Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Outline

- Introduction, reflection and mental maths
- Early Learning Goals for Reception
- Key number objectives for KS1
- Key Shape, space and measure objectives for KS1
- How children learn maths – calculation policy
- **Ideas for home - practical showcase**
- Questions

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Area	Reception
Number ELG	• deep understanding of numbers to 10, including the composition of each number • automatic recall of number bonds up to at least 5, including linked subtraction facts and double facts
Numerical patterns ELG	• verbally count beyond 20, recognising the pattern of the counting system • compare quantities up to 10 (greater than, less than, same as)
Shape, space and measure	• select, rotate and manipulate shapes to develop spatial reasoning skills, *e.g. pattern and building blocks, jigsaw puzzles* • investigate shapes, *e.g. how two triangles can be put together to create a square, folding paper shapes* • repeating patterns, *e.g. AB, ABB or ABBC using cubes* • compare length, weight and capacity, *e.g. "Which jug holds more?"*

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Area	Year One	Year Two
Number and place value	• numbers to 100 including place value • count in 10s, 5s and 2s • one more, one less	• numbers to 100 including place value and 0 as a place holder • count in 10s, 5s, 2s and 3s • < and >
Addition and subtraction	• understand +, - and = • number bonds and related subtraction facts within 20 • +/- 1- and 2-digit numbers to 20, including 0 • 7 = ? – 9	• use inverse relationship • addition and subtraction facts to 20 and related facts to 100 • +/- two 2-digit numbers and + three 1-digit numbers • commutative nature of addition
Multiplication and division	• grouping and sharing small quantities • arrays – eggs in an egg box • repeated addition – 5+5+5+5	• x and ÷ facts for 10, 5 and 2 x tables • calculate sums within tables using x, ÷ and = • arrays and repeated addition • commutative nature of multiplication
Fractions	• half • quarter • understanding fractions are part of one whole • early links to division	• ½, ¼, 2/4, ¾, 1/3 • ½ of 6 = 3 • ½ = 2/4

