Year 4

Numeracy

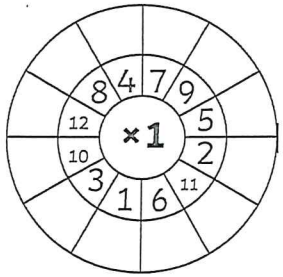
Pack #1

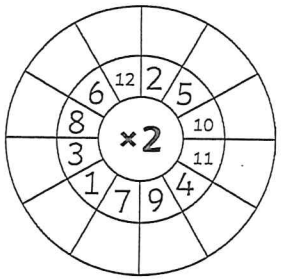
Multiplication Square

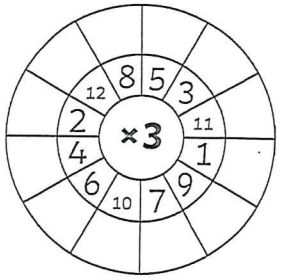
×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

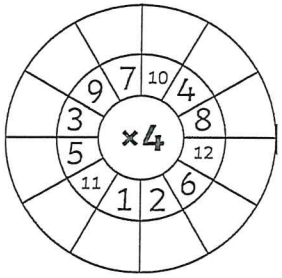
Multiplication Wheels

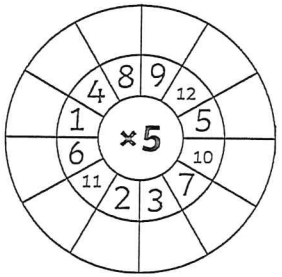
Multiply the numbers by the middle number.

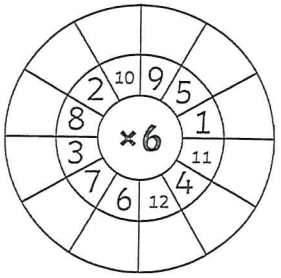


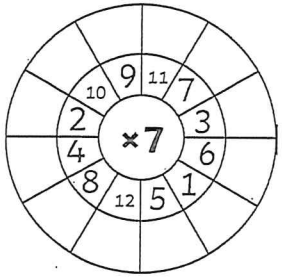


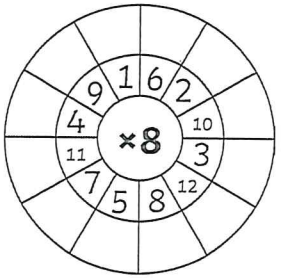


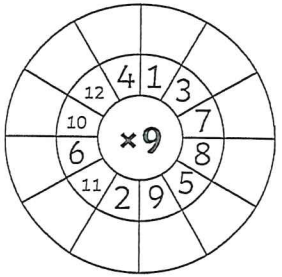


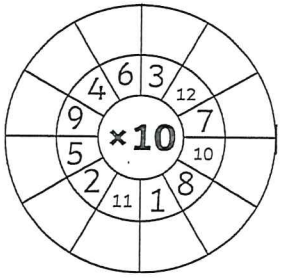


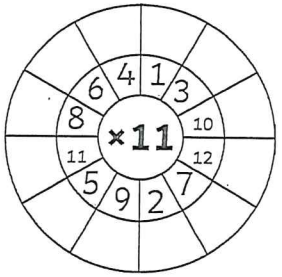


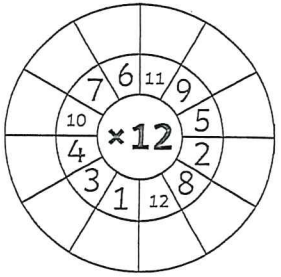








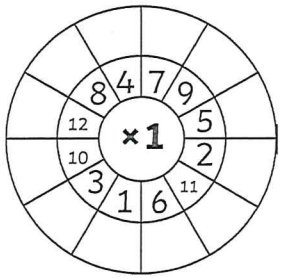


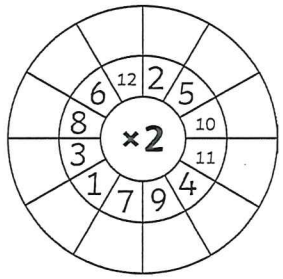


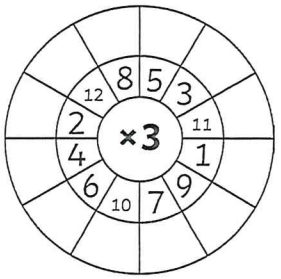
Notes

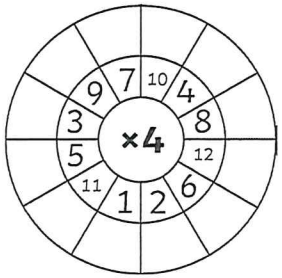
Multiplication Wheels

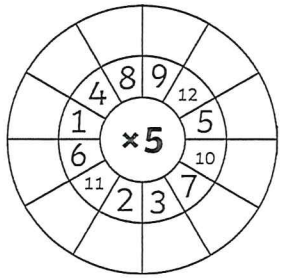
Multiply the numbers by the middle number.

