Homework/Extension
Step 7: Inverse Operations

National Curriculum Objectives:

Mathematics Year 5: (5C5a) Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
Mathematics Year 5: (5C6a) Multiply and divide numbers mentally drawing upon known facts

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)
Developing Decide whether the missing numbers share a common factor. Includes times tables up to 12 x 12. Also includes pictorial support.
Expected Decide whether the missing numbers are prime numbers. Includes times tables up to 12 x 12.
Greater Depth Use inverse operations it identify whether a starting number is a square and cube number. Includes times tables up to 12 x 12.

Questions 2, 5 and 8 (Varied Fluency)
Developing Mark which statements can be calculated from a given pictorial representation. Includes times tables up to 12 x 12. Four multiple choice options given.
Expected Mark which statements can be calculated from a given pictorial representation. Includes times tables up to 12 x 12. Six multiple choice options given.
Greater Depth Mark which statements can be calculated or derived from a given representation. Includes times tables up to 12 x 12. Multiple choice options given.

Questions 3, 6 and 9 (Reasoning)
Developing Explain whether a statement is correct using knowledge of inverse operations. Includes times tables up to 12 x 12. Includes pictorial support.
Expected Explain whether a statement is correct using knowledge of factors and inverse operations. Includes times tables up to 12 x 12.
**Greater Depth** Use knowledge of factors to create different fact families. Includes times tables up to 12 x 12 and derived facts.

More Year 5 Multiplication and Division resources.

Did you like this resource? Don't forget to review it on our website.

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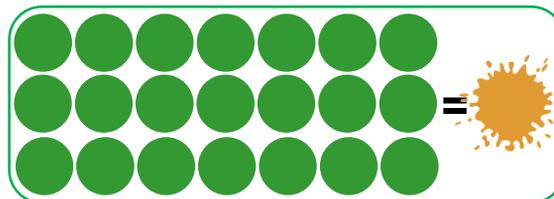Homework/Extension – Inverse Operations – Teaching Information

Inverse Operations

1. True or false? The missing numbers from the representations below all share a common factor.

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$3 \times$ $= 27$
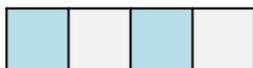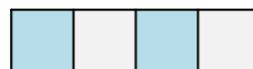
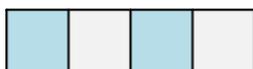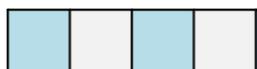$30 \div$ $= 10$

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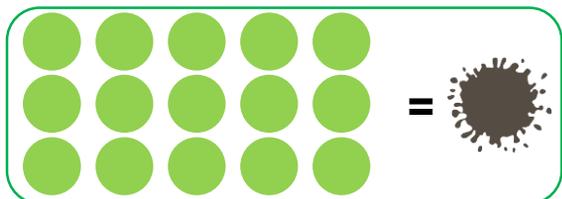
2. Tick the statements that can be calculated from the representation shown below.

A. 6 x 4 ☐

B. 26 ÷ 4 ☐

C. 24 ÷ 6 ☐

D. 4 x 8 ☐

3. Kath has drawn the array below.
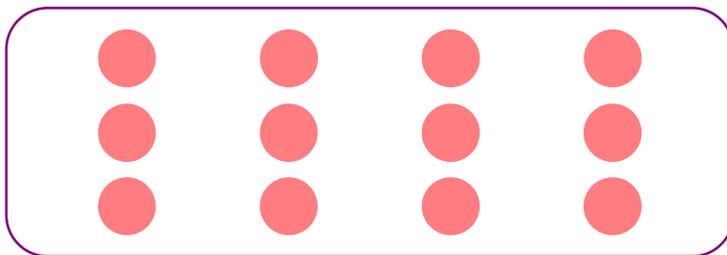
She says,

3 x 4 = 16, so 16 ÷ 4 = 3

Kath

Is she correct? Explain your answer.

