has more stickers? ☐

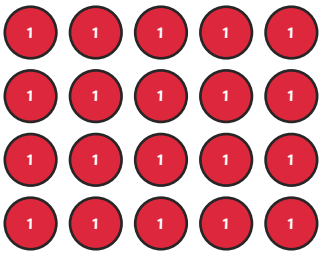
Show your working out.

Link Multiplication and Division

1) Complete the multiplication and division statements shown by the arrays.

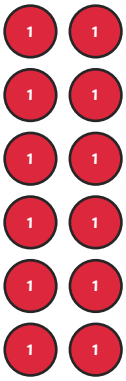


3	×		=	12
	×	3	=	
12	÷		=	
	÷		=	

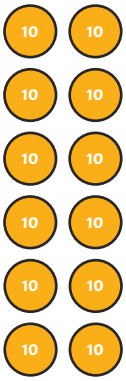


	×		=	
	×		=	
	÷		=	
	÷		=	

2) Complete the multiplication and division statements shown by the arrays.



	×		=	
	×		=	
	÷		=	
	÷		=	



	×		=	
	×		=	
	÷		=	
	÷		=	

3) **Solve the word problem.**

A baker makes 280 cupcakes. He arranges them into boxes of 4 cupcakes. How many boxes of cupcakes will there be in total?

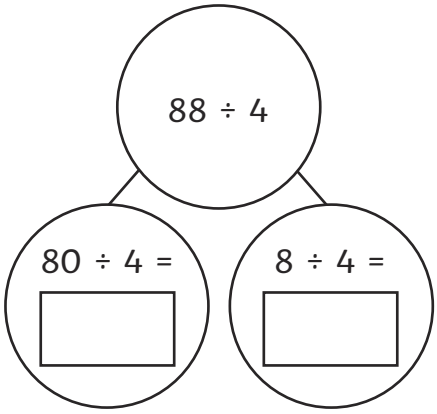
Show your method.

Divide a 2-Digit Number by a 1-Digit Number with No Exchange

1) Solve the division calculations. Use the place value charts and complete the part-whole models to help you.

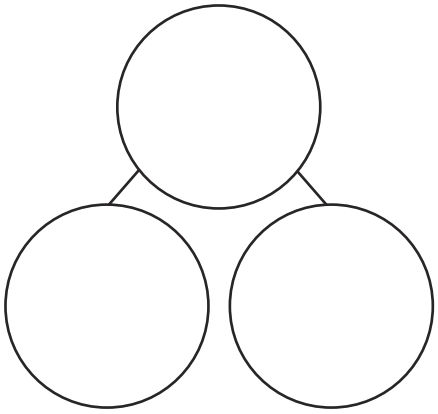
88 ÷ 4 = ☐

Tens	Ones
10 10	1 1
10 10	1 1
10 10	1 1
10 10	1 1



36 ÷ 3 = ☐

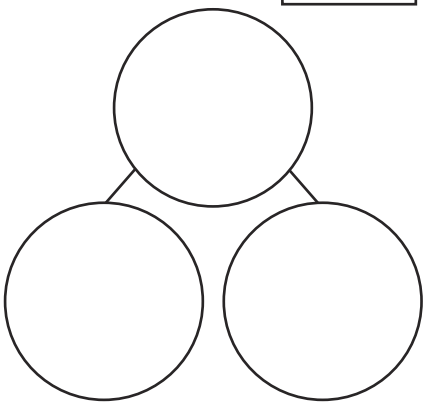
Tens	Ones



2) A pizza parlour sells 96 pizzas over three days. How many pizza did it sell each day?

☐ ÷ ☐ = ☐

Tens	Ones

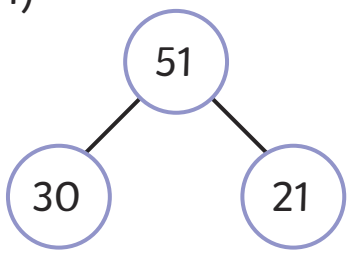


3) Charlie has a tub of 63 crayons. He says that these can be shared equally between 3 people. Is Charlie correct? Show your working.

Divide a 2-Digit Number by a 1-Digit Number Using Flexible Partitioning

Solve each of the division calculations using flexible partitioning. Complete the part-whole model to help you.
Each part will be a multiple of 3.