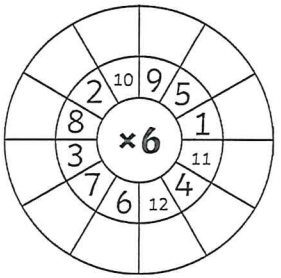


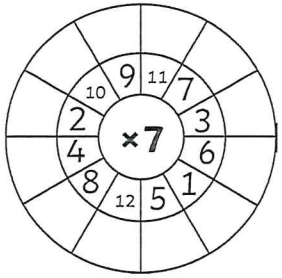


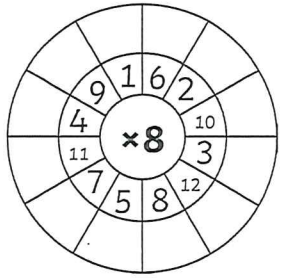


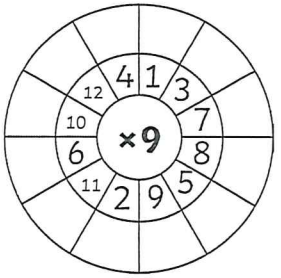


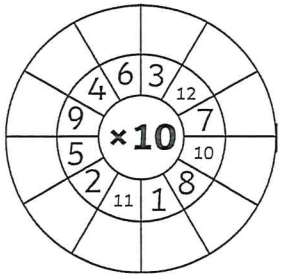


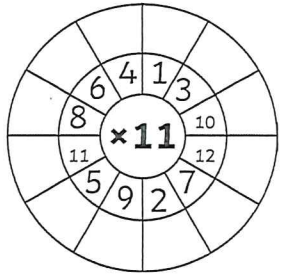


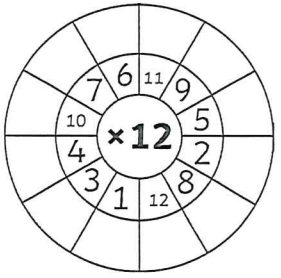




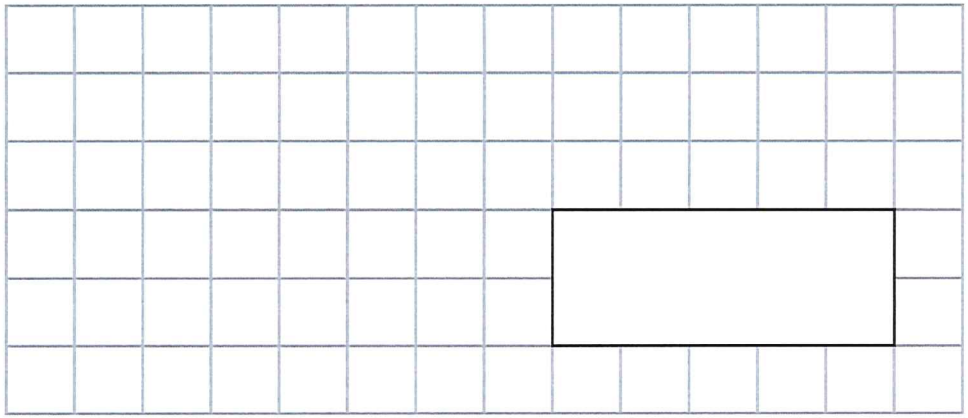




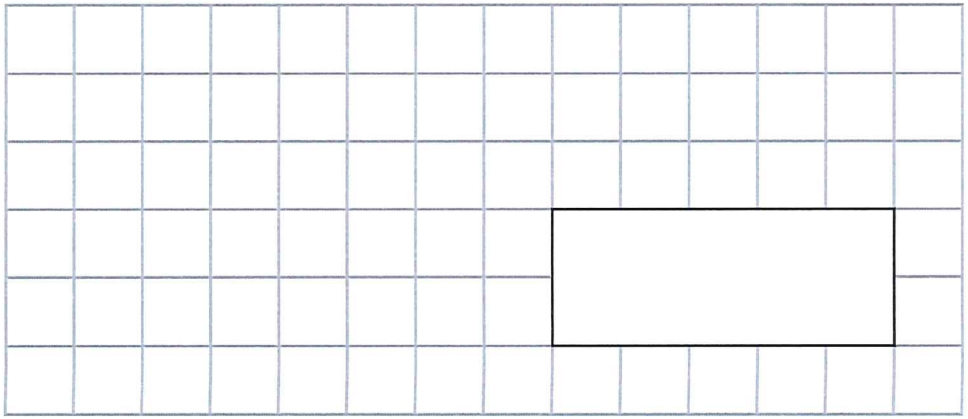




7. A mother and a father are the same age and they have triplets. The total of all the ages in the family added together is 79. Can you find two possibilities for the family's ages?



8. A shop sells these drinks: Orange Juice, Lemonade, Coke and Water and these crisps: Pickled Onion, Plain and Salt and Vinegar. If you went into the shops and bought one drink and one packet of crisps, how many different possible combinations would there be?



