



Maths

Multiplication and Division

Need a coherently planned sequence of lessons to complement this resource?

Lesson Breakdown

Below is our suggestion for the most coherent and progressive sequence to teach this area of Planit Maths steps on the White Rose Maths scheme of learning although we have not aimed to mirror the exact order in the scheme.

Groups (1): Equal and Unequal Groups

This fantastic lesson builds on children's prior experience of grouping, fair sharing, discrete and continuous quantities, to arrays and to repeated addition. (Please note this is a non-statutory aim)

NC Statement: Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. (Please note this is a non-statutory aim)

Lesson Aim: To identify equal and unequal groups.

Groups (2): Describing Equal Groups

This magical themed lesson coaches children through describing equal groups. They say how many equal groups there are and how many objects in each group. This lesson can be used to support children's understanding of multiplication and division. (Please note this is a non-statutory aim)

NC Statement: Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. (Please note this is a non-statutory aim)

Lesson Aim: To describe equal groups.

Introduction

These lessons introduce the children to multiplication and division facts leading to instant recall and use of inverse operations. Children begin with practical grouping before using skip counting, number lines and eventually learning number facts. Children write multiplication and division expressions and calculations using a range of stimulus resources to deepen understanding of these concepts. They explore and reason about commutativity, solve problems and use a variety of models and images to demonstrate their thinking.

SolveIt Lesson Pack: Reshaped Rectangles Using their knowledge of multiplication, can children break rectangles into different chunks to help them calculate mentally? Children break up rectangles in different ways to build up their knowledge of multiplicative reasoning. They reason about what they have noticed and apply this to multiplying large numbers.

Assessment Statements

by the end of this unit:

children working towards the expected level will be able to:

- sort objects into equal groups and recognise equal and unequal groups;
- count fluently in twos, fives and tens from zero and keep track of their count to multiply;
- use equipment and different models and images to demonstrate multiplication and division;
- use equipment and different models and images to solve simple multiplication and division problems;
- recognise odd and even numbers up to 20 and explain the difference between them;
- know some doubles and halves of numbers.

children working at the expected level will be able to:

- recall and use multiplication and division for two, five and ten times tables;
- recognise odd and even numbers up to 100 reasoning to explain how to identify larger or even numbers;
- write expressions and calculations using the multiplication (\times), division (\div) and equals ($=$);
- understand that multiplication is commutative that division is not;
- demonstrate that multiplication and division are inverse;
- recall doubles and halves of numbers up to 100;
- link doubling and halving to multiplying and dividing by two and use this to solve problems;

Multiplication and Division

Maths Year 21 Steps to Progression Overview

The aim of this overview is to support teachers using Planit Maths to show the most coherent and progressive sequence to teach each area of maths. We also want to fully support teachers who use the White Rose Maths scheme of learning to make full use of the resources available within Planit Maths. Wherever possible, lesson packs have been matched to each of the small steps on the White Rose Maths scheme of learning.

Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value					Number: Addition and Subtraction				Measurement: Money		Number: Multiplication and Division
Spring	Number: Multiplication and Division		Statistics and division		Geometry: Properties of Shape			Number: Fractions			Measurement: Length and Height	
Summer	Position and Direction			Problem Solving and Efficient Methods		Measurement: Time		Measurement: Mass, Capacity and Temperature				Investigations

See our [Multiplication and Division Steps to Progression](#) document.

Twinkl Planit is our award-winning scheme of work with over 4000 resources.



Multiplying by 2



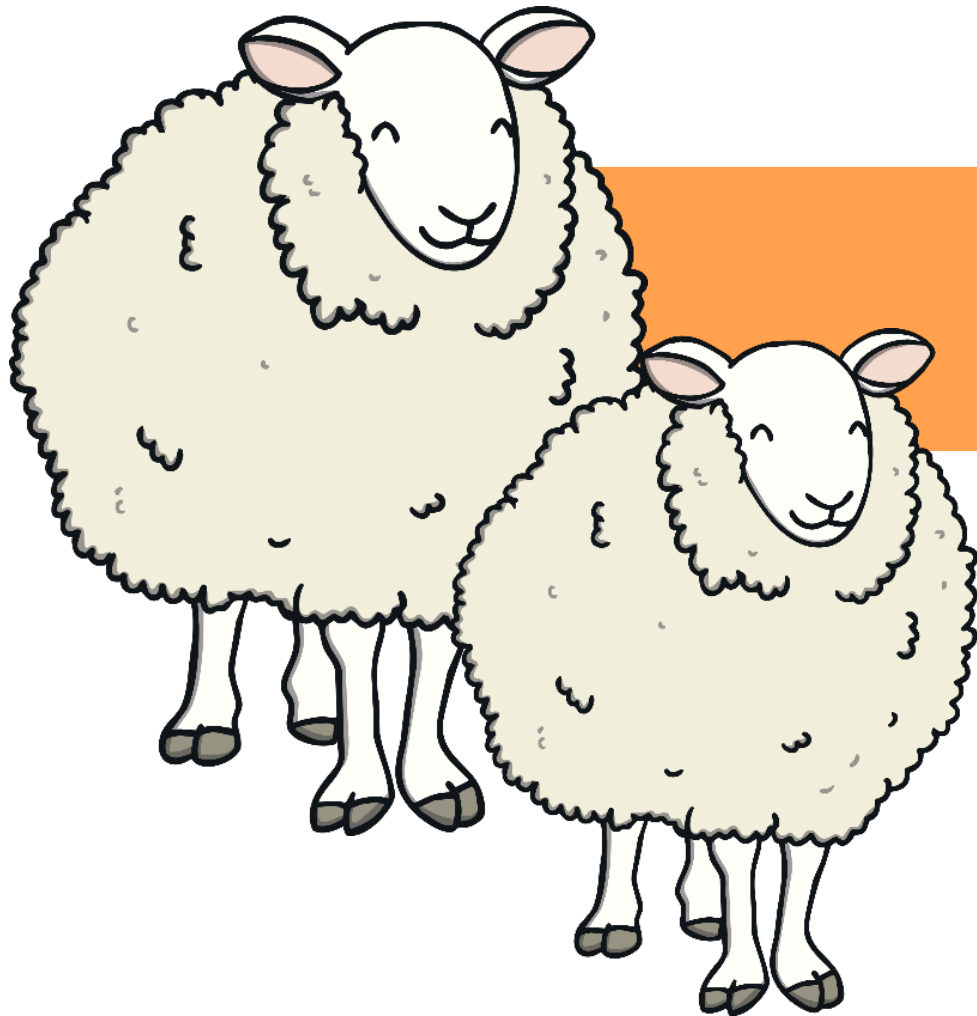
Aim

- I can recall and use multiplication facts for the 2 times table.

Success Criteria

- I can count in 2s.
- I can spot patterns within multiples of 2.
- I can recall multiplication facts up to 12×2 .

Remember It



Count the objects in 2s as they appear on the slide.

How many socks?



