

# Reasoning and Problem Solving

## Step 10: The 8 Times Table

### National Curriculum Objectives:

Mathematics Year 3: (3C6) [Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables](#)

Mathematics Year 3: (3C7) [Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods](#)

Mathematics Year 3: (3C8) [Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which  \$n\$  objects are connected to  \$m\$  objects](#)

### Differentiation:

Questions 1, 4 and 7 (Problem Solving)

**Developing** Find all pairs of multiplications that match a given amount. Using pictorial support for each question where each digit is represented.

**Expected** Find all pairs of multiplications that match a given amount. Some scaffolding support is given.

**Greater Depth** Find all pairs of multiplications that match a given amount. No scaffolding or pictorial support is given.

Questions 2, 5 and 8 (Problem Solving)

**Developing** Use digit cards to create pairs of multiplications that have the same answer. Using pictorial support for each question where each digit is represented.

**Expected** Use digit cards to create pairs of multiplications that have the same answer. Some scaffolding support is given.

**Greater Depth** Use digit cards to create 3 multiplications with the same answer. Identify cards that cannot be used. No scaffolding or pictorial support is given.

Questions 3, 6 and 9 (Reasoning)

**Developing** Explain if given images are correct. Using pictorial support for each question where each digit is represented.

**Expected** Explain if given statements are correct. Some scaffolding support is given.

**Greater Depth** Explain if given statements are correct. No scaffolding or pictorial support is given.

More [Year 3 Multiplication and Division](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

## The 8 Times Table

1a. Colour in all the pairs of multiplications that can be used to solve:



$1 \times 8$ $8 \times 8$	$5 \times 8$ $2 \times 8$	$8 \times 8$ $2 \times 8$
$5 \times 8$ $6 \times 8$	$3 \times 8$ $6 \times 8$	$2 \times 8$ $6 \times 8$
$4 \times 8$ $5 \times 8$	$3 \times 8$ $2 \times 8$	$5 \times 8$ $4 \times 8$



PS

## The 8 Times Table

1b. Colour in all the pairs of multiplications that can be used to solve:

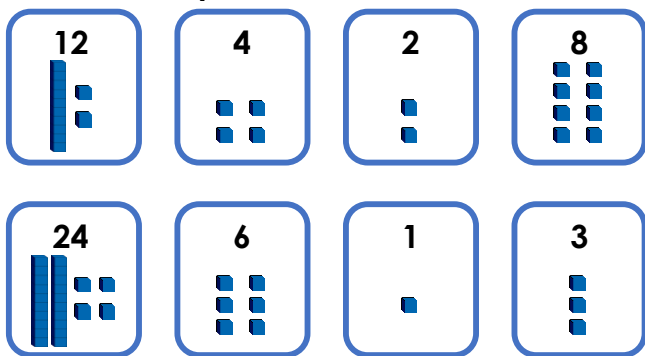


$6 \times 8$ $3 \times 8$	$5 \times 8$ $3 \times 8$	$2 \times 8$ $5 \times 8$
$3 \times 8$ $4 \times 8$	$1 \times 8$ $5 \times 8$	$2 \times 8$ $6 \times 8$
$5 \times 8$ $1 \times 8$	$5 \times 8$ $2 \times 8$	$3 \times 8$ $5 \times 8$



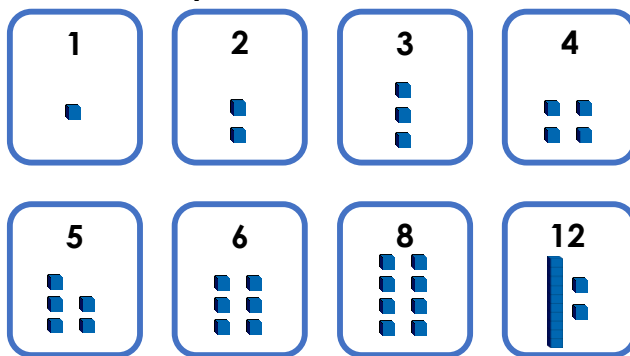
PS

2a. Use the digit cards below to make pairs of multiplications that have the same answer. You must multiply by 8 in one of each pair.



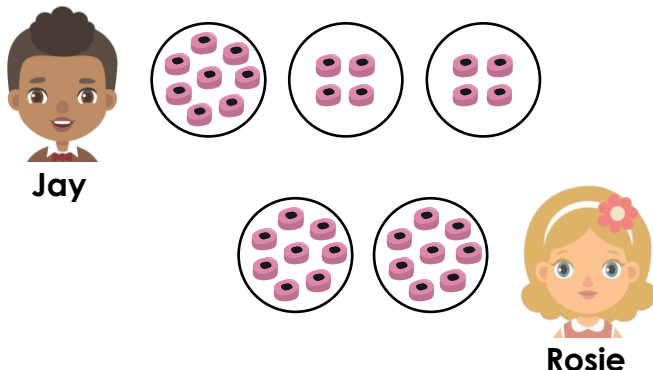
PS

2b. Use the digit cards below to make pairs of multiplications that have the same answer. You must multiply by 8 in one of each pair.



