

Primes, Squares and Cubes: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To make connections between square numbers and area.	Review the children's understanding of area and its units by making the link between finding the area of squares and rectangle and square numbers. Investigate why we use the units cm^2 and begin to use this knowledge to solve problems involving area and square numbers.	<ul style="list-style-type: none"> • Are children able to make the link between area and squaring a number? • Can children find the area of a square by squaring the length of the sides? • Are children able to recognise and use the 2 notation? 	<ul style="list-style-type: none"> • Slides • Worksheets 1A/1B/1C • Squared paper • Challenge Card 1A (FSD? activity only)
Lesson 2	To make connections between 3 and finding the volume of a cube.	Begin to use cube numbers in context when making the link between volume and cube numbers. Revisit the formula of length x width x depth and begin to use this in problems involving volume and cube numbers.	<ul style="list-style-type: none"> • Can children describe what the 3 notation means? • Are children able to make the link between finding the volume of a cube and 3 a number? • Can children use their understanding of volume and cube numbers in a problem solving calculation? 	<ul style="list-style-type: none"> • Slides • Worksheet 2A/2B/2C • Gift Box Sizing Guide • Worksheet 2C/2D (FSD? activity only)
Lesson 3	To investigate and identify prime numbers.	Investigate the factors of numbers and use this to pick out numbers with only two factors. Use this criterion to define prime numbers and composite numbers. Using this understanding the children launch into investigating and identifying prime numbers to 120 using methods such as Eratosthenes' sieve.	<ul style="list-style-type: none"> • Can children describe what a prime number is? • Are children able to use the vocabulary 'prime' and 'composite' with confidence? • Are children able to identify the prime numbers between 1 and 20? 	<ul style="list-style-type: none"> • Slides • Worksheet 3A/3B/3C • Multiplication Grid • Challenge Card 3A
Lesson 4	To identify the prime factors of a number.	Leading on from the previous lesson, the children use their knowledge of prime numbers to find the prime factors of the numbers 2-50. Whilst using factor trees to identify prime factors, the children can consolidate their understanding of square and cube numbers and their notations by writing the multiplication sentences of each number's prime factors.	<ul style="list-style-type: none"> • Can children describe what a prime factor is? • Are children able to complete a factor tree for a given number? • Can children identify the prime factors of a number? 	<ul style="list-style-type: none"> • Slides • Worksheet 4A/4B/4C • Prime Factor Cards (FSD? activity only) • Teacher Cards (FSD? activity only)
Lesson 5	To solve problems involving square, cube and prime numbers.	Children practise the use of square and cube numbers in number sentences before becoming number detectives. They must identify a number based on clues including prime, square and cube numbers. Some clues may be useless and the children must identify the unhelpful information.	<ul style="list-style-type: none"> • Can children define the key vocabulary of square, cube, prime and composite numbers? • Can children identify square, cube, prime and composite numbers? • Can children solve problems involving square, cube, prime and composite numbers? 	<ul style="list-style-type: none"> • Slides • Worksheet 5A/5B/5C • Hundred Squares • Points Card 5A (FSD? activity only) • Calculation Cards 5A/5B/5C (FSD? activity only) • Help Sheet 5A