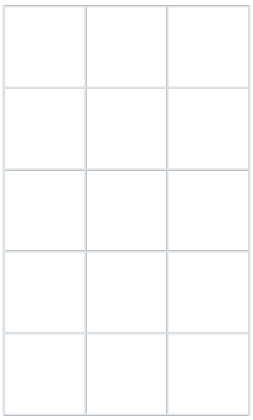
Year 2 - Column Addition — Lesson Guide

Step 1

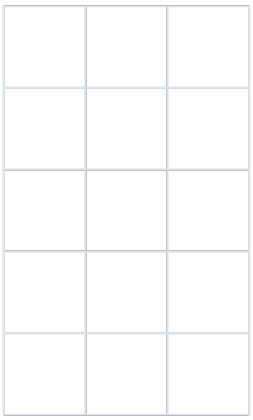
25 + 17 = ☐



The plus sign tells us to add. When we add more, the number gets bigger. We circle the plus sign.

Step 2

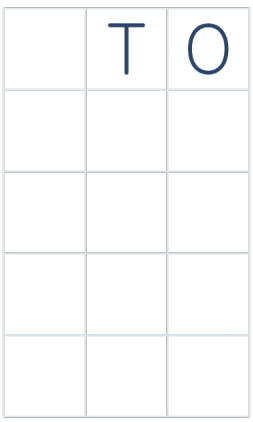
25 + 17 = ☐



First, check whether a mental method would be quicker. Look at the ones. 5 ones and 7 ones make 12 ones. We can exchange 10 ones for 1 ten. Column addition keeps the place values lined up.

Step 3

25 + 17 = ☐



Next, our largest number has 2 digits, so we neatly write the headings T and O below the question, with one heading in each box. These stand for tens and ones.

Step 4

25 + 17 = ☐

	T	O
	2	5

The first digit of 25, 2, is in the tens column, so we start there. Now, we write 25 in the correct columns, with one digit in each box.

Step 5

25 + 17 = ☐

	T	O
	2	5
+	1	7

Remember: There must always be a digit in the ones column, even if it is a 0.

Then, we write a plus sign on the left of the calculation. 17 has two digits, so we start with 1 in the tens column. We write 17 in the correct columns, with one digit in each box.

Step 6

25 + 17 = ☐

	T	O
	2	5
+	1	7

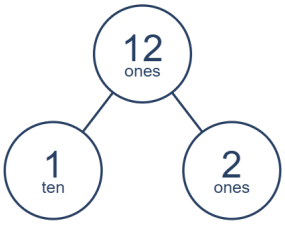
Draw a line under 17. Leave one row for the sum, then draw the second line below that row. Write exchanges below the second line.

Step 7

25 + 17 = ☐

	T	O
	2	5
+	1	7

First, we add the ones, the smallest place-value column. 5 ones + 7 ones = 12 ones. As we can only write one digit per box, we partition 12 ones into 1 ten and 2 ones.



Step 8

25 + 17 = ☐

	T	O
	2	5
+	1	7
		2
	1	

We write the 1 ten in the tens column underneath the answer, ready for the next step. Then we write the remaining 2 ones in the ones answer box.

Step 9

25 + 17 = ☐



Remember: Check both places. Keep the small 1 below the tens column and the 2 in the ones answer square.

The small 1 below the tens column stands for 1 ten. The 2 in the ones answer square stands for 2 ones. Together, they make 12 ones.

Step 10

25 + 17 = ☐

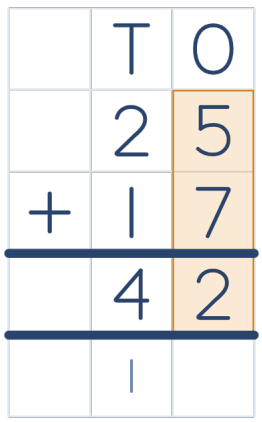


Remember: Look below the column you are working on. Add the exchanged amount written there.

Finally, we add the tens. 2 tens + 1 ten = 3 tens. Add the 1 exchanged ten shown by the small 1 below the tens column. 3 tens + 1 exchanged ten = 4 tens. We write 4 in the tens column. No exchange is needed this time.

Step 11

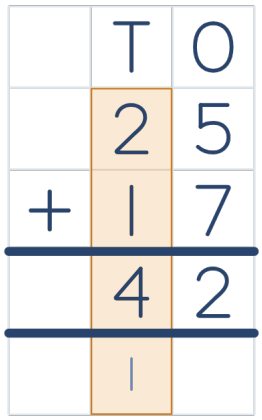
25 + 17 = ☐



Our sum is 42. Before we copy our answer into the answer box, let's check each column, including the exchanges. First, we check the ones: 5 + 7 = 12. We have correctly recorded 1 ten underneath the answer and 2 ones in the ones answer box.

Step 12

25 + 17 = ☐



Finally, we check the tens, including the exchanged ten: 2 + 1 + 1 = 4. We have correctly included the exchanged ten and written 4 in the tens answer box.

Step 13

25 + 17 = **42**

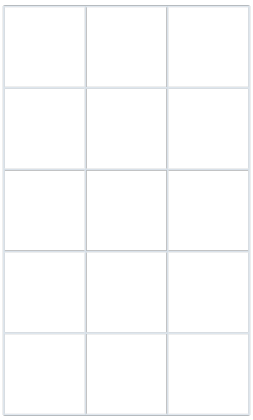


The sum is 42. Copy 42 into the answer box. Make sure you copy the answer correctly.

Year 2 - Column Subtraction — Lesson Guide

Step 1

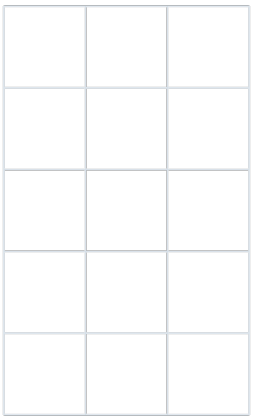
51 – 24 = ☐



The minus sign tells us to take away. When we take something away, the number gets smaller. We circle the minus sign.

Step 2

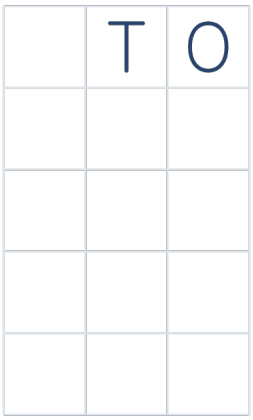
51 – 24 = ☐



First, check whether a mental method would be quicker. Look at the ones. We have 1 one and need to subtract 4 ones. Column subtraction helps us record the exchange.

Step 3

51 – 24 = ☐



Next, our largest number has 2 digits, so we neatly write the headings T and O below the question, with one heading in each box. These stand for tens and ones.

Step 4

51 – 24 = ☐

	T	O
	5	1

The first digit of 51, 5, is in the tens column, so we start there. Now, we write 51 in the correct columns, with one digit in each box.

Step 5

51 – 24 = ☐

	T	O
	5	1
–	2	4

Remember: There must always be a digit in the ones column, even if it is a 0.

Then, we write a minus sign on the left of the calculation. The first digit of 24, 2, is in the tens column, so we start there. We write 24 in the correct columns, with one digit in each box.

Step 6

51 – 24 = ☐

	T	O
	5	1
–	2	4

Draw a line under 24. Leave one row for the difference, then draw the second line below that row.

Step 7

51 – 24 = ☐

	T	O
	4 5	1
–	2	4

Remember: Exchange when you have fewer ones than you need to subtract.

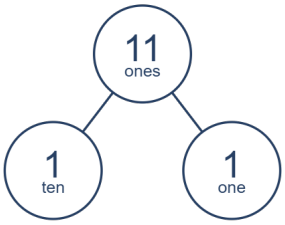
We have 1 one and need to subtract 4 ones. Exchange 1 ten from the 5 tens for 10 ones. Cross out the 5 and write a small 4 at the top left of the tens square. We now have 4 tens in that column.

Step 8

51 – 24 = ☐

	T	O
	4 5	1 1
–	2	4

Write a small 1 at the top left of the ones square, beside the 1 already there. The small 1 stands for 10 more ones. Read the two digits together as 11 ones. Keep the original 1 in its place.



Step 9

51 – 24 = ☐

	T	O
	~~5~~ 4	1 1
–	2	4
		7

11 ones – 4 ones = 7 ones, so we write 7 in the ones column.

Step 10

51 – 24 = ☐

	T	O
	~~5~~ 4	1 1
–	2	4
		7

The earlier exchange left 4 tens, so we use that current value instead of the crossed-out 5.

Step 11

51 – 24 = ☐

	T	O
	~~5~~ 4	1 1
–	2	4
	2	7

Finally, we subtract the tens, which is 4 tens – 2 tens. 4 tens – 2 tens = 2 tens, so we write 2 in the tens column. No exchange is needed this time.

Step 12

51 – 24 = ☐

	T	O
	~~5~~ 4	1 1
–	2	4
	2	7

Our difference is 27. Before we copy our answer into the answer box, let's check each column, including the exchanges. First, we check the ones: 11 ones – 4 ones = 7 ones. We have correctly written 7 in the ones answer box.

Step 13

51 – 24 = ☐

	T	O
	~~5~~ 4	1 1
–	2	4
	2	7

Finally, we check the tens: 4 tens – 2 tens = 2 tens. We have correctly written 2 in the tens answer box.

Step 14

51 – 24 = **27**

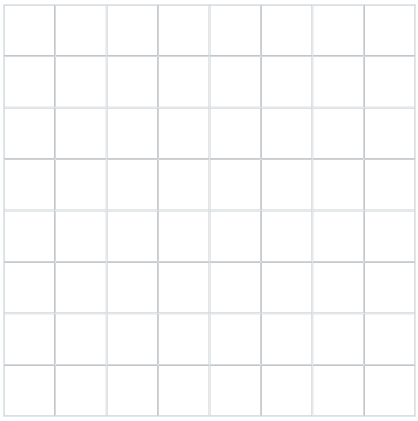
	T	O
	~~5~~ 4	1 1
–	2	4
	2	7

The difference is 27. Copy 27 into the answer box. Make sure you copy the answer correctly.