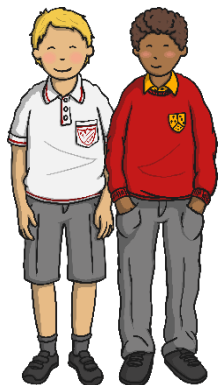
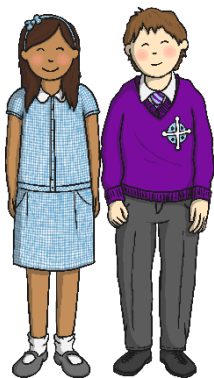
There are 6 socks.

How many eyes?



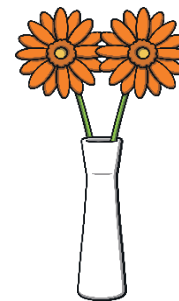
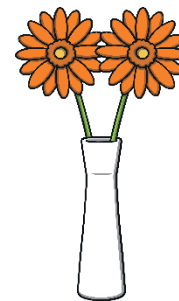
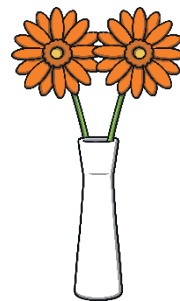
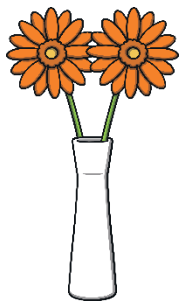
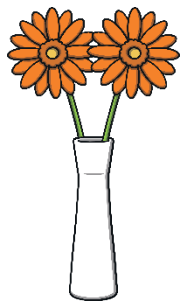
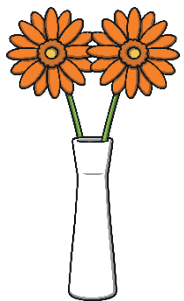
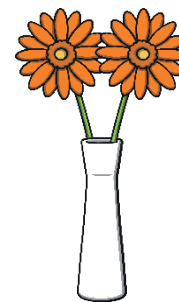
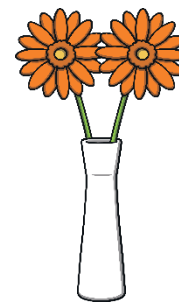
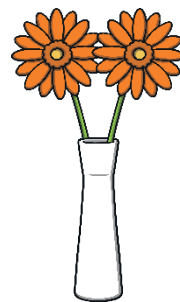
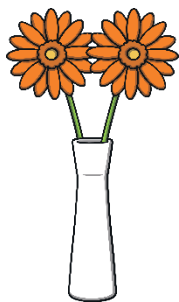
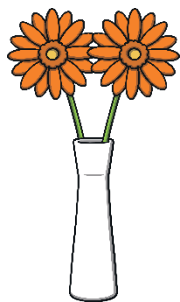
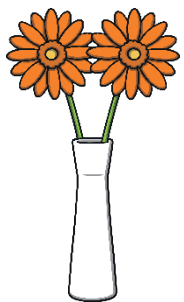
There are 12 eyes.

How many children?



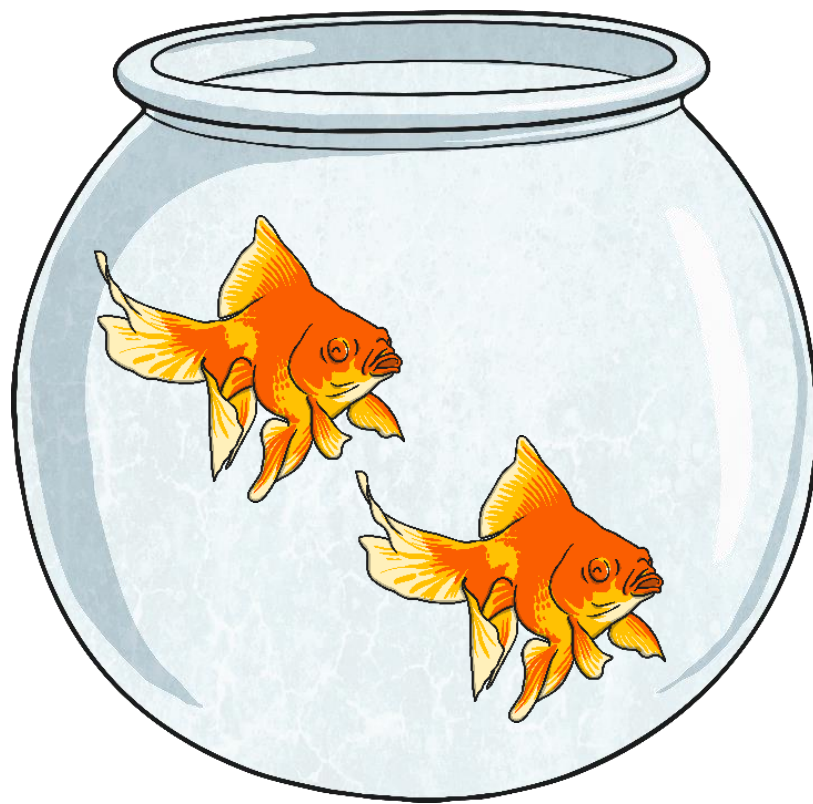
There are 16 children.

How many flowers?



There are 24 flowers.

How many fish?

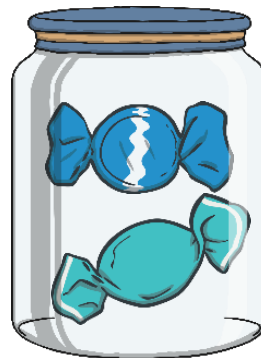
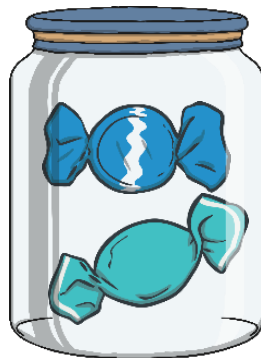
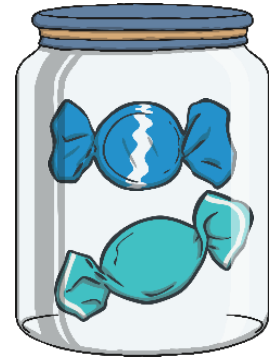
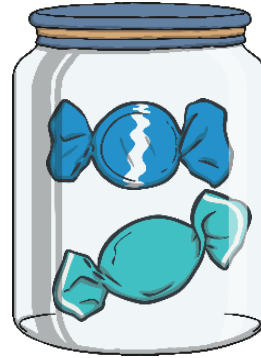
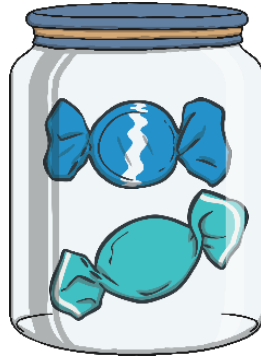
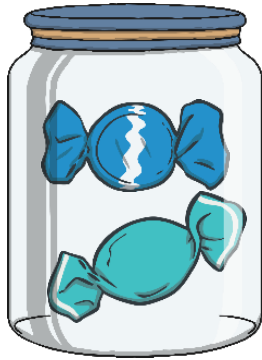
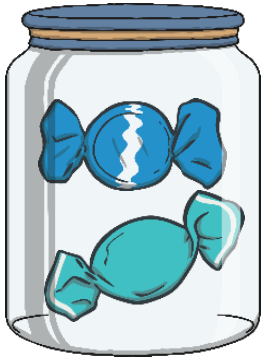


There are 2 fish.

