

Reasoning and Problem Solving

Step 1: Multiples

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](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Identify a multiple from given parameters (using multiples of 2, 3, 5 or 10).

Expected Identify a multiple from given parameters (using multiples of numbers up to and including 12).

Greater Depth Identify a multiple from given parameters (using multiples of numbers beyond the 12 times tables).

Questions 2, 5 and 8 (Reasoning)

Developing Identify what certain numbers from a small section of a hundred square have in common (using multiples of 2, 3, 5 or 10).

Expected Identify what certain numbers from a small section of a hundred square have in common (using multiples of numbers up to and including 12).

Greater Depth Identify what certain numbers from a small section of a hundred square have in common (using multiples of numbers beyond the 12 times tables).

Questions 3, 6 and 9 (Reasoning)

Developing Identify and explain why a number is the odd one out (using multiples of 2, 3, 5 or 10).

Expected Identify and explain why a number is the odd one out (using multiples of numbers up to and including 12).

Greater Depth Complete a part whole model to create number bonds to 100. Starting with any 2-digit number.

More Year [5 Multiplication and Division](#) resources.

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Reasoning and Problem Solving – Multiples

1a. Florence is thinking of a number.

My number is a multiple of 5 and 10. It is even and between 35 and 55.

What could her number be?

Is there only one answer?



PS

1b. Greg is thinking of a number.

My number is a multiple of 3. It is even and between 20 and 30.

What could his number be?

Is there only one answer?



PS

2a. Below is a section of a hundred square. Why are some of the numbers shaded? Why do some of the numbers have circles around them?

9	10	11	12
29	30	31	32
39	40	41	42



R

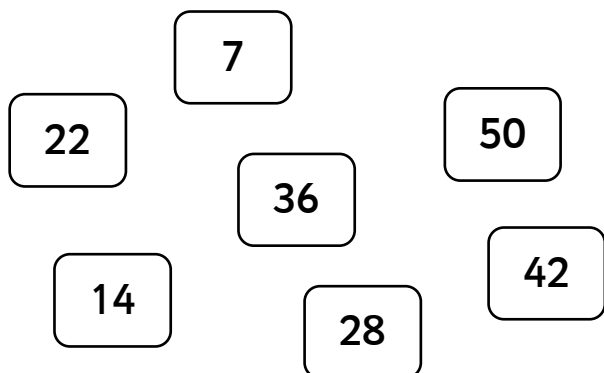
2b. Below is a section of a hundred square. Why are some of the numbers shaded? Why do some of the numbers have circles around them?

15	16	17	18
25	26	27	28
35	36	37	38



R

3a. Which is the odd one out?

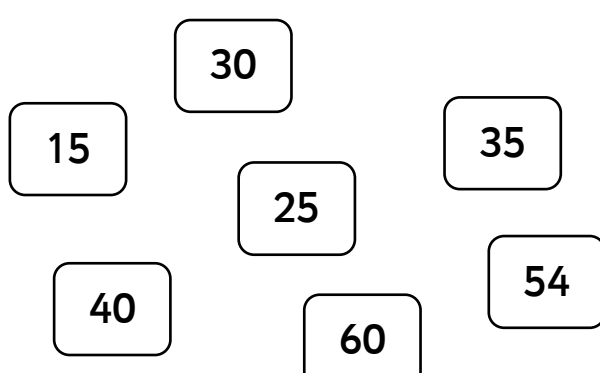


How do you know?



R

3b. Which is the odd one out?



How do you know?



R

Reasoning and Problem Solving – Multiples

4a. Mia is thinking of a number.

My number is a multiple of 9 and 3. It is even and between 50 and 60.

What could her number be?

Is there only one answer?



PS

4b. Alex is thinking of a number.

My number is a multiple of 11 and 2. It is even and between 20 and 50.

What could his number be?

Is there only one answer?



PS

5a. Below is a section of a hundred square. Why are some of the numbers shaded? Why do some of the numbers have circles around them?