Multiplying by 1 and 0 and Dividing by 1

A. Calculate:

1.	12 x 1 =	**10.**	1 x 31 =
2.	1 x 82 =	**11.**	0 x 0 =
3.	0 x 1 =	**12.**	0 ÷ 1 =
4.	25 x 1 =	**13.**	50 x 1 =
5.	342 x 1 =	**14.**	1 x 50 =
6.	212 ÷ 1 =	**15.**	1 x 3983 =
7.	4567 x 0 =	**16.**	26 ÷ 1 =
8.	1 x 1 =	**17.**	1 ÷ 1 =
9.	0 x 11 =	**18.**	156 x 0 =

B. Write the calculation represented by these word problems then solve the word problem.

1. Dave buys 72 eggs and puts them all in one basket. How many eggs are in the basket?

Calculation = Answer =

2. Bobbie finds a shop selling games consoles for £79. She buys one game console. How much does she spend?

Calculation = ☐ Answer = ☐

3. Samit's dad earns £65 per shift, but last week he could not work as he was ill. How much did he earn altogether last week?

Calculation = ☐ Answer = ☐

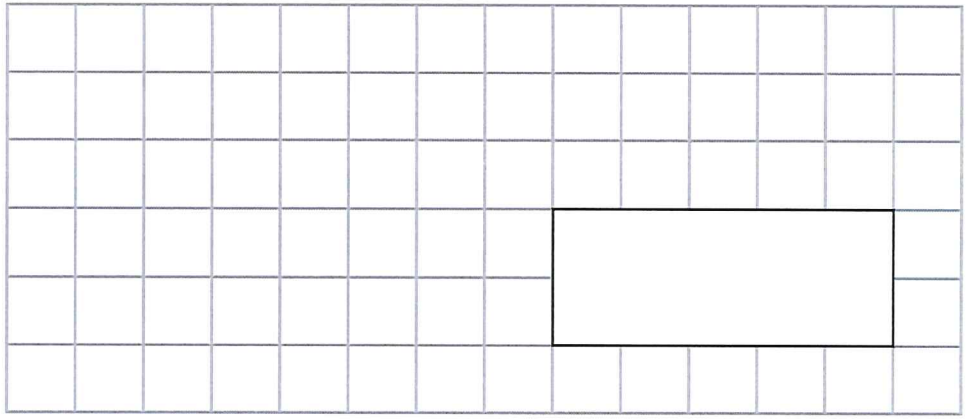
C. Work your way across each grid applying each operation to the answer from the previous calculation.

Beginning Number	÷1	x1	x0	÷1	Ending Number
32					

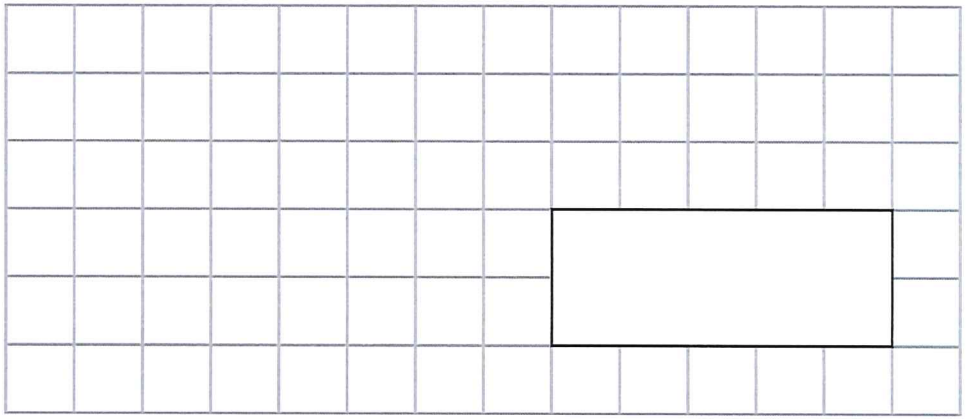
Beginning Number	÷1	x1	x1	x0	Ending Number
1					

Beginning Number	x1	÷1	x1	÷1	Ending Number
10 000					

5. Anja stands by the side of the road counting the wheels on the vehicles that go past her. If she counts 250 wheels, how many cars and how many bikes might she have seen?



6. Robbie is 90 cm tall. If he grows 10 cm next year and then 1 cm less each year after that, how tall will he be in ten years?



3. Travis has designed a computer program which multiplies any number put in by a number chosen by the computer. He inputs four numbers and the answers which come out are 49, 126, 98 and 154. Which number might his program be multiplying by?

4. Gerrard is making a sequence with shapes – he uses 4 squares, 6 triangles and 3 circles. If he uses the same pattern to make a longer sequence, how many squares would he use if he used 65 shapes in total?