How many hands?

There are 0 hands.

How many sweets?

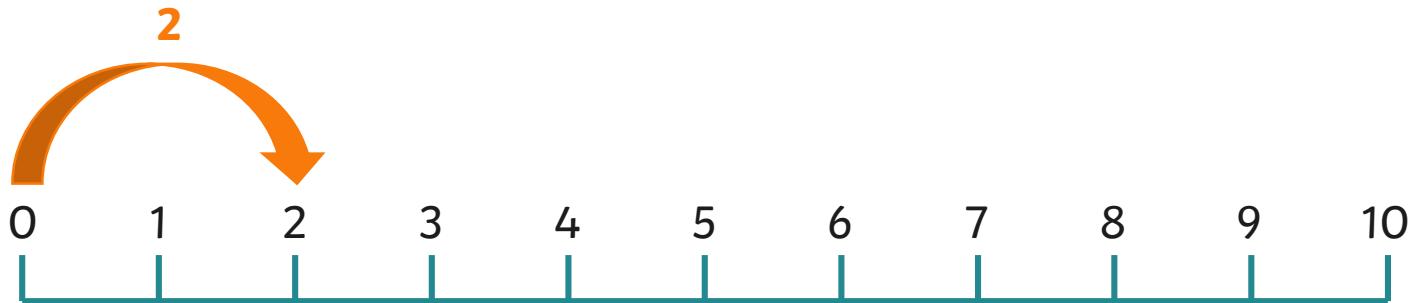
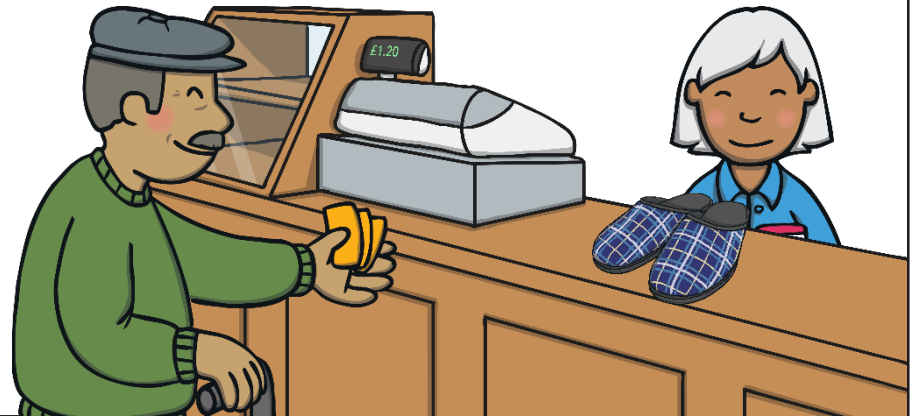


There are 14 sweets.

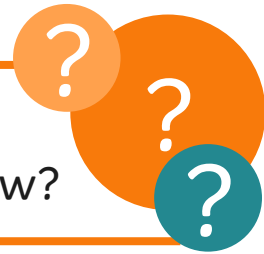
This customer has bought 1 pair of shoes.
How many shoes has he bought?



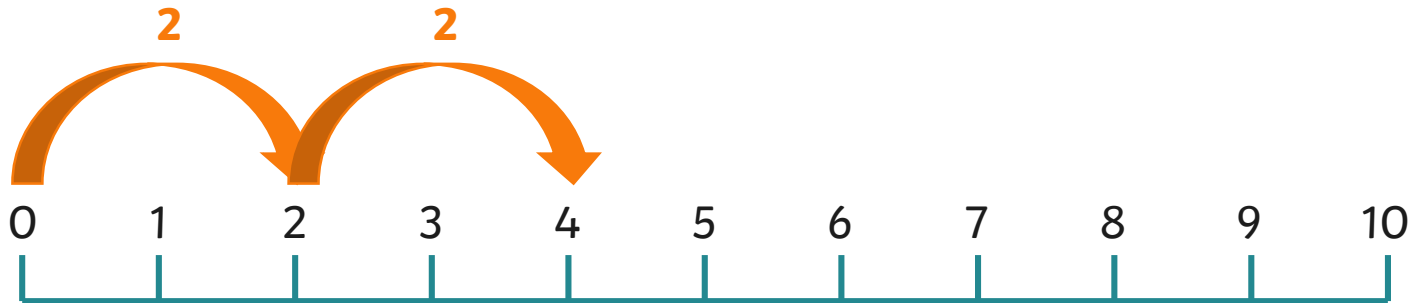
There is 1 pair of shoes.
There are 2 shoes altogether.
The product of 1 and 2 is 2.



This customer has bought 2 pairs of shoes.
How many shoes has she bought? How do you know?



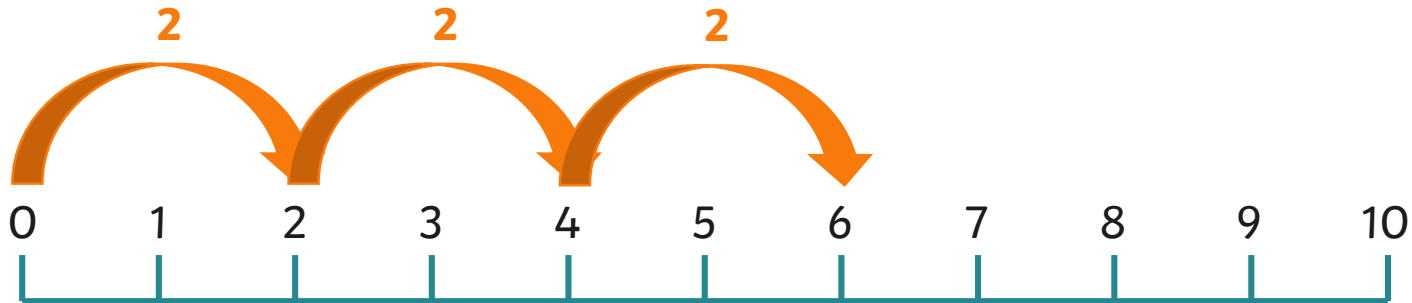
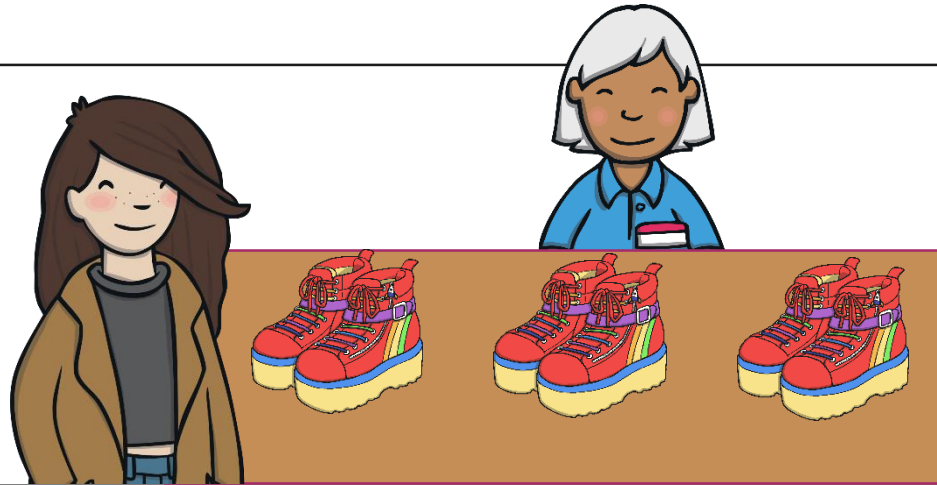
There are 2 pairs of shoes.
There are 4 shoes altogether.
The product of 2 and 2 is 4.



