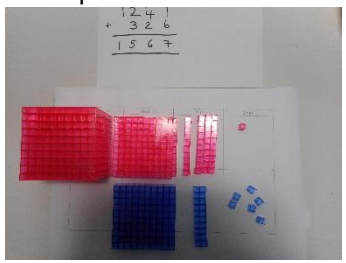
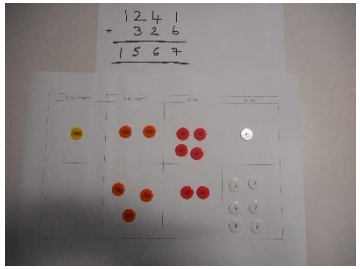
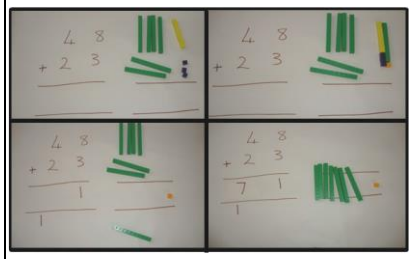
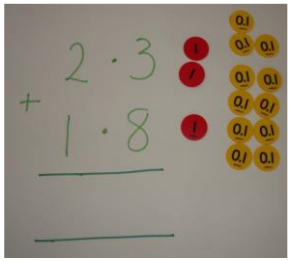
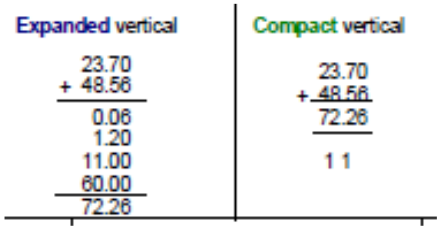
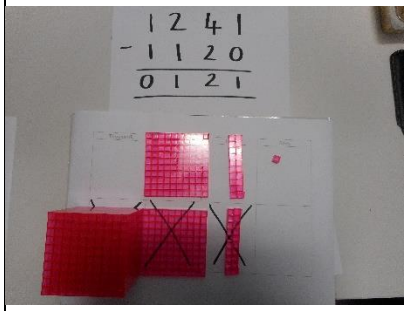
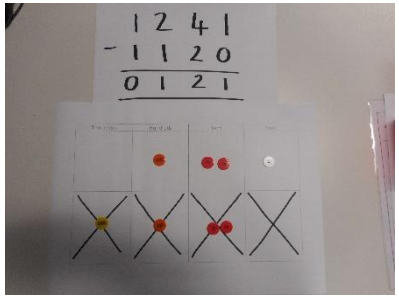
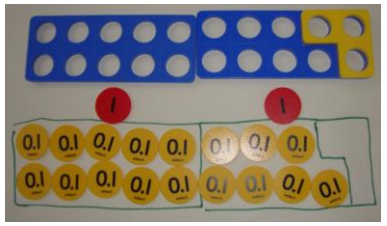
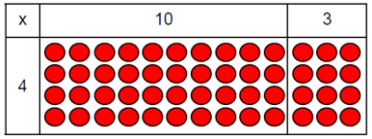
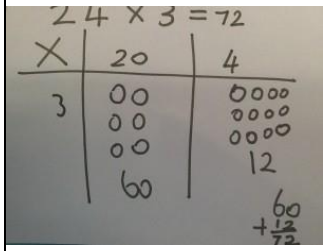
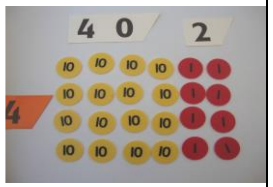
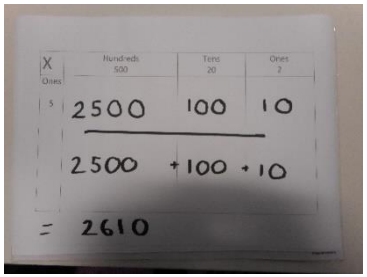
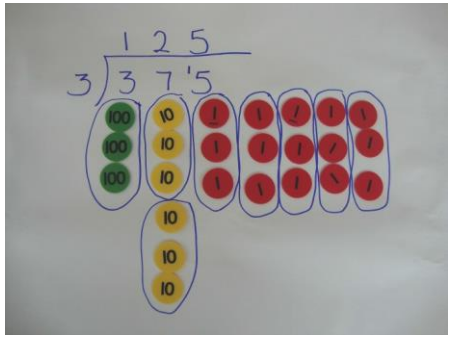
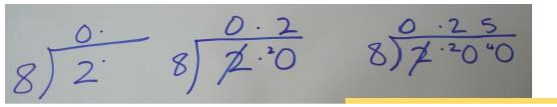
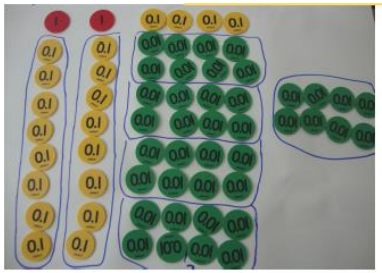
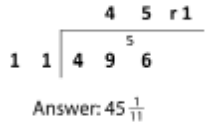
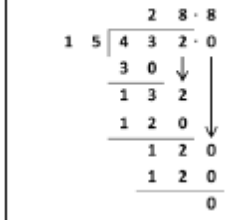
Year 6 Progression in maths