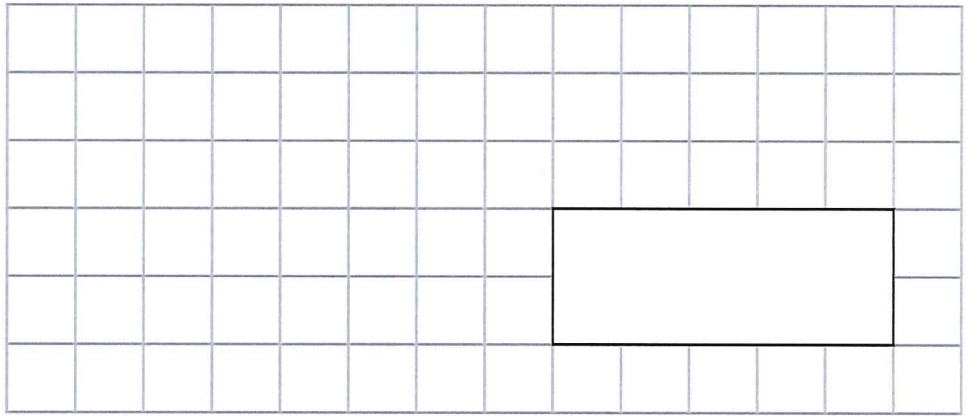
Multiplying Mentally Using Known Facts

Start this activity by recording the answers to these multiplication questions.

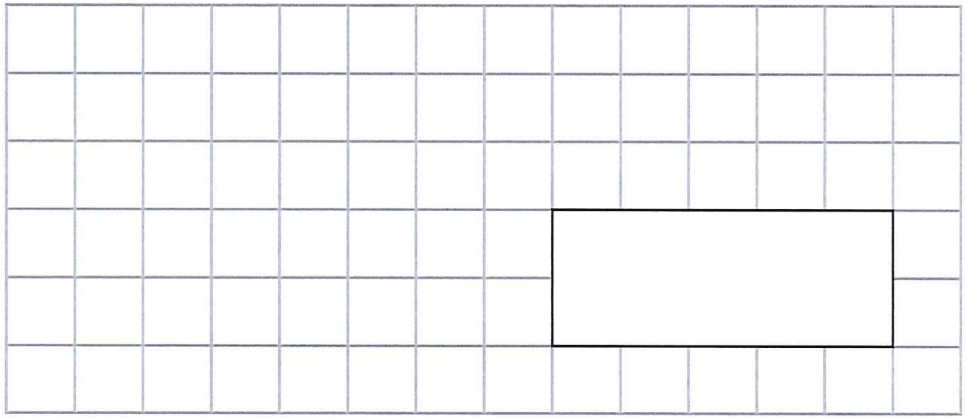
6 × 20 =	40 × 11 =	6 × 50 =	40 × 6 =	3 × 80 =
80 × 4 =	7 × 90 =	120 × 10 =	3 × 40 =	80 × 7 =
600 × 2 =	4 × 1100 =	600 × 5 =	4 × 600 =	300 × 8 =
8 × 400 =	700 × 9 =	12 × 1000 =	300 × 4 =	8 × 700 =
60 × 20 =	40 × 110 =	60 × 50 =	40 × 60 =	30 × 80 =
80 × 40 =	70 × 90 =	120 × 100 =	30 × 40 =	80 × 70 =

Correspondence Type Word Problems

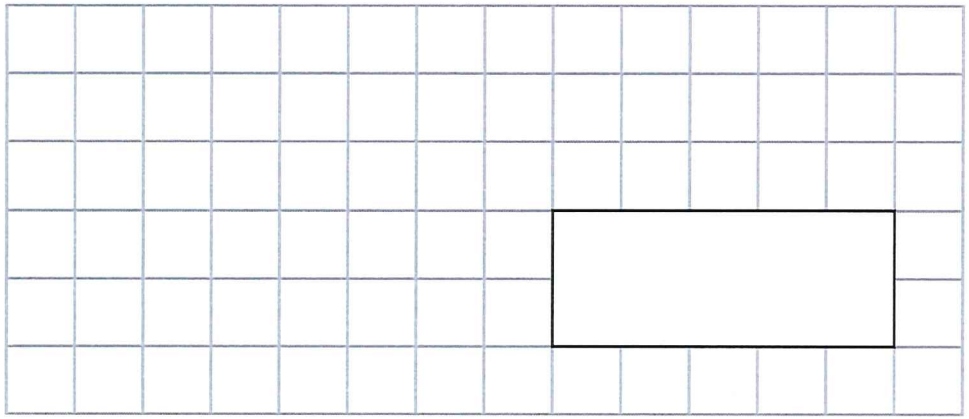
1. Greg gets paid 7p for every newspaper he delivers. How many must he deliver to earn at least 5 pounds?



2. A pizza restaurant offers five different pizzas (Hawaiian, Pepperoni, Vegetarian, Meat Feast and Margherita) and five types of base (Italian, Deep Pan, Stuffed Crust, Square and Thin and Crispy). How many different combinations are available?