This customer has bought 3 pairs of shoes.
How many shoes has she bought?



**There are 3 pairs of shoes.
There are 6 shoes altogether.
The product of 3 and 2 is 6.**



This customer has bought 4 pairs of shoes.

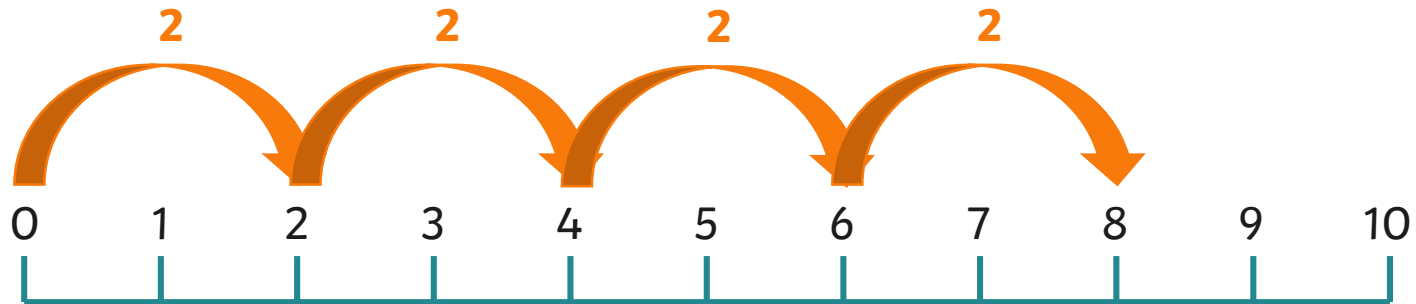


How many pairs of shoes has he bought?

4

How many shoes are there altogether?

8



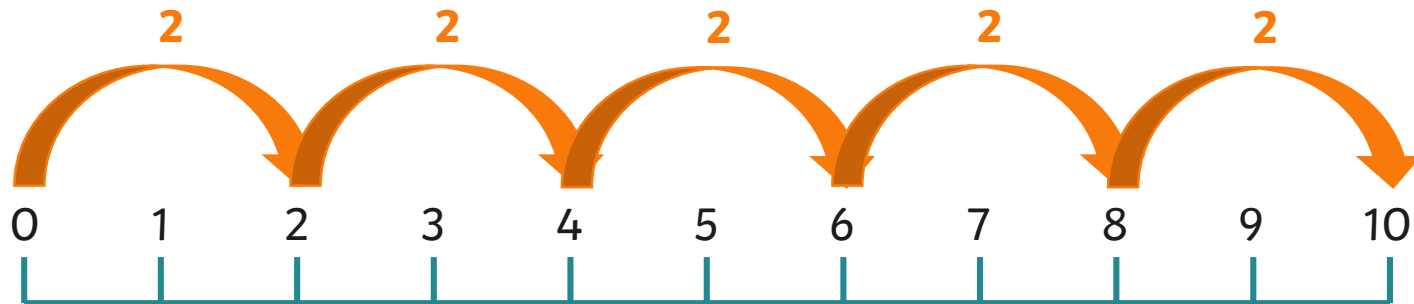
This customer has bought 5 pairs of shoes.
Write a calculation to represent this.



$5 \times 2 = 10$
Five groups of two shoes is ten.

or

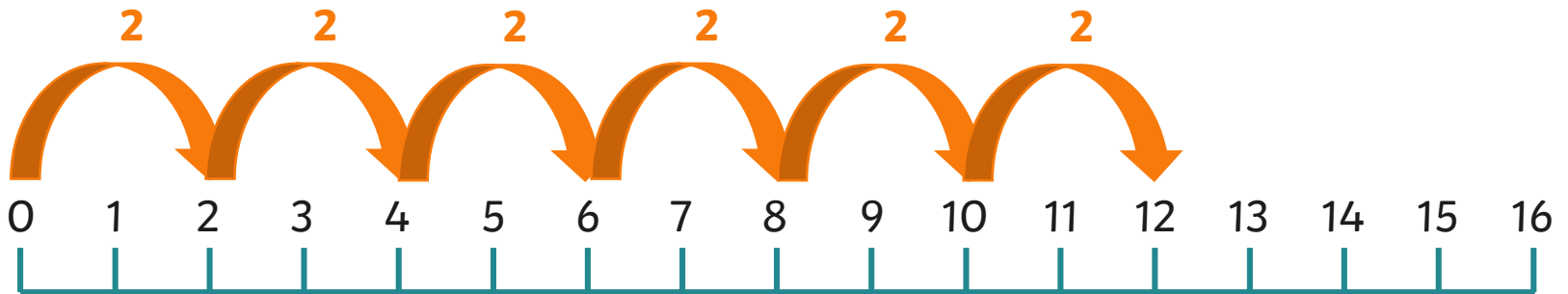
$2 \times 5 = 10$
Two shoes, five times equals ten.



This customer has bought 6 pairs of shoes.
How many shoes has she bought?



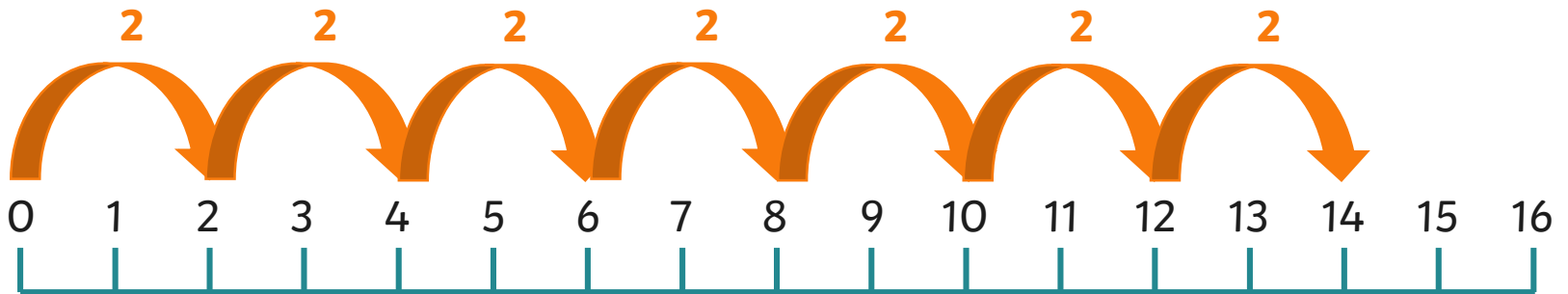
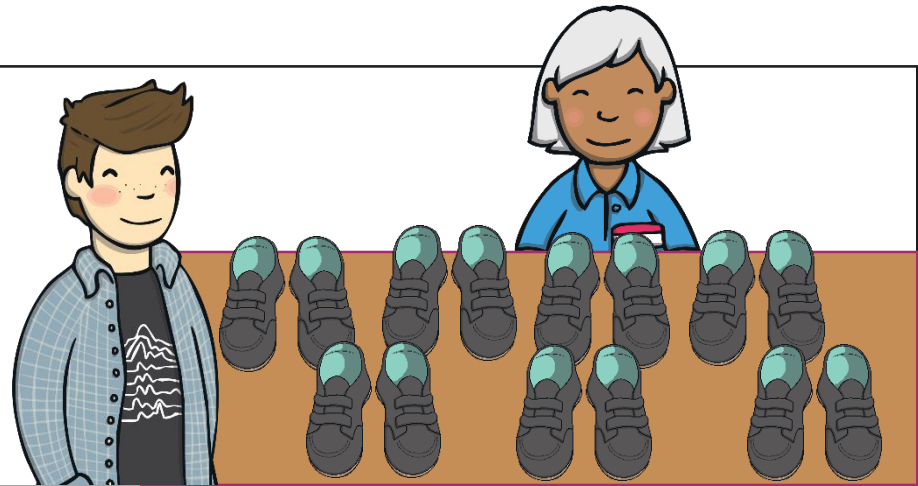
6 groups of 2 is 12.