Addition	Pupils should be taught to: ▪ perform mental calculations, including with mixed operations and large numbers ▪ use their knowledge of the order of operations to carry out calculations involving the four operations ▪ solve addition multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Strategies: Strategies: • Diennes on PV mats • Place value counters & PV mat once secure with diennes • Expanded column addition Children should be competent in compact methods of all four operations. Use the above to support children who are not.	The following strategies are for children not at ARE or to prove their thinking/'show another way'. All year 6 children should be able to use the formal method for all four operations.   	 

Subtraction	Pupils should be taught to: ▪ perform mental calculations, including with mixed operations and large numbers ▪ use their knowledge of the order of operations to carry out calculations involving the four operations ▪ solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving subtraction • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Strategies: • Diennes on PV mats • Place value counters & PV mat once secure with diennes • Expanded column subtraction Children should be competent in compact methods of all four operations. Use the above to support children who are not.	The following strategies are for children not at ARE or to prove their thinking/'show another way'. All year 6 children should be able to use the formal method for all four operations.    	1000 and 300 and 70 and 4 – 900 and 60 and 8 1300 and 60 and 14 – 900 and 60 and 8 400 and 0 and 6 Decomposition: 1374 - 968 = 406 932 – 457 becomes 8 12 1 9 3 2 – 4 5 7 4 7 5 Answer: 475

Year 6 Progression in maths

Multiplication	Pupils should be taught to: ▪ multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication ▪ perform mental calculations, including with mixed operations and large numbers ▪ identify common factors, common multiples and prime numbers ▪ use their knowledge of the order of operations to carry out calculations involving the four operations • solve problems involving multiplication • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Strategies: • Grid method using diennes • Grid method using place value counters when secure with diennes • Pictorial representation of grid method • Grid method • Timestable grids • Expanded column method Children should be competent in compact methods of all four operations. Use the above to support children who are not.	The following strategies are for children not at ARE or to prove their thinking/'show another way'. All year 6 children should be able to use the formal method for all four operations. For lower ability to solidify  understanding: HTUxU  4 digits and up: Use column grid method ALONGSIDE concrete resources. 2 5 X 4 2 0 (5 x 4) 8 0 (20 x 4) 1 0 0  	 47 x 36 = 1692 (estimate 50 x 40 = 2000) × 40 7 30 1200 210 1410 6 240 42 282 1692 27 x 34 = 918 (estimate 30 x 30 = 900) 27 x 34 28 (7 x 4) 80 (20 x 4) 210 (7 x 30) 600 (20 x 30) 918 2741 x 6 = 16446 (estimate 3000 x 6 = 18000 2 7 4 1 × 6 1 6 4 4 6 4 2 24 x 16 = 384 (estimate 25 x 15 = 375) 2 2 4 × 1 6 2 4 0 1 4 4 3 8 4

Division	Pupils should be taught to: ▪ divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context ▪ divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context ▪ perform mental calculations, including with mixed operations and large numbers ▪ use their knowledge of the order of operations to carry out calculations involving the four operations • solve problems involving division • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • Use written division methods in cases where the and has up to 2dp. • *[Divide numbers up to 2dp by U/TU whole numbers.*	Strategies: • Grouping with concrete resources (low attainers who lack understanding of concept) • Timestable grids • Short division using diennes • Short division using place value counters • Expanded long division Children should be competent in compact methods of all four operations. Use the above to support children who are not.	The following strategies are for children not at ARE or to prove their thinking/'show another way'. All year 6 children should be able to use the formal method for all four operations. For children not working at a year 6 level: Draw dots and group them to divide an amount and clearly show a remainder. Children to only move on to short division when they fully understand PV. 	  496 ÷ 11 (estimate 500 ÷ 10 = 50)  432 ÷ 15 = 28.8