

# DIVISION

Division is an essential concept in mathematics. It's a way to split a number into equal parts.

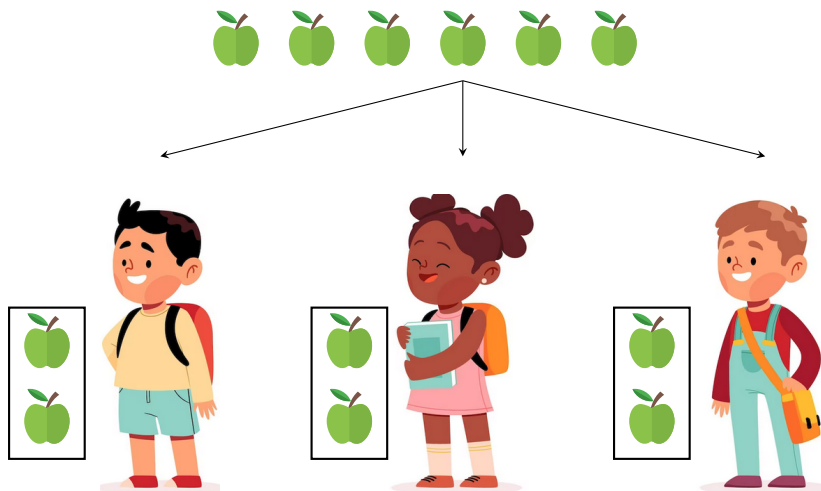
## A DEFINITIONS

**Discover:** Kevin, Aisha, and Louis have 6 apples. They want to share these apples equally.



How many apples will each friend get?

*Answer:* To divide 6 apples among 3 friends:



Each friend receives 2 apples.

When we say 6 apples divided among 3 friends, we can write it as  $6 \div 3 = 2$ . The symbol  $\div$  means "divided by."

### Definition Division

**Division** is the process of splitting a number into equal parts or groups. The  $\div$  symbol indicates division. Division can be represented in several ways:

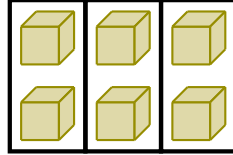
- Numbers:

$$6 \div 3 = 2$$

- Words:

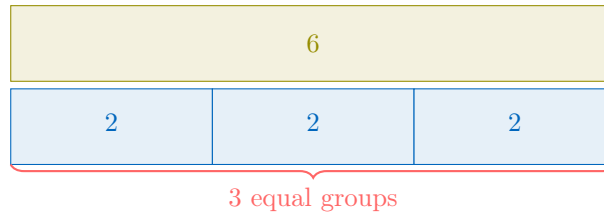
six divided by three equals two

- Items:



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

- Part-whole model:



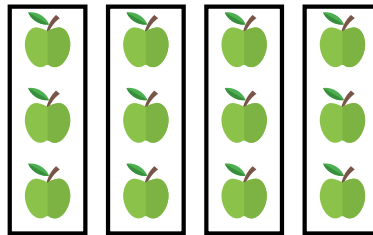
## B REPRESENTATIONS OF DIVISION

### Method Number of items in each group

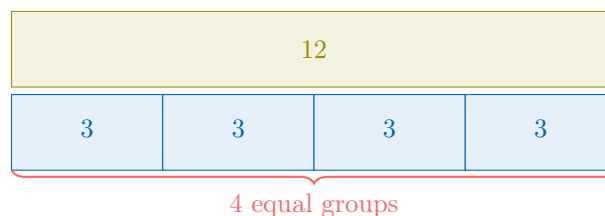
When you know the total and the number of groups, division finds the number of items in each group.

$$\text{total} \div \text{number of groups} = \text{number of items in each group}$$

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



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

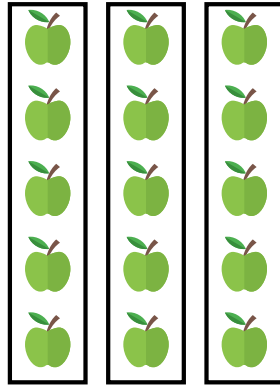


### Method Number of groups

If you know the total and the number of items in each group, division finds the number of groups.

$$\text{total} \div \text{number of items in each group} = \text{number of groups}$$

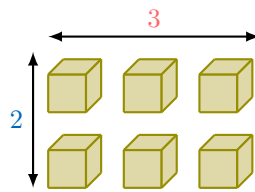
For example, we have 15 apples and pack them into boxes, each holding 5 apples.



Thus,  $15 \div 5 = 3$  is the number of boxes.

## C INVERSE OPERATIONS: MULTIPLICATION AND DIVISION

Discover:



1. You have 3 columns of 2 cubes each. How many cubes are there in total? (This involves multiplication.)
2. You have 6 cubes to share equally into 3 columns. How many cubes will each column have? (This involves division.)

Answer:

1. Total cubes:  $3 \times 2 = 6$
2. Each column has  $6 \div 3 = 2$  cubes.

### Proposition Multiplication and Division are Inverse Operations

Multiplication and division undo each other:

$$3 \times 2 = 6$$

$$6 \div 3 = 2$$

$$6 \div 2 = 3$$

