

P Pearson

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## Year I

## Unit I: Numbers to IO

## Teacher Guide sample pages

## Comparing groups

## Learning focus

in this lesson children will compare two groups of objects through one-to-one correspondence.

## Small steps

$\rightarrow$ Previous step: Counting one less $\rightarrow$ This step: Comparing groups $\rightarrow$ Next step: Comparing numbers of objects

## NATIONAL CURRICULUM LINKS

## Year 1 Number - Number and Place Value

dentify and represent numbers using objects and pictorial representations including the number line, and use the language

## ASSESSING MASTERY

Children can say whether one group of objects has more objects in it than another. They reach this understanding by
assigning one object from one group to one object in another group and then seeing where there are more or less.

## COMMON MISCONCEPTIONS

In comparing two groups of objects, children may assign more than one object from one group to another group. This shows
that they have not grasped one-to-one correspondence.

## GOING DEEPER

Some children may go on to work out how many more or how many less (finding the difference). This lesson will not explor finding the difference in detail, but you can challenge children to think deeper by encouraging them to count how many more or less objects there are

## KGY LANGUAGE

"Match", "equal", "more than", "greater than", "less than" or "fewer than"

## RESOURCES

Cubes, counters, Power Maths eBook and image bank. Optional: printed images of buckets, flags, sandcastles and spades

## MODELS AND IMAGES

mages used in this lesson are predominantly of objects. These may be represented with cubes and counters When modeling groups, you may want to use different colours to represent different groups so children can make comparisons between them.

## Before you start (II

How are you going to integrate the Power Up activity into the lesson?
Based on previous lessons taught in this unit, are there any additional misconceptions you need to consider upfront? Are there any adaptations you are planning to make to this lesson, to link it to other lessons or curriculum work?

## Discover

Wats of workne Pair work.
in Focus in this part of the lesson we want children to start discovering that they can associate one object in on group with one object in another group
wrocus As they experiment with concrete objects and start to see that there is not always a one-to-one
correspondence of objects between groups, children will start to use the language around comparison (e.g." "more" or "fewer"),
DERPEN Question 1 b provides an opportunity to work in greater depth for children who are able to at this stage. ANSwERS Question 1a There are more FLAGS than SANDCASTLES. Question 1b Each CHILD cannot have BUCKET

## Share

Wars of Worknc whole class discussion.
ASK

- How did you work out the answers? How do you know your answers are correct?
the flags?
tags? How can you show that each sandcastle can have a flag? How can you show you do not have enough buckets for all
Answers can be verbal or children can use interactive teaching platies to demonstrate understanding
wrocus Look for children explaining that they are
matching one object in one group to exactly one object in another group. Once this is done they should be able to see which group has more and therefore which group has less. Children may use different coloured counters, cubes, may match one-to-one by taking one from each group and placing them together.
ANSWERS Question 1a There are more FLAGS than
SANDCASTLES. Question 1b Each CHILD cannot have SANDCAST

${ }^{4} 6986$
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## Think together

Wars of worknes Whole class teacher led: Question 2 I do, Question 3 We do, Question 4 You do.
ASK
How could you see easily which group has more?
How methods could you use?
How could you show your working?


N Focus When working on question 4 , look for children o draw the correct number of circles and squares in a lin to make comparison of the two groups easier. Children should then draw a line between them to connect them $u$ and realise that there are more squares than circles,
DEspen Question 4 is a Challenge question and it provides an opportunity to work in greater depth for children who re able to at this stage.
Diffen Use the characters in the book to talk about the
different ways to answer the question. Ask: How did the
haracters do it? Who do you think has the best metho and why?
ANsw:3s Question 2 There are more SANDCASTLES. Question 3 There are fewer CHILDREN. Question 4 There are more SQUARES.

## Practice



Wavs of workng Independent thinking.
support Work with children who struggled during Think Together on the first few Practice questions to help them to keep up.
wrocus In question 1 , the lines matching cups to plates provide scaffolding to help children move towards work independently. If children struggle here come back together as a class. Ask for answers and ask them to show you how they know.
ASSESSMENT CHECKPONTT Question 1 and question 2 should help you decide whether children understand the languag "more" and "fewer"
in rocus When children get to question 4 they should
be starting to form their own mathematical sentences to compare groups of objects.
Comp
${ }^{\text {Answzas }}$ Answers to Practice questions are in a separate answer book.

