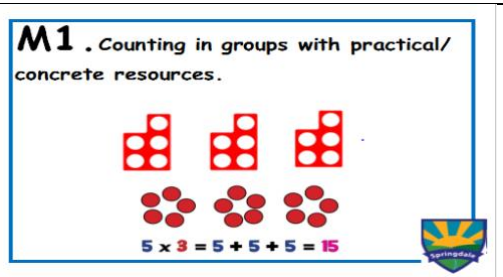
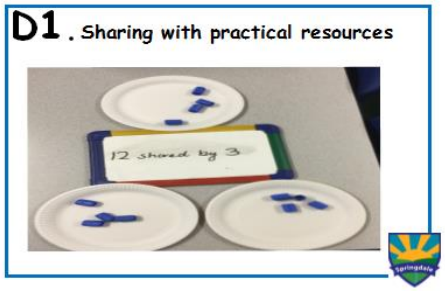
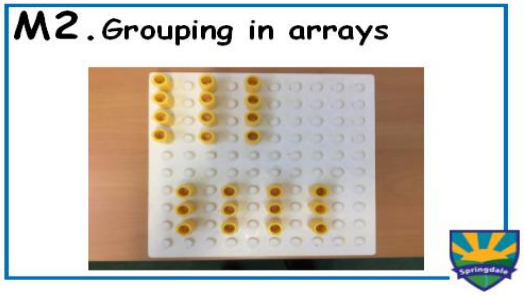
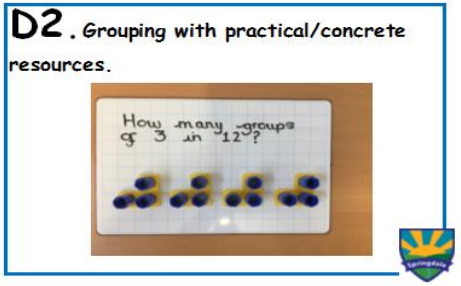
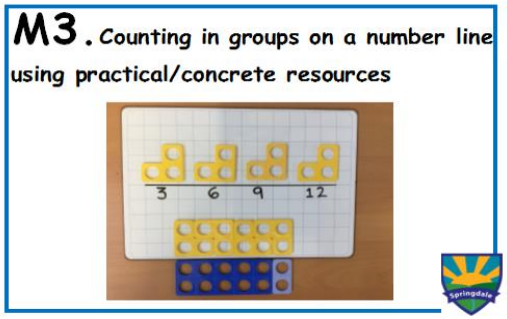
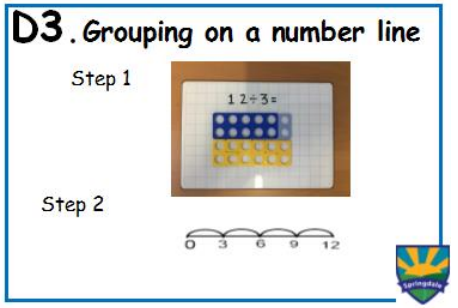
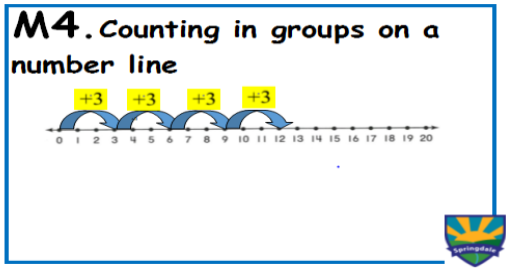
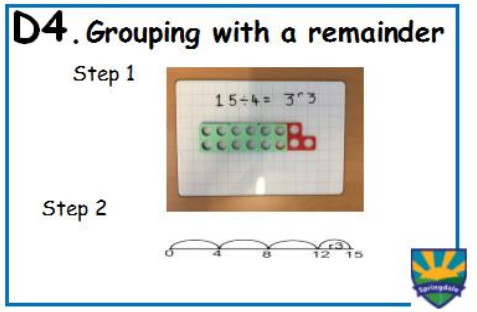
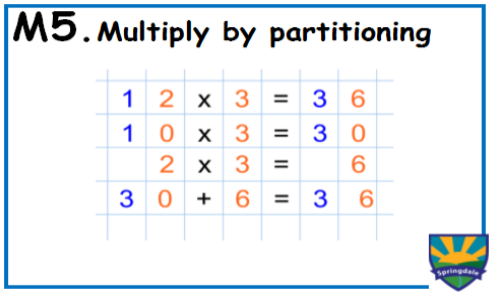
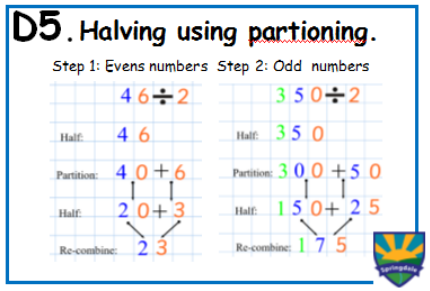
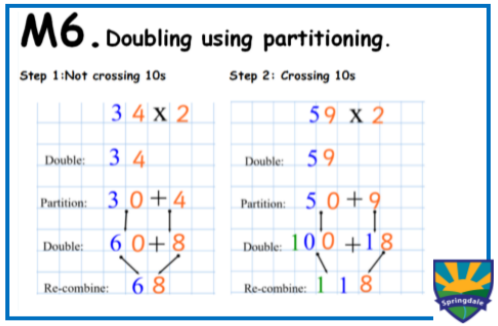
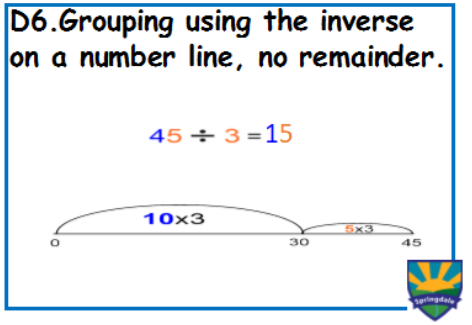
