

# Reasoning and Problem Solving

## Step 3: Add Equal Groups

### National Curriculum Objectives:

Mathematics Year 2: (2C8) [Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts](#)

### Differentiation:

Questions 1, 4 and 7 (Reasoning)

**Developing** Explain if a statement is correct, using knowledge of adding two or three equal groups of 5 or less. Comparative groups use same numbers. Pictorial support given.

**Expected** Explain if a statement is correct, using knowledge of adding up to four equal groups of 2, 3, 5 or 10. Comparative groups use same numbers.

**Greater Depth** Explain if a statement is correct, using knowledge of adding up to four equal groups of 2, 3, 5 or 10. Some numbers are represented as words. Comparative groups use different numbers.

Questions 2, 5 and 8 (Reasoning)

**Developing** Explain if a calculation is correct, using knowledge of adding two equal groups of 5 or less.

**Expected** Explain if a calculation is correct, using knowledge of adding up to four equal groups of any 1-digit number.

**Greater Depth** Explain if a calculation is correct, using knowledge of adding four equal groups of 2, 3, 5 or 10 where some individual objects have a value of more than 1.

Questions 3, 6 and 9 (Problem Solving)

**Developing** Solve a word problem using repeated addition including three equal groups of 5 or less.

**Expected** Solve a two-step word problem using repeated addition including three equal groups of any 1-digit number. Second step of problem includes adding one more group.

**Greater Depth** Solve a two-step word problem using repeated addition including four equal groups of 2, 3, 5 or 10. Some numbers are represented as words. Second step of problem includes use of coins.

More [Year 2 Multiplication and Division](#) resources.

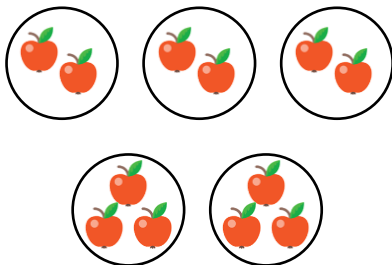
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## Add Equal Groups

1a. Ana says,



3 groups of 2 gives  
the same answer as  
2 groups of 3.



Is she correct? Explain how you know.



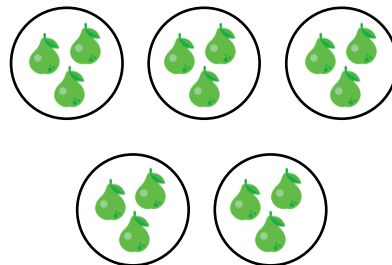
R

## Add Equal Groups

1b. Rory says,



3 groups of 3 gives  
the same answer as  
2 groups of 3.



Is he correct? Explain how you know.



R

2a. Ruth buys two packs of pencils. She writes a number sentence to show this.



$$5 + 5 = 10$$

Is she correct? Explain how you know.



R

2b. Erica buys two packs of pens. She writes a number sentence to show this.



$$2 + 2 = 4$$

Is she correct? Explain how you know.



R

3a. Cookies are sold in bags of 3. Glenn buys 3 bags. Write a number sentence to show how many cookies he has altogether.



PS

3b. Bananas are sold in pairs. Shannon buys 3 pairs. Write a number sentence to show how many bananas she has altogether.



PS

## Add Equal Groups

4a. Max says,



3 groups of 10 gives  
the same answer as  
 $10 + 10 + 10$ .

Is he correct? Explain how you know.



R

## Add Equal Groups

4b. Ava says,



3 groups of 4 gives  
the same answer as  
 $3 + 3 + 3 + 3$ .

Is she correct? Explain how you know.



R

5a. Julia buys three packs of books. She writes a number sentence to show this.



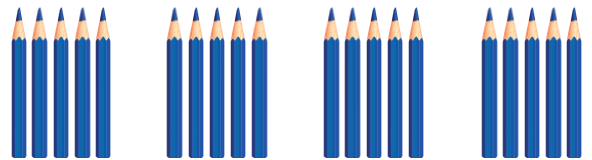
$$3 + 3 + 3 = 9$$

Is she correct? Explain how you know.



R

5b. Isaac buys four packs of pencils. He writes a number sentence to show this.



$$4 + 4 + 4 = 12$$

Is he correct? Explain how you know.