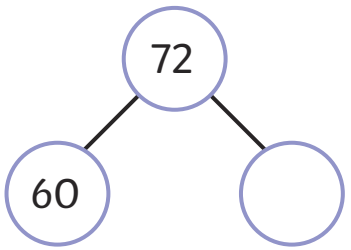
1)



30	÷	3	=	
21	÷		=	7
10	+	7	=	

51 ÷ 3 =

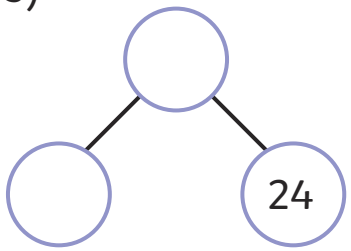
2)



	÷	3	=	
	÷		=	
	+		=	

72 ÷ 3 =

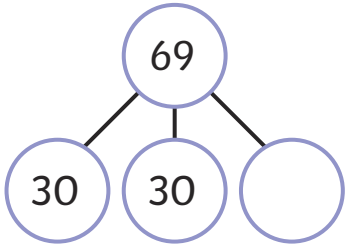
3)



	÷	3	=	
	÷		=	
	+		=	

54 ÷ 3 =

4)



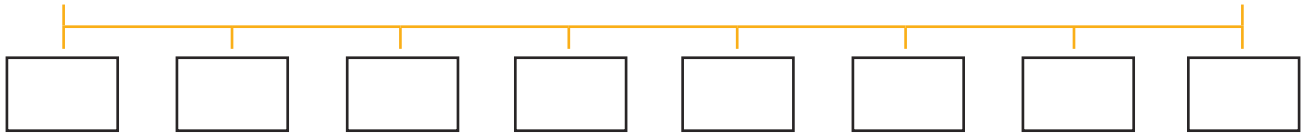
30	÷	3	=	
	÷		=	
	÷		=	
	+		+	=

69 ÷ 3 =

Divide a 2-Digit Number by a 1-Digit Number with Remainders

1) Use the number line to calculate the division.

20 ÷ 3 = ☐



2) Use the place value chart to calculate the division.

58 ÷ 4 = ☐

Tens	Ones

3) What division does this show?

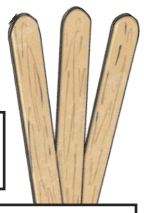
☐ ÷ ☐ = ☐

Tens	Ones
10 10	1 1 1
10 10	1 1 1
10 10	1 1 1

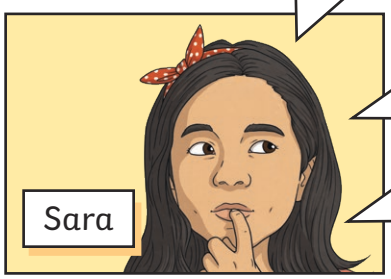
1
1

Challenge

How many lolly sticks does Sara have?



I have more than 40 and less than 50 sticks.



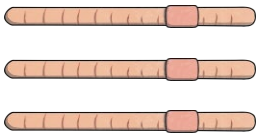
I can make triangles with no sticks left over.

I can make pentagons but I will have a remainder of 3.

☐ sticks

Scaling

1) There are 3 times as many caterpillars as worms. How many caterpillars are there?



2) There are 16 pears. How many apples are there?

apples

pears

3) Which statements match the bar model? Tick them.

frog

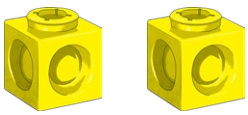
snail

There are 5 frogs and 25 snails.	
There are 8 frogs and 32 snails.	
There are 15 snails and 5 frogs.	

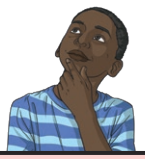
4) There are 3 times as many frogs as snails. There are 20 creatures altogether. How many frogs and how many snails are there? Draw a bar model to help you.

5) Draw towers of cubes so that Ruby's statement is true. How many cubes are in your towers?

I need 2 more cubes and my tower will be 3 times the size of Zola's.



Ruby



Zola

Challenge: Can you find other answers to this question?

How Many Ways?

1) Anton has 4 different T-shirts and 2 pairs of shorts.
How many possible combinations does he have altogether?
Write a multiplication calculation to show how you found the answer.

☐ × ☐ = ☐


vanilla

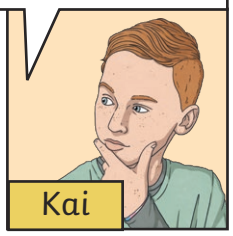

strawberry


bubblegum

sauce


sprinkles

There are 5 possible combinations of flavours and toppings.

