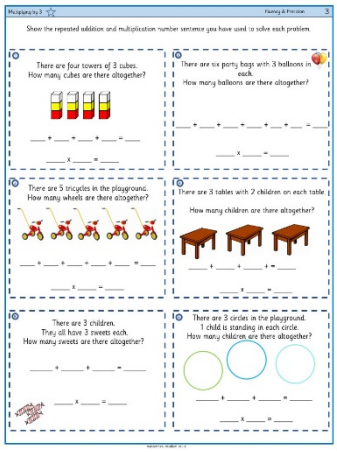
## Lesson 12 – Multiplying by 3

| NC Objective: | Resources needed: | Vocabulary: |
|---|---|---|
| Count from 0 in multiples of 4. 8. 50 and 100.<br>Recall and use multiplication and division facts for the 3,4 and 8 multiplication tables | Differentiated Sheets<br>Teaching Slides | Multiplication, multiply, multiples, equal groups, number sentence, represent |

Children draw on their knowledge of counting in threes in order to start to multiply by 3. They use their knowledge of equal groups to use concrete and pictorial methods to solve questions and problems involving multiplying by 3.

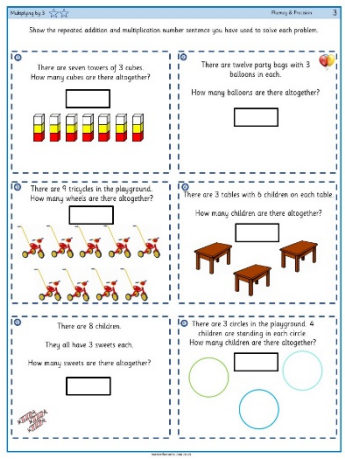
Key Questions:
How many equal groups do we have? How many are in each group?
How many do we have altogether?
Can you write a number sentence to show this? Can you represent the problem in a picture?
Can you use concrete apparatus to solve the problem? How many lots of 3 do we have?
How many groups of 3 do we have?

### ★ Working Towards



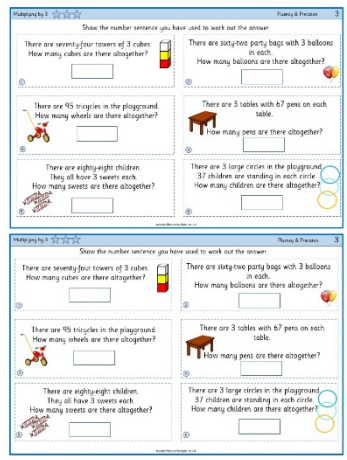

Children have word problems to solve which involve multiplying by 3.They fill in the repeated addition needed to solve the problem and the gaps for the multiplication number sentence needed.

### ★★ Working Within



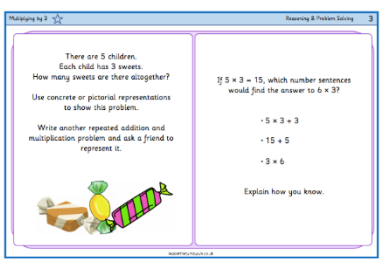

Children have word problems to solve which involve multiplying by 3.They write their own repeated addition number sentence to match each pictorial representation/ word problem and they also write the multiplication calculation used. They can show working out using arrays or bar models.

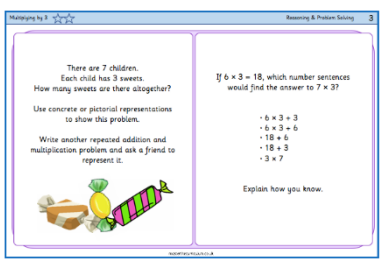
### ★★★ Greater Depth

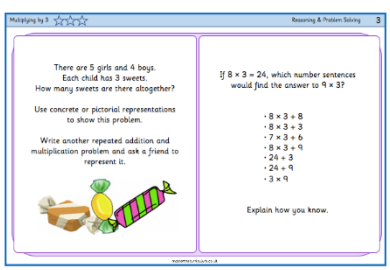



Children on this sheet are fluent in multiplying by 3. They use known facts to solve the multiplication questions. E.g. 64 x 3. Children to work out 60 x 3, then 4 x 3 and add together to find the answer.

