

Reasoning and Problem Solving

Step 11: Correspondence Problems

National Curriculum Objectives:

Mathematics Year 4: (4C8) [Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as \$n\$ objects are connected to \$m\$ objects](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Identify the correspondence between n objects and m objects (includes 2,3,4,5 and 8 times table with pictorial support).

Expected Identify the correspondence between n objects and m objects (all table facts with some pictorial support).

Greater Depth Identify the correspondence between n objects and m objects (using table facts to 12 x 12 and beyond with no pictorial support).

Questions 2, 5 and 8 (Reasoning)

Developing Explain what the equation is, using the correspondence between n objects and m objects (includes 2,3,4,5 and 8 times table).

Expected Explain what the equation is, using the correspondence between n objects and m objects (all table facts).

Greater Depth Explain what the equation is, using the correspondence between n objects and m objects (using table facts to 12 x 12 and beyond).

Questions 3, 6 and 9 (Reasoning)

Developing Explain which statement is correct by exploring the correspondence between n objects and m objects (includes 2,3,4,5 and 8 times table).

Expected Explain which statement is correct by exploring the correspondence between n objects and m objects (all table facts).

Greater Depth Explain which statement is correct by exploring the correspondence between n objects and m objects (using table facts to 12 x 12 and beyond).

More [Year 4 Multiplication and Division](#) resources.

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

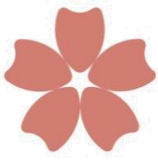
Correspondence Problems

Correspondence Problems

1a. Tom is planting flowers in his garden. For every daisy he plants 1 pansy.



Daisy



Pansy

If he plants 3 daisies, how many petals will there be altogether?

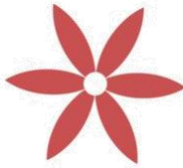


PS

1b. Sarah is buying flowers for a gift. For every lily she buys 1 jasmine.



Lily



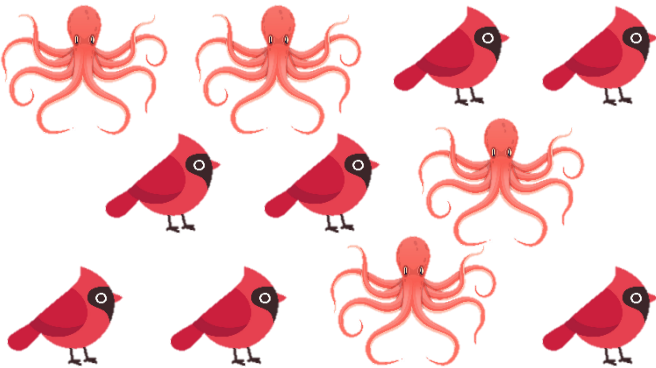
Jasmine

If she buys 4 lilies, how many petals will there be altogether?



PS

2a. The answer is 46.



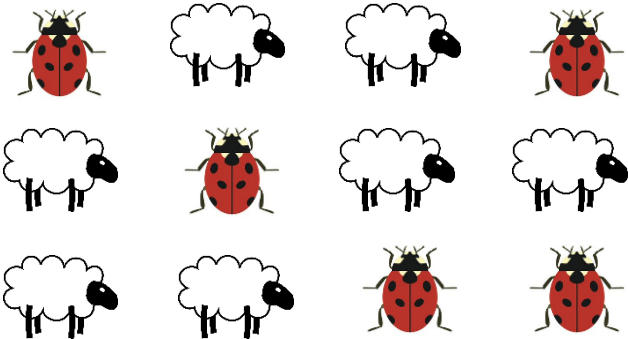
What is the equation? Use the images to help you explain your answer.



$\square \times \square + \square \times \square = \square$

R

2b. The answer is 58.



What is the equation? Use the images to help you explain your answer.



$\square \times \square + \square \times \square = \square$

R

3a. A car park has 8 motorbikes and 5 cars. Pippa and Saif are trying to work out the total number of wheels.



Pippa

The total number of wheels is $8 \times 5 + 4 \times 2 = 48$.