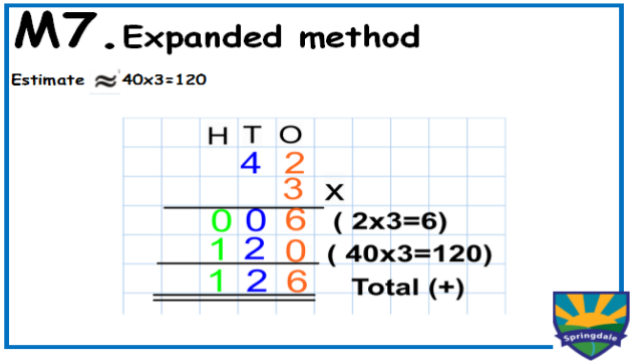
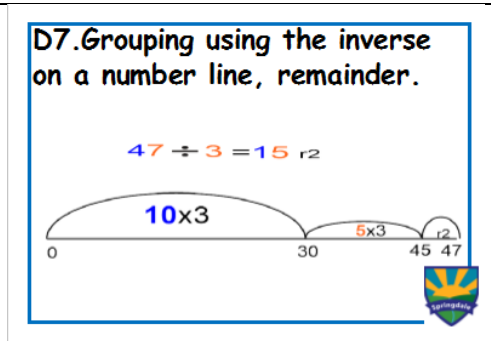
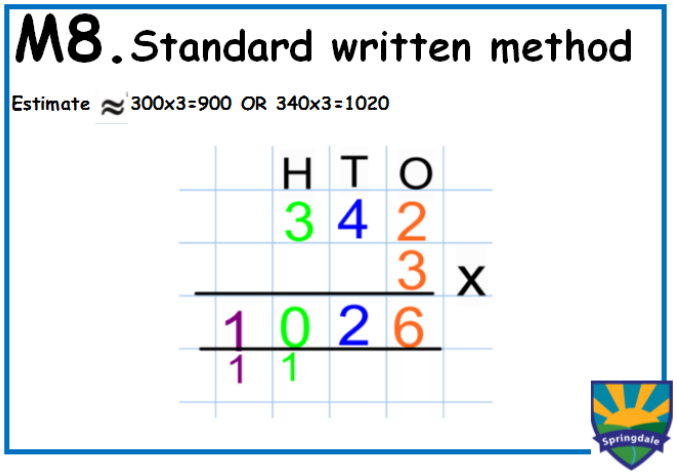
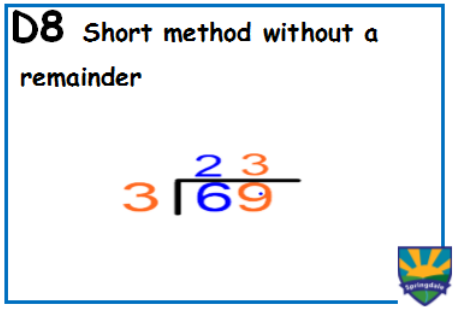
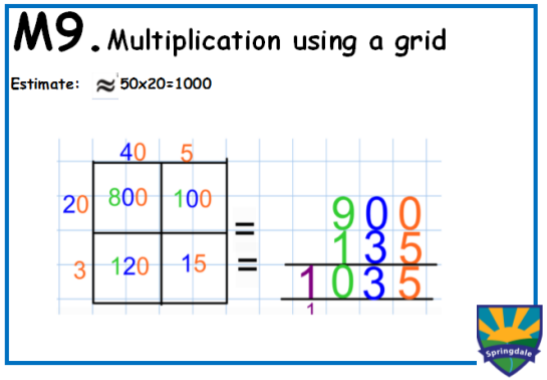
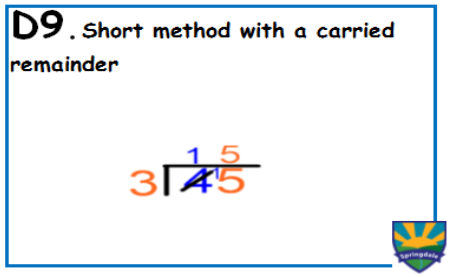
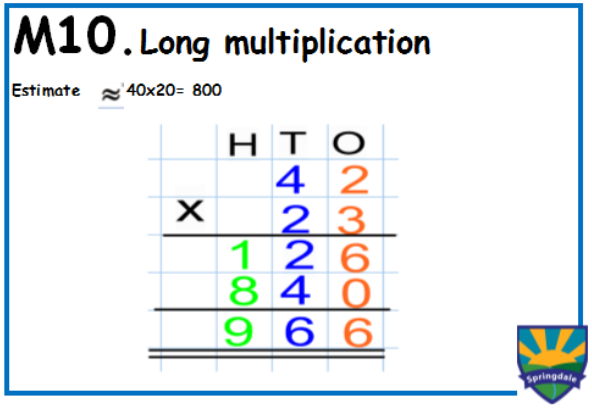
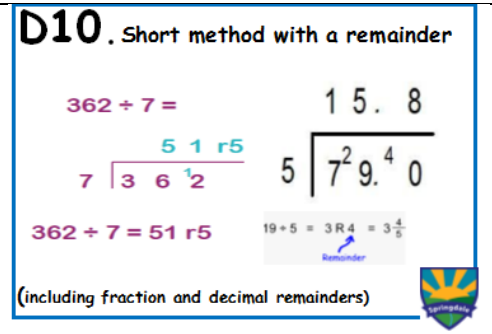
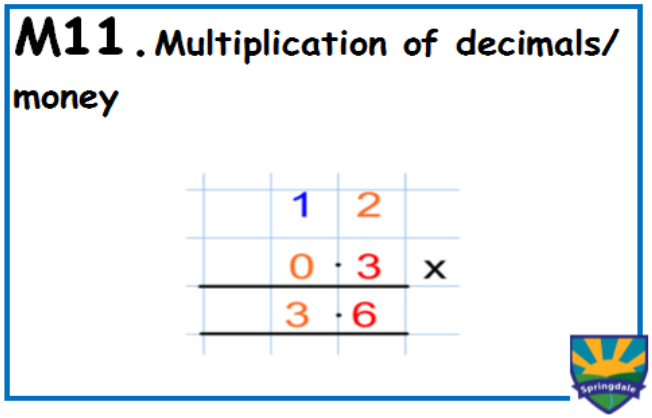
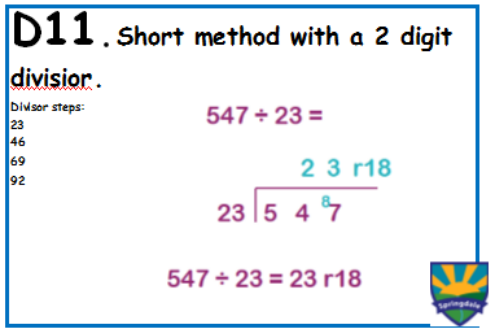
Visual Learning Steps for Written Calculations: Multiplication and Division