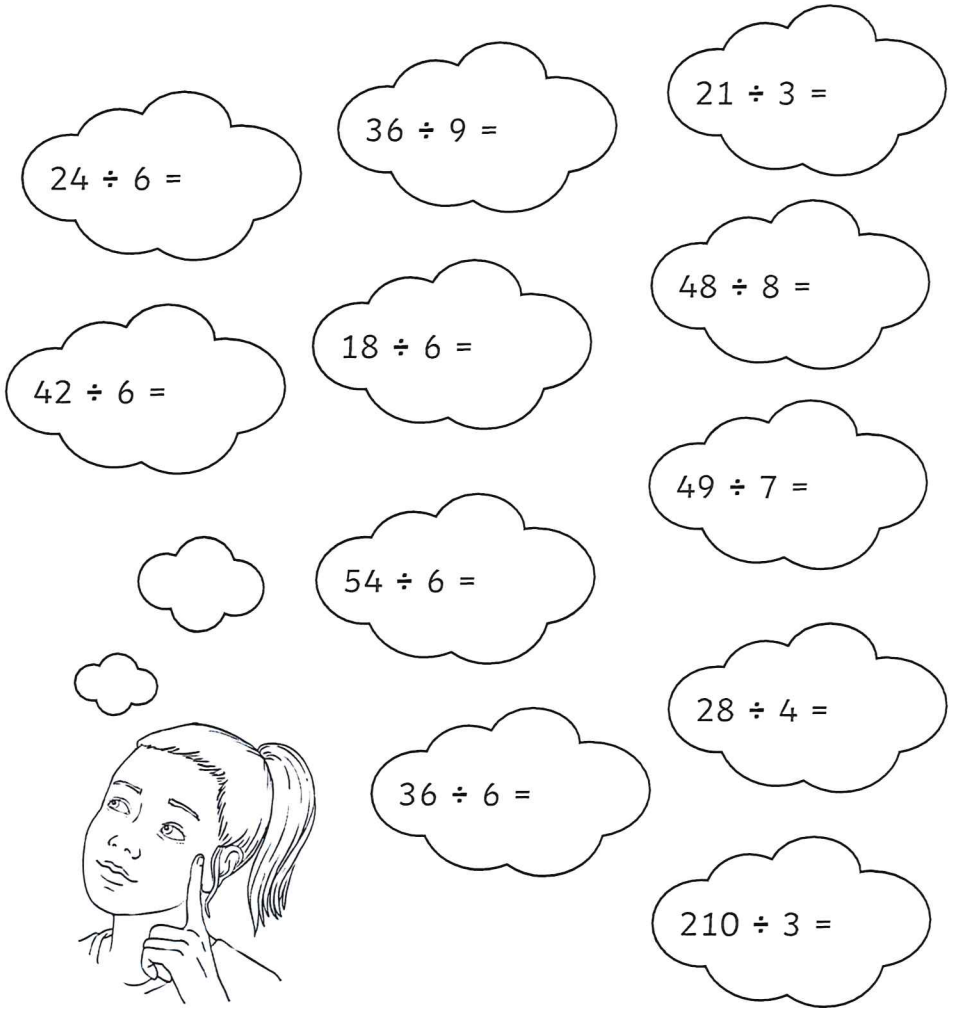


8. Annie's drink is made by mixing 250ml of orange juice with 200ml of apple juice and 50ml of strawberry juice. How much apple juice is needed if she is making her drink contain a total of 250ml?



Dividing Mentally Using Known Facts

Start this activity by recording the answers to these division questions.



The Commutative Law of Multiplication

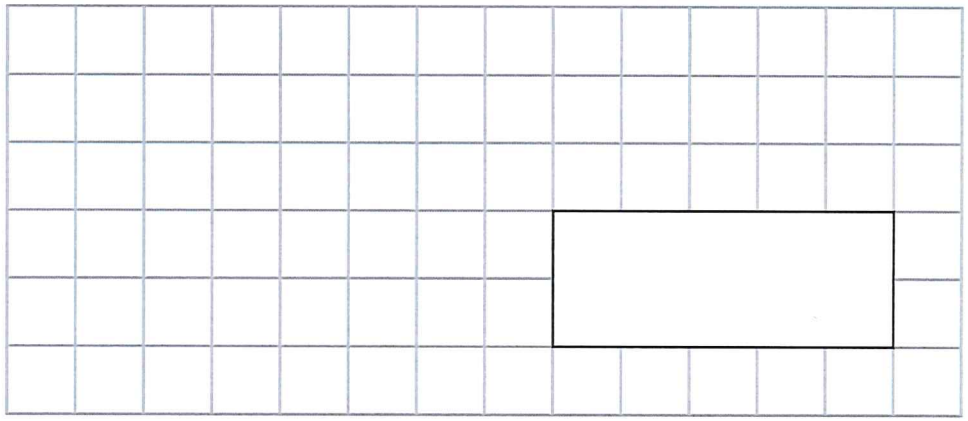
Write the order in which you think it is best to multiply these numbers and then work out the calculation.

Tip: you may not need to change every calculation.