## Reasoning & Problem Solving



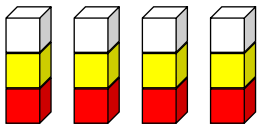



Show the repeated addition and multiplication number sentence you have used to solve each problem.

1

There are four towers of 3 cubes.
How many cubes are there altogether?



_____ + _____ + _____ + _____ = _____

_____ x _____ = _____

2

There are six party bags with 3 balloons in each.
How many balloons are there altogether?

_____ + _____ + _____ + _____ + ____ + ____ = _____

_____ x _____ = _____

3

There are 5 tricycles in the playground.
How many wheels are there altogether?

_____ + _____ + _____ + _____ + _____ = _____

_____ x _____ = _____

4

There are 3 tables with 2 children on each table.

How many children are there altogether?

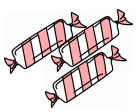
_____ + _____ + _____ + = _____

_____ x _____ = _____

5

There are 3 children.
They all have 3 sweets each.
How many sweets are there altogether?

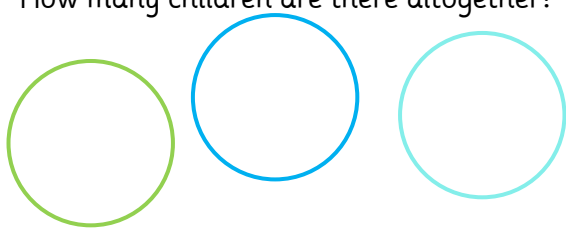
_____ + _____ + _____ = _____



_____ x _____ = _____

6

There are 3 circles in the playground.
1 child is standing in each circle.
How many children are there altogether?



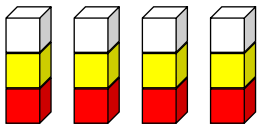
_____ + _____ + _____ = _____

_____ x _____ = _____

Show the repeated addition and multiplication number sentence you have used to solve each problem.

1

There are four towers of 3 cubes.
How many cubes are there altogether?



3 + 3 + 3 + 3 = 12

4 x 3 = 12

2

There are six party bags with 3 balloons in each.
How many balloons are there altogether?

3 + 3 + 3 + 3 + 3 + 3 = 21

6 x 3 = 21

3

There are 5 tricycles in the playground.
How many wheels are there altogether?

3 + 3 + 3 + 3 + 3 = 15

5 x 3 = 15

4

There are 3 tables with 2 children on each table.

How many children are there altogether?

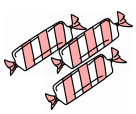
2 + 2 + 2 + = 6

3 x 2 = 6

5

There are 3 children.
They all have 3 sweets each.
How many sweets are there altogether?

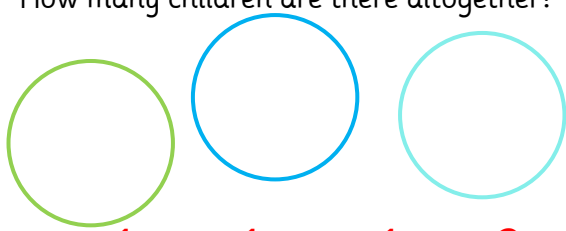
3 + 3 + 3 = 9



3 x 3 = 9

6

There are 3 circles in the playground.
1 child is standing in each circle.
How many children are there altogether?

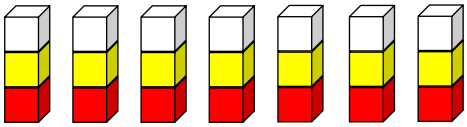


1 + 1 + 1 = 3

3 x 1 = 3

Show the repeated addition and multiplication number sentence you have used to solve each problem.