Year 2 - Single Digit Addition — Lesson Guide

Step 1

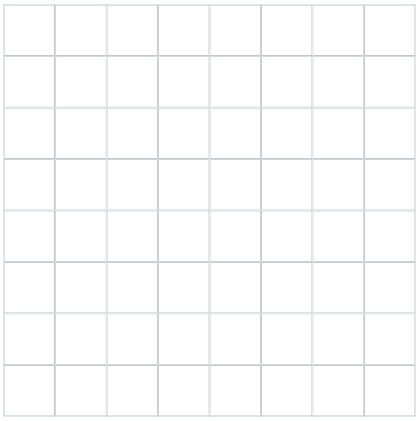
16 + 5 = ☐



The plus sign tells us to add. When we add more, the number gets bigger. We circle the plus sign.

Step 2

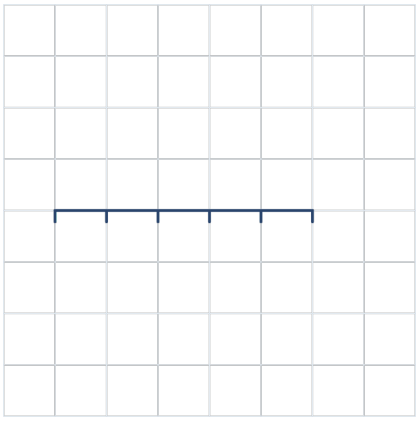
16 + 5 = ☐



A number line helps us see each step as we count on. Each jump moves us one number to the right.

Step 3

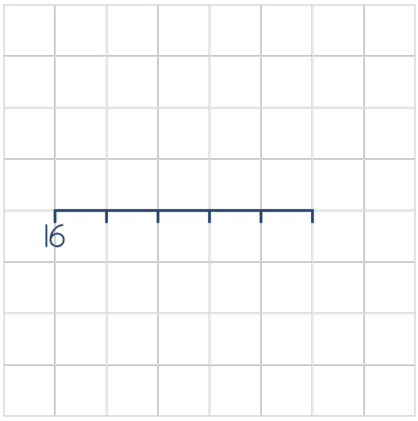
16 + 5 = ☐



Draw a number line with one space for each jump.

Step 4

16 + 5 = ☐

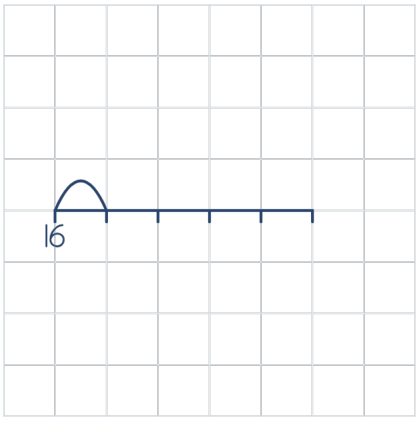


Remember: Count the jumps, without counting the starting number as a jump.

We write 16 under the left end. We start counting with the first jump.

Step 5

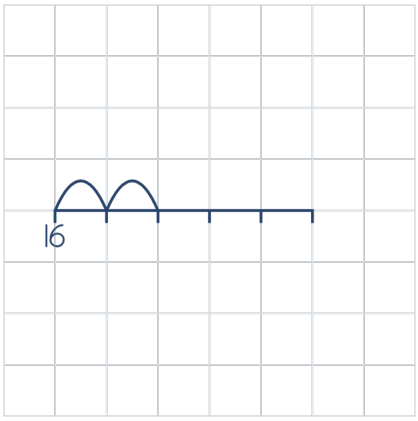
16 + 5 = ☐



Jump 1 takes us from 16 to 17.

Step 6

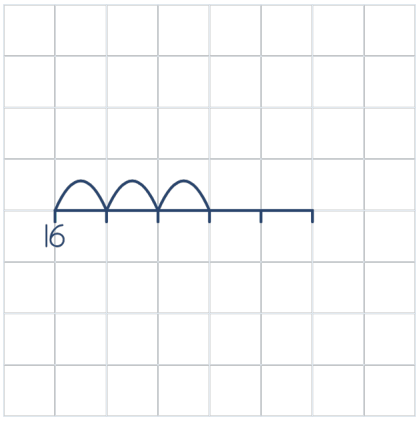
16 + 5 = ☐



Jump 2 takes us from 17 to 18.

Step 7

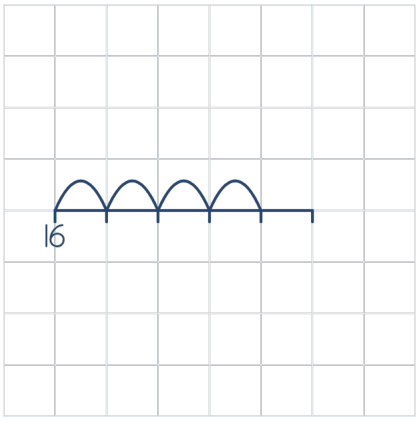
16 + 5 = ☐



Jump 3 takes us from 18 to 19.

Step 8

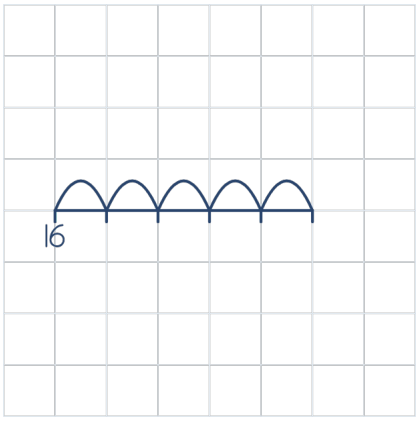
16 + 5 = ☐



Jump 4 takes us from 19 to 20.

Step 9

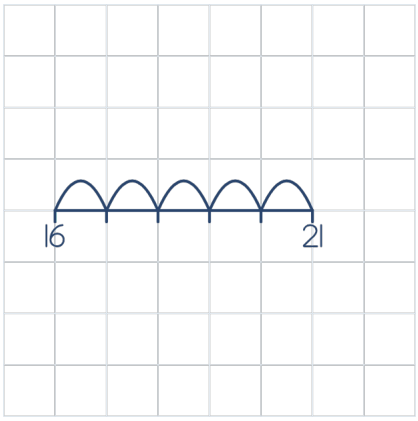
16 + 5 = ☐



Jump 5 takes us from 20 to 21.

Step 10

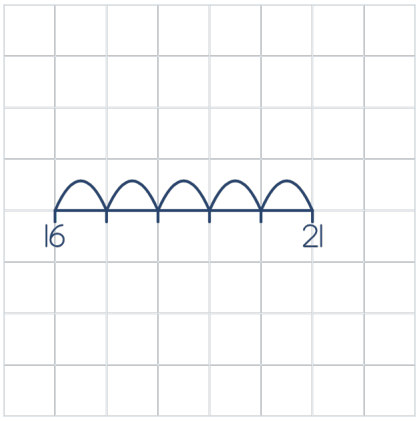
16 + 5 = ☐



We landed on 21. Write 21 under the last mark, where the fifth jump ends.

Step 11

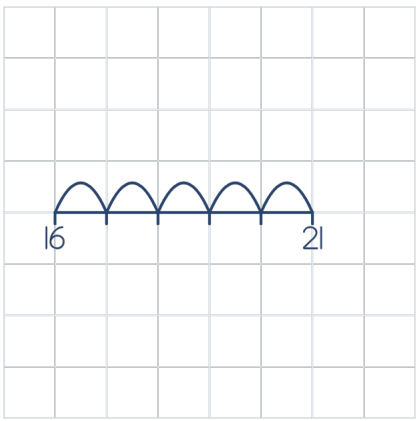
16 + 5 = ☐



Now, we check that we started at 16, made exactly 5 jumps right and finished at 21. We count the jumps, without counting the starting number as a jump.

Step 12

16 + 5 = **21**

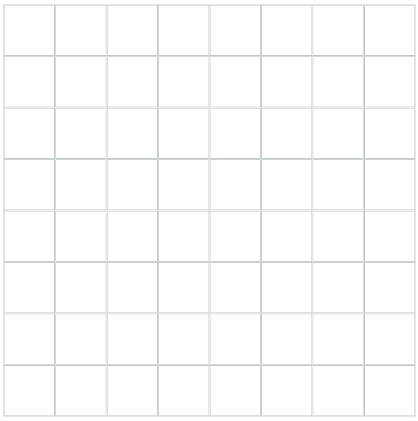


The sum is 21. Copy 21 into the answer box. Make sure you copy the answer correctly.

Year 2 - Single Digit Subtraction — Lesson Guide

Step 1

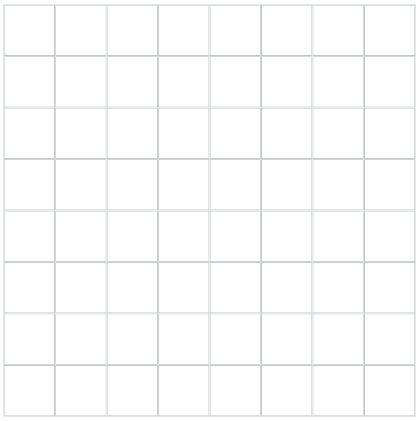
13 – 4 = ☐



The minus sign tells us to take away. When we take something away, the number gets smaller. We circle the minus sign.

Step 2

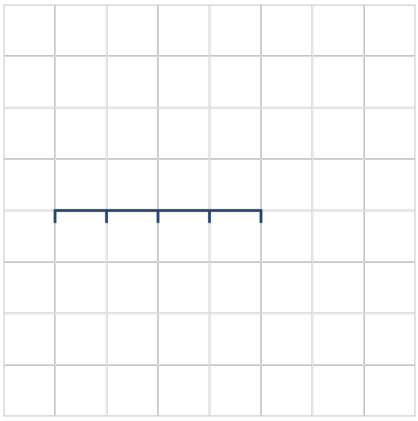
13 – 4 = ☐



A number line helps us see each step as we count back. Each jump moves us one number to the left.