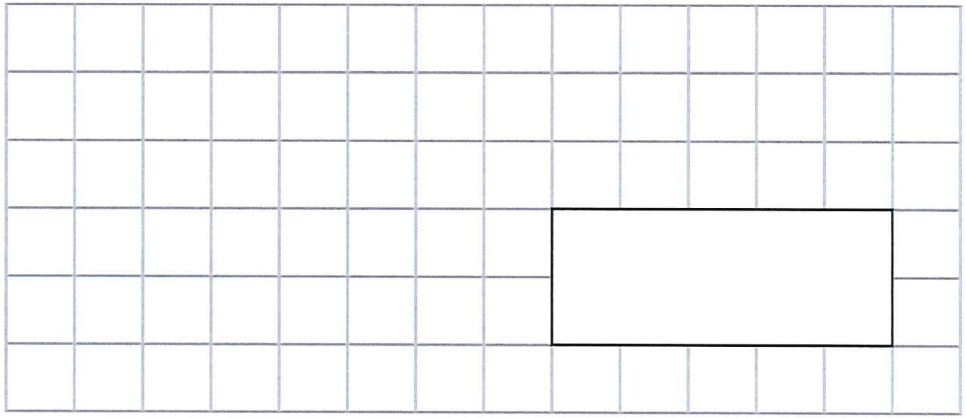
Example: 4 × 17 = 17 × 4 = 68

17 × 4 = ____ × ____ = ____	4 × 29 = ____ × ____ = ____
3 × 24 = ____ × ____ = ____	28 × 8 = ____ × ____ = ____
5 × 17 = ____ × ____ = ____	7 × 17 = ____ × ____ = ____
29 × 6 = ____ × ____ = ____	15 × 8 = ____ × ____ = ____
4 × 18 = ____ × ____ = ____	5 × 27 = ____ × ____ = ____
7 × 11 = ____ × ____ = ____	3 × 24 = ____ × ____ = ____
19 × 3 = ____ × ____ = ____	17 × 3 = ____ × ____ = ____
7 × 30 = ____ × ____ = ____	4 × 14 = ____ × ____ = ____
8 × 21 = ____ × ____ = ____	6 × 24 = ____ × ____ = ____
3 × 18 = ____ × ____ = ____	21 × 5 = ____ × ____ = ____
28 × 9 = ____ × ____ = ____	8 × 26 = ____ × ____ = ____
2 × 15 = ____ × ____ = ____	9 × 24 = ____ × ____ = ____
12 × 4 = ____ × ____ = ____	7 × 29 = ____ × ____ = ____
29 × 5 = ____ × ____ = ____	27 × 6 = ____ × ____ = ____
7 × 27 = ____ × ____ = ____	5 × 17 = ____ × ____ = ____

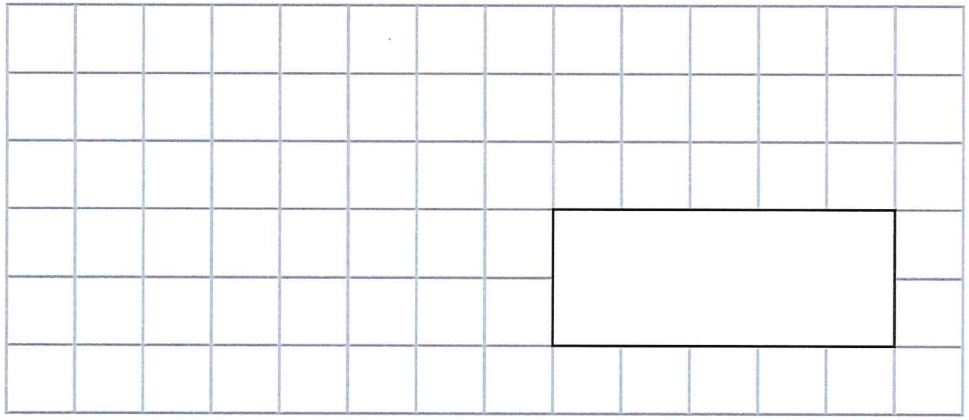
6. Sunnah is planning her party. She has worked out that each party bag will cost 59p to make. How much will it cost her to make party bags for each of her nine friends?



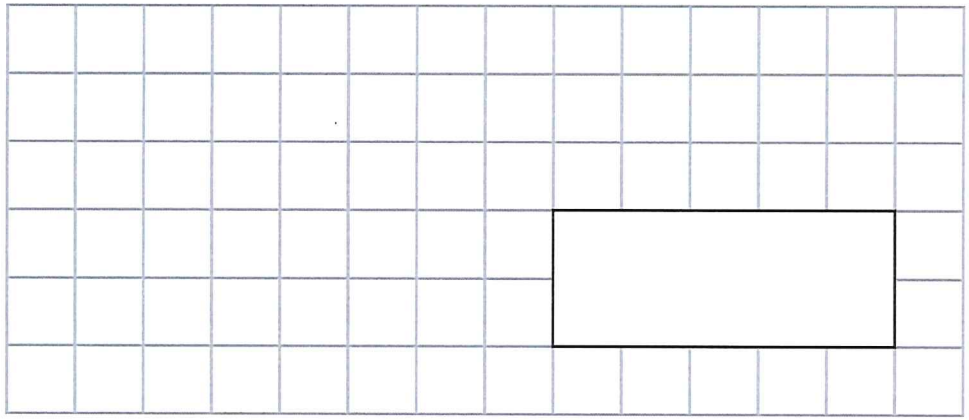
7. James gets three sessions of trampolining for £17. How much would 12 sessions cost?