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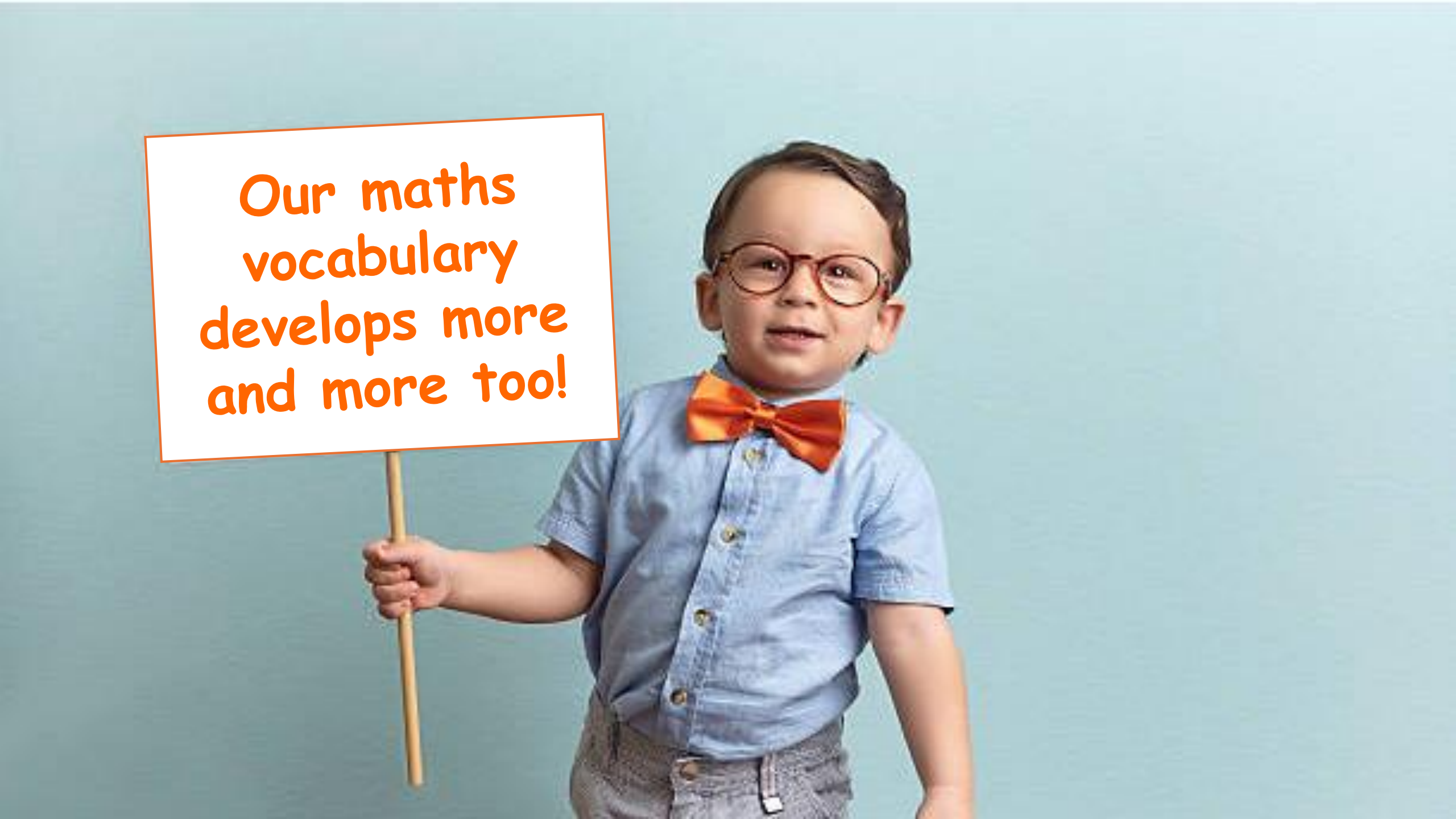
Area	Year One	Year Two
Measurement	• length and height • mass (weight) • capacity and volume • measuring tools, e.g. rulers, scales • money - know value of coins and notes • dates - days of week, weeks, months, years • time – drawing hands to show o'clock and half past	• choose and use cm/m, g/kg, ml/l and °C • measuring tools, e.g. thermometers • money - use £ and p, make amounts, +/- including change • time – minutes in an hour, hours in a day • time – drawing hands to show all five minute intervals
Properties of shape	• 2D, e.g. circle, triangle, square, rectangle • 3D, e.g. sphere, cube, cuboid, pyramid	• quadrilaterals, polygons, prisms, cones • number of sides, lines of symmetry, faces, edges, vertices • 2D faces of 3D shapes, e.g. circular faces on a cylinder • draw shapes
Position and direction	• language, e.g. left and right, between, forwards and backwards • whole, half, quarter and three quarter turns clockwise	• use mathematical vocabulary to describe position, direction and movement • link between quarter turns and right angles • clockwise and anticlockwise


Our maths vocabulary develops more and more too!

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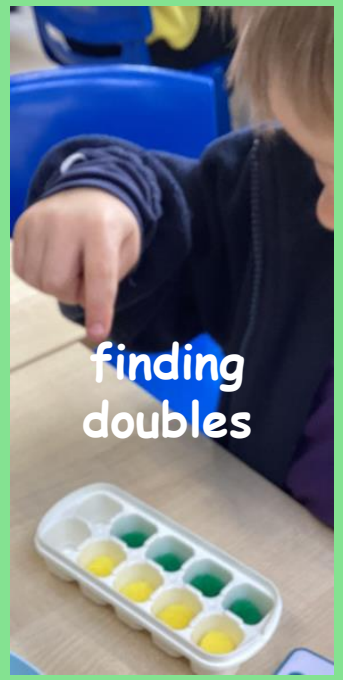
• Concrete	• use of physical resources e.g. cubes
• Pictorial	• use of pictures instead of or alongside numbers
• Abstract	• use of those funny little symbols we call numbers and understanding what they actually mean
• Application of strategies and skills	• problem-solving activities or investigations which also require learning to work systematically

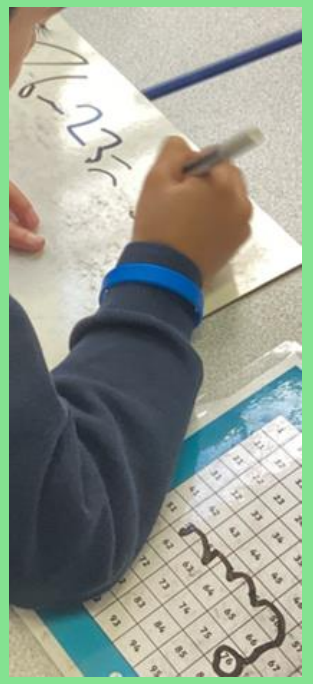


composition of number - what is 6?