PS

3a. Jay and Rosie have 16 sweets to share in to equal groups.

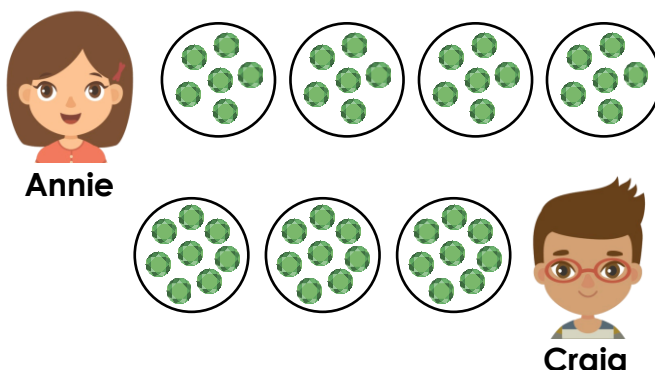


Who do you agree with? Explain your answer.



R

3b. Annie and Craig have 24 gems to share in to equal groups.



Who do you agree with? Explain your answer.



R

## The 8 Times Table

## The 8 Times Table

4a. Colour in all the pairs of multiplications that can be used to solve  $6 \times 8$ .

$5 \times 8$ $3 \times 8$	$1 \times 8$ $4 \times 8$	$3 \times 8$ $2 \times 8$
$4 \times 8$ $2 \times 8$	$2 \times 8$ $4 \times 8$	$7 \times 8$ $2 \times 8$
$3 \times 8$ $3 \times 8$	$4 \times 8$ $3 \times 8$	$1 \times 8$ $5 \times 8$



PS

4b. Colour in all the pairs of multiplications that can be used to solve  $11 \times 8$ .

$3 \times 8$ $7 \times 8$	$6 \times 8$ $5 \times 8$	$2 \times 8$ $5 \times 8$
$4 \times 8$ $7 \times 8$	$8 \times 8$ $2 \times 8$	$7 \times 8$ $4 \times 8$
$2 \times 8$ $9 \times 8$	$1 \times 8$ $4 \times 8$	$3 \times 8$ $3 \times 8$



PS

5a. Use the digit cards below to make pairs of multiplications that have the same answer. You must multiply by 8 in one of each pair.

4	8	2	10
24	3	6	5



PS

5b. Use the digit cards below to make pairs of multiplications that have the same answer. You must multiply by 8 in one of each pair.

2	12	3	1
6	4	8	5



PS

6a. John and Lucy have 32 tennis balls to share in to equal groups.



John

We could make 4 equal groups of 4 and 2 equal groups of 8.

If we doubled the groups of 8, we would not need any groups of 4.



Lucy

Do you agree with Lucy? Explain your answer.



R

6b. Lola and Sam have 48 marbles to share in to equal groups.



Lola

We could make 4 groups of 8 and 4 groups of 4.

If we halved the groups of 8, we could double the groups of 4.



Sam

Do you agree with Sam? Explain your answer.



R

## The 8 Times Table

7a. Colour in all the pairs of multiplications that have the same answer as  $4 \times 8$ .

$4 \times 4$ $2 \times 8$	$1 \times 5$ $5 \times 2$	$3 \times 4$ $1 \times 8$
$10 \times 2$ $1 \times 8$	$9 \times 2$ $2 \times 8$	$6 \times 2$ $6 \times 4$
$2 \times 12$ $1 \times 8$	$4 \times 4$ $8 \times 2$	$5 \times 4$ $3 \times 4$



PS

## The 8 Times Table

7b. Colour in all the pairs of multiplications that have the same answer as  $7 \times 8$ .

$9 \times 2$ $4 \times 5$	$6 \times 2$ $2 \times 6$	$8 \times 4$ $12 \times 2$
$10 \times 4$ $1 \times 8$	$2 \times 8$ $10 \times 4$	$6 \times 4$ $4 \times 6$
$2 \times 10$ $9 \times 4$	$2 \times 2$ $8 \times 4$	$5 \times 4$ $4 \times 4$



PS

8a. Use the digit cards below to make 3 multiplications that have the same answer.

2	8	4	9
10	3	12	6

Identify the cards that cannot be used.



PS

8b. Use the digit cards below to make 3 multiplications that have the same answer.

10	6	7	8
2	5	4	20

Identify the cards that cannot be used.



PS

9a. Jacob and Eva have 72 marbles to share in to equal groups.



Jacob

We could make 5 groups of 8, 4 groups of 4 and 8 groups of 2.

If we had 4 groups of 8, we could double the number of groups of 4 and 2.



Eva

Do you agree with Eva? Explain your answer.