The total number of wheels is $8 \times 2 + 5 \times 4 = 36$.



Saif

Who is correct? Prove it.



R

3b. In a field there are 4 sheep and 8 geese. Luna and Gus are trying to work out the total number of legs.



Luna

The total number of legs is $4 \times 4 + 8 \times 2 = 32$.

The total number of legs is $4 \times 8 + 4 \times 2 = 40$.



Gus

Who is correct? Prove it.



R

Correspondence Problems

Correspondence Problems

4a. Suzi is making confetti from petals. For every crocus she uses 3 pansies.



Crocus



Pansy

If she has 4 crocuses, how many petals will there be altogether?



PS

4b. Karen is arranging a bouquet of flowers. For every rose she has 2 daffodils.



Rose



Daffodil

If she has 5 roses, how many petals will there be altogether?



PS

5a. The answer is 100.



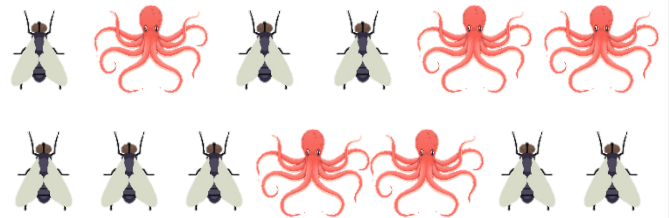
What is the equation? Use the images to help you explain your answer.



$$\square \times \square + \square \times \square = \square$$

R

5b. The answer is 88.



What is the equation? Use the images to help you explain your answer.



$$\square \times \square + \square \times \square = \square$$

R

6a. A car park has 12 cars and 8 motorbikes. Debbie and Tom are trying to work out the total number of wheels.



Debbie

The total number of wheels is $12 \times 4 + 8 \times 2 = 64$.

The total number of wheels is $12 \times 8 = 96$.



Tom

Who is correct? Prove it.



R

6b. There are 9 spiders and 12 beetles. Orla and Henry are trying to work out the total number of legs.



Orla

The total number of legs is $9 \times 12 = 108$.

The total number of legs is $9 \times 8 + 12 \times 6 = 144$.



Henry

Who is right? Prove it.



R

Correspondence Problems

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7a. Justin is painting flowers. For every carnation he paints 4 orchids.



Carnation



Orchid

If he paints 5 carnations, how many petals will there be altogether?



PS

7b. Georgie is filling a vase with flowers. For every sunflower she chooses 2 freesias.



Sunflower



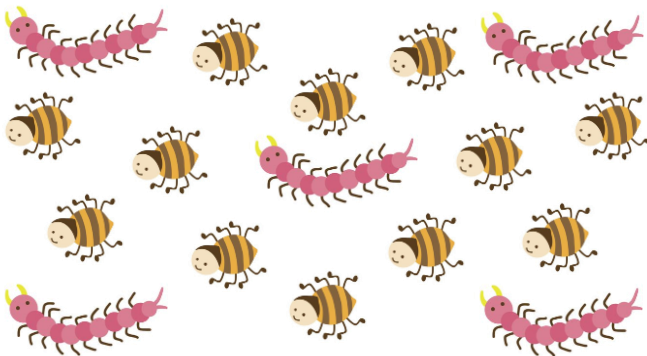
Freesia

If she has 7 sunflowers, how many petals will there be altogether?



PS

8a. The answer is 186.



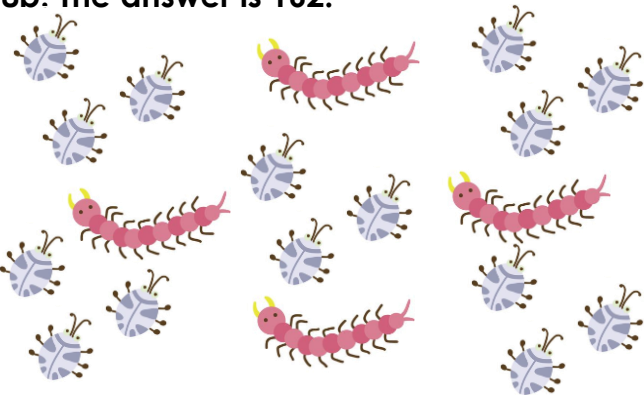
What is the equation? Use the images to help you explain your answer.