Inverse Operations

4. True or false? The missing numbers from these calculations are all prime numbers.

$6 \times$ ⬤ $= 48$

⬤ $\times$ ⬤ $= 14$

$9 \times$ ⬤ $= 27$

⬤ $\times 9 = 45$

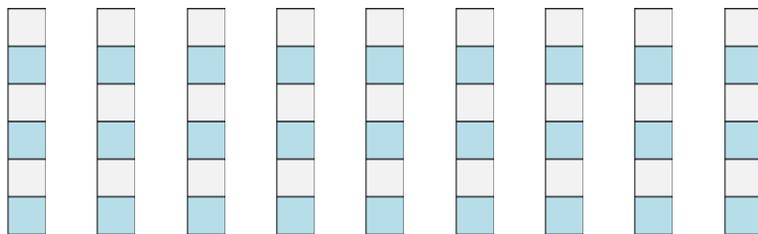⬤ $\times 4 = 32$

$8 \times$ ⬤ $= 72$

VF
HW/Ext

5. Tick the statements which can be calculated from the representation shown below.

A. 9×6 ☐

B. 6×10 ☐

C. $45 \div 9$ ☐

D. $60 \div 6$ ☐

E. $54 \div 6$ ☐

F. 6×9 ☐

VF
HW/Ext

6. Chelsea has completed the fact family below.

$8 \times 6 = 56$

$56 \div 8 = 6$

$6 \times 8 = 56$

$56 \div 6 = 8$

She says,

> 8 and 6 are both factors of 56.

Chelsea

Is she correct? Explain your answer.

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Homework/Extension – Inverse Operations – Year 5 Expected

Inverse Operations

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7. True or false? The number I'm thinking of is either a square or a cube number.

A. I think of a number and divide it by 3. I then multiply it by 6. My answer is 72.

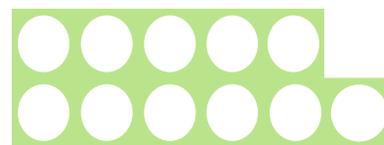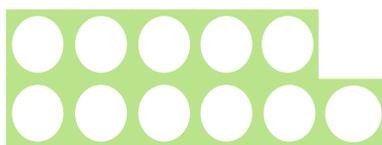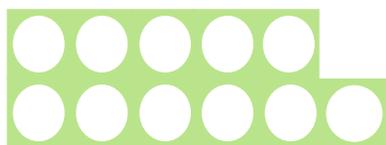**B.** I think of a number and divide it by 7. I then multiply it by 4. My answer is 48.

C. I think of a number and multiply it by 4. I then divide it by 2. My answer is 18.

D. I think of a number and divide it by 6. I then multiply it by 5. My answer is 40.

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8. Tick the statements which can be calculated or derived from the representation shown below.

A. 12 x 6 ☐	**B.** 12 x 11 ☐	**C.** 66 ÷ 11 ☐
D. 6 x 11 ☐	**E.** 66 ÷ 2 ☐	**F.** 64 ÷ 6 ☐
G. 11 ÷ 6 ☐	**H.** 6 ÷ 22 ☐	**I.** 11 x 6 ☐

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9. Use different factor pairs of 72 to complete the fact families below.

☐ x ☐ = **72**   ☐ ÷ ☐ = ☐

72 ÷ ☐ = ☐   ☐ x ☐ = ☐

Paul says,

> I can use this information to create new fact families.

Write two fact families related to the ones above.

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Homework/Extension – Inverse Operations – Year 5 Greater Depth

Developing

1. True (3)

2. A and C

3. No, Kath is incorrect, because 3 x 4 = 12 so 12 ÷ 4 = 3.

Expected

4. False, because 8 and 9 are not prime numbers.

5. A, E and F

6. No, Chelsea is incorrect, because 6 is not a factor of 56. Instead of the number '6', she should have used '7' in her fact family.

Greater Depth

7. A = true (36), B = false (84), C = true (9), D = false (48)

8. C, B, D and I

9. Factor pairs that could be used to create the fact families include: 1 and 72, 2 and 36, 3 and 24, 4 and 18, 6 and 12, 8 and 9.

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Homework/Extension – Inverse Operations ANSWERS