This customer has bought 7 pairs of shoes.
How many shoes has he bought? How do you know?



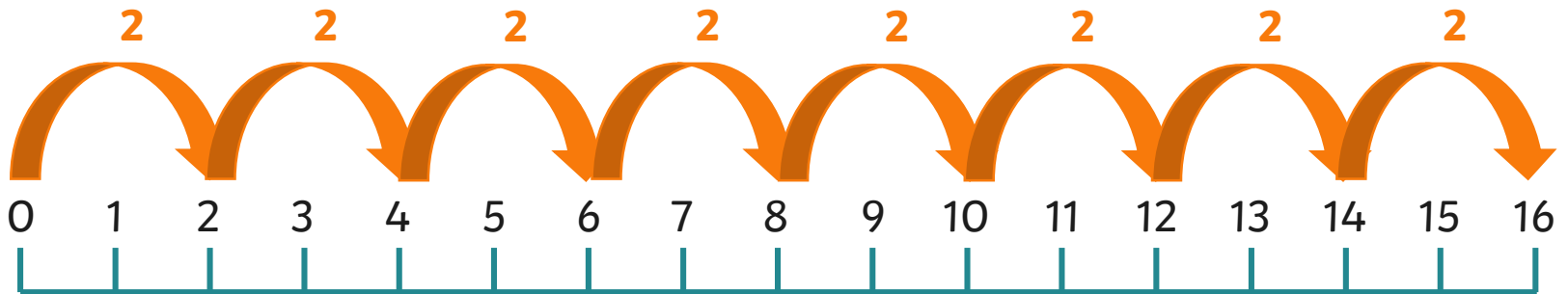
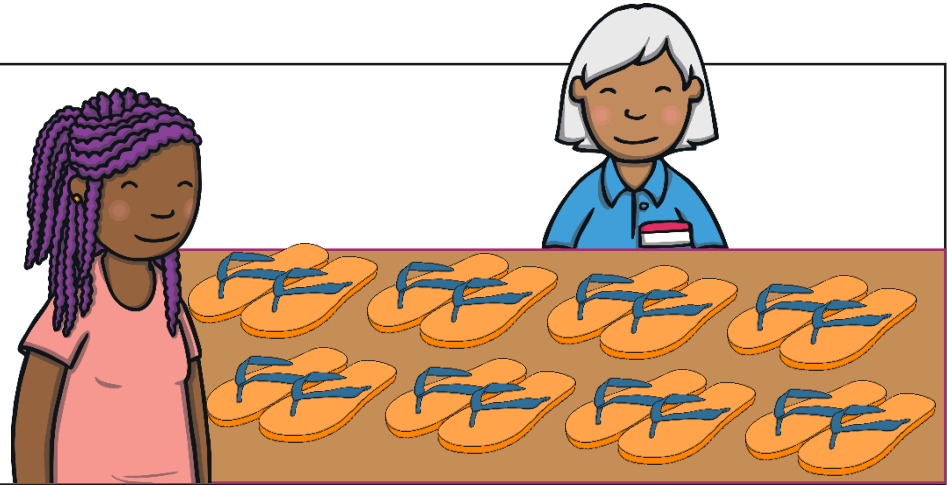
The product of
7 and 2 is 14.



This customer has bought 8 pairs of shoes.
How many shoes has she bought? Write a calculation for this.



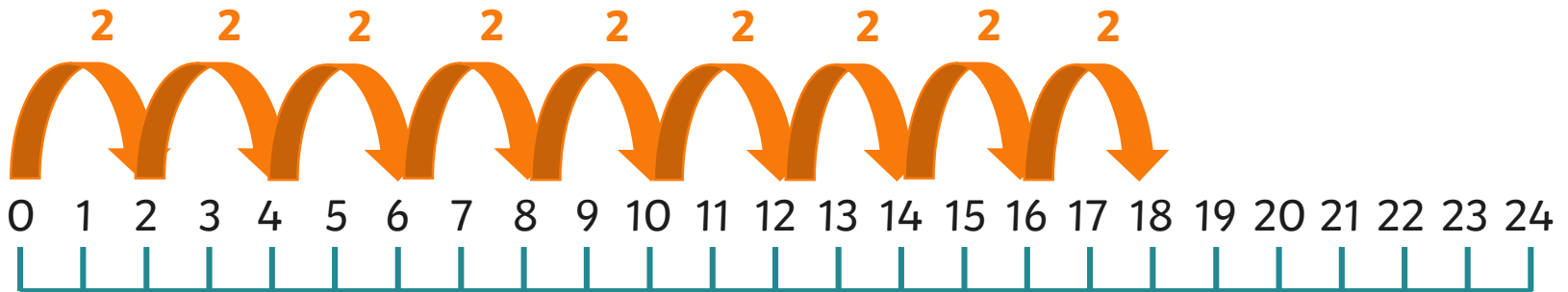
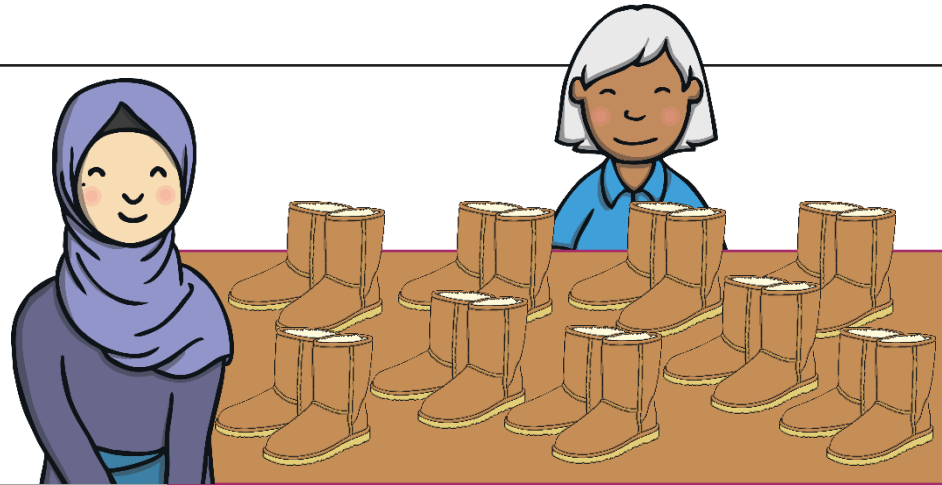
$$8 \times 2 = 16$$



This customer has bought 9 pairs of shoes.
How many shoes has she bought?