Step 3

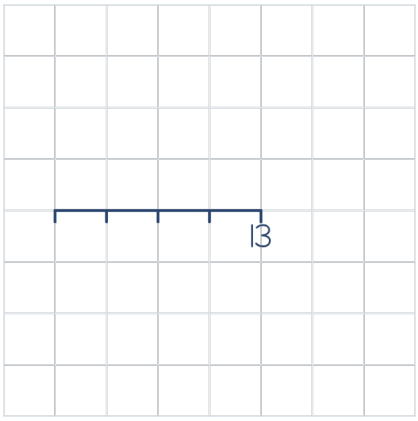
13 – 4 = ☐



Draw a number line with one space for each jump.

Step 4

13 – 4 = ☐

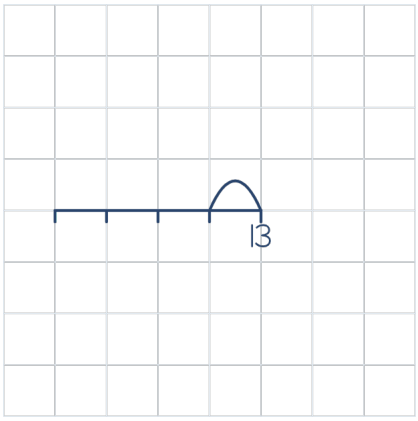


Remember: Count the jumps, without counting the starting number as a jump.

We write 13 under the right end. We start counting with the first jump.

Step 5

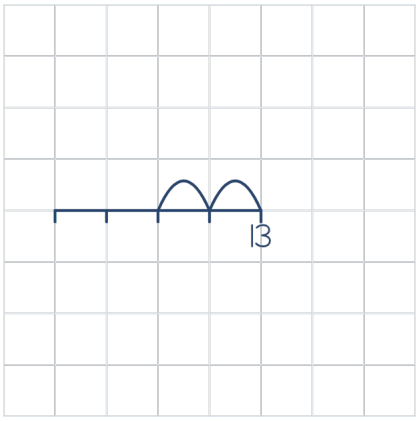
13 – 4 = ☐



Jump 1 takes us from 13 to 12.

Step 6

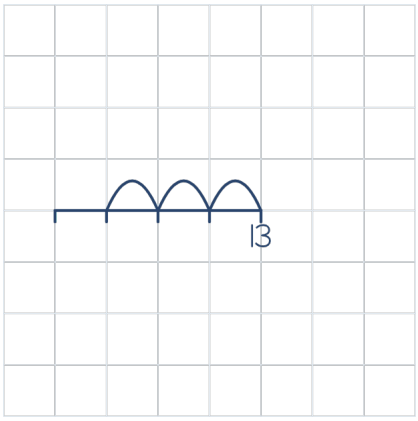
13 – 4 = ☐



Jump 2 takes us from 12 to 11.

Step 7

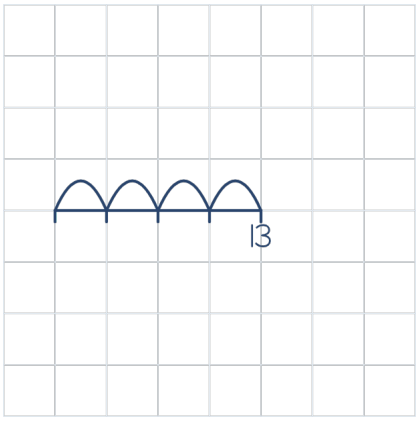
13 – 4 = ☐



Jump 3 takes us from 11 to 10.

Step 8

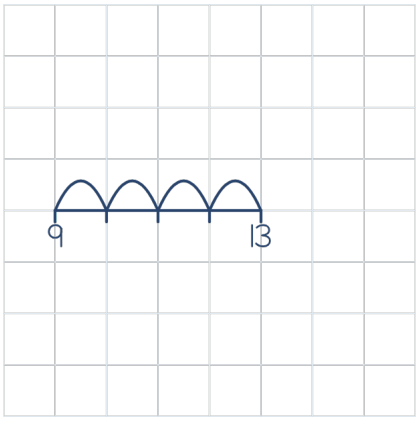
13 – 4 = ☐



Jump 4 takes us from 10 to 9.

Step 9

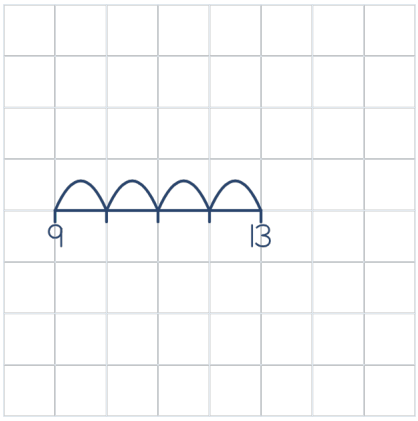
13 – 4 = ☐



We landed on 9. Write 9 under the last mark, where the fourth jump ends.

Step 10

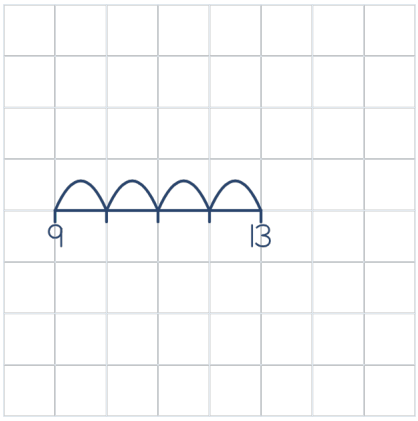
13 – 4 = ☐



Now, we check that we started at 13, made exactly 4 jumps left and finished at 9. We count the jumps, without counting the starting number as a jump.

Step 11

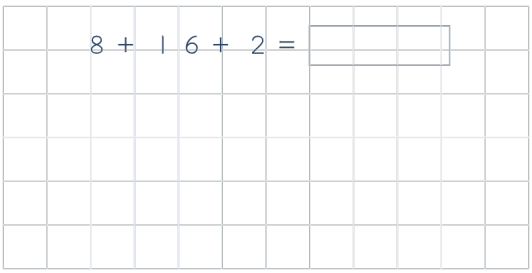
13 – 4 = 9



The difference is 9. Copy 9 into the answer box. Make sure you copy the answer correctly.

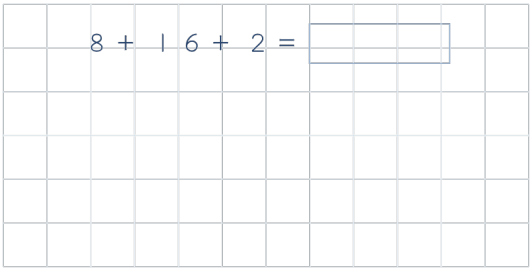
Year 2 - Adding 3 Numbers — Lesson Guide

Step 1



We circle both plus signs. Both signs tell us to add.

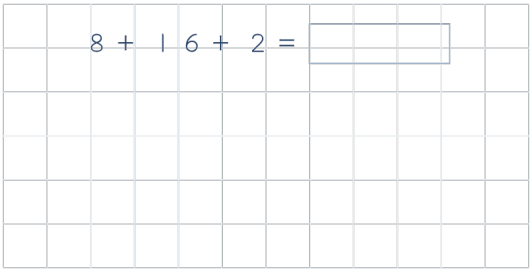
Step 2



Remember: Look at all three numbers. Use each original number once.

We can add the numbers in any order and get the same total. Let's find two numbers that are easy to add together.

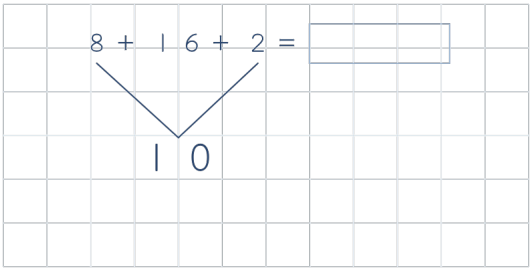
Step 3



Remember: Use each original number once.

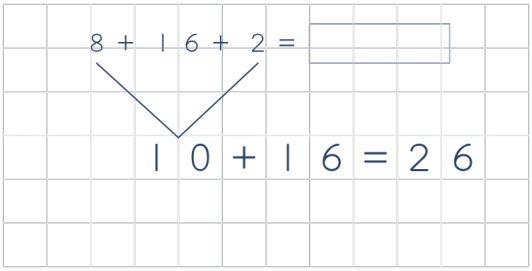
Use number bonds, doubles and other number facts to choose a helpful pair. A useful pair here is 8 and 2. 8 + 2 = 10. That gives us a multiple of 10, which is easy to add to. Draw a line from each chosen number to where we will write the first result. Keep 16 for the next step. Other pairs can still give the same sum.

Step 4



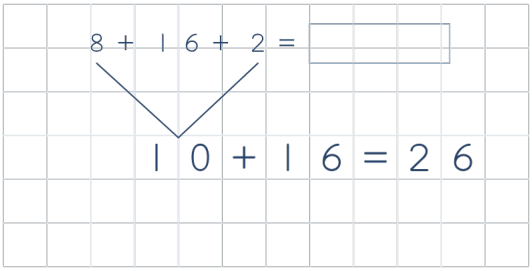
First, we add the chosen pair. 8 + 2 = 10. We write 10 on the squares, in the middle below the two chosen numbers. We still need the remaining number, 16.

Step 5



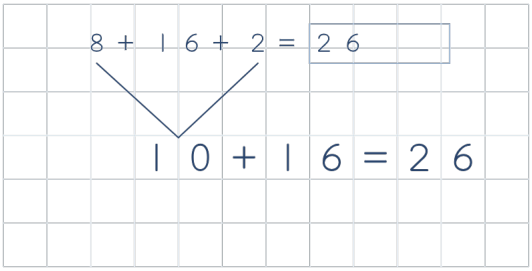
Next, we add the remaining number to our first result. 10 + 16 = 26. There are no exchanges in this addition, so we can work it out mentally. We could use a column method if needed. We have now used all three original numbers once.