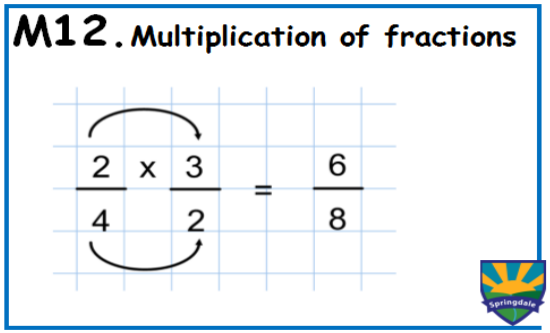
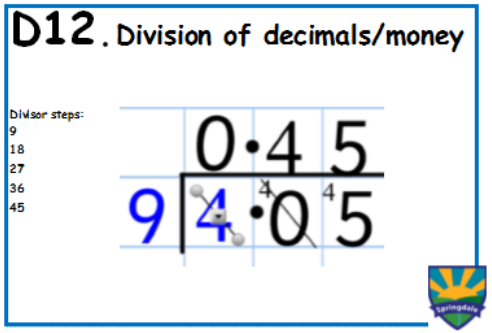
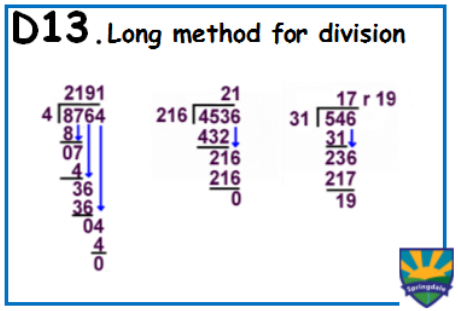
Expected By end of…	MULTIPLICATION	Key Concepts and Vocab	DIVISION	Key Concepts and Vocab
Year 1		This is 5x3 i.e. 5 three times. **groups of sets of multiplied by count in 2s**		**shared by groups of share**
Year 1		4x3 i.e. 4 three times 3x4 i.e 3 four times **arrays**		**groups of shapes of patterns of**
Year 2		4 lots of 3 How many 3s make 12? repeated addition		4 lots of 3 4 groups of 3 4 sets of 3 **How many times?** **divide** **jumps of**