## Reflect

Wats of workne Independent thinking ASSESSMEN CHEGKPONTI Any children struggling to use "more" and "fewer" or using them incorrectly within their own sentence will need intervention support before the

## After the lesson

-How did the lesson go? What would you do differently next time?

- What percentage of children mastered this lesson? Are you ready to move on?


PUPIL PRACTICE BOOKA PAGE 2


There are more $\triangle$ than $\square$
There are $\square \star$ than $\triangle$
There are 6 more $t$ than


PUPIL PRACTICE BOoK A PAGE 3

## Year I

## Unit 4: Addition and subtraction within IO (2)

Textbook and Practice Book sample pages


## Related facts - addition and subtraction 2

## Share

(1) a) There are 6 rings in total.

$6-2=4 \quad$ Leon scores 4 rings.
b)

I got 4 number sentences.

$$
\begin{aligned}
& 6-2=4 \\
& 6-4=2 \\
& 2+4=6 \\
& 4+2=6
\end{aligned}
$$

I found a different way to write them.

$$
4=6-2
$$

$$
2=6-4
$$

$$
6=2+4
$$

$$
6=4+2
$$

There are 8 different number sentences that show this fact.

## Think together

(1) Leon throws 7 rings.

He scores 4. How many miss?


2. How many rings are there in total? Find the number sentences to show this fact.


$$
\begin{aligned}
& \square+\square=\square \\
& \square+\square=\square \\
& \square-\square=\square \\
& \square-\square=\square
\end{aligned}
$$



0
0
(3) Find all the number sentences.

$q=\square+5$

$$
4+\square=9
$$

$$
\mathrm{q}=5+\square
$$

$$
\square+\square=\mathrm{q}
$$

$$
5=\square-\square
$$

$$
\square-\square=5
$$

$$
\square \bigcirc \square \bigcirc \square
$$

## Related facts - addition and subtraction 2

(3) Fill in the number sentences to match the questions.
(1) How many ducks in total?

Fill in the
a)


b)

d) $\mathbf{q}=\square+\square$
c)

e) $9=$ $\square$
$\square$
(2) How many stay? How many jump?
b) How many $\}$ stay?

$$
\begin{aligned}
& 4+\square=10 \\
& 10=4+\square
\end{aligned}
$$

a) How many $\}$ in total?

Fill in the and the number facts.

a) $5-\mathrm{I}=\square$
c) $5-4=$ $\square$
b) $\square=5-I$
d) $\qquad$
c) How many $\{$ fall?

(4) I know $3+7=10$.

What other facts do I know?
$3+7=10$



$\square$


$\square=\square \bigcirc \square$
$\square=\square \bigcirc \square$
(5) Can you complete 4 different number sentences?


## Reflect



## Year 3

## Unit 2: Addition and subtraction (I)

Textbook and Practice Book sample pages


## Addition and subtraction of IOOs

## Discover


(1) a) Tom uses digit cards to make the numbers $3 \times 2$ and 5441. He adds the numbers.

What is his total?
b) Tom takes a digit card from one number and swaps it with a digit card in the other number.
His total is the same.
Which digits did he swap?

## Share




Tom swapped the 5 and the 3.


Are there any other digits I could swap?

## Think together

(1) Tom makes two different numbers.

His numbers are | 1 | 4 | 2 | and | 3 | 5 |
| :--- | :--- | :--- | :--- | :--- | :--- |

What is his total?

(2) Suki makes two numbers.

Her numbers are 4,153 and 562.
What is her total?


(3)

Jing gets a total of 993 .
What numbers did she make to get this total?


I think there is more than one answer.


## Addition and subtraction of 100 s

(1) Fill in the boxes and spaces in these additions.

c)


2
Complete these additions. Try to do the last one mentally.
a)

b)


c) | H | T | O |
| :--- | :--- | :--- |
| 3 | 7 | 4 |


$+$

d) $311+583=$ $\square$
e) $400+425=$ $\square$
(3) There are 235 boys and 312 girls in the school. How many children are there in total?

(4)

Fill in the boxes in these additions.

a) | H | T | O |
| :--- | :--- | :--- |
| I | 8 | 6 |


b)

c) $548+\square=678$

5 Each of these symbols is used instead of a digit. Work out which digit each symbol is.

a) Work out $540+321$.


## Year 5

## Unit IO: Fractions (3)

## Textbook and Practice Book sample pages

b) Use your answer to work out the following additions.