4. How many squares can she make with nine eggs?



5. How many squares can the recipe make if she uses 1kg of butter?



Using Commutativity in Mental Calculations

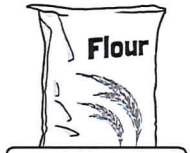
Look at the following questions. Decide if you can use the principle of commutativity (doing the multiplication in any order) to make the calculations easier to answer. If you can't make them any easier, just change the order anyway!

e.g. 2 × 9 × 5 =	Five multiplied by two equals ten – doing that first makes any subsequent calculation easy! 5 × 2 × 9 = 10 × 9 = 90
e.g 9 × 2 × 8 =	9 x 8 is from a multiplication table you may already know. You can finish the calculation by just doubling the answer. 9 × 8 × 2 = 72 × 2 = 144

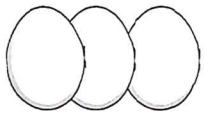
1. 12 × 2 × 5 =	
2. 2 × 13 × 2 =	
3. 5 × 10 × 4 =	

4. 5 × 5 × 2 =	
5. 5 × 4 × 5 =	
6. 12 × 5 × 10 =	
7. 14 × 5 × 2 =	
8. 7 × 13 × 0 =	
9. 2 × 2 × 11 × 2 =	
10. 10 × 136 × 10 =	
11. 1 × 2 × 3 × 4 × 5 =	

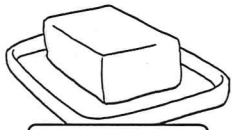
Robyn is using a recipe which requires these ingredients to make chocolate brownies – she wants to sell them at a fayre.



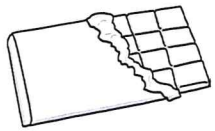
Plain flour **90g**



3 large eggs



Butter **200g**



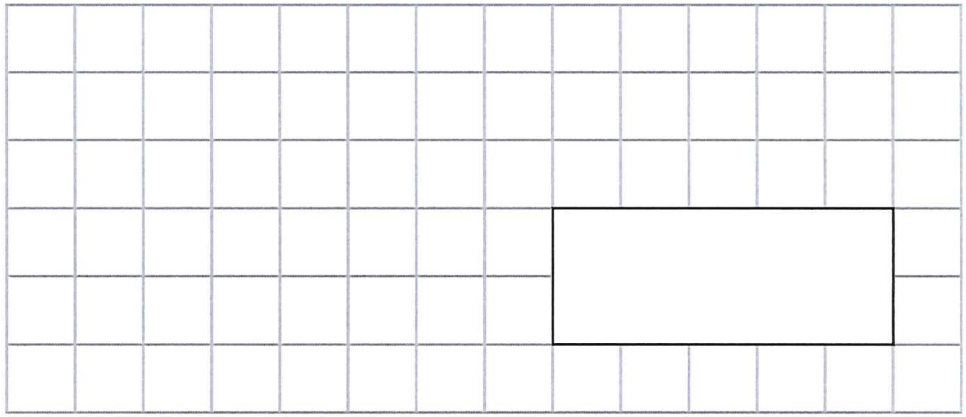
Chocolate **250g**

Cocoa powder **50g**

Sugar **300g**

All of the ingredients above will make 16 squares. Use this information to help answer the questions on the next page.

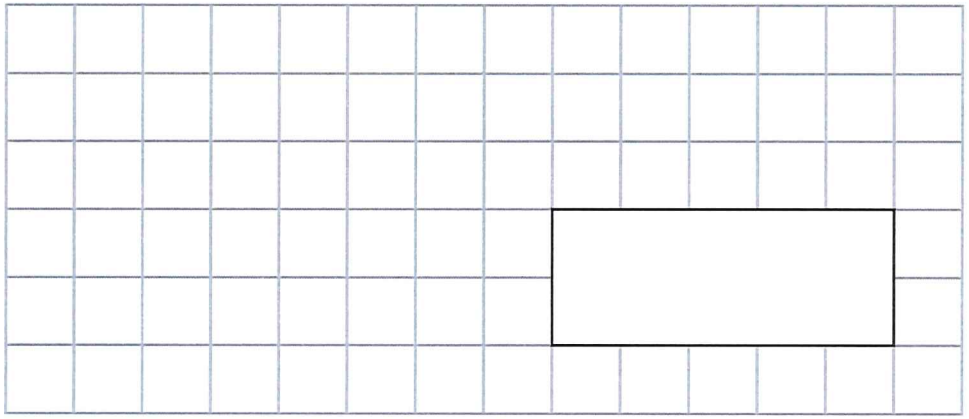
3. How much cocoa powder will she need to make 64 squares?



