

Helping Your Child with Division

Number · Prep to Year 6 · Australian Curriculum Mathematics

Division is the operation of splitting a number into equal groups. Your child learns two ways to think about it:

sharing — $12 \div 4$ means '12 shared equally into 4 groups'

grouping — $12 \div 4$ means 'how many groups of 4 are in 12?'

Both give the same answer (3), but they help your child understand when to use division in real life. Division is closely linked to multiplication — knowing your **times tables** is the key to becoming confident with division.

Year level	What your child learns	What this looks like
Prep	Sharing equally Your child shares objects equally into groups. equal sharing — every group gets the same amount Example: 6 bananas shared between 2 people → 3 each They use objects (counters, blocks) and count how many in each group.	Share 10 blocks between 2 people. "How many does each person get?" Share 6 grapes between 3 people. "Is it fair? How do you know?"
Year 1	Grouping and sharing with materials Your child groups objects and connects sharing to multiplication: grouping — put 12 objects into groups of 4 → how many groups? sharing — share 12 objects into 4 groups → how many each? They use arrays and skip counting: 2, 4, 6, 8, 10, 12 (skip count by 2s → $12 \div 2 = 6$ groups) They record using pictures and diagrams, not formal $\div$ symbol yet.	Use counters. Put them into groups of 2. "How many groups of 2 in 10?" Skip count by 5: 5, 10, 15, 20. "How many 5s in 20?"
Year 2	Arrays and repeated subtraction Your child uses arrays (rows and columns of dots) to show division: $12 \div 3 = ?$ → arrange 12 dots in 3 equal rows → 4 in each row They use repeated subtraction : $12 - 3 - 3 - 3 - 3 = 0$ → did it 4 times → $12 \div 3 = 4$ They also learn that multiplication and division are related : $3 \times 4 = 12$, so $12 \div 3 = 4$ and $12 \div 4 = 3$	Draw a 3×4 array. "How many altogether? So $12 \div 3 = ?$" "If $5 \times 3 = 15$, what is $15 \div 5$?" Practice: 'If $4 \times 6 = 24$, what is $24 \div 6$?'
Year 3	Dividing 2-digit numbers Your child divides one- and two-digit numbers by a one-digit number. $48 \div 4 = ?$ Think: $4 \times ? = 48$. Recall: $4 \times 10 = 40$, $4 \times 2 = 8 \rightarrow 4 \times 12 = 48$ So $48 \div 4 = 12$ They also explore inverse operations : division undoes multiplication. fact family — 4 facts from 2 numbers: $3 \times 8 = 24$ $8 \times 3 = 24$ $24 \div 3 = 8$ $24 \div 8 = 3$	"What is $36 \div 3$?" Think: $3 \times ? = 36$ Hint: $3 \times 10 = 30$, $3 \times 2 = 6$ Write the full fact family for $5 \times 7 = 35$. "If $6 \times 8 = 48$, what is $48 \div 6$?"
Year 4	Division without remainder — efficient strategies Your child divides larger numbers, still without remainders. partitioning for division : split the number into easy parts: $96 \div 4$: Split 96 into 80 + 16 $80 \div 4 = 20$ $16 \div 4 = 4$ $20 + 4 = 24$ They also divide by 10, 100, 1000: $360 \div 10 = 36$ (just remove a zero) $3600 \div 100 = 36$	"What is $84 \div 4$?" Split: $80 \div 4 = 20$, $4 \div 4 = 1 \rightarrow 21$ "Divide 450 by 10. By 100." "Share \$96 equally between 4 people. How much each?"

Year 5	Remainders, decimals and fractions Your child divides and deals with remainders — the amount left over when something doesn't divide evenly. $17 \div 5 = 3$ remainder 2 (3 groups of 5, with 2 left over) The remainder can be expressed as: a remainder: $17 \div 5 = 3 \text{ r } 2$ a fraction: $17 \div 5 = 3\frac{2}{5}$ a decimal: $17 \div 5 = 3.4$ Context matters: 17 students $\div$ 5 buses $\rightarrow$ need 4 buses (round up, can't have 0.4 of a bus!)	'17 sandwiches shared between 5 people.' 'How many each? What happens to the leftover?' 'Express $17 \div 5$ as a fraction and as a decimal.' 'Does the context change the answer?'
Year 6	Dividing decimals and solving complex problems Your child divides decimals and larger numbers: $4.8 \div 4 = 1.2$ (same as $48 \div 4 = 12$, then divide by 10) $48 \div 0.4$: think of it as $480 \div 4 = 120$ (multiply both numbers by 10 to remove the decimal) They also find fractions of quantities: $\frac{1}{4}$ of 60 = $60 \div 4 = 15$ $\frac{3}{4}$ of 60 = $3 \times 15 = 45$	'What is $6.4 \div 4$?' Think: $64 \div 4 = 16 \rightarrow 1.6$ 'What is $\frac{1}{4}$ of 80? What is $\frac{3}{4}$ of 80?' \$24.60 shared equally between 3 people. 'How much each?'