Step 6



Now, we check that we have used all three original numbers once. First, 8 + 2 = 10. Then, 10 + 16 = 26. All three original numbers have been used once.

Step 7

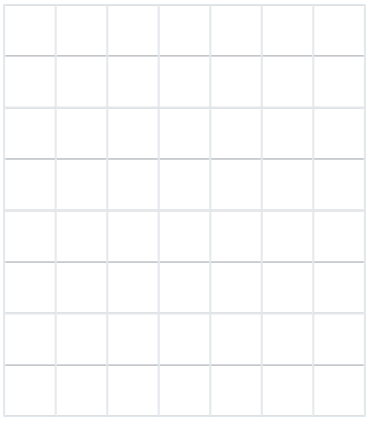


The sum is 26. Copy 26 into the answer box. Make sure you copy the answer correctly.

Year 2 - Finding Missing Numbers (+ and –) — Lesson Guide

Step 1

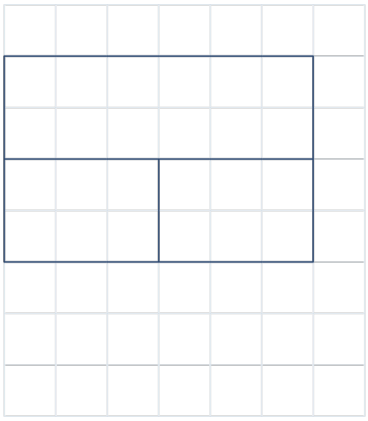
☐ – 15 = 12



The minus sign tells us to take away. When we take something away, the number gets smaller. We circle the minus sign.

Step 2

☐ – 15 = 12

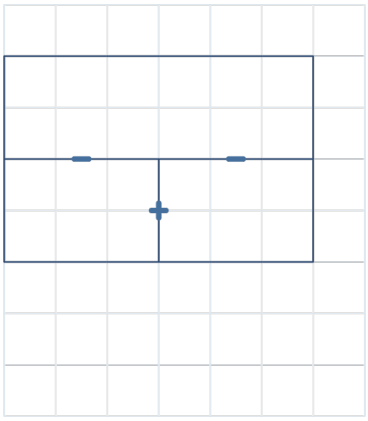


Remember: The box asks for a missing number. Put it back in the same place to check.

This is a missing number problem. We know what the calculation equals. The box asks which number we started with. A bar model helps us see the whole and its parts. We draw the whole on top and the two parts below it.

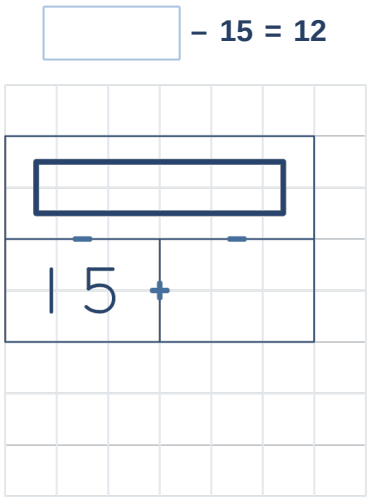
Step 3

☐ – 15 = 12



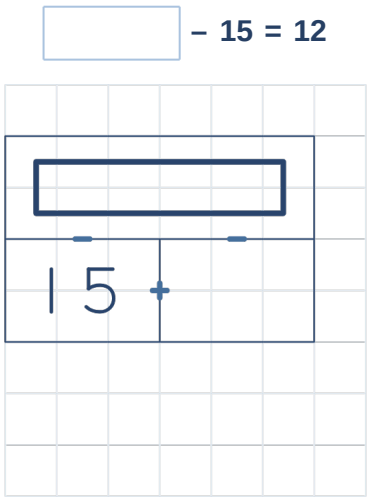
Next, we draw bold minus signs between the whole and its parts, and a bold plus sign between the two parts. This shows us that the two parts add to make the whole and, to find a part, we subtract the other part from the whole.

Step 4



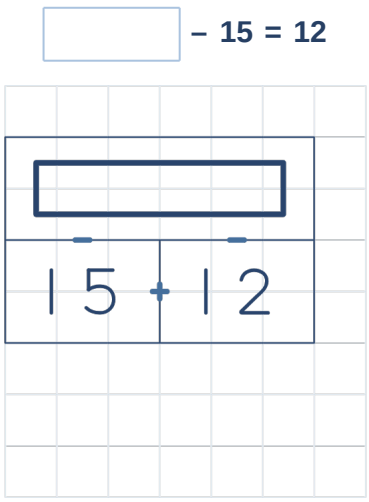
Next, we use our bar model to show something minus 15. The number we start with is the whole. The number we take away is one part. We draw a small box in the whole for the missing number. We write 15 in the left part.

Step 5



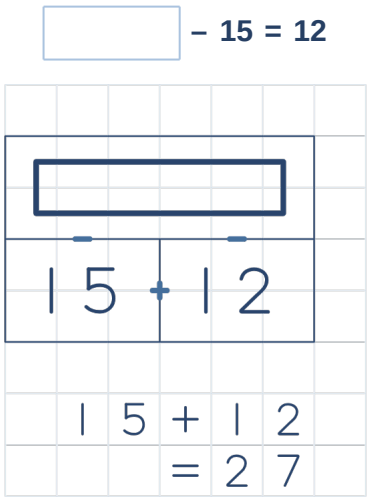
Check the two entries before filling the last space. Read the question up to the equals sign as something take away 15. In the bar model, the blank in the whole bar and 15 in the left part should read as something take away 15. If the entries match, fill the last space. If they differ, correct the model first.

Step 6



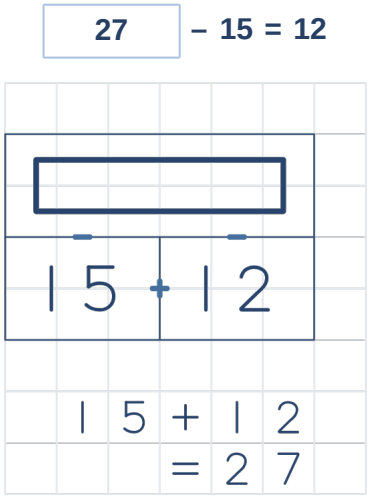
Now the calculation is in the correct place, we can look at the amount left, 12. We write 12 in the other part.

Step 7



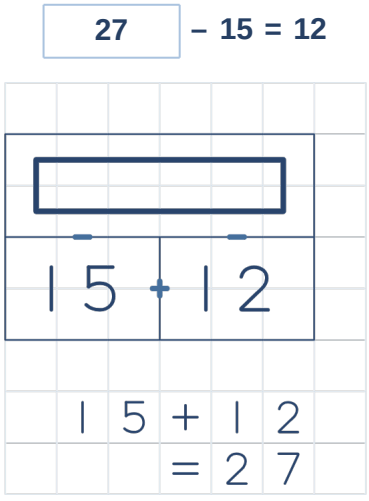
We add the two parts to find the whole. I can partition 12 into 10 and 2. I am going to add these parts mentally, starting with the greatest place value. 15 + 12 = 27.

Step 8



Now, we put 27 into the blank in the original question. Make sure you copy the answer correctly.

Step 9

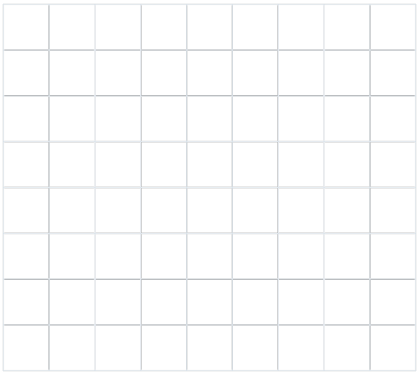


Put 27 in the blank and use the operation in the question. Take away 10 to get 17. Then take away 5 to get 12. The result matches 12 on the right. If you get a different number, check that you used the operation in the question. Then work it out again.

Year 2 - Multiplication (ones) — Lesson Guide

Step 1

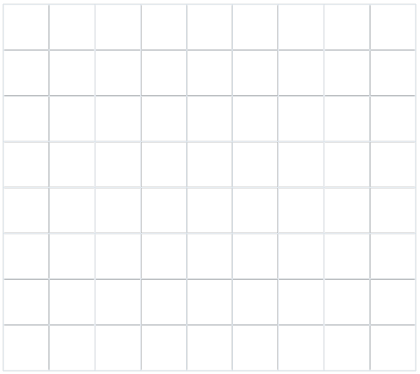
$3 \times 4 =$ ☐



The multiplication sign tells us to make equal groups and find the total. We circle the multiplication sign.

Step 2

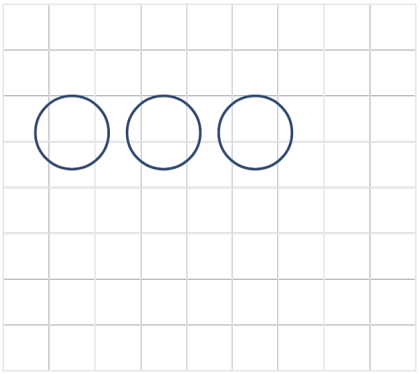
$3 \times 4 =$ ☐



3 × 4 means 3 lots of 4. That means we need 3 groups with 4 in each.

Step 3

$3 \times 4 =$ ☐

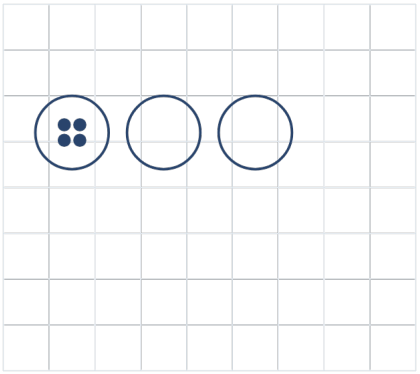


Remember: One circle for each group. Each group must have the same number of counters.