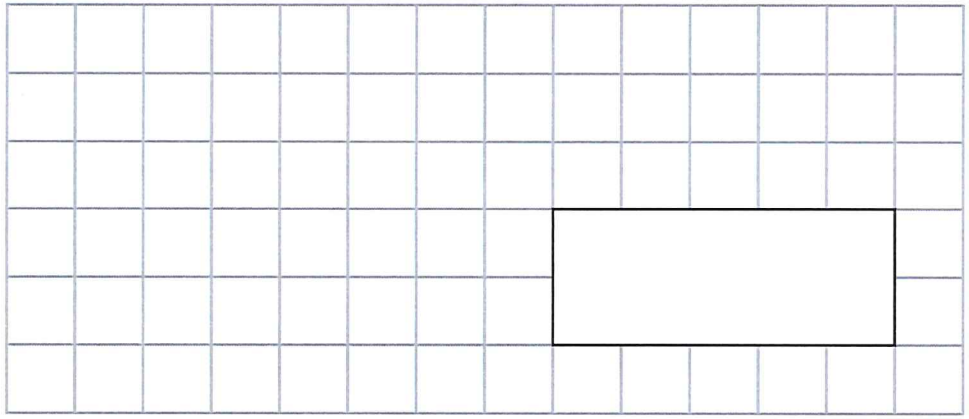
Problems Involving Scaling Worksheet

Scale the information you have been given up or down to find the answer to each question.

1. Eggs cost 90p for 6. How much would 36 eggs cost?



2. The length of a toy car is 3cm. Tony wants to make a drawing which is 17 times bigger. How long will the car be in his drawing?



Multiplying Two-Digit Numbers by One-Digit Numbers Answers

1. 24 × 4 =	2. 22 × 5 =	3. 18 × 5 =	4. 26 × 3 =
5. 12 × 5 =	6. 48 × 2 =	7. 41 × 9 =	8. 31 × 7 =
9. 44 × 7 =	10. 32 × 7 =	11. 62 × 3 =	12. 66 × 4 =
13. 82 × 4 =	14. 87 × 8 =	15. 94 × 8 =	16. 53 × 8 =
17. 85 × 4 =	18. 75 × 3 =	19. 68 × 6 =	20. 78 × 7 =

Three Digit × One Digit Multiplication

Answer these calculations using either the compact method or the long multiplication method:

1. 167 x 3	**2.** 137 x 3
3. 261 x 4	**4.** 319 x 3
5. 629 x 5	**6.** 417 x 6
7. 130 x 9	**8.** 617 x 9
9. 243 x 4	

19. _7_ × 5 = 1355

20. 8_4 × _ = 3336

21. _5_ × 3 = 1056

22. 7_2 × _ = 2226

23. _8_ × 4 = 740

24. _0_ × 3 = 1200

25. 1_9 × _ = 338

26. _7_ × 6 = 3456

27. 1_6 × _ = 680

28. 4_2 × _ = 1446

29. _0_ × 3 = 1518

30. 4_1 × _ = 2055

31. _4_ × 6 = 4494

32. _4_ × 2 = 292

33. 8_2 × _ = 1644

34. 6_3 × _ = 1346

35. _0_ × 5 = 4535

36. _2_ × 2 = 258

37. _8_ × 2 = 1766

38. _6_ × 4 = 3444

39. _5_ × 6 = 5124

40. 6_5 × _ = 3225

Multiplying 3-Digit by 1-Digit Numbers

Calculate the missing number in these calculations.

1. 2_4 × _ = 856
2. _0_ × 4 = 1204
3. 8_5 × _ = 4950
4. 6_6 × _ = 3280
5. _4_ × 3 = 1620
6. 9_8 × _ = 4890
7. _1_ × 2 = 432
8. _0_ × 4 = 836
9. 9_6 × _ = 3864
10. 3_5 × 3 = 1035
11. _4_ × 4 = 584
12. _3_ × 2 = 1876
13. _7_ × 5 = 3380
14. _7_ × 3 = 834
15. _5_ × 3 = 477
16. 8_6 × _ = 3384
17. 5_6 × _ = 2144
18. _6_ × 2 = 730

Missing Numbers 2-Digit × 1-Digit Multiplication

Calculate the missing digits in these calculations.

1. □8 × □ = 272
2. 8□ × 4 = 324
3. □4 × □ = 84
4. □1 × □ = 205
5. 3□ × 3 = 90
6. □7 × □ = 485
7. 2□ × 2 = 44
8. 2□ × 4 = 108
9. □0 × □ = 200
10. □1 × □ = 33
11. 6□ × 4 = 244
12. 3□ × 2 = 72

13.

	2	□
×		5
1	1	0

14.

	9	□
×		3
2	7	3

15.

	8	□
×		3
2	6	7

16.

	□	0
×		□
	4	0

17.

	□	4
×		□
3	3	6

18.

	5	□
×		2
1	1	0

19.

	9	□
×		5
4	6	0

20.

	□	3
×		□
3	7	2

21.

	1	□
×		3
	3	6

22.

	□	8
×		□
2	9	4

23.

	2	□
×		4
	9	6

24.

	1	□
×		3
	3	3

25.

	□	9
×		□
1	1	8

26.

	□	2
×		□
	7	2

27.

	□	1
×		□
1	5	5

28.

	4	□
×		3
1	4	1

29.

	5	□
×		3
1	7	4

30.

	□	3
×		□
4	1	5