

WA4MNAFA1

Understanding number

Core + Challenge

Prime vs Composite Numbers

I can classify whole numbers as prime or composite.

Name: _____ Date: _____ Score: / 53

Key idea

Prime and composite numbers: a prime number has exactly two factors, 1 and itself (e.g. $7 = 1 \times 7$ only). A composite number has more than two factors (e.g. $8 = 1 \times 8, 2 \times 4$). The number 1 is neither prime nor composite.

A Fluency *practise the skill*

/16 marks

Classify each number as prime (P) or composite (C).

1. 2 _____

2. 3 _____

3. 4 _____

4. 5 _____

5. 6 _____

6. 7 _____

7. 9 _____

8. 11 _____

9. 12 _____

10. 13 _____

11. 15 _____

12. 17 _____

13. 19 _____

14. 21 _____

15. 23 _____

16. 25 _____

B Core *apply the skill to problems*

/21 marks

- 1 List all the prime numbers between 1 and 20.

[3 marks]

Answer: _____

- 2 A student says 9 is prime because it is an odd number. (a) Is the student correct? Explain. (b) List the factors of 9 to support your answer.

[4 marks]

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Answer: _____

3

List all the composite numbers between 20 and 30.

[3 marks]

Answer: _____

4

(a) Classify 29 as prime or composite, explaining your reasoning. (b) Classify 51 as prime or composite, explaining your reasoning.

[4 marks]

Answer: _____

5

Find the smallest composite number greater than 50.

[3 marks]

Answer: _____

6

(a) List the prime numbers between 30 and 40. (b) Explain why even numbers greater than 2 can never be prime.

[4 marks]

Answer: _____

C

Reasoning *explain, justify and check*

/9 marks

1

Explain the difference between a prime number and a composite number.

[2 marks]

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2

Explain why the number 1 is neither prime nor composite.

[2 marks]

3

A student says that all prime numbers are odd. Explain why this is incorrect, using an example.

[2 marks]

4

A student lists the factors of 15 as 1, 3, 5, 15 and concludes 15 is prime because it has four factors spread evenly. Explain the error in the student's reasoning, and correctly classify 15.

[3 marks]

D

Challenge *multi-step and problem-solving*

/7 marks

1

Find two prime numbers that add up to 24.

[2 marks]

Answer: _____

2

A number between 40 and 50 is prime. List all the possibilities.

[2 marks]

Answer: _____

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3

A student claims every even number greater than 2 can be written as the sum of two prime numbers. Test this claim for the number 30 by finding one such pair of prime numbers.

[3 marks]

Answer: _____

How did I go?

Fluency ____/16 Core ____/21 Reasoning ____/9 Challenge ____/7 **Total ____/53**

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