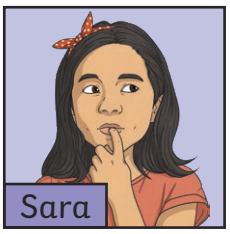


2) Is Kai correct? Explain your reasoning.

_____

_____

3) Sara is choosing a drink and a snack. There are 3 different drinks and she has 15 combinations to choose from. How many different snacks are there?



4) **Challenge:** Mia is looking at her sunglasses and hats. She has 12 different combinations altogether. She has more hats than sunglasses. How many pairs of sunglasses could she have?

Multiples of 10 Home Learning **Answers**

1) Which values are missing from the 10 times table facts?

6	× 10 = 60
12 × 10 =	**120**
10 ×	**11** = 110

2) Anton can bake 10 cakes on a tray.

How many cakes can he bake on 9 trays?

90

3) Sweets come in bags of 10. A shopkeeper has 140 sweets. How many bags does the shopkeeper have?

14

4) Can you complete the sentence stems to describe the ten-frame representation?

10	10	10	10	10
10	10	10	10	10

10	10	10	10	10
10	10	10	10	10

10	10	10	10	

There are **24** counters.

24 × **10** = **240**

240 is a multiple of 10.

5) Can you complete each number track with the missing multiples of 10?

150	160	**170**	**180**	190

210	**220**	**230**	**240**	**250**

Related Calculations **Answers**

Practise solving related calculations by playing this dice game.

You will need:

- a dice (if you don't have a dice, you could use this free interactive 3D Dice Roller. You can find it on the Twinkl website. https://www.twinkl.co.uk/resource/3d-dice-roller-t-m-1635323995

How to play:

- Roll a dice twice to create a 1-digit number multiplied by a 1-digit number calculation.
- Find the product of this calculation.
- Make one of the digits ten times bigger and then solve this second calculation.

Here's an example:

5 × 6 = 30 50 × 6 = 300

How many can you do?

Have a go at writing them down.

There are many possible calculations. Here are some examples:

1 × 2 = 2	**1 × 20 = 20**
2 × 2 = 4	**2 × 20 = 40**
3 × 2 = 6	**3 × 20 = 60**
4 × 2 = 8	**4 × 20 = 80**
5 × 2 = 10	**5 × 20 = 100**

Extra Challenge

Can you write division statements for each of your multiplication statements?

There are many possible calculations. Here are some examples:

2 ÷ 2 = 1	**20 ÷ 2 = 10**
4 ÷ 2 = 2	**40 ÷ 2 = 20**
6 ÷ 2 = 3	**60 ÷ 2 = 30**
8 ÷ 2 = 4	**80 ÷ 2 = 40**
10 ÷ 2 = 5	**100 ÷ 2 = 50**

Reasoning About Multiplication **Answers**

Instructions:

- **Cut out the multiplication expression cards.**
- Can you compare the multiplication expressions to complete the statements below?
- **You could stick them into the correct spaces.**

2 × 4	=	1 × 8
8 × 4 5 × 3 5 × 3 2 × 3 2 × 3 2 × 3	<	10 × 5 8 × 4 10 × 5 10 × 5 8 × 4 5 × 3
10 × 5 8 × 4 10 × 5 10 × 5 8 × 4 5 × 3	>	8 × 4 5 × 3 5 × 3 2 × 3 2 × 3 2 × 3

Is there more than one answer for each statement? **Have a go at writing them down.**

1) Use the place value charts to help you complete the multiplication questions.

33 × 3 = **99**

30 3

Tens	Ones
10 10 10	1 1 1
10 10 10	1 1 1
10 10 10	1 1 1

30 × **3** + **3** × **3**

90 + **9** = **99**

2) Complete the missing numbers to find the partial products and add them together to complete the multiplication.

21 × 4

20 × 4 = **80**

1 × 4 = **4**

80 + **4** = **84**

23 × 3

20 × 3 = **60**

3 × **3** = **9**

60 + **9** = **69**

3) Use the digit cards to create calculations multiplying 2-digit numbers by 1-digit numbers. How many can you make and solve?