R

6a. Doughnuts are sold in packs of 6. Joseph buys 2 packs. How many doughnuts does he have altogether?

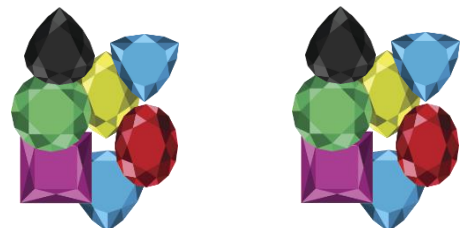


If he buys one more pack, how many doughnuts will Joseph have now?



PS

6b. Gems are sold in bags of 7. If Rowena buys 2 bags. How many gems does she have altogether?



If she buys one more bag, how many gems will Rowena have now?



PS

## Add Equal Groups

7a. Lily says,

Four groups of five gives the same answer as 2 groups of 10.



Is she correct? Explain how you know.



R

## Add Equal Groups

7b. Frankie says,

4 groups of 3 gives the same answer as two groups of five.



Is he correct? Explain how you know.



R

8a. Raj counts his spending money. He writes a number sentence to show this.



$$4 + 4 + 4 + 4 = 16p$$

Is he correct? Explain how you know.



R

8b. Jade counts her spending money. She writes a number sentence to show this.



$$10 + 10 + 10 + 10 = 40p$$

Is she correct? Explain how you know.



R

9a. Cupcakes are sold in boxes of ten. Mia buys four boxes. How many cupcakes does she have altogether?



Each box costs 10p. How many 5p coins would Mia need to pay?



PS

9b. Carrots are sold in bags of five. Dylan buys four bags. How many carrots does he have altogether?



The carrots cost 5p a bag. How many 10p coins would Dylan need to pay?



PS

## Reasoning and Problem Solving

### Add Equal Groups

#### Developing

1a. Ana is correct because both equal 6 ( $2 + 2 + 2$  and  $3 + 3$ ).

2a. Ruth is correct because the pencils show 2 groups of 5, which is the same as  $5 + 5 = 10$ .

3a.  $3 + 3 + 3 = 9$

#### Expected

4a. Max is correct because both equal 30 (3 groups of 10 and  $10 + 10 + 10$ ).

5a. Julia is incorrect because her answer is for 3 groups of 3. She should have written  $4 + 4 + 4 = 12$  to show that there are 3 groups of 4 books.

6a.  $6 + 6 = 12$  doughnuts. If Joseph buys another pack, he will have 18 ( $6 + 6 + 6$ ).

#### Greater Depth

7a. Lily is correct because both equal 20 ( $5 + 5 + 5 + 5$  and  $10 + 10$ ).

8a. Raj is incorrect because his answer is for 4 groups of 4. He should have written  $5 + 5 + 5 + 5 = 20$ p to show that there are 4 groups of 5p.

9a. 40 cupcakes ( $10 + 10 + 10 + 10$ ). Mia needs eight 5p coins to pay.

## Reasoning and Problem Solving

### Add Equal Groups

#### Developing

1b. Rory is incorrect because 3 groups of 3 equal 9 and 2 groups of 3 equal 6.

2b. Erica is incorrect because her answer is for 2 groups of 2. She should have written  $3 + 3 = 6$  to show that there are 2 groups of 3 pens.

3b.  $2 + 2 + 2 = 6$

#### Expected

4b. Ava is correct because both equal 12 ( $4 + 4 + 4$  and  $3 + 3 + 3 + 3$ ).

5b. Isaac is incorrect because his answer is for 3 groups of 4. He should have written  $5 + 5 + 5 + 5 = 20$  to show that there are 4 groups of 5 pencils.

6b.  $7 + 7 = 14$ . If Rowena buys another pack, she will have 21 ( $7 + 7 + 7$ ).

#### Greater Depth

7b. Frankie is incorrect because 4 groups of 3 equal 12 and 2 groups of 5 equal 10.

8b. Jade is correct because the coins show 4 groups of 10p, which is the same as  $10 + 10 + 10 + 10 = 40$ p.

9b. 20 carrots ( $5 + 5 + 5 + 5$ ). Dylan needs two 10p coins to pay.