

Homework/Extension

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:

Questions 1, 4 and 7 (Varied Fluency)

Developing Find the odd number out which is not a prime number. Uses prime numbers up to 100.

Expected Find the odd number out which does not have a given prime factor. Uses prime and composite numbers up to 100 and identifies prime factors in numbers.

Greater Depth Find the odd number out which does not have a given prime factor. Identify the prime factors of a number and recognise the sum of prime factors. Uses prime and composite numbers up to 100.

Questions 2, 5 and 8 (Varied Fluency)

Developing Complete the factor trees using prime numbers. Uses prime and composite numbers up to 100.

Expected Complete the factor trees using composite and prime numbers. Uses composite numbers up to 100 and identifies prime factors in numbers.

Greater Depth Complete the factor trees using composite and prime numbers. Uses composite numbers up to 100 and identifies prime factors in numbers. Identify if a statement about the sum of the prime factors is true or false.

Questions 3, 6 and 9 (Reasoning and Problem Solving)

Developing Identify and explain the correct statement based on recognising prime numbers. Uses prime and composite numbers up to 100.

Expected Identify and explain the correct statement based on prime factors. Uses composite numbers up to 100 and identifies prime factors in numbers.

Greater Depth Identify and explain the correct statement based on the sum of prime factors. Uses prime and composite numbers up to 100 and identifies prime factors in numbers.

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

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

Prime Numbers

1. Which number is the odd one out because it is not a prime number?

15

11

17

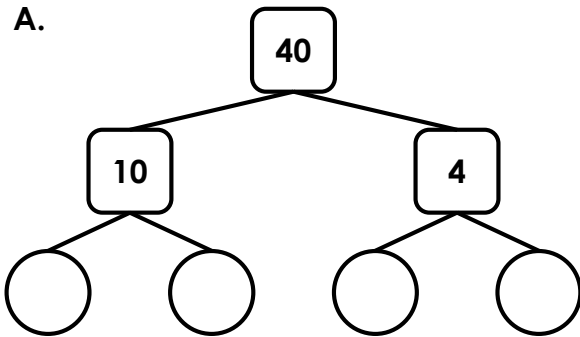
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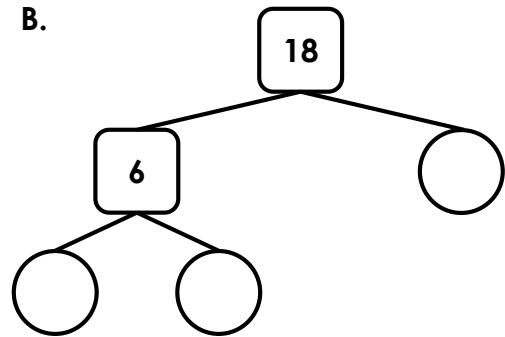
VF
HW/Ext

2. Place prime numbers in the circles to complete the factor trees below.

A.



B.



VF
HW/Ext

3. Chris and Abiha are learning about prime numbers and how to identify them.



Chris

All 2-digit numbers ending in 2 cannot be prime numbers because they are even.



Abiha

2 is a prime number so that means all 2-digit numbers ending in 2 must be prime numbers as well.

Who do you agree with? Explain your answer.



RPS
HW/Ext

Prime Numbers

4. Which number is the odd one out because it does not have 13 as a prime factor?

39

41

52

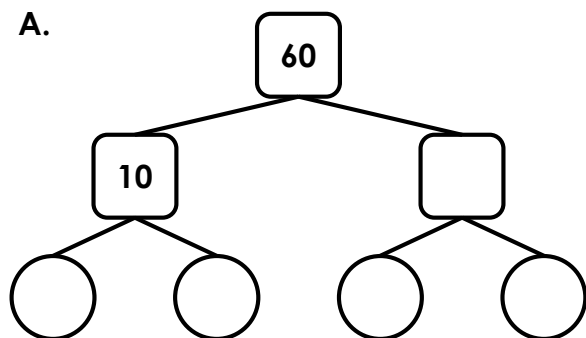
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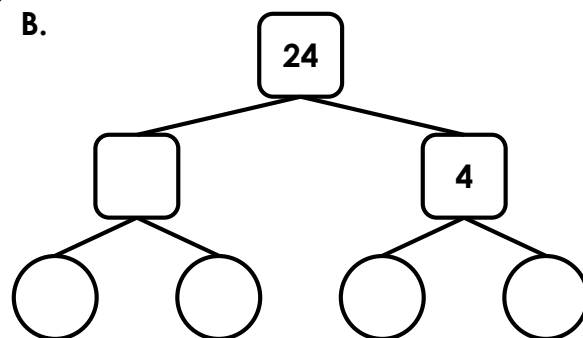
VF
HW/Ext

5. Place composite numbers in the squares and prime factors in the circles to complete the factor trees below.

A.



B.



VF
HW/Ext

6. Lauren and Dan are learning about prime factors and how to identify them.



Lauren

Every even number has 2 as a prime factor.



Dan

Composite numbers over 60 only have two prime factors.

Who do you agree with? Explain your answer.



RPS
HW/Ext

Prime Numbers

7. Which number is the odd one out because it does not have 7 as a prime factor?

64

91

49

84

The prime factors of one of these numbers add together to make 20. Which one is it?

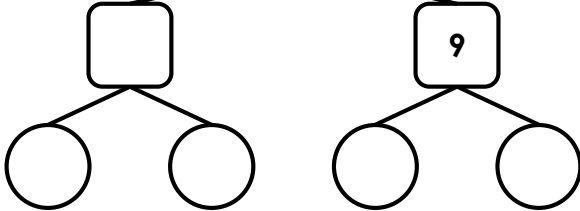


VF
HW/Ext

8. Place composite numbers in the squares and prime factors in the circles to complete the factor trees below.

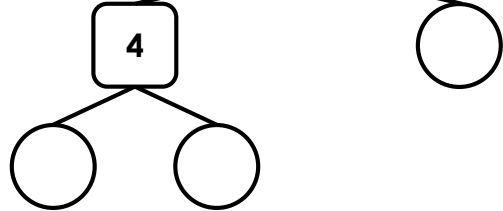
A.

54



B.

92



True or false? The sum of the prime factors in tree B is 28.



VF
HW/Ext

9. Leah and Phil are learning about the sum of prime factors.



Leah

When you add the prime factors of a number, the total is always an odd number.



Phil

The sum of the prime factors of 52 is a prime number.

Who do you agree with? Explain your answer.



RPS
HW/Ext

Homework/Extension

Prime Numbers

Developing

1. 15
2. A = 2 and 5; 2 and 2; B = 2 and 3; 3
3. Chris. Various possible answers, for example: Every 2-digit number ending in 2 can be divided by 2, making them composite numbers and not prime numbers.

Expected

4. 41
5. A = Composite number: 6; Prime numbers: 2 and 5; 2 and 3
B = Composite number: 6; Prime numbers: 2 and 3; 2 and 2
6. Lauren. Various possible answers, for example: Every even number can be divided by 2 so has 2 as a prime factor.

Greater Depth

7. 64; 91
8. A = Composite number: 6; Prime numbers: 2 and 3; 3 and 3
B = Prime numbers: 2 and 2; 23
False. The sum of the prime factors in tree B is 27.
9. Phil. Various possible answers, for example: The prime factors of 52 are 2, 2 and 13 which when added together make 17. 17 is a prime number.