

Varied Fluency

Step 4: Prime Numbers

National Curriculum Objectives:

Mathematics Year 5: (5C5b) [Know and use the vocabulary of prime numbers, prime factors and composite \(non-prime\) numbers](#)

Mathematics Year 5: (5C8a) [Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes](#)

Differentiation:

Developing Questions to support identifying prime and composite numbers up to 100.

Expected Questions to support identifying prime and composite numbers up to 100 and identifying prime factors in numbers.

Greater Depth Questions to support identifying prime and composite numbers up to 100. Includes identifying prime factors in numbers and recognising the sum of prime factors.

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

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

Prime Numbers

Prime Numbers

1a. Circle the prime numbers.

3, 8, 9, 17, 23, 31



VF

1b. Circle the prime numbers.

2, 6, 11, 24, 37, 40



VF

2a. Which of the following are composite numbers?

5	29	35
19	12	38



VF

2b. Which of the following are composite numbers?

60	13	21
32	41	77



VF

3a. Circle the numbers which are in the wrong place.

Prime Numbers	Composite Numbers
33	12
10	26
11	31
2	40



VF

3b. Circle the numbers which are in the wrong place.

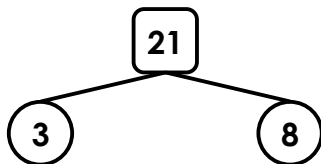
Prime Numbers	Composite Numbers
29	46
7	39
43	23
42	5



VF

4a. True or false?

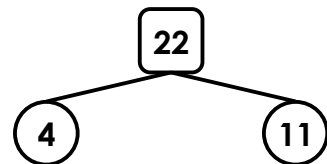
The factor tree below is correct.



VF

4b. True or false?

The factor tree below is incorrect.



VF

Prime Numbers

5a. Circle the numbers that have 2 as a prime factor.

4, 5, 9, 18, 29, 32



VF

Prime Numbers

5b. Circle the numbers that have 5 as a prime factor.

2, 13, 15, 23, 30, 43



VF

6a. Which of the following are composite numbers that have 7 as a prime factor?

89	17	14
32	49	7



VF

6b. Which of the following are composite numbers that have 11 as a prime factor?

11	66	100
28	37	44



VF

7a. Circle the numbers which are in the wrong place.

Prime Factor of 30	Not a Prime Factor of 30
2	30
4	6
5	15
10	3



VF

7b. Circle the numbers which are in the wrong place.

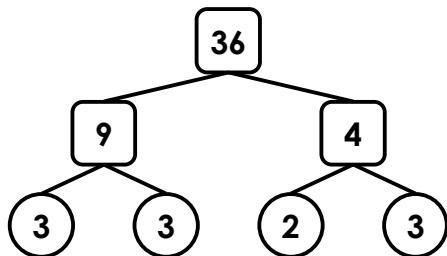
Prime Factor of 42	Not a Prime Factor of 42
21	2
7	28
3	35
14	4



VF

8a. True or false?

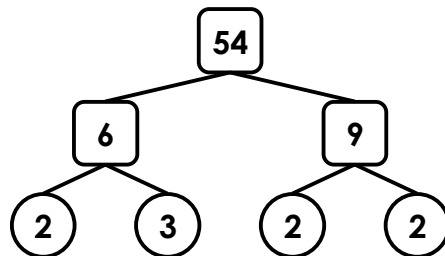
The factor tree below is correct.



VF

8b. True or false?

The factor tree below is incorrect.



VF

Prime Numbers

9a. Circle the numbers where the sum of the prime factors is less than 12.

15, 26, 28, 32, 41, 49



VF

Prime Numbers

9b. Circle the numbers where the sum of the prime factors is greater than 12.

11, 21, 36, 38, 44, 56



VF

10a. Which of the following are composite numbers and have 8 as the sum of their prime factors?

15	89	20
59	16	9



VF

10b. Which of the following are composite numbers and have 10 as the sum of their prime factors?

29	25	30
46	35	59



VF

11a. Circle the number pairs which are in the wrong place.

Sum of Prime Factors is 15	Sum of Prime Factors is not 15
16 and 20	10 and 16
21 and 6	12 and 21



VF

11b. Circle the number pairs which are in the wrong place.

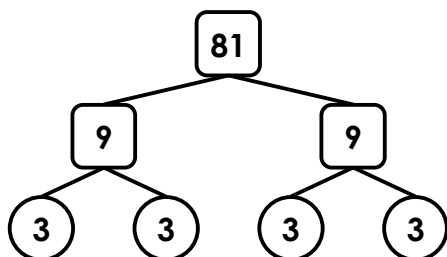
Sum of Prime Factors is 18	Sum of Prime Factors is not 18
38 and 44	42 and 26
14 and 27	25 and 15



VF

12a. True or false?

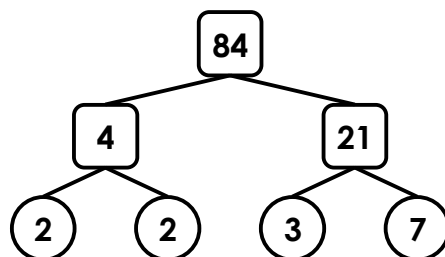
The sum of the prime factors in the tree below does not equal 13.



VF

12b. True or false?

The sum of the prime factors in the tree below equals 13.



VF

Varied Fluency Prime Numbers

Developing

- 1a. 3, 17, 23 and 31
- 2a. 35, 12 and 38
- 3a. 33, 10 and 31
- 4a. False. The factors should be 3 and 7

Expected

- 5a. 4, 18 and 32
- 6a. 14 and 49
- 7a. 4, 10 and 3
- 8a. False. The prime factors of 4 are 2 and 2

Greater Depth

- 9a. 15, 28 and 32
- 10a. 15 and 16
- 11a. 16 and 20, 10 and 16
- 12a. True

Varied Fluency Prime Numbers

Developing

- 1b. 2, 11 and 37
- 2b. 60, 21, 32 and 77
- 3b. 42, 23 and 5
- 4b. True

Expected

- 5b. 15 and 30
- 6b. 66 and 44
- 7b. 21, 14 and 2
- 8b. True

Greater Depth

- 9b. 38, 44 and 56
- 10b. 25 and 30
- 11b. 38 and 44, 25 and 15
- 12b. False. The total of the prime factors is 14