Circles help us keep the groups separate. We draw 3 circles the same size, one for each group.

Step 4

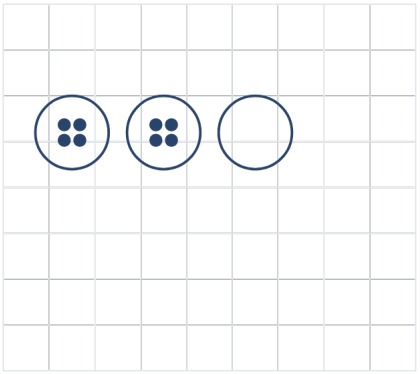
$3 \times 4 =$ ☐



First, we put 4 ones in circle 1. Put the counters in neat rows.

Step 5

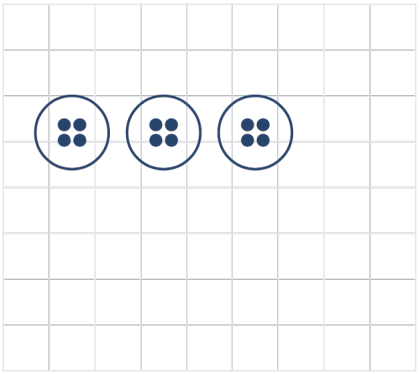
$3 \times 4 =$ ☐



Next, we put 4 ones in circle 2. Make this group look like the first one.

Step 6

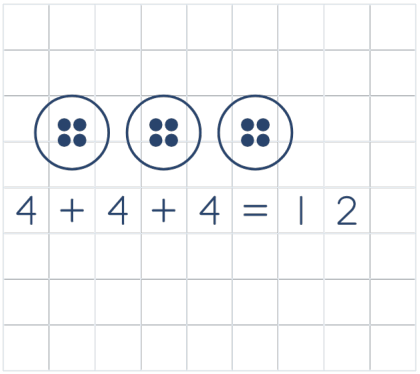
$3 \times 4 =$ ☐



Next, we put 4 ones in circle 3. Make this group look like the first one.

Step 7

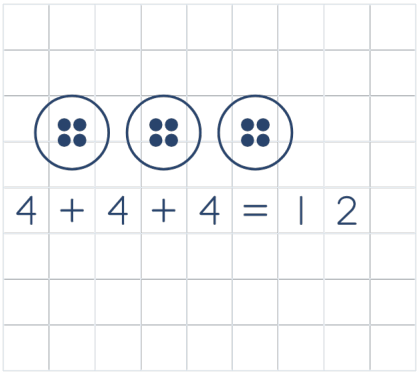
3 × 4 = ☐



Each circle has 4 counters. Add the number of counters in each circle. 4 + 4 + 4 = 12.

Step 8

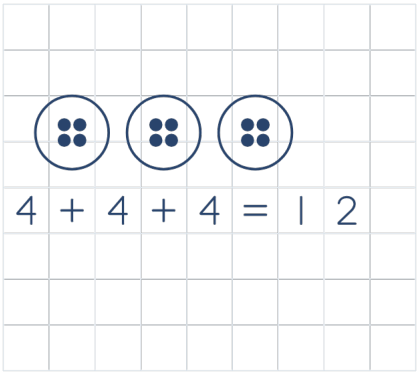
3 × 4 = ☐



Every circle should have 4. That makes the groups equal.

Step 9

3 × 4 = **12**

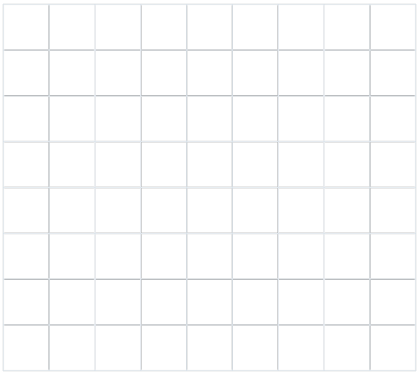


The product is 12. Copy 12 into the answer box. Make sure you copy the answer correctly.

Year 2 - Multiplication (tens) — Lesson Guide

Step 1

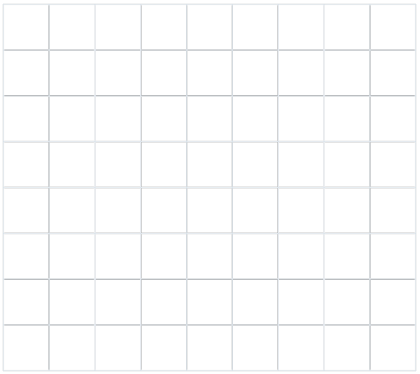
14 × 3 = ☐



The multiplication sign tells us to make equal groups and find the total. We circle the multiplication sign.

Step 2

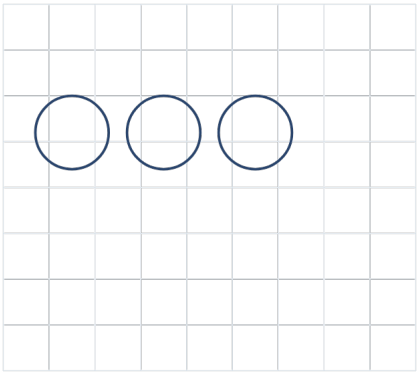
14 × 3 = ☐



14 × 3 means 14 lots of 3. We can swap the numbers and use 3 groups of 14. The total stays the same.

Step 3

14 × 3 = ☐

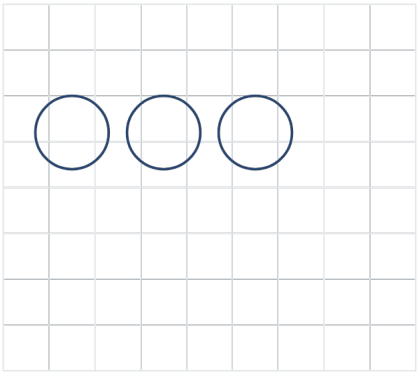


Remember: One circle for each group. Each group must have the same amount.

Circles help us keep the groups separate. We draw 3 circles the same size, one for each group.

Step 4

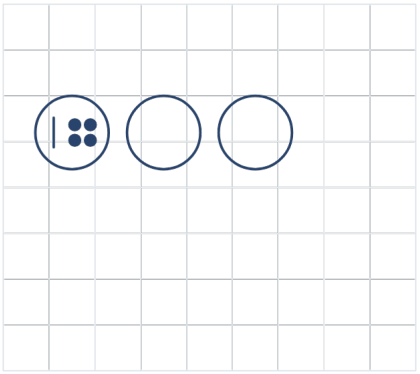
14 × 3 = ☐



14 has 1 ten and 4 ones. Draw one straight line for each ten and one dot for each one. Each circle must show the same amount.

Step 5

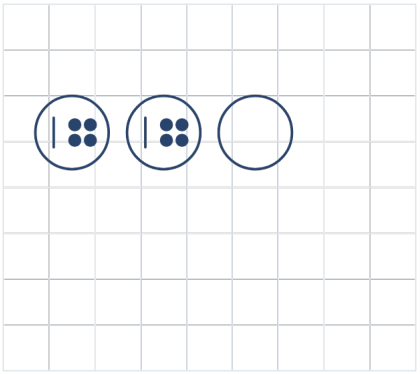
14 × 3 = ☐



First, we put 1 ten and 4 ones in circle 1. Draw straight lines for the tens and put the ones in neat rows.

Step 6

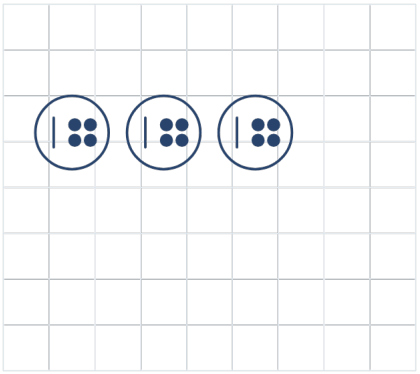
14 × 3 = ☐



Next, we put 1 ten and 4 ones in circle 2. Make this group look like the first one.

Step 7

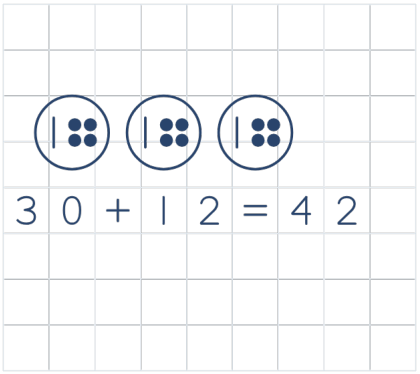
14 × 3 = ☐



Next, we put 1 ten and 4 ones in circle 3. Make this group look like the first one.

Step 8

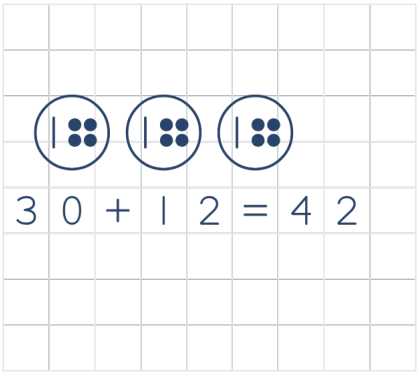
14 × 3 = ☐



Add the tens first. 3 lines stand for 30. Now add the ones. Each circle has 4 ones. 4 + 4 + 4 = 12. 30 + 12 = 42.

Step 9

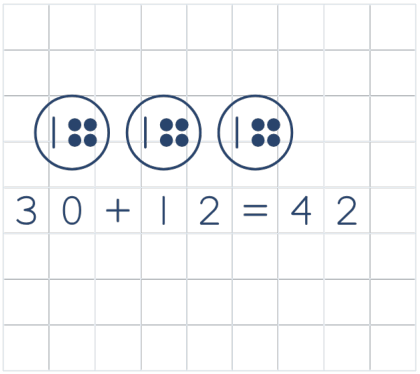
14 × 3 = ☐



Every circle should have 14. That makes the groups equal.