42	43	44
52	53	54
62	63	64



R

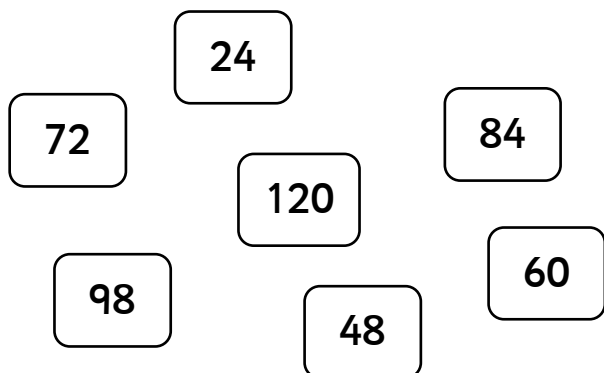
5b. Below is a section of a hundred square. Why are some of the numbers shaded? Why do some of the numbers have circles around them?

62	63	64
72	73	74
82	83	84



R

6a. Which is the odd one out?

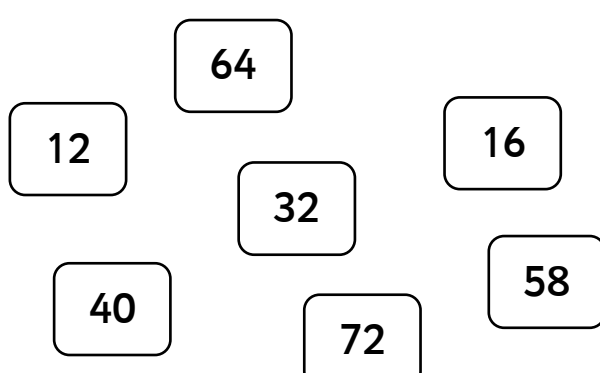


How do you know?



R

6b. Which is the odd one out?



How do you know?



R

Reasoning and Problem Solving – Multiples

7a. Rachel is thinking of a number.

My number is a multiple of 3, 6 and 9. It is even and between 100 and 130.

What could her number be?

Is there only one answer?



PS

7b. Monty is thinking of a number.

My number is a multiple of 11 and 7. It is even and between 130 and 160.

What could his number be?

Is there only one answer?



PS

8a. Below is a section of a number square. Why are some of the numbers shaded? Why do some of the numbers have circles around them?

104	105	106
114	115	116
124	125	126



R

8b. Below is a section of a number square. Why are some of the numbers shaded? Why do some of the numbers have circles around them?

96	97	98
106	107	108
116	117	118



R

9a. Which is the odd one out?

96

80

72

112

88

104

60

How do you know?



R

9b. Which is the odd one out?

98

63

77

21

84

92

70

How do you know?



R

Reasoning and Problem Solving – Multiples

Developing

- 1a. 40 or 50
- 1b. 24
- 2a. Shaded – multiples of 3. Circles – multiples of 5 and 10.
- 2b. Shaded – multiples of 2. Circles – multiples of 5.
- 3a. 7 is the odd one out because it is not a multiple of 2.
- 3b. 54 is the odd one out because it is not a multiple of 5.

Expected

- 4a. 54
- 4b. 22 or 44
- 5a. Shaded – multiples of 3. Circles – multiples of 7.
- 5b. Shaded – multiples of 8. Circles – multiples of 6 or 12.
- 6a. 98 is the odd one out because it is not a multiple of 12.
- 6b. 58 is the odd one out because it is not a multiple of 4.

Greater Depth

- 7a. 108 or 126
- 7b. 154
- 8a. Shaded – multiples of 5. Circles – multiples of 4.
- 8b. Shaded – multiples of 3. Circles – multiples of 12.
- 9a. 60 is the odd one out because it is not a multiple of 8.
- 9b. 92 is the odd one out because it is not a multiple of 7.