## Reflect



Joe has tried to add 454 and 134. Explain the mistakes he has made.

$$
\begin{array}{c|c|c}
H & T & 0 \\
\hline 4 & 5 & 4 \\
\hline 1 & 4 & 3 \\
\hline 6 & 9 & 7
\end{array}
$$

- 


-
-

## Multiplying fractions (1)

## Discover

a) What fraction of the jug of milk is needed for 3 milkshakes?
b) How many jugs of milk are needed to make 7 milkshakes?

## Share


b)

$\begin{aligned} & \text { I'm going to } \\ & \text { add again. }\end{aligned} \frac{1}{5}+\frac{1}{5}+\frac{1}{5}+\frac{1}{5}+\frac{1}{5}+\frac{1}{5}+\frac{1}{5}=\frac{7}{5}=1 \frac{2}{5}$

I'm going to multiply.

$$
7 \times \frac{1}{5}=\frac{7}{5}=1 \frac{2}{5}
$$

Which way was quicker?

I $\frac{2}{5}$ of a jug of milk are needed to make 7 milkshakes.

## Think together

(1) A cat eats $\frac{1}{7}$ of a bag of cat food each day.

What fraction of the bag does the cat need for 4 days?

(2) One glass holds $\frac{1}{8}$ of a bottle of orange juice. How many bottles do you need for II glasses?

(3) a) Do all of these show $\frac{4}{5}$ ?

b) Find 4 ways of showing $\frac{5}{8}$.

## Multiplying fractions (1)

(1) a) Each child eats $\frac{1}{7}$ of a bag of popcorn. What fraction of the bag do 5 children eat?

| $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{7}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |


b) One person eats $\frac{1}{3}$ of a tin of soup for lunch.

How many tins of soup are needed for 5 people?

c) Mike uses $\frac{1}{4}$ of a banana in his cake. How many bananas does he need for 7 cakes? Draw your answer as a bar model.

(2) Fill in the blank boxes to complete the multiplications.
a) $7 \times \frac{1}{8}=\frac{\square}{\square}$

b) $5 \times \frac{1}{9}=\frac{\square}{\square}$

c) $\frac{1}{10} \times \square=\frac{7}{10}$
$\square \times \frac{1}{10}=\frac{7}{10}$
d) $\frac{\square}{\square} \times 4=\frac{4}{9}$
$4 \times \frac{\square}{\square}=\frac{4}{9}$
e) $\frac{3}{8}=\square \times \frac{1}{8}$
$\frac{3}{8}=\frac{1}{8} \times \square$
(3) Complete the multiplications.
a) $\frac{1}{5} \times 2=\frac{\square}{\square}$
b) $\frac{1}{7} \times 6=\frac{\square}{\square}$
c) $3 \times \frac{1}{2}=$

d) $\frac{1}{4} \times 7=\frac{\square}{\square}=\square \frac{\square}{\square}$
e) $\frac{1}{3} \times 5=5 \times \square$
f) $\frac{1}{8} \times \square=1$
(4) a) $\frac{1}{5} \times \square=1 \frac{2}{5}$
b) $\frac{1}{\square} \times \square=1 \frac{1}{8}$
(5) a) $0 \times \frac{1}{8}=\frac{\square}{\square}$
b) $1 \times \frac{1}{8}=\frac{\square}{\square}$
c) $2 \times \frac{1}{8}=\frac{\square}{\square}=\frac{\square}{\square}$
d) $3 \times \frac{1}{8}=\frac{\square}{\square}$
e) $4 \times \frac{1}{8}=\frac{\square}{\square}=\frac{\square}{\square}$
f) $5 \times \frac{1}{8}=\frac{\square}{\square}$
g) $6 \times \frac{1}{8}=\frac{\square}{\square}=\frac{\square}{\square}$
h) $7 \times \frac{1}{8}=\frac{\square}{\square}$
i) $8 \times \frac{1}{8}=\frac{\square}{\square}=\square$
(6) a) $\frac{1}{10} \times \square=\frac{3}{5}$
b) $\frac{1}{6} \times \square=1 \frac{1}{3}$

## Reflect

The answer is $\frac{4}{5}$.
What was the question?

## $\frac{\square}{\square} \times \square$ or $\square \times \frac{\square}{\square}$

## Notes



## The whole-class mastery approach that works for every child

Power Maths is a new and exciting programme written specifically for the latest UK curriculum and inspired by mastery best-practice from around the world.

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