★ Two ways to think about division — both mean $12 \div 3$

SHARING ($\div$ into equal groups)	GROUPING (how many groups of 3?)
Question: 12 apples shared into 3 equal groups. How many apples in each group? • • • • • • • • • • • • • • • Group 1 Group 2 Group 3 $12 \div 3 = 4$ (4 apples in each group) You know the NUMBER OF GROUPS (3). You find out HOW MANY IN EACH GROUP (4).	Question: 12 apples. Put 3 in each bag. How many bags can you fill? • • • • • • • • • • • • Bag 1 Bag 2 Bag 3 Bag 4 $12 \div 3 = 4$ (you can fill 4 bags) You know HOW MANY IN EACH GROUP (3). You find out THE NUMBER OF GROUPS (4).

Fact family: $3 \times 4 = 12$ $4 \times 3 = 12$ $12 \div 3 = 4$ $12 \div 4 = 3$ — four facts, all from the same three numbers!

Helping at Home — Division

Worked examples and questions to ask · Prep to Year 6

How it works — worked examples

Year 2 — Division with an array

$$24 \div 6 = ?$$

Make an array with 24 dots:



6 rows of 4

$$24 \div 6 = 4$$

Fact family:

$$6 \times 4 = 24$$

$$4 \times 6 = 24$$

$$24 \div 6 = 4$$

$$24 \div 4 = 6$$

Year 3 — Partitioning to divide

$$84 \div 4 = ?$$

Step 1 Split 84 into easy parts: $80 + 4$

Step 2 $80 \div 4 = 20$ (think: $4 \times 20 = 80$)

Step 3 $4 \div 4 = 1$

Answer $20 + 1 = 21$ $84 \div 4 = 21 \checkmark$

Year 5 — What to do with remainders

17 ÷ 5 — the same calculation, three different contexts

	Context	Answer
A	17 biscuits shared between 5 friends. How many each?	3 biscuits each, with 2 left over (3 r 2)
B	17 students need to be put in groups of 5. How many groups?	Need 4 groups (3 full groups + 1 group of 2 — round UP)
C	17 km run equally over 5 days. How far each day?	3.4 km each day (write as decimal)

Key insight: The calculation is always $17 \div 5 = 3.4$, but the context tells you how to express the answer.

Questions to ask your child

You do not need to know the answer. Ask and let your child explain!

P Prep

- Share these 8 blocks between 2 people — how many each?
- Is it fair? How do you know?
- What if we shared them between 4 people?

1 Year 1

- Put these 12 counters into groups of 3. How many groups?
- Count by 2s to find how many 2s are in 10.
- What sharing story could you tell about $8 \div 2$?

2 Year 2

- Draw an array to show $15 \div 3$.
- If $4 \times 5 = 20$, what is $20 \div 4$? And $20 \div 5$?
- Write the fact family for 3, 7 and 21.

3 Year 3

- What is $48 \div 4$? Think: $4 \times ? = 48$.
- Use partitioning: split 72 into 60 + 12, then $\div 6$.
- Write all four facts in the family for $6 \times 9 = 54$.

4 Year 4

- Divide 96 by 4 using the split strategy.
- How many tens are in 360? So $360 \div 10 = ?$
- \$72 divided equally among 4 family members — how much each?

5 Year 5

- What is $23 \div 5$? Express the remainder as a fraction and a decimal.
- 23 students split into groups of 5 for an activity — how many groups? Any left over?
- Does the context change how you write the answer?

6 Year 6

- What is $7.2 \div 6$? (Think: $72 \div 6 = 12$, then $\div 10$)
- Find $\frac{3}{4}$ of 120 by dividing by 4 first, then multiplying by 3.
- \$34.80 shared between 4 friends — how much each?

Things to try at home

Any age: Share food equally — fruit, biscuits, grapes. 'Is it fair? How many each? Is there a remainder?'	Year 1–2: Use buttons or coins. Put them into equal groups. 'How many groups of 3 can you make from 15?'
Year 2–3: Practice fact families. Say ' $3 \times 8 = 24$ ' and ask your child to give the other three facts immediately.	Year 3–4: 'How many weeks in 63 days?' ($\div 7$). 'How many \$5 notes make \$85?' Real problems make division real.
Year 5: Cook a recipe: the recipe serves 6 but you only want to serve 4. Divide each ingredient by 6, multiply by 4.	Year 6: Read a shopping receipt. Find the cost per item when buying in bulk — that's division in real life!

Key words to learn together

division: splitting into equal groups or finding how many groups of a number fit into another	sharing: splitting a total equally among a set number of groups
grouping: finding how many equal groups of a given size fit into a total	array: an arrangement of objects in equal rows and columns — great for showing multiplication and division
equal groups: groups that all have the same number of items	repeated subtraction: subtracting the same number over and over until you reach 0 — a way to show division
inverse operations: division and multiplication undo each other: $3 \times 4 = 12$, so $12 \div 3 = 4$	fact family: four related number facts using the same three numbers: $3 \times 4 = 12$, $4 \times 3 = 12$, $12 \div 3 = 4$, $12 \div 4 = 3$
remainder: the amount left over when a number cannot be divided exactly	partitioning: splitting a number into parts to make division easier: $84 = 80 + 4$
quotient: the result of a division: in $12 \div 3 = 4$, the quotient is 4	divisible: a number is divisible by another if there is no remainder: 12 is divisible by 3