Step 10

14 × 3 = 42

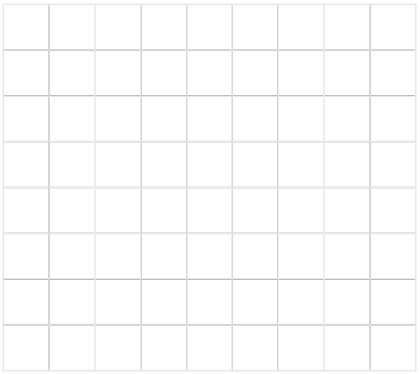


The product is 42. Copy 42 into the answer box. Make sure you copy the answer correctly.

Year 2 - Division (ones) — Lesson Guide

Step 1

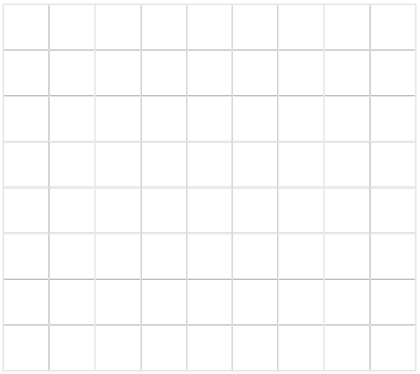
10 ÷ 2 = ☐



The division sign tells us to share the whole amount into equal groups. We circle the division sign.

Step 2

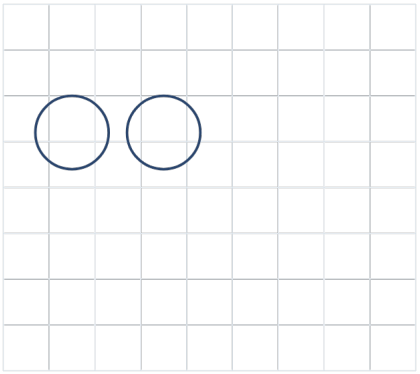
10 ÷ 2 = ☐



10 ÷ 2 means 10 shared into 2 equal groups. How many are in each group?

Step 3

10 ÷ 2 = ☐

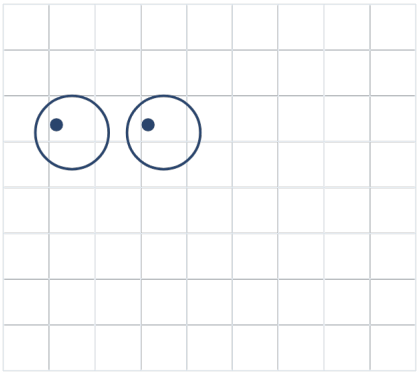


Remember: One circle for each group. Give one counter to each group in turn.

Circles help us keep the groups separate. We draw 2 circles the same size, one for each group.

Step 4

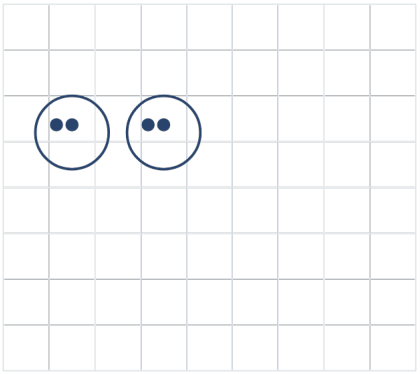
10 ÷ 2 = ☐



Give one counter to each group in turn. Use the same neat rows in each circle. Each counter is worth 1. We have shared 2 altogether. Each circle now has 1 counter.

Step 5

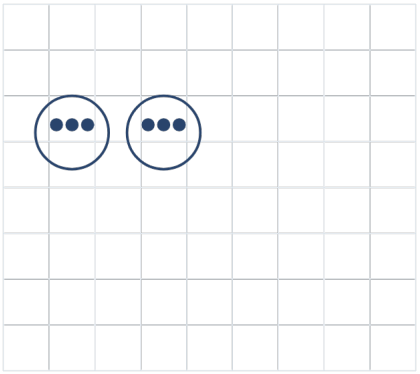
10 ÷ 2 = ☐



Next, we put one more counter in every circle. We have shared 4 altogether. Each circle now has 2 counters.

Step 6

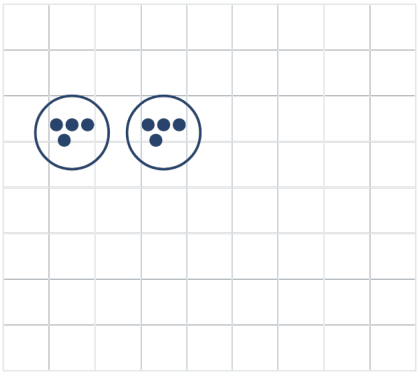
10 ÷ 2 = ☐



Next, we put one more counter in every circle. We have shared 6 altogether. Each circle now has 3 counters.

Step 7

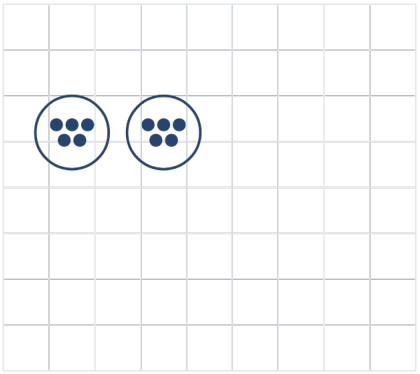
$10 \div 2 =$ ☐



Next, we put one more counter in every circle. We have shared 8 altogether. Each circle now has 4 counters.

Step 8

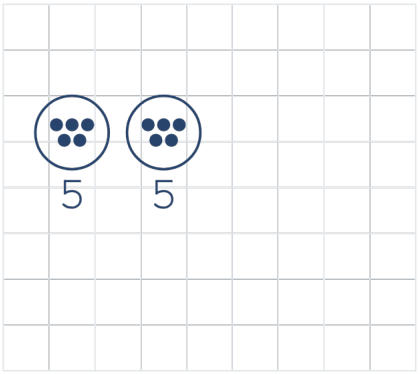
$10 \div 2 =$ ☐



Next, we put one more counter in every circle. We have shared 10 altogether. Each circle now has 5 counters.

Step 9

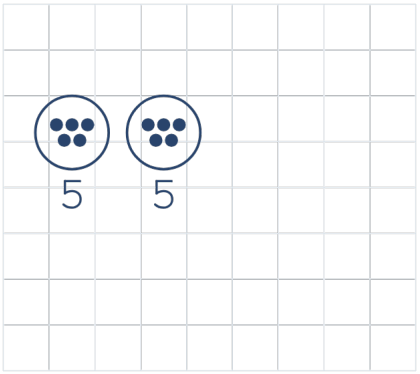
10 ÷ 2 = ☐



Count the counters in one circle. Each circle holds 5. Write 5 under each circle.

Step 10

10 ÷ 2 = 5

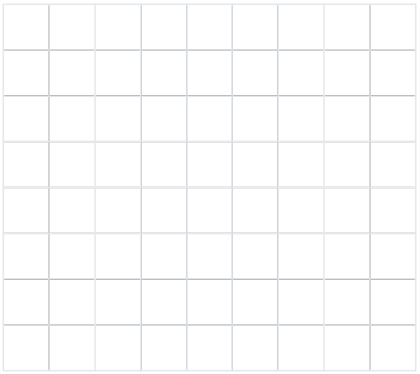


The quotient is 5. Copy 5 into the answer box. Make sure you copy the answer correctly.

Year 2 - Division (tens) — Lesson Guide

Step 1

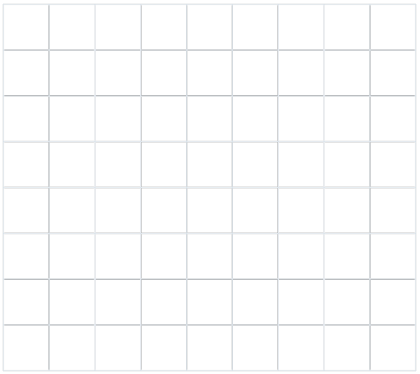
32 ÷ 2 = ☐



The division sign tells us to share the whole amount into equal groups. We circle the division sign.

Step 2

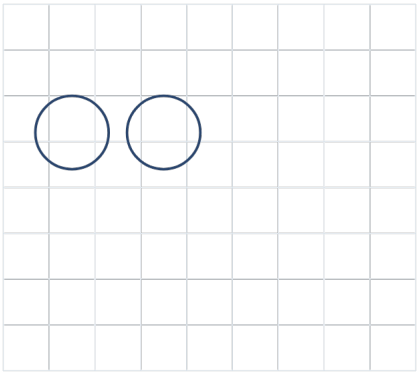
32 ÷ 2 = ☐



32 ÷ 2 means 32 shared into 2 equal groups. How many are in each group?

Step 3

32 ÷ 2 = ☐

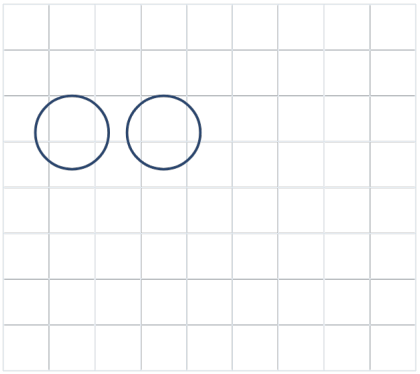


Remember: One circle for each group. Share the tens first.

Circles help us keep the groups separate. We draw 2 circles the same size, one for each group.

Step 4

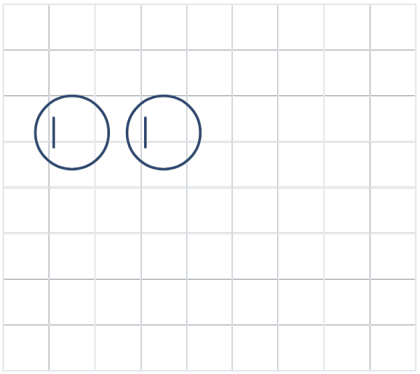
32 ÷ 2 = ☐



32 has 3 tens and 2 ones. We share the tens first. A long line is worth 10. A small counter is worth 1.