18



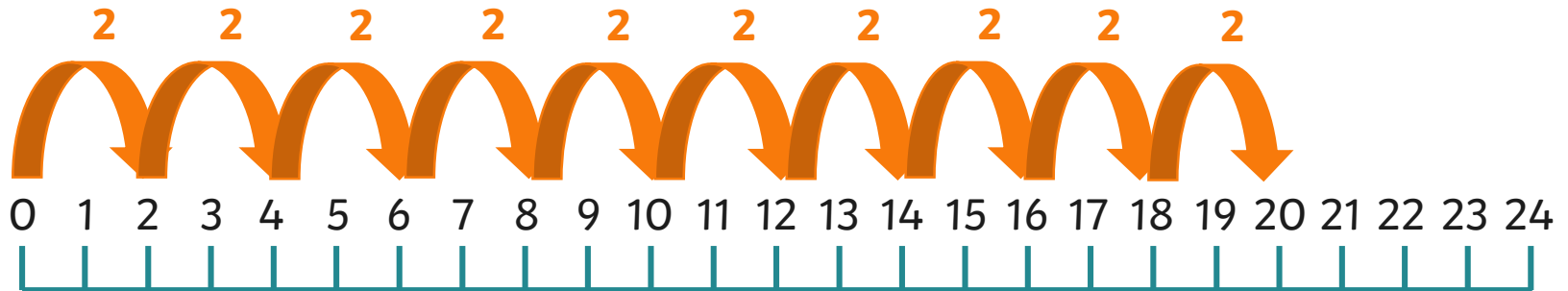
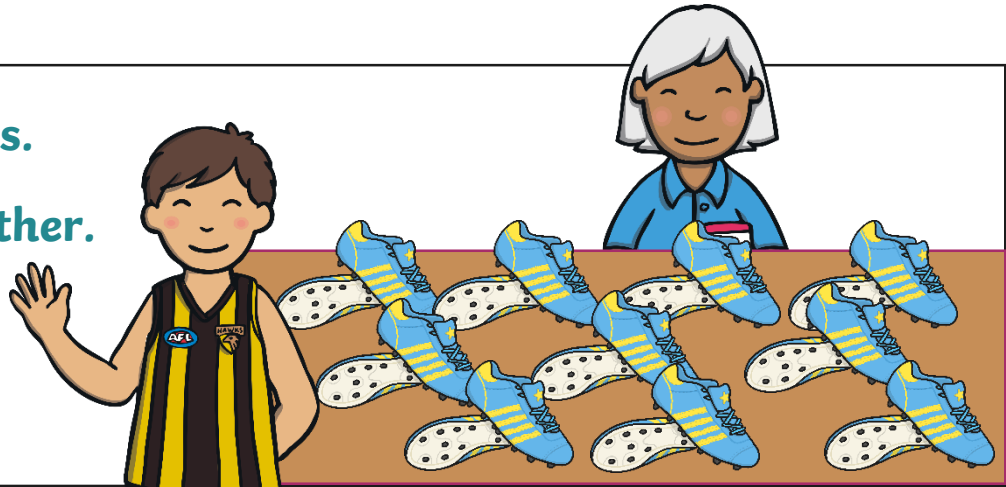
This customer has bought 10 pairs of shoes.
What do you know?



There are 10 pairs of shoes.

There are 20 shoes altogether.

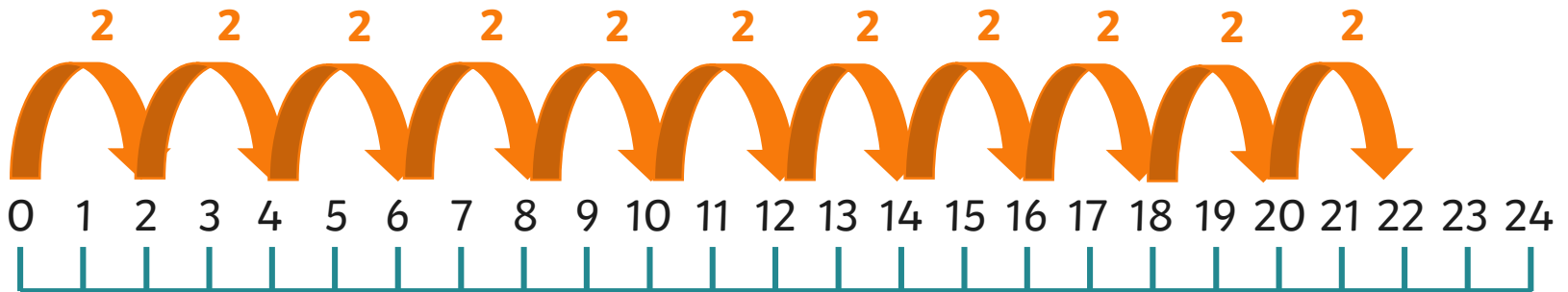
The product of 10
and 2 is 20.



This customer has bought 11 pairs of shoes.
How many shoes has he bought?



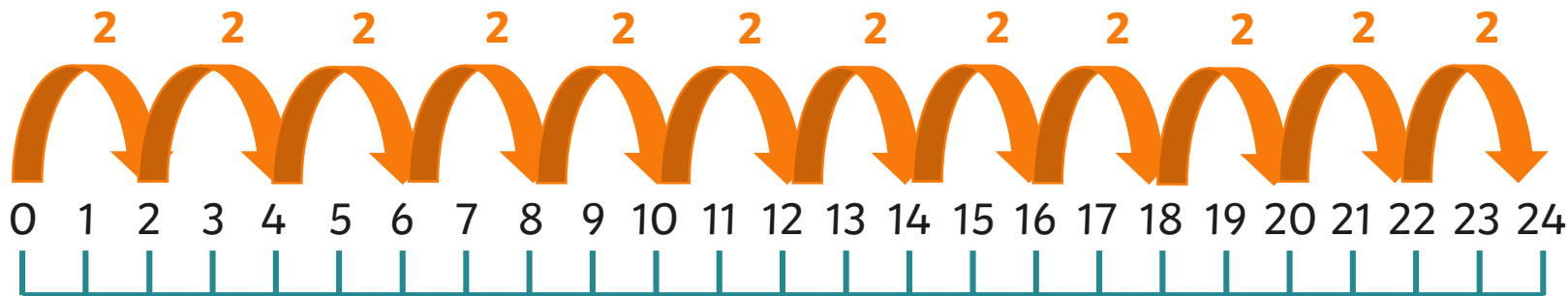
The product of
11 and 2 is 22.