$\square \times \square + \square \times \square = \square$

R

8b. The answer is 162.



What is the equation? Use the images to help you explain your answer.



$\square \times \square + \square \times \square = \square$

R

9a. A car park has 26 vehicles made up of cars and motorbikes. Ava and Hugh are trying to work out the possible total number of wheels.



Ava

The biggest combination would be 24 cars and 2 bikes.

The total number of possible wheels is 96.



Hugh

Who is correct? Prove it.



R

9b. There are people sitting on chairs in a hall. There are 300 legs altogether. Billie and Tariq are trying to work out how many people there are.



Billie

I think there are 150 people.

I think there are 50 people.



Tariq

Who is correct? Prove it.



R

Reasoning and Problem Solving Correspondence Problems

Developing

1a. There will be 3 daisies and 3 pansies;
 $3 \times 8 + 3 \times 5 = 39$ petals

2a. The equation is $4 \times 8 + 7 \times 2 = 46$
because there are 4 octopuses with 8 limbs
and there are 7 birds with 2 legs.

3a. Saif is correct. He has worked out that he
needs to know how many motorbike wheels
there are (2×8) and how many car wheels
(5×4) and then added them together to
give an answer of 36.

Expected

4a. There will be 4 crocuses and 12 pansies;
 $4 \times 8 + 12 \times 6 = 104$ petals

5a. The equation is $9 \times 4 + 8 \times 8 = 100$
because there are 9 cats with 4 legs and
there are 8 octopuses with 8 limbs.

6a. Debbie is correct. She has worked out
that she needs to know how many car
wheels there are (12×4) and how many
motorbike wheels (8×2) and then added
them together to give an answer of 64.

Greater Depth

7a. There will be 5 carnations and 20
orchids;

$$5 \times 16 + 20 \times 10 = 280 \text{ petals}$$

8a. The equation is $5 \times 18 + 12 \times 8 = 186$
because there are 5 minibeasts with 18 legs
and there are 12 bugs with 8 legs.

9a. Ava is correct. The largest number of
possible wheels is to have 24 cars (24×4)
and 2 bikes (it is plural). This gives a total
number of 100 wheels.

Reasoning and Problem Solving Correspondence Problems

Developing

1b. There will be 4 lilies and 4 jasmine;
 $4 \times 5 + 4 \times 6 = 44$ petals

2b. The equation is $5 \times 6 + 7 \times 4 = 58$
because there are 5 ladybirds with 6 legs
and there are 7 sheep with 4 legs.

3b. Luna is correct. She has worked out
that she needs to know how many sheep
legs there are (4×4) and how many
geese legs (8×2) and then added them
together to give an answer of 32.

Expected

4b. There will be 5 roses and 10 daffodils;
 $5 \times 5 + 10 \times 8 = 105$ petals

5b. The equation is $8 \times 6 + 5 \times 8 = 88$
because there are 8 flies with 6 legs and
there are 5 octopuses with 8 limbs.

6b. Henry is correct. He has worked out
that he needs to know how many spider
legs there are (9×8) and how many
beetle legs (12×6) and then added them
together to give an answer of 144.

Greater Depth

7b. There will be 7 sunflowers and 14
freesias;

$$7 \times 12 + 14 \times 10 = 224 \text{ petals}$$

8b. The equation is $15 \times 6 + 4 \times 18 = 162$
because there are 15 bugs with 6 legs and
there are 4 minibeasts with 18 legs.

9b. Tariq is correct. Chairs have 4 legs and
humans have 2. if there were 50 people,
that would equal 100 legs. $50 \text{ chairs} \times 4$
legs = 200. $200 + 100 = 300$ legs.