Step 5

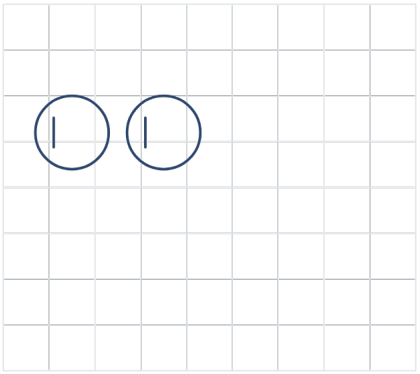
32 ÷ 2 = ☐



First, we give one ten to every circle. We have now shared 20 altogether, with 1 ten in each circle.

Step 6

32 ÷ 2 = ☐

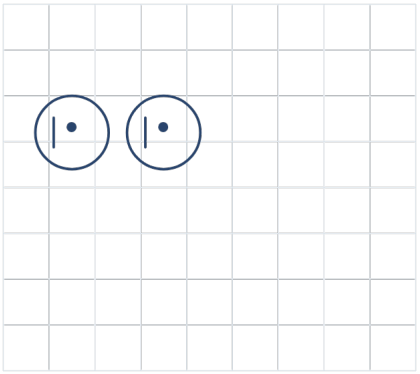


Remember: Share the ones from the exchange and the ones we started with.

We have 1 ten left. We need 2 tens to give one more ten to every circle. Exchange 1 ten for 10 ones. Add the 2 ones we started with. We now have 12 ones to share.

Step 7

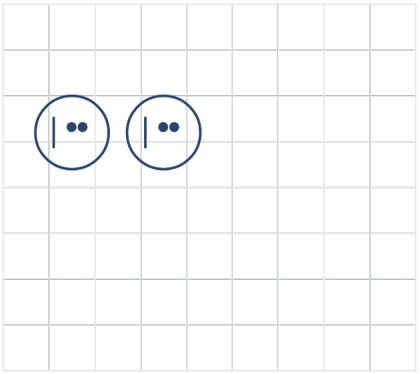
$32 \div 2 =$ ☐



Give one counter to each group in turn. Use the same neat rows in each circle. Each counter is worth 1. We have shared 22 altogether. Each circle now has 1 ten and 1 one.

Step 8

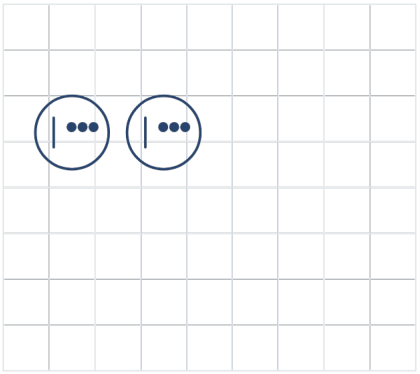
$32 \div 2 =$ ☐



Next, we put one more counter in every circle. We have shared 24 altogether. Each circle now has 1 ten and 2 ones.

Step 9

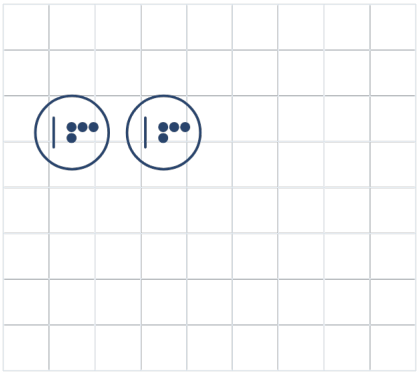
$32 \div 2 =$ ☐



Next, we put one more counter in every circle. We have shared 26 altogether. Each circle now has 1 ten and 3 ones.

Step 10

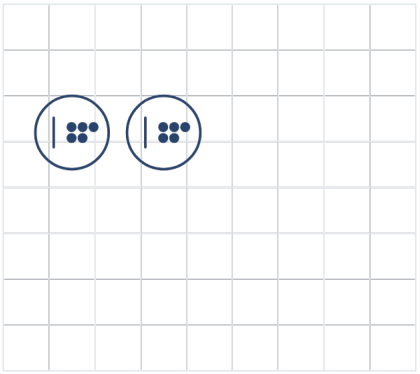
$32 \div 2 =$ ☐



Next, we put one more counter in every circle. We have shared 28 altogether. Each circle now has 1 ten and 4 ones.

Step 11

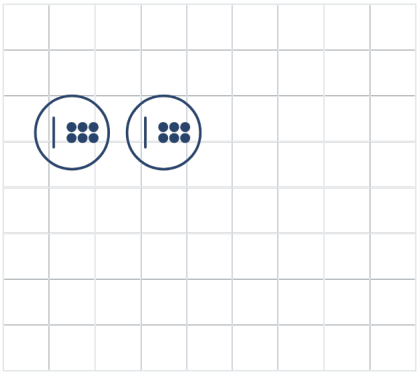
$32 \div 2 =$ ☐



Next, we put one more counter in every circle. We have shared 30 altogether. Each circle now has 1 ten and 5 ones.

Step 12

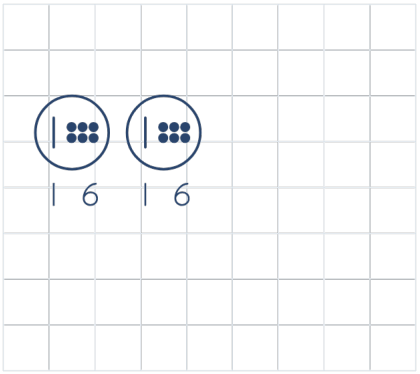
$32 \div 2 =$ ☐



Next, we put one more counter in every circle. We have shared 32 altogether. Each circle now has 1 ten and 6 ones.

Step 13

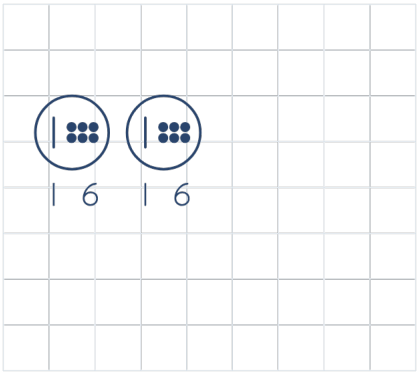
32 ÷ 2 = ☐



Look in one circle. 1 line shows 10 and 6 counters show 6. 10 + 6 = 16. Each circle holds 16. Write 16 under each circle.

Step 14

32 ÷ 2 = **16**



The quotient is 16. Copy 16 into the answer box. Make sure you copy the answer correctly.

Year 2 - Finding Fractions of Amounts (Unit) — Lesson Guide

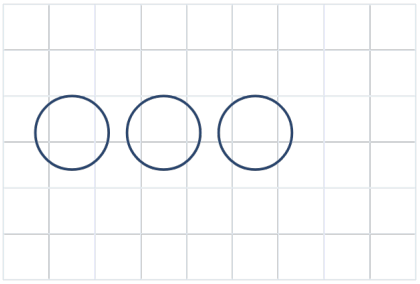
Step 1

Find $\frac{1}{3}$ of 6 = ☐

1/3 means we want 1 out of 3 equal parts. The denominator tells us how many equal parts make the whole. The numerator tells us how many of those parts we want.

Step 2

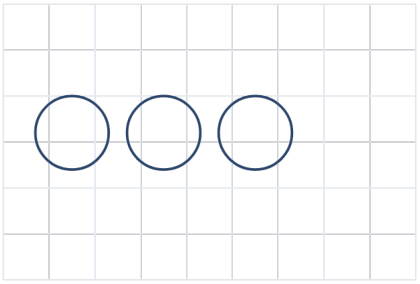
Find $\frac{1}{3}$ ✓ of 6 = ☐



Circles help us see the equal parts. We draw 3 circles the same size, one for each part. Then, we tick the denominator, 3, because we have drawn that many equal parts.

Step 3

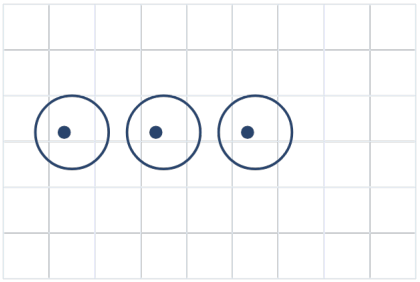
Find $\frac{1}{3}$ ✓ of 6 = ☐



Next, we share 6 equally between the circles, using the same method as division. Each circle must hold the same amount.

Step 4

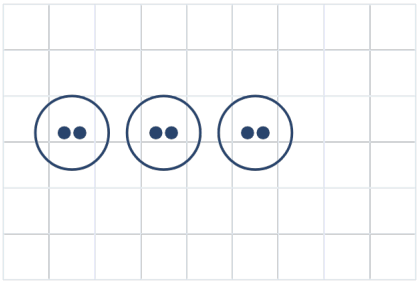
Find $\frac{1}{3}$ of 6 = ☐



Give one counter to each group in turn. Use the same neat rows in each circle. Each counter is worth 1. We have shared 3 altogether. Each circle now has 1 counter.

Step 5

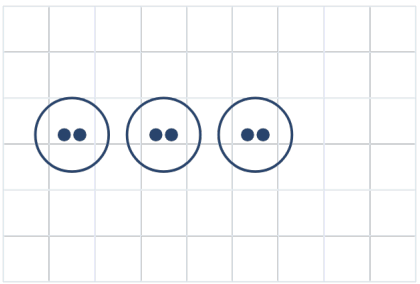
Find $\frac{1}{3}$ of 6 = ☐



Next, we put one more counter in every circle. We have shared 6 altogether. Each circle now has 2 counters.