R

9b. Aliza and William have 48 biscuits to share in to equal groups.



Aliza

We could make 4 groups of 8, 2 groups of 4 and 4 groups of 2.

If we had 3 groups of 8, we could double the number of groups of 4 and 2.



William

Do you agree with William? Explain your answer.



R

## Reasoning and Problem Solving The 8 Times Table

### Developing

1a.

$1 \times 8$ $8 \times 8$	$5 \times 8$ $2 \times 8$	$8 \times 8$ $2 \times 8$
$5 \times 8$ $6 \times 8$	$3 \times 8$ $6 \times 8$	$2 \times 8$ $6 \times 8$
$4 \times 8$ $5 \times 8$	$3 \times 8$ $2 \times 8$	$5 \times 8$ $4 \times 8$

2a. Various answers, for example:  $1 \times 8$  and  $2 \times 4 = 8$ ,  $8 \times 3$  and  $6 \times 4 = 24$ .

3a. Rosie is correct. She has 2 equal groups of 8. Jay has 16 sweets but his groups are not equal.

### Expected

4a.

$5 \times 8$ $3 \times 8$	$1 \times 8$ $4 \times 8$	$3 \times 8$ $2 \times 8$
$4 \times 8$ $2 \times 8$	$2 \times 8$ $4 \times 8$	$7 \times 8$ $2 \times 8$
$3 \times 8$ $3 \times 8$	$4 \times 8$ $3 \times 8$	$1 \times 8$ $5 \times 8$

5a. Various answers, for example:  $4 \times 10$  and  $5 \times 8 = 40$ ,  $6 \times 8$  and  $24 \times 2 = 48$

6a. Lucy is correct because 4 equal groups of 8 is 32, which is the number of tennis balls John and Lucy have so 0 groups of 4 are required.

### Greater Depth

7a.

$4 \times 4$ $2 \times 8$	$1 \times 5$ $5 \times 2$	$3 \times 4$ $1 \times 8$
$10 \times 2$ $1 \times 8$	$9 \times 2$ $2 \times 8$	$6 \times 2$ $6 \times 4$
$2 \times 12$ $1 \times 8$	$4 \times 4$ $8 \times 2$	$5 \times 4$ $3 \times 4$

8a.  $2 \times 12$ ,  $3 \times 8$  and  $6 \times 4$  all equal 24. 9 and 10 cannot be used.

9a. Eva is incorrect because 4 groups of 8 is 32, 8 groups of 4 is 32 and 16 groups of 2 is 32.  $32 + 32 + 32 = 96$ , which is more marbles than Jacob and Eva have.

## Reasoning and Problem Solving The 8 Times Table

### Developing

1b.

$6 \times 8$ $3 \times 8$	$5 \times 8$ $3 \times 8$	$2 \times 8$ $5 \times 8$
$3 \times 8$ $4 \times 8$	$1 \times 8$ $5 \times 8$	$2 \times 8$ $6 \times 8$
$5 \times 8$ $1 \times 8$	$5 \times 8$ $2 \times 8$	$3 \times 8$ $5 \times 8$

2b. Various answers, for example:  $6 \times 8$  and  $12 \times 4 = 48$ ,  $3 \times 8$  and  $2 \times 12 = 24$

3b. Annie and Craig are both correct. Annie has 4 equal groups of 6 and Craig has 3 equal groups of 8.

### Expected

4b.

$3 \times 8$ $7 \times 8$	$6 \times 8$ $5 \times 8$	$2 \times 8$ $5 \times 8$
$4 \times 8$ $7 \times 8$	$8 \times 8$ $2 \times 8$	$7 \times 8$ $4 \times 8$
$2 \times 8$ $9 \times 8$	$1 \times 8$ $4 \times 8$	$3 \times 8$ $3 \times 8$

5b. Various answers, for example:  $8 \times 3$  and  $2 \times 12 = 24$ ,  $1 \times 8$  and  $4 \times 2 = 8$

6b. Sam is correct because 2 groups of 8 is 16 and 8 groups of 4 is 32.  $16 + 32 = 48$ , which is the number of marbles Lola and Sam have.

### Greater Depth

7b.

$9 \times 2$ $4 \times 5$	$6 \times 2$ $2 \times 6$	$8 \times 4$ $12 \times 2$
$10 \times 4$ $1 \times 8$	$2 \times 8$ $10 \times 4$	$6 \times 4$ $4 \times 6$
$2 \times 10$ $9 \times 4$	$2 \times 2$ $8 \times 4$	$5 \times 4$ $4 \times 4$

8b.  $10 \times 4$ ,  $5 \times 8$  and  $2 \times 20$  all equal 40. 7 and 6 cannot be used.

9b. William is incorrect because 3 groups of 8 is 24, 4 groups of 4 is 16 and 8 groups of 2 is 16.  $24 + 16 + 16 = 56$ , which is more biscuits than Aliza and William have.