1	2	3	1	2	3

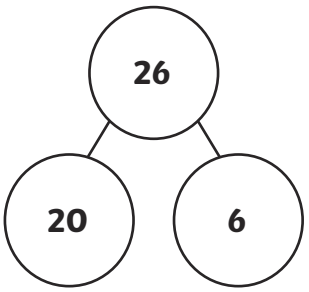
Multiple answers are possible, including:

12 × 1 = 12	**13 × 1 = 13**	**23 × 1 = 23**
12 × 2 = 24	**13 × 2 = 26**	**23 × 2 = 66**
12 × 3 = 36	**13 × 3 = 39**	**23 × 3 = 99**
21 × 1 = 21	**31 × 1 = 31**	**32 × 1 = 32**
21 × 2 = 42	**31 × 2 = 62**	**32 × 2 = 64**
21 × 3 = 63	**31 × 3 = 93**	**32 × 3 = 96**

1) Use the place value chart and part-whole model to help you complete the calculation.

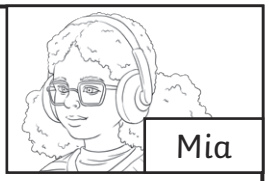
26	×	**4**	=	**104**

Tens	Ones
10 10	1 1 1 1 1 1
10 10	1 1 1 1 1 1
10 10	1 1 1 1 1 1
10 10	1 1 1 1 1 1



20	×	**4**	=	**80**
6	×	**4**	=	**24**
80	+	**24**	=	**104**

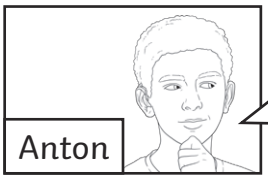
2) Mia is making fruit skewers for her birthday party. She is making 28 skewers and would like 3 strawberries on each. How many strawberries will she need? Show your working.



She will need 84 strawberries.

28 × 3 = 84
20 × 3 = 60
8 × 3 = 24
60 + 24 = 84

3) Anton and Ajani are comparing their football sticker collection books.



I have filled 21 pages with 9 stickers on each page.

I have filled 24 pages with 8 stickers on each page.

Who has more stickers? **Ajani has more stickers.**

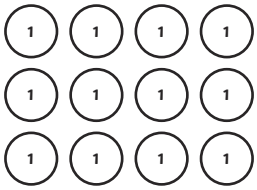
Show your working out.

21 × 9 = 189
20 × 9 = 180
1 × 9 = 9
180 + 9 = 189

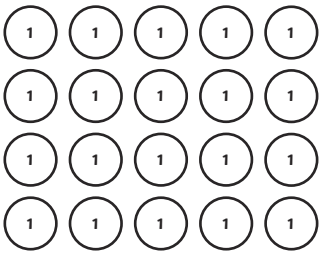
24 × 8 = 192
20 × 8 = 160
4 × 8 = 32
160 + 32 = 192

Link Multiplication and Division **Answers**

1) Complete the multiplication and division statements shown by the arrays.

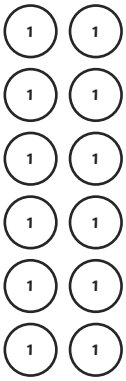


3	×	**4**	=	12
4	×	3	=	**12**
12	÷	**4**	=	**3**
12	÷	**3**	=	**4**



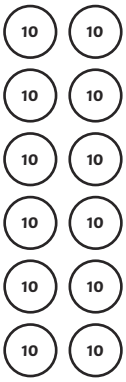
5	×	**4**	=	**20**
4	×	**5**	=	**20**
20	÷	**4**	=	**5**
20	÷	**5**	=	**4**

2) Complete the multiplication and division statements shown by the arrays.



2	×	**6**	=	**12**
6	×	**2**	=	**12**
12	÷	**6**	=	**2**
12	÷	**2**	=	**6**

Multiple answers are possible.
Here are some suggested answers.



2	×	**60**	=	**120**
60	×	**2**	=	**120**
120	÷	**60**	=	**2**
120	÷	**2**	=	**60**

3) Solve the word problem.

A baker makes 280 cupcakes. He arranges them into boxes of 4 cupcakes. How many boxes of cupcakes will there be in total?

Show your method.

70

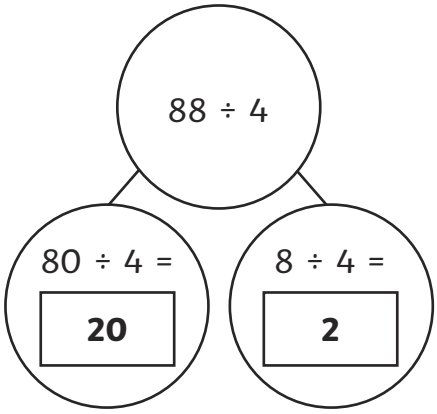
280 ÷ 4 = 70.

