MATHS FIELD GUIDE · GRADE 1

Make and break small numbers

OPENING PROBLEM

What is the whole?

A 

B 

02 One whole, several splits
03 Rules and worked cases
04 Two pockets
05 Balance the two sides
06 Check your reasoning

ILLUSTRATED PROBLEM SHEET

One whole, several splits

One group can be split in different ways. Rejoining all the parts restores the whole.

1

A ○○○○○

B ○

What is the whole?

Start at five and count one more. Six.

2

A ○○○○

B ○○

What changed from five and one?

One moved to the second row. There are still six.

3

A ○○○

B ○○○

Can both parts match?

Yes. Three and three make six.

4

A ○○○○○○

B

Does an empty part change the total?

Six and zero still make six.

Seven split as 5 and 2
rejoin to check.

Seven split as 4 and 3
same whole, different parts.

CHAPTER PROBLEM

A whole has five counters. One part has three. What is the other part?

Two. Three and two make five.

MATHS REFERENCE · GRADE 1

Make and break small numbers

A whole is the complete amount.

Parts are amounts inside that whole. Put the parts together to remake the whole.

Four cases to recognise

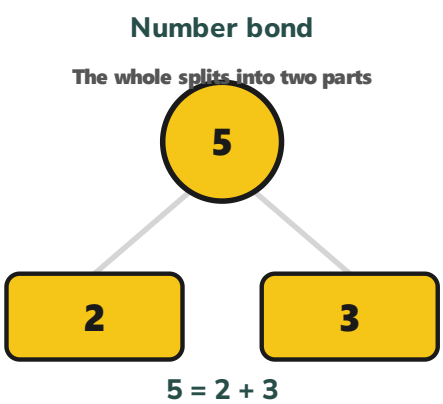
Situation	What to do and why
Six shells, two under a cup	Four are outside because 2 + 4 = 6.
All six in one hand	The other hand holds zero: 6 + 0 = 6.
Move one from a group of four to a group of two	The parts become three and three. The whole stays six.
A child lists 1 + 5 and 5 + 1	The parts exchange positions. Both make six.

Read the model

Split a whole

Start with five counters. Put two on one side and three on the other.

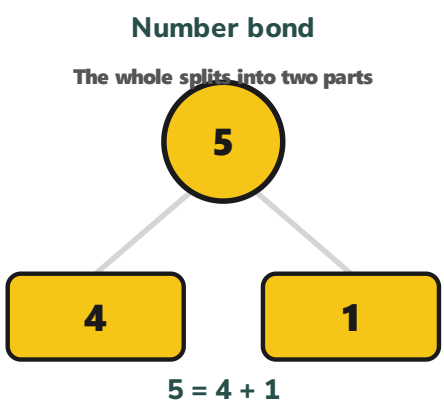
Both parts still belong to the whole five.



Make a different split

Now put four counters on one side and one on the other.

The parts changed. The whole is still five.



whole The complete amount.
part Some of a whole.
split Separate a whole into parts.

A ○○○○○○
B ○○

Start at six. Where do two more land?

Seven, eight. The sum is eight.

WORKED INVESTIGATION

Two pockets

Put five shells into two pockets. Three go in the left pocket. The two still in your hand must go in the right.

Look at this part	What it tells you
Left 4	right 1
Left 3	right 2
Left 0	right 5

Work it through

Move one shell from the pocket with four to the pocket with one. The parts become three and two. Put them together to check that there are still five.

Catch the mistake

One pocket can be empty. Zero and five is a way to make five because the empty pocket adds nothing.

Compare the cases

One part can be empty

Put all five counters on one side. Leave the other side empty.

Five and zero still make five.

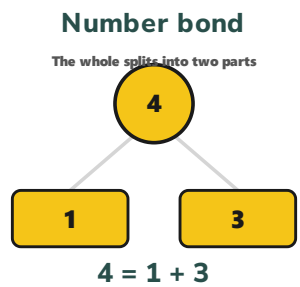
A ●●●●●

B

Find a hidden part

A whole has four counters. You can see one. Three are hidden.

The visible part and hidden part must make four.



Change one condition

Use six shells instead. If the first pocket still has three, the second now needs three. The total changed by one.

Parts must fit the whole

Two counters and two counters make four, not five.

Check by putting all the counters together and counting.

Build your own splits

Use six large counters. Make two parts.

Find a different split. Keep all six counters each time.

A ○○○○

B ●●●●

Which double do you see?

Four and four give eight without counting each dot again.

ILLUSTRATED PROBLEM SHEET

Balance the two sides

The equals sign says the two sides have the same value.

1



Can either side be read first?

Yes. Each row has two.

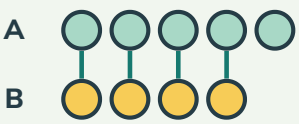
2

3 + 2
↓
5
↓
4 + 1

Can different additions have the same total?

Yes. Both describe five.

3



How could adding just one make the rows equal?

Add one to B. Adding one to A would increase the difference.

4

6 = 4 + □
↓
4 + 2 = 6

What fits the empty square?

Two. Four and two match the six on the other side.

3 + 4 = 7
the statement reads both ways.

3 + 4 = 4 + 3
swap the two addends and the total stays 7.

CHAPTER PROBLEM

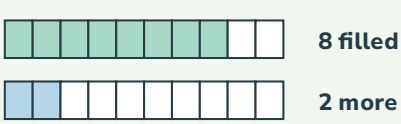
Can four and zero make four? Explain.

Yes. An empty part adds no counters.

QUESTION BANK · FOLD OR COVER THE RIGHT COLUMN

Check your reasoning

Try the problem	Solution and reasoning
01 Six counters are under two cups. Four are visible under one. How many are hidden under the other?	Two. Four and two remake six.
02 Take one from each side of a balance with five on each side. What happens?	Four remain on each side. Equality is preserved.
03 Show two different splits of six.	For example, one and five, or two and four. Both remake six.
04 Two pockets hold six shells altogether. One pocket has four. How many must be in the other, and how can you check?	Two. Make a group of four and a group of two, then count all six.
05 Seven beads are split between two hands. Four show. How many are hidden?	Three, because four and three make seven.
06 Can two equal whole-number groups make five?	Two and two make four, leaving one. The closest groups have two and three.
07 What is the whole when these two colour groups join? 	Four green and three yellow counters make seven.



How many are needed to fill ten from eight?

Two spaces. From 8 + 5, use two, then add the other three to ten: 13.

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