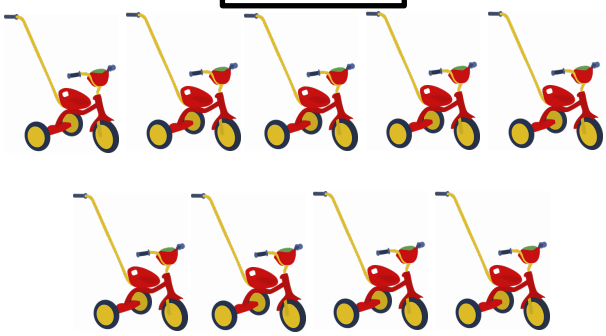
1. There are seven towers of 3 cubes.
How many cubes are there altogether?



2. There are twelve party bags with 3 balloons in each.

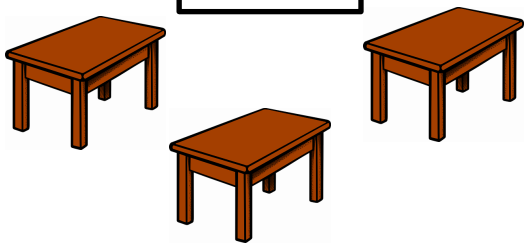
How many balloons are there altogether?

3. There are 9 tricycles in the playground.
How many wheels are there altogether?



4. There are 3 tables with 6 children on each table.

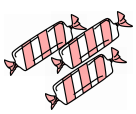
How many children are there altogether?



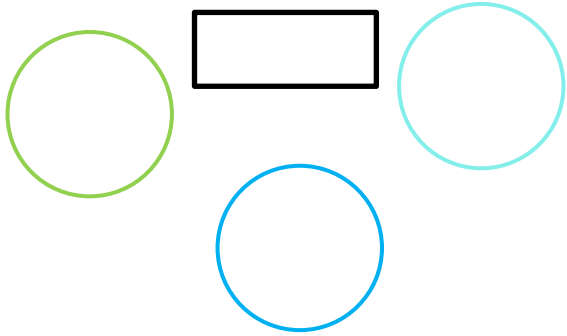
5. There are 8 children.

They all have 3 sweets each.

How many sweets are there altogether?



6. There are 3 circles in the playground. 4 children are standing in each circle.
How many children are there altogether?

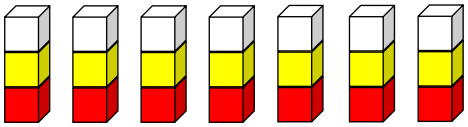


Show the repeated addition and multiplication number sentence you have used to solve each problem.

1

There are seven towers of 3 cubes.
How many cubes are there altogether?

21



2

There are twelve party bags with 3 balloons in each.

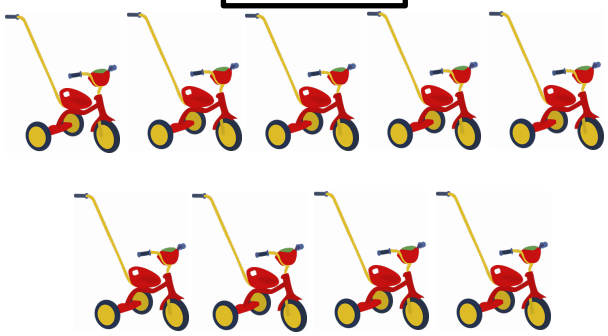
How many balloons are there altogether?

36

3

There are 9 tricycles in the playground.
How many wheels are there altogether?

27

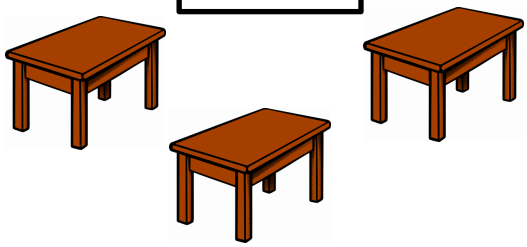


4

There are 3 tables with 6 children on each table.

How many children are there altogether?

18



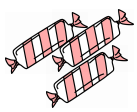
5

There are 8 children.

They all have 3 sweets each.

How many sweets are there altogether?