Numicon odd and even





subtracting 10s then 1s

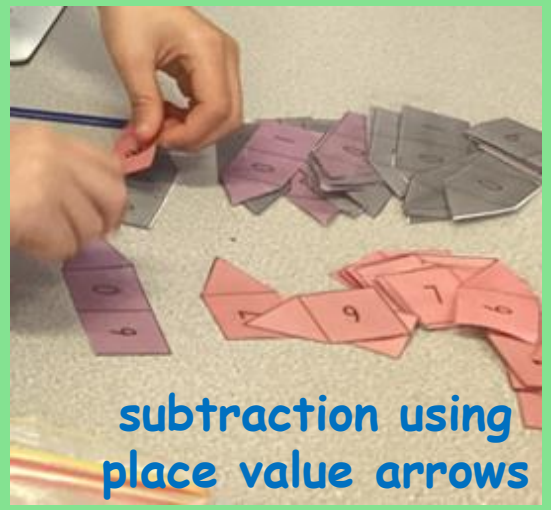


making number lines





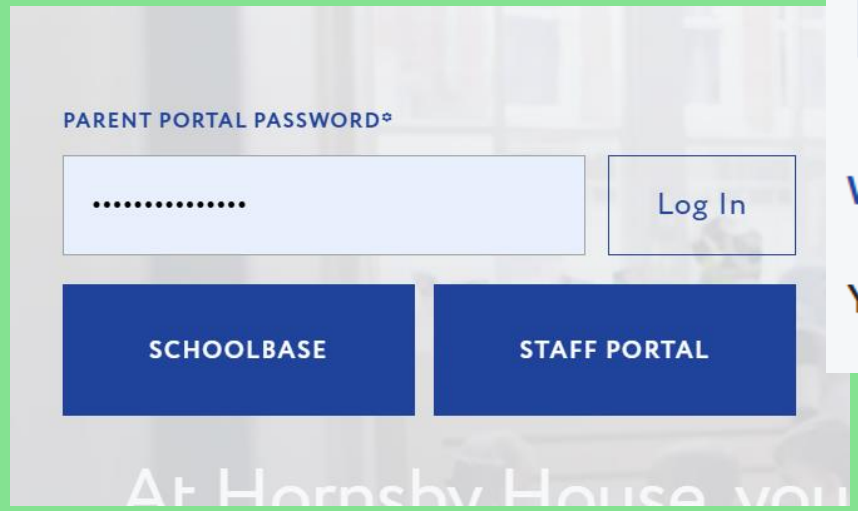
using a bead string to add 9 and 11 by adding 10 first