Children may carry out the related calculation 28 ÷ 4 and then make the answer ten times greater to help them reach the answer.

1) Solve the division calculations. Use the place value charts and complete the part-whole models to help you.

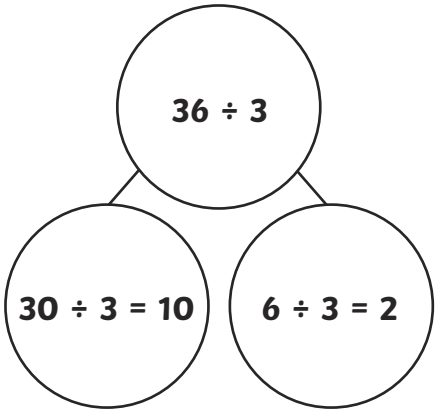
88 ÷ 4 = **22**

Tens	Ones
10 10	1 1
10 10	1 1
10 10	1 1
10 10	1 1



36 ÷ 3 = **12**

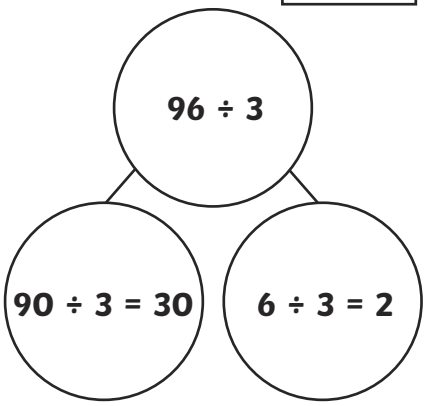
Tens	Ones
10	1 1
10	1 1
10	1 1



2) A pizza parlour sells 96 pizzas over three days. How many pizza did it sell each day?

96 ÷ **3** = **32**

Tens	Ones
10 10 10	1 1
10 10 10	1 1
10 10 10	1 1



3) Charlie has a tub of 63 crayons. He says that these can be shared equally between 3 people. Is Charlie correct? Show your working.

Yes, Charlie is correct.
63 ÷ 3 = 21

60 ÷ 3 = 20

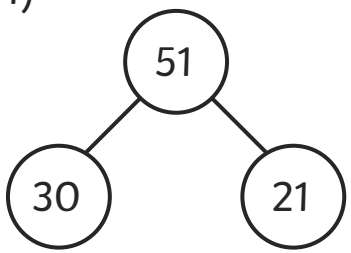
3 ÷ 3 = 1

20 + 1 = 21

Divide a 2-digit Number by a 1-digit Number Using Flexible Partitioning **Answers**

Solve each of the division calculations using flexible partitioning. Complete the part-whole model to help you. **Each part will be a multiple of 3.**

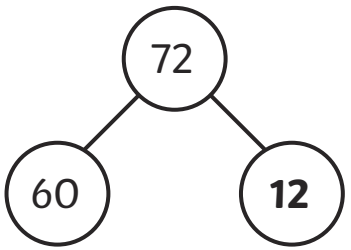
1)



30	÷	3	=	**10**
21	÷	**3**	=	7
10	+	7	=	**17**

51 ÷ 3 = **17**

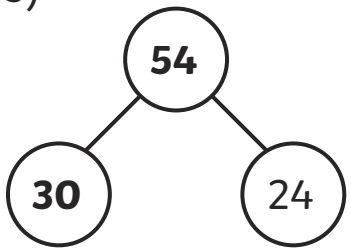
2)



60	÷	3	=	**20**
12	÷	**3**	=	**4**
20	+	**4**	=	**24**

72 ÷ 3 = **24**

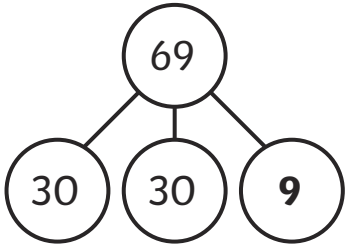
3)



30	÷	3	=	**10**
24	÷	**3**	=	**8**
10	+	**8**	=	**18**

54 ÷ 3 = **18**

4)



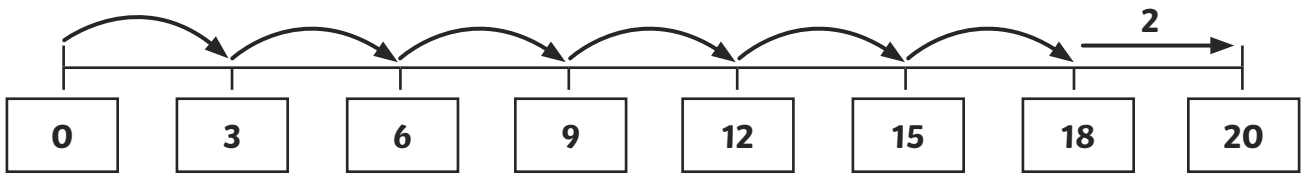
30	÷	3	=	**10**		
30	÷	**3**	=	**10**		
9	÷	**3**	=	**3**		
10	+	**10**	+	**3**	=	**23**

69 ÷ 3 = **23**

Divide a 2-Digit Number by a 1-Digit Number with Remainders

1) Use the number line to calculate the division.