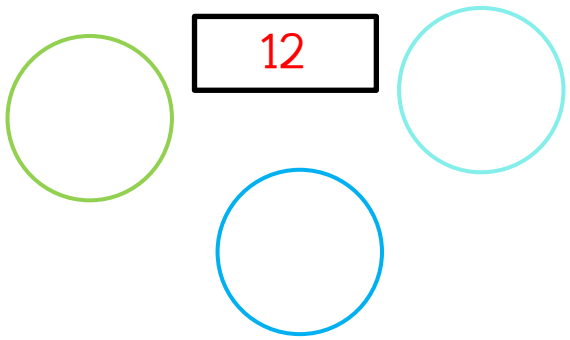
24



6

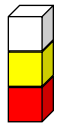
There are 3 circles in the playground. 4 children are standing in each circle.
How many children are there altogether?

12



Show the number sentence you have used to work out the answer.

1. There are seventy-four towers of 3 cubes.
How many cubes are there altogether?



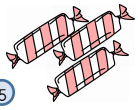
2. There are sixty-two party bags with 3 balloons in each.
How many balloons are there altogether?

3. There are 95 tricycles in the playground.
How many wheels are there altogether?

4. There are 3 tables with 67 pens on each table.

How many pens are there altogether?

5. There are eighty-eight children.
They all have 3 sweets each.
How many sweets are there altogether?



6. There are 3 large circles in the playground.
37 children are standing in each circle.
How many children are there altogether?



Multiplying by 3 ☆☆☆ Fluency & Precision 3

Show the number sentence you have used to work out the answer.

1. There are seventy-four towers of 3 cubes.
How many cubes are there altogether?

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How many balloons are there altogether?

3. There are 95 tricycles in the playground.
How many wheels are there altogether?

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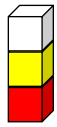


222

2. There are sixty-two party bags with 3 balloons in each.
How many balloons are there altogether?

186

3. There are 95 tricycles in the playground.
How many wheels are there altogether?

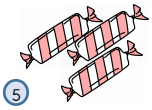
285

4. There are 3 tables with 67 pens on each table.

How many pens are there altogether?

201

5. There are eighty-eight children.
They all have 3 sweets each.
How many sweets are there altogether?



264

6. There are 3 large circles in the playground.
37 children are standing in each circle.
How many children are there altogether?

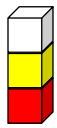
111



Multiplying by 3 ☆☆☆ Answers Fluency & Precision 3

Show the number sentence you have used to work out the answer.

1. There are seventy-four towers of 3 cubes.
How many cubes are there altogether?



222

2. There are sixty-two party bags with 3 balloons in each.
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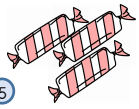

264

6. There are 3 large circles in the playground.
37 children are standing in each circle.
How many children are there altogether?

111

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There are 5 children.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

If 5 × 3 = 15, which number sentences would find the answer to 6 × 3?

- 5 × 3 + 3
- 15 + 5
- 3 × 6

Explain how you know.



Multiplying by 3 ☆ Reasoning & Problem Solving 3

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If 5 × 3 = 15, which number sentences would find the answer to 6 × 3?

- 5 × 3 + 3
- 15 + 5
- 3 × 6

Explain how you know.

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There are 5 children.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

There are 15 sweets altogether.
Children may use items such as counters or cubes.

If 5 × 3 = 15, which number sentences would find the answer to 6 × 3?

- 5 × 3 + 3
- 15 + 5
- 3 × 6

Explain how you know.

5 × 3 + 3 because one more lot of 3 will find the answer.

3 × 6 because 3 × 6 = 6 × 3
(because multiplication is commutative).



Multiplying by 3 ☆ Answers Reasoning & Problem Solving 3

There are 5 children.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

There are 15 sweets altogether.
Children may use items such as counters or cubes.

If 5 × 3 = 15, which number sentences would find the answer to 6 × 3?

- 5 × 3 + 3
- 15 + 5
- 3 × 6

Explain how you know.

5 × 3 + 3 because one more lot of 3 will find the answer.

3 × 6 because 3 × 6 = 6 × 3
(because multiplication is commutative).

