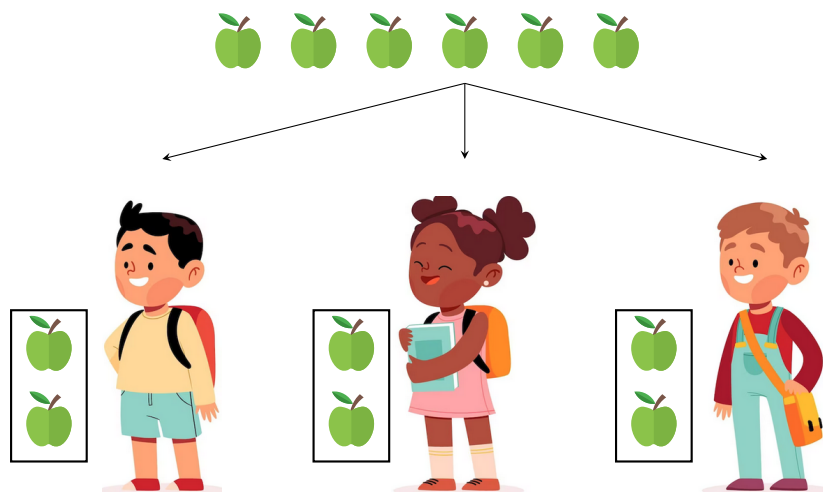# DIVISION

Have you ever shared something fairly with friends? Or have you ever put your toys away into equal groups? When you do this, you are using division! Division is a powerful tool for sharing and grouping equally.

A WHAT IS DIVISION?

Discover: Hugo, Aisha, and Louis have 6 apples. They want to share them equally. How can they do it so that it's fair?

Answer:

We can give one apple to each friend until all the apples are gone. Each friend gets 2 apples. This process of fair sharing is what we call **division**.

Division is the process of splitting a total amount into equal groups. We use the **division sign ($\div$)** to write a division sentence.

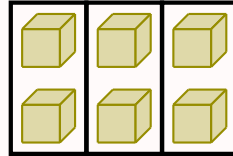We can show "**six** divided by **three** equals **two**" in many ways:
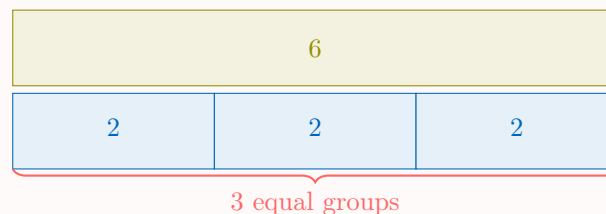
- **With Numbers**:

$$6 \div 3 = 2$$

- **In Groups**

6 shared into 3 equal groups is 2 in each group

- **With Cubes**:

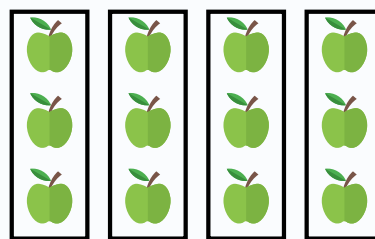$6 \div 3 = 2$: number of cubes in each group

- **With a Part-Whole Model**:
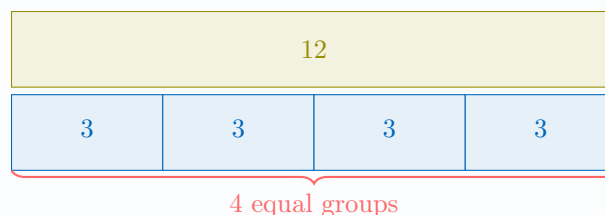

3 equal groups

B   TWO KINDS OF DIVISION QUESTIONS

Sometimes you know the total and the number of groups. Division helps you find the number of items in each group.

$$\text{Total} \div \text{Number of groups} = \text{Number in each group}$$

For example, we have 12 apples to share equally among 4 friends.

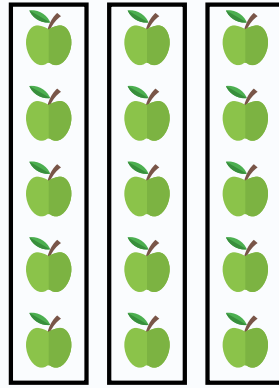Each friend gets $12 \div 4 = 3$ apples.

4 equal groups

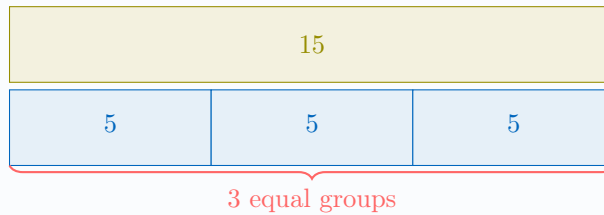Other times, you know the total and the number of items for each group. Division helps you find the number of groups you can make.

$$\text{Total} \div \text{Number in each group} = \text{Number of groups}$$

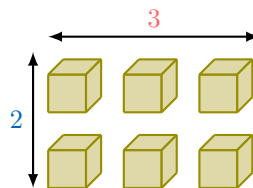For example, we have 15 apples and we put them into boxes of 5.

We can make $15 \div 5 = 3$ boxes.

15		
5	5	5

3 equal groups

C THE MULTIPLICATION AND DIVISION CONNECTION

Discover: This array of cubes shows how multiplication and division are connected.

- **Multiplication** builds the total:
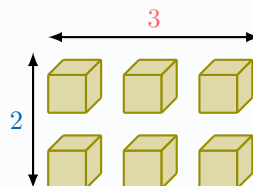 3 columns of 2 cubes each make 6 cubes in total.

$$3 \times 2 = 6$$

- **Division** finds the group size:
  6 cubes shared among 3 columns give 2 cubes per column.

$$6 \div 3 = 2$$

Proposition **The Multiplication and Division Connection**

Multiplication and division are **inverse operations**. This means they are partners that "undo" each other.

The fact family for 3, 2, and 6 is:

$$3 \times 2 = 6 \qquad 6 \div 3 = 2$$
$$2 \times 3 = 6 \qquad 6 \div 2 = 3$$