20 ÷ 3 = **6r2**



2) Use the place value chart to calculate the division.

58 ÷ 4 = **14r2**

Tens	Ones	
10	1 1 1 1	1
10	1 1 1 1	1
10	1 1 1 1	
10	1 1 1 1	

3) What division does this show?

71 ÷ **3** = **23r2**

Tens	Ones	
10 10	1 1 1	1
10 10	1 1 1	1
10 10	1 1 1	

Challenge

How many lolly sticks does Sara have?

I have more than 40 and less than 50 sticks.

Sara

I can make triangles with no sticks left over.

I can make pentagons but I will have a remainder of 3.

If Sara can make triangles with no remainder, she could have 42, 45 or 48 sticks, as these are the multiples of 3 between 40 and 50.

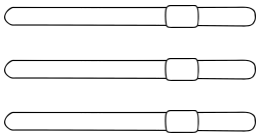
If she has 42 sticks, she will have a remainder of 2 when she makes pentagons. If she has 45, there will be no remainder. She must have 48 sticks.

48 ÷ 5 = 9r3

48 sticks

Scaling **Answers**

1) There are 3 times as many caterpillars as worms. How many caterpillars are there?



9

2) There are 16 pears. How many apples are there?

apples ☐

pears ☐☐☐☐

4

3) Which statements match the bar model? Tick them.

frog ☐

snail ☐☐☐☐☐

There are 5 frogs and 25 snails.	✓
There are 8 frogs and 32 snails.	✗
There are 15 snails and 5 frogs.	✓

4) There are 3 times as many frogs as snails. There are 20 creatures altogether. How many frogs and how many snails are there? Draw a bar model to help you.

☐

☐☐☐ } **20**

15

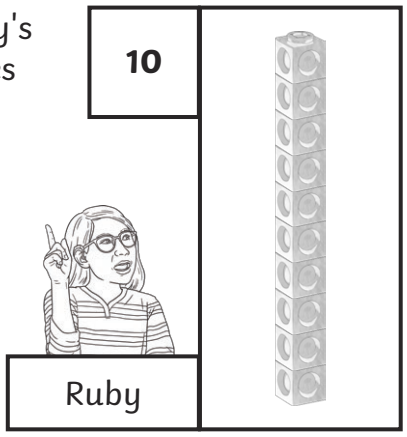
5

5) Draw towers of cubes so that Ruby's statement is true. How many cubes are in your towers?

Several answers are possible. Check that Ruby's tower is 3 times the size of Zola's (minus 2 cubes).

Example answers are:

Zola 1 and Ruby 1, Zola 2 and Ruby 4, Zola 3 and Ruby 7, Zola 4 and Ruby 10, Zola 5 and Ruby 13.



How Many Ways? **Answers**

1) Anton has 4 different T-shirts and 2 pairs of shorts.
How many possible combinations does he have altogether?
Write a multiplication calculation to show how you found the answer.

4 × **2** = **8**


vanilla


strawberry


bubblegum

sauce


sprinkles

There are 5 possible combinations of flavours and toppings.

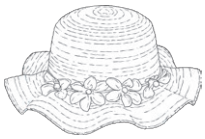
2) Is Kai correct? Explain your reasoning.

No. There are 3 different flavours and 2 toppings. 3 × 2 = 6. There are 6 possible combinations.

3) Sara is choosing a drink and a snack. There are 3 different drinks and she has 15 combinations to choose from. How many different snacks are there?

3 × 5 = 15, so there are 5 different types of snacks.

4) **Challenge:** Mia is looking at her sunglasses and hats. She has 12 different combinations altogether. She has more hats than sunglasses. How many pairs of sunglasses could she have?



Possible combinations are: 1 × 12, 2 × 6 and 3 × 4. She has more hats each time so the number of sunglasses she could have is 1, 2 or 3.