This customer has bought 12 pairs of shoes.
How many shoes has she bought?



$$12 \times 2 = 24$$



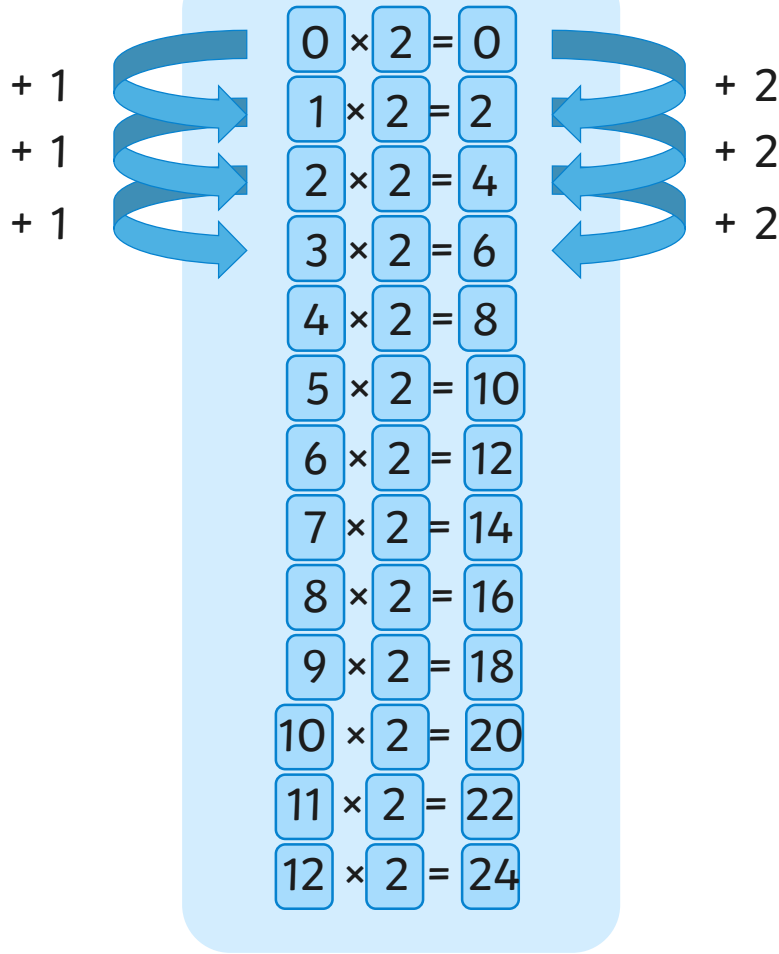
Shelby's Shoes

	Number of Pairs of Shoes	Number of Shoes
$0 \times 2 = 0$	0	0
$1 \times 2 = 2$	1	2
$2 \times 2 = 4$	2	4
$3 \times 2 = 6$	3	6
$4 \times 2 = 8$	4	8
$5 \times 2 = 10$	5	10
$6 \times 2 = 12$	6	12
$7 \times 2 = 14$	7	14
$8 \times 2 = 16$	8	16
$9 \times 2 = 18$	9	18
$10 \times 2 = 20$	10	20
$11 \times 2 = 22$	11	22
$12 \times 2 = 24$	12	24

If I have 3 pairs of shoes, how many shoes do I have?

If I have 12 pairs of shoes, how many shoes do I have?

What patterns can you spot?



The first factor increases by 1 each time.

The second factor in each calculation is 2.


The product increases by two each time.

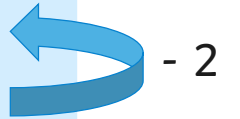
The products are all even.

Patterns

How can we use the patterns to find the missing numbers?

$$\begin{array}{l} 0 \times 2 = 0 \\ 1 \times 2 = 2 \\ 2 \times 2 = \boxed{4} \\ 3 \times 2 = 6 \\ 4 \times 2 = 8 \\ 5 \times 2 = 10 \\ 6 \times 2 = 12 \\ 7 \times 2 = 14 \\ 8 \times 2 = 16 \\ 9 \times 2 = 18 \\ 10 \times 2 = 20 \\ 11 \times 2 = \boxed{22} \\ 12 \times 2 = 24 \end{array}$$

 + 2

 - 2

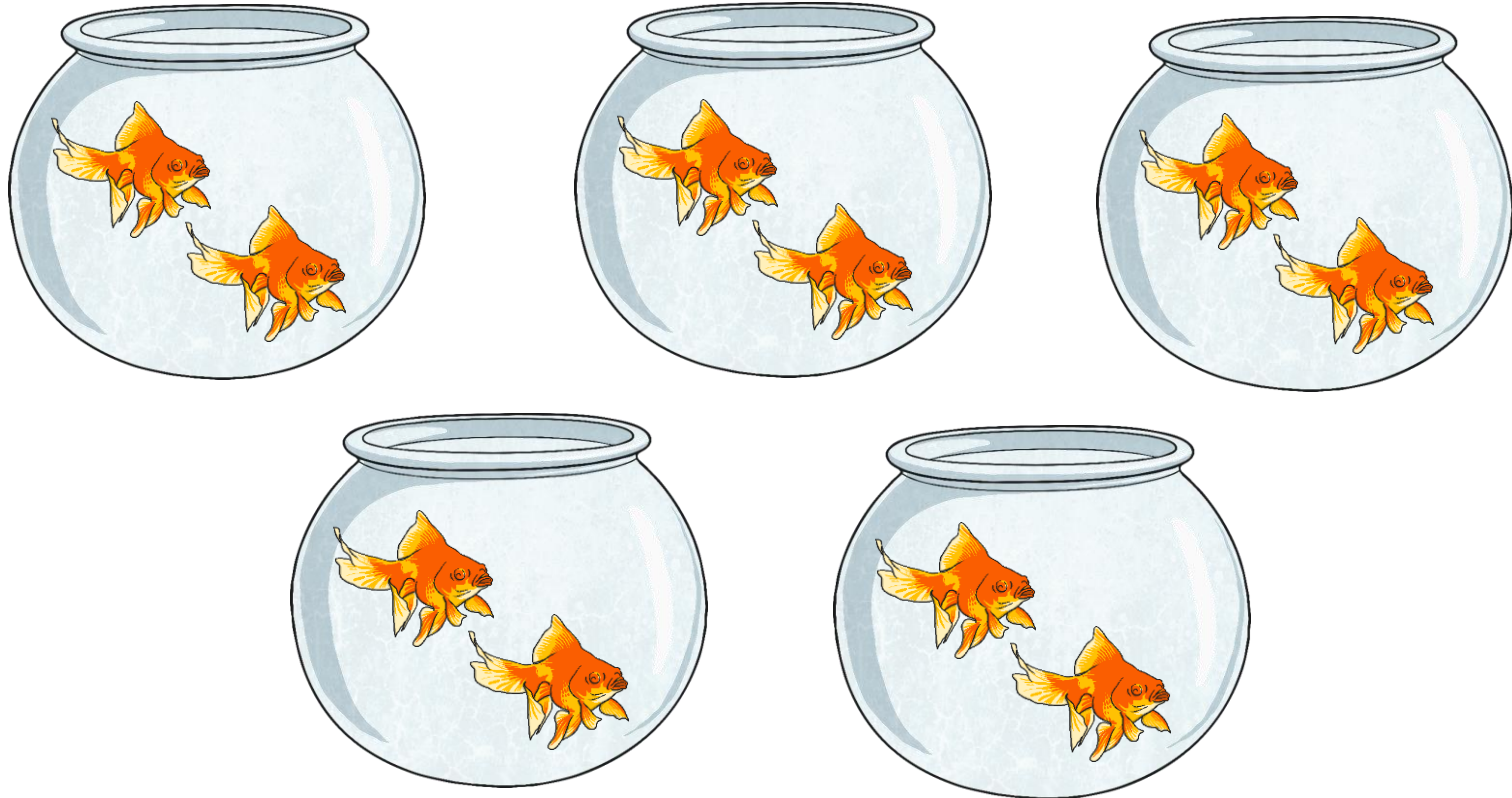
The product increases by two each time.