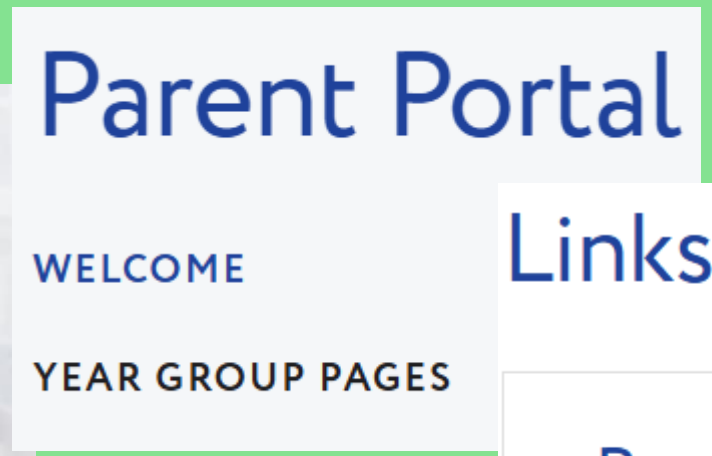


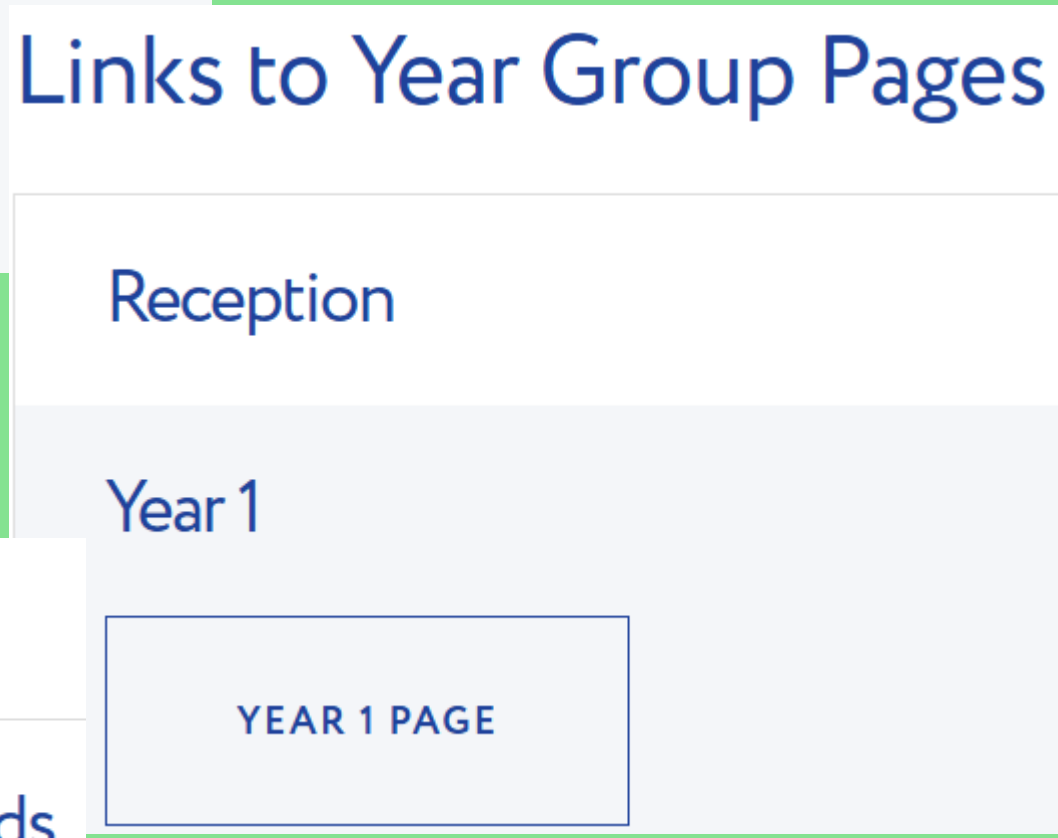


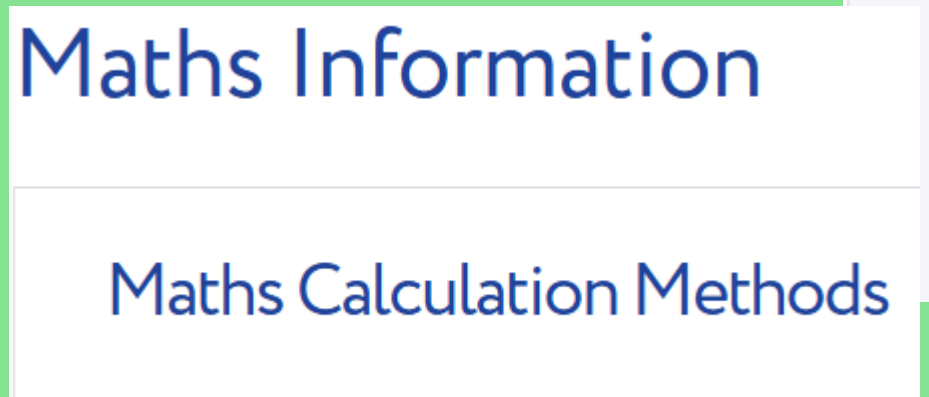


Calculation policy









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