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There are 7 children.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

If 6 × 3 = 18, which number sentences would find the answer to 7 × 3?

- 6 × 3 + 3
- 6 × 3 + 6
- 18 + 6
- 18 + 3
- 3 × 7

Explain how you know.



Multiplying by 3 ☆☆ Reasoning & Problem Solving 3

There are 7 children.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

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If 6 × 3 = 18, which number sentences would find the answer to 7 × 3?

- 6 × 3 + 3
- 6 × 3 + 6
- 18 + 6
- 18 + 3
- 3 × 7

Explain how you know.

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There are 7 children.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

There are 21 sweets altogether.

Children may use items such as counters or cubes.

They could draw a bar model for a pictorial representation.

If 6 × 3 = 18, which number sentences would find the answer to 7 × 3?

- 6 × 3 + 3
- 6 × 3 + 6
- 18 + 6
- 18 + 3
- 3 × 7

Explain how you know.

6 × 3 + 3 because one more lot of 3 will find the answer.
18 + 3 because adding one more lot of 3 to the answer to 6 lots will give me 7 lots.

3 × 7 because 7 × 3 = 3 × 7 (because multiplication is commutative).



Multiplying by 3 ☆☆ Answers Reasoning & Problem Solving 3

There are 7 children.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

There are 21 sweets altogether.

Children may use items such as counters or cubes.

They could draw a bar model for a pictorial representation.

If 6 × 3 = 18, which number sentences would find the answer to 7 × 3?

- 6 × 3 + 3
- 6 × 3 + 6
- 18 + 6
- 18 + 3
- 3 × 7

Explain how you know.

6 × 3 + 3 because one more lot of 3 will find the answer.
18 + 3 because adding one more lot of 3 to the answer to 3 lots will give me 7 lots.

3 × 7 because 7 × 3 = 3 × 7 (because multiplication is commutative).

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There are 5 girls and 4 boys.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

If 8 × 3 = 24, which number sentences would find the answer to 9 × 3?

- 8 × 3 + 8
- 8 × 3 + 3
- 7 × 3 + 6
- 8 × 3 + 9
- 24 + 3
- 24 + 9
- 3 × 9

Explain how you know.



Multiplying by 3 ☆☆☆ Reasoning & Problem Solving 3

There are 5 girls and 4 boys.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

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If 8 × 3 = 24, which number sentences would find the answer to 9 × 3?

- 8 × 3 + 8
- 8 × 3 + 3
- 7 × 3 + 6
- 8 × 3 + 9
- 24 + 3
- 24 + 9
- 3 × 9

Explain how you know.

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There are 5 girls and 4 boys.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

There are 27 sweets altogether.

Children may use items such as counters or cubes.

They could draw a bar model for a pictorial representation.

If 8 × 3 = 24, which number sentences would find the answer to 9 × 3?

- 8 × 3 + 8
- 8 × 3 + 3
- 7 × 3 + 6
- 8 × 3 + 9
- 24 + 3
- 24 + 9
- 3 × 9

Explain how you know.

8 × 3 + 3 because one more lot of 3 will find the answer.
24 + 3 because adding one more lot of 3 to the answer to 8 lots will give me 9 lots.

3 × 9 because 9 × 3 = 3 × 9 (because multiplication is commutative).



Multiplying by 3 ☆☆☆ Answers Reasoning & Problem Solving 3

There are 5 girls and 4 boys.
Each child has 3 sweets.
How many sweets are there altogether?

Use concrete or pictorial representations to show this problem.

Write another repeated addition and multiplication problem and ask a friend to represent it.

There are 27 sweets altogether.

Children may use items such as counters or cubes.

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If 8 × 3 = 24, which number sentences would find the answer to 9 × 3?

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- 7 × 3 + 6
- 8 × 3 + 9
- 24 + 3
- 24 + 9
- 3 × 9

Explain how you know.

8 × 3 + 3 because one more lot of 3 will find the answer.
24 + 3 because adding one more lot of 3 to the answer to 8 lots will give me 9 lots.

3 × 9 because 9 × 3 = 3 × 9 (because multiplication is commutative).

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