$$2 \times 2 = 1 \times 2 + 2$$

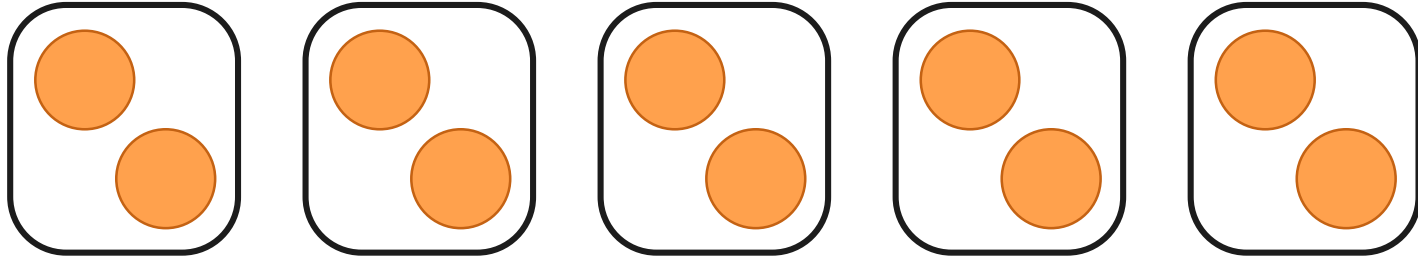
$$11 \times 2 = 12 \times 2 - 2$$

There are 5 fish tanks. Each fish tank has 2 fish.
How many fish are there altogether?

Represent this problem by drawing or using manipulatives.



There are 5 fish tanks. Each fish tank has 2 fish.
How many fish are there altogether?



How could we solve this problem?

We could count the fish one by one.

We could count the fish in twos.

We could use our multiplication chart we made earlier.

We may remember 5 times 2 is equal to 10.

Let's practise the two times tables together.



7 twos are 14.
 $7 \times 2 = 14$



8 twos are 16.
 $8 \times 2 = 16$



9 twos are 18.
 $9 \times 2 = 18$



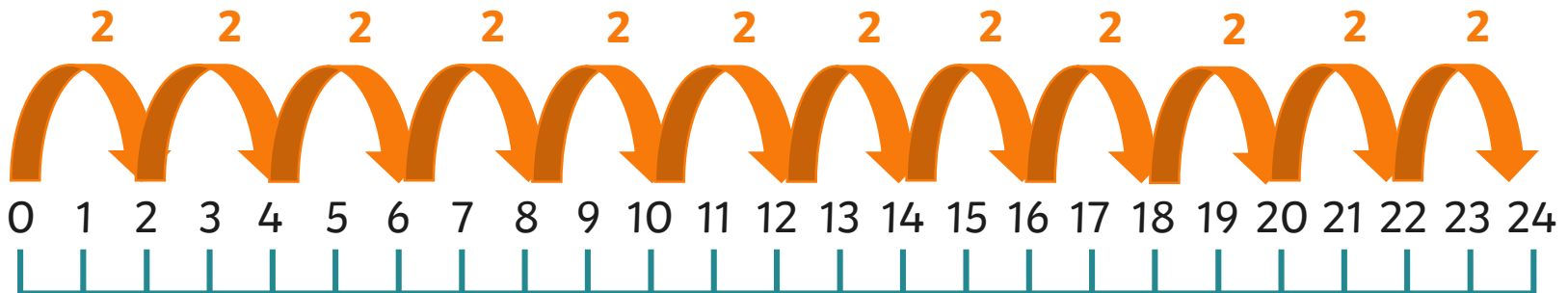
10 twos are 20.
 $10 \times 2 = 20$



15 twos are 30.
 $15 \times 2 = 30$



12 twos are 24.
 $12 \times 2 = 24$



Complete the calculation to show how many wheels there are altogether.



How can you check you are correct?

4

× 2 =

8

Fill in the missing numbers.
Is there any patterns you can use to help?

$$7 \times 2 = 14$$

$$6 \times 2 = \boxed{12}$$

$$5 \times 2 = \boxed{10}$$

$$4 \times \boxed{2} = 8$$

$$3 \times \boxed{2} = 6$$

$$\boxed{2} \times 2 = 4$$

$$\boxed{1} \times 2 = 2$$

$$4 \times 2 = 3 \times 2 + \boxed{2}$$

$$4 \times 2 - \boxed{2} = 3 \times 2$$

Problems

Use the greater than, less than and equals symbols to complete these problems. One has been done.

< > =

4×2

>

$1 \times 2 + 2$

4×2

=

$3 \times 2 + 2$

4×2

=

$5 \times 2 - 2$

4×2

>

$2 \times 2 + 2$

4×2

<

$5 \times 2 + 2$

Matching Cards



2



2

2

$$1 \times 2$$

$$2 \times 2$$

$$4 \times 2$$

6

$$3 \times 2$$

The product of 2
and 2 is 4.

The product of 3
and 2 is 6.

$$2 \times 2 - 2$$

$$1 \times 2 + 2$$


$$4 \times 2 - 2$$

$$3 \times 2 + 2$$


Diving into Mastery

Dive in by completing your own activity!




The 2 Times Table 

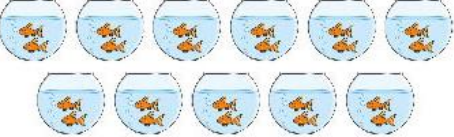
Count in twos to complete the sentences.


 $2 \times \underline{\quad} = \underline{\quad}$ and $\underline{\quad} \times 2 = \underline{\quad}$

There are socks in total.


 $2 \times \underline{\quad} = \underline{\quad}$ and $\underline{\quad} \times 2 = \underline{\quad}$

There are footballs in total.


 $2 \times \underline{\quad} = \underline{\quad}$ and $\underline{\quad} \times 2 = \underline{\quad}$

There are fish in total.

20

ber.

iet?

Aim



- I can recall and use multiplication facts for the 2 times table.

Success Criteria

- I can count in 2s.
- I can spot patterns within multiples of 2.
- I can recall multiplication facts up to 12×2 .