Step 6

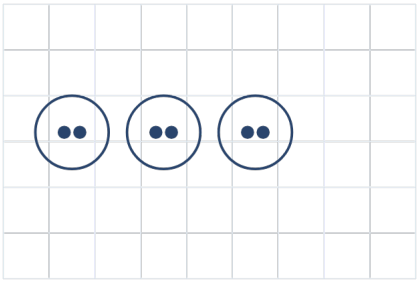
Find $\frac{1}{3}$ of 6 = ☐



Now, we check that every circle holds the same amount. Each has 2 ones, which is 2. 3 equal groups of 2 make 6, so we have shared the whole amount.

Step 7

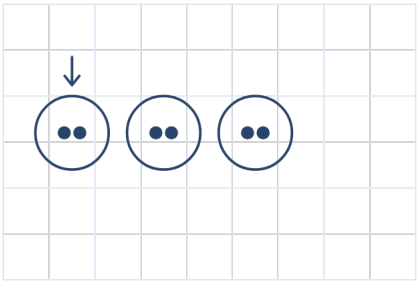
Find $\frac{1}{3}$ of 6 = ☐



We have shared the whole amount, 6, equally. Now, we tick 6 to show that we have used all of it.

Step 8

Find $\frac{1}{3}$ of 6 = ☐

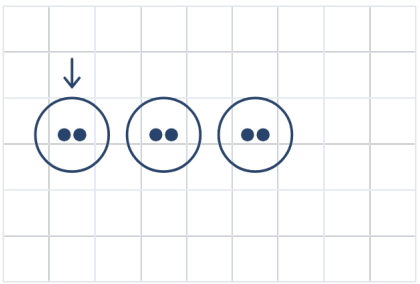


Remember: One arrow goes to each chosen circle. Use the amounts in the circles to find the answer.

The numerator, which is 1, tells us to choose 1 equal part. Draw one arrow to the circle we want. Check that you drew one arrow. Tick the numerator, 1.

Step 9

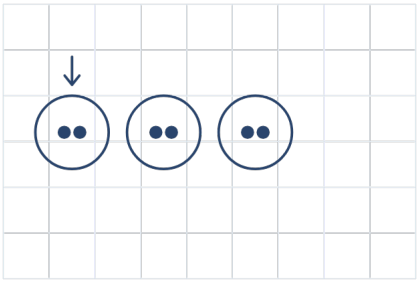
Find $\frac{1}{3}$ of 6 = ☐



Follow the arrow to its circle. Count the counters in just that circle. There are 2 counters. So one third of 6 is 2.

Step 10

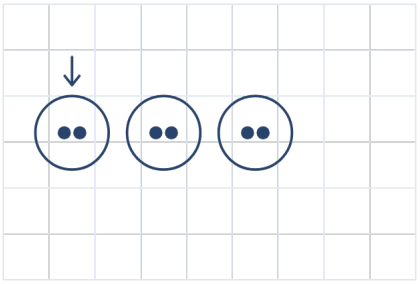
Find $\frac{1}{3}$ of 6 = ____



Check the denominator. There are 3 equal groups. Check the whole amount. 3 groups of 2 make 6. Check the numerator. One circle has an arrow. The chosen part gives 2.

Step 11

Find $\frac{1}{3}$ of 6 = 2



The fraction amount is 2. Copy 2 into the answer box. Make sure you copy the answer correctly.

Year 2 - Finding Fractions of Amounts (Non-unit) — Lesson Guide

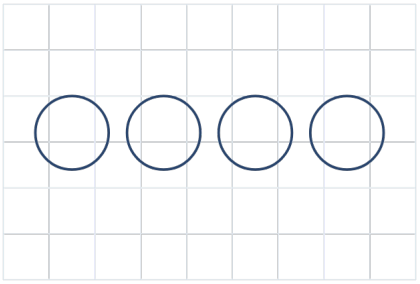
Step 1

Find $\frac{3}{4}$ of 12 = ☐

3/4 means we want 3 out of 4 equal parts. The denominator tells us how many equal parts make the whole. The numerator tells us how many of those parts we want.

Step 2

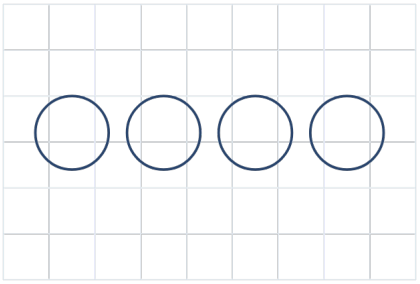
Find $\frac{3}{4}$ of 12 = ☐



Circles help us see the equal parts. We draw 4 circles the same size, one for each part. Then, we tick the denominator, 4, because we have drawn that many equal parts.

Step 3

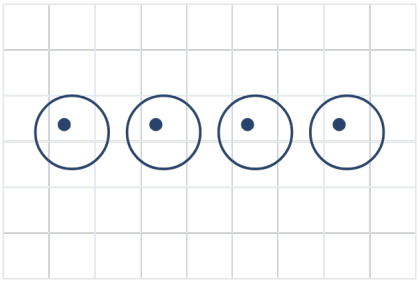
Find $\frac{3}{4}$ of 12 = ☐



Next, we share 12 equally between the circles, using the same method as division. Each circle must hold the same amount.

Step 4

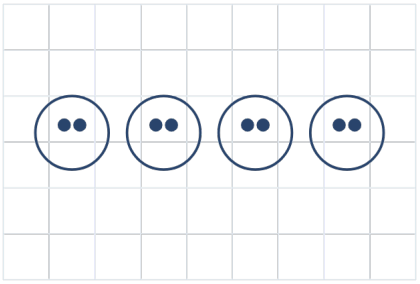
Find $\frac{3}{4}$ of 12 = ☐



Give one counter to each group in turn. Use the same neat rows in each circle. Each counter is worth 1. We have shared 4 altogether. Each circle now has 1 counter.

Step 5

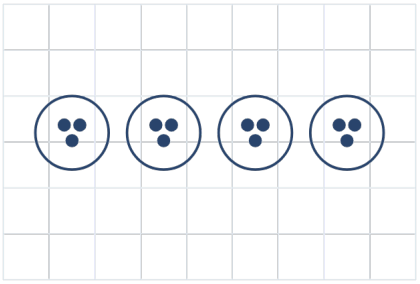
Find $\frac{3}{4}$ of 12 = ☐



Next, we put one more counter in every circle. We have shared 8 altogether. Each circle now has 2 counters.

Step 6

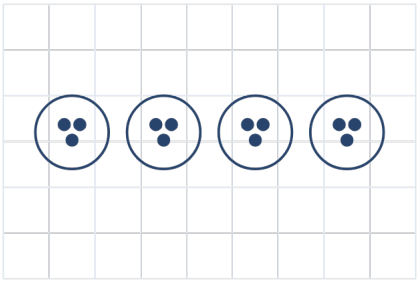
Find $\frac{3}{4}$ of 12 = ☐



Next, we put one more counter in every circle. We have shared 12 altogether. Each circle now has 3 counters.

Step 7

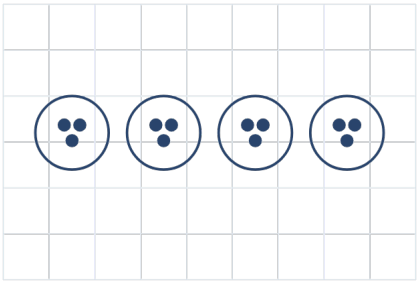
Find $\frac{3}{4}$ of 12 = ☐



Now, we check that every circle holds the same amount. Each has 3 ones, which is 3. 4 equal groups of 3 make 12, so we have shared the whole amount.

Step 8

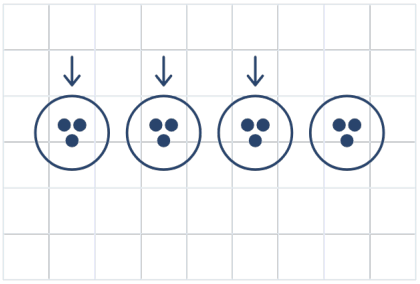
Find $\frac{3}{4}$ of 12 = ☐



We have shared the whole amount, 12, equally. Now, we tick 12 to show that we have used all of it.

Step 9

Find $\frac{3}{4}$ of 12 = ☐

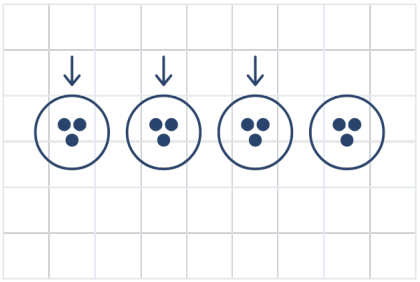


Remember: One arrow goes to each chosen circle. Use the amounts in the circles to find the answer.

The numerator, which is 3, tells us to choose 3 equal parts. Draw one arrow to each of 3 different circles. Count the 3 arrows. Tick the numerator, 3.

Step 10

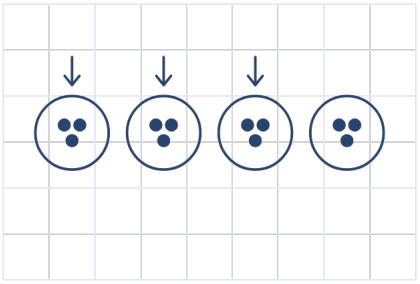
Find $\frac{3}{4}$ of 12 = ☐



Add the amounts in the circles with arrows. 3 + 3 + 3 = 9. So 3/4 of 12 is 9.

Step 11

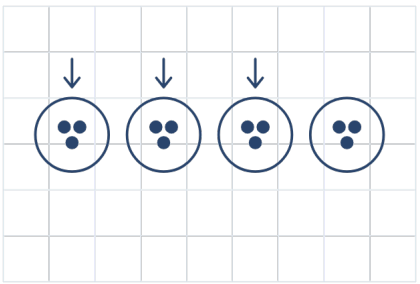
Find $\frac{3}{4}$ of 12 = ☐



Check the denominator. There are 4 equal groups. Check the whole amount. 4 groups of 3 make 12. Check the numerator. 3 circles have arrows. The chosen parts give 9.

Step 12

Find $\frac{3}{4}$ of 12 = 9



The fraction amount is 9. Copy 9 into the answer box. Make sure you copy the answer correctly.