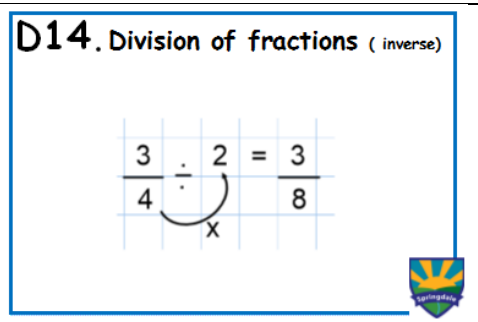
Year 2		**lots of groups of sets of jumps of times multiple of repeated addition**		How many groups of? Sets of? Jumps of? How many left over? **Remainder left left over inverse**
Year 3		Partitioning into Tens and Ones is a vital skill **partition multiply recombine/ total product times multiple of**		Partitioning into Tens and Ones is a vital skill. **partition divide by 2 half share inverse**
Year 3		Partitioning into Tens and Ones is a vital skill. **partition X 2 double near double twice times multiple of**		Times table knowledge or abilty to use a multiplication grid is vital. **divide division divisior groups of quotient**

				inverse
Year 4		Multiply ones/units first. Always add carrying figures. **tens ones/units expanded multiply times multiple of product**		Times table knowledge or abilty to use a multiplication grid is vital. **division divisior groups of quotient left over/ remainder inverse**
Year 4		Multiply ones/units, then tens then hundreds. **HTO multiplicand (342) multiplier (3) multiple of**		Use arrows to show how division calculation should be read **divisor steps dividend (69) divisor (3) quotient (23) inverse check factor divisible by difference**

Year 4		Partitioning into Tens and Ones is a vital skill. **multiply** **ten times larger** **total** **column** **multiple**		Use arrows to show how division calculation should be read **divisor steps** **dividend (45)** **divisor (3)** **quotient (15)** **remainder** **inverse check** **factor** **divisible by** **difference**
Year 5		Multiply the units and then the tens. Don't forget the 0 when multiplying 10s and 00 when multiplying 100s. **HTO** **multiplicand (342)** **multiplier (3)** **total** **multiple**		Using arrows helps to show how division calculation should be read. A good understanding of times tables, inverse operations and remainders is vital. **divisor steps** **dividend** **divisor** **quotient** **remainder**

				decimal fraction difference inverse check divisible by factor
Year 5/6		The place value for this is not correct but it's easier to teach linked to long multiplication and then count the decimal places in the question as this matches the decimal places in the answer. **decimal places divisor steps**		Count in 5 divisor steps to start. Show remainders as fractions and decimals as in D10. **divisor steps dividend divisor remainder decimal fraction quotient inverse check divisible by difference**

Year 5/6		Multiply the numerators and denominators. Cancel answers to the lowest/simpliest form. **numerator** **denominator**		Line up decimal points. **divisor steps** **dividend** **divisor** **remainder** **decimal** **fraction** **quotient** **divisible by** **difference**
Year 5/6				**divisor steps** **dividend** **divisor** **remainder** **decimal** **fraction** **quotient** **divisible by** **difference**

Year 5/6				Swop the numerator and denominator of the second fraction and then use the inverse (x) Big Bottoms **numerator** **denominator** **inverse**