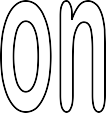
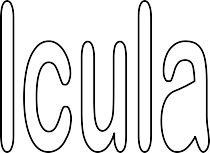
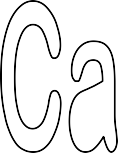
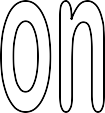
 

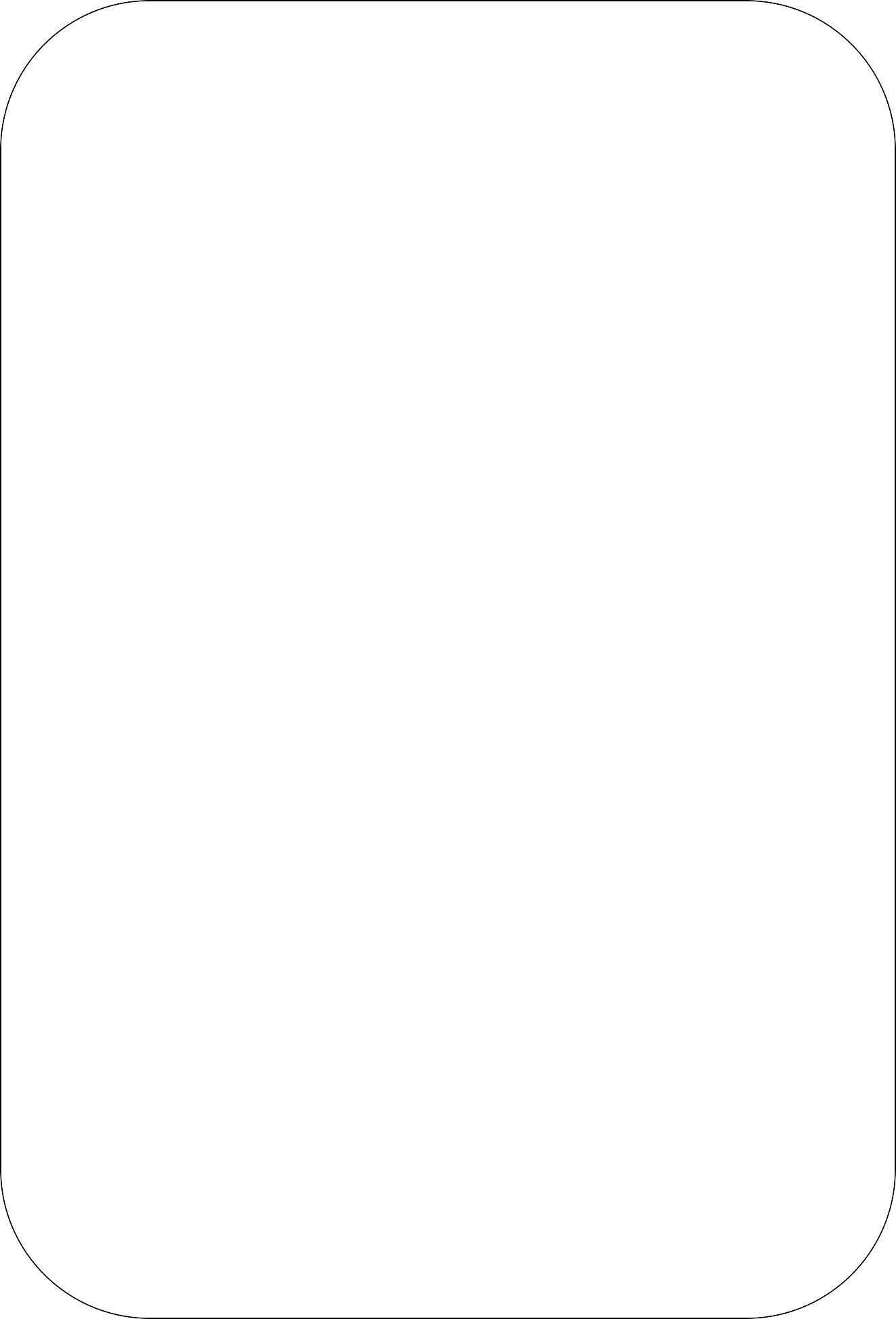
**Holy Trinity CE (A) Primary**





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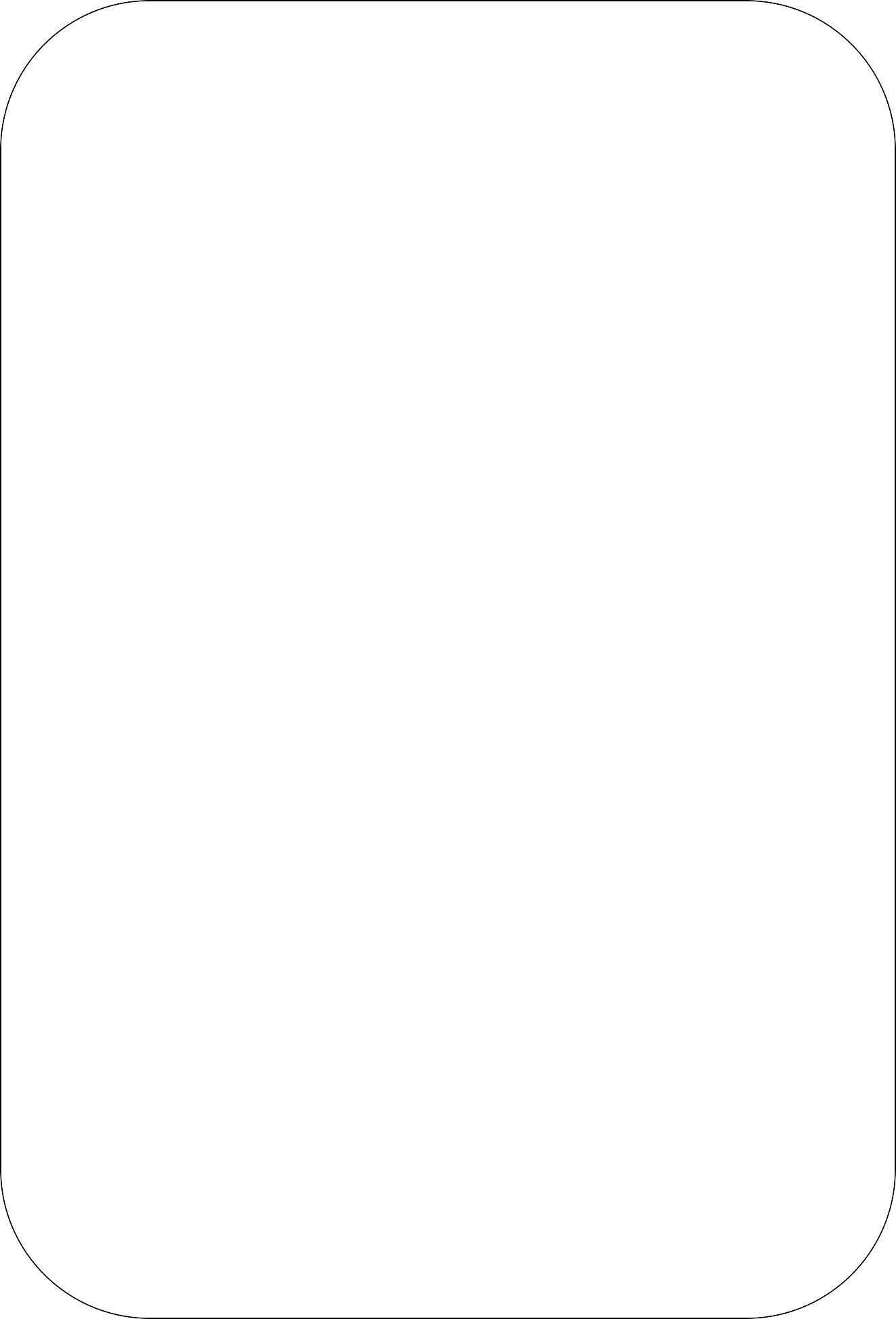


The following Progression in Calculation policy has been written to meet the requirements of the National Curriculum 2014 for the teaching and learning of Mathematics.

It is designed to give a consistent and smooth progression of learning in calculations from EYFS through to Year 6.

The Progression in Calculation policy is organised according to Year group expectations as set out in the National Curriculum. Your child will progress through the methods of calculation according to their ability within the four operations of addition, subtraction, multiplication and division.

The methods shown are only written ways of calculating. Children will also be calculating using mental strategies too.



During their time at Holy Trinity, children learn how to use models and images, such as empty number lines, to support their mental and informal written methods of calculation. As children’s mental methods are strengthened and refined, so too are their informal written methods. These methods become more efficient and succinct and lead to efficient written methods that can be used more generally. By the end of Year 6 children are equipped with mental and written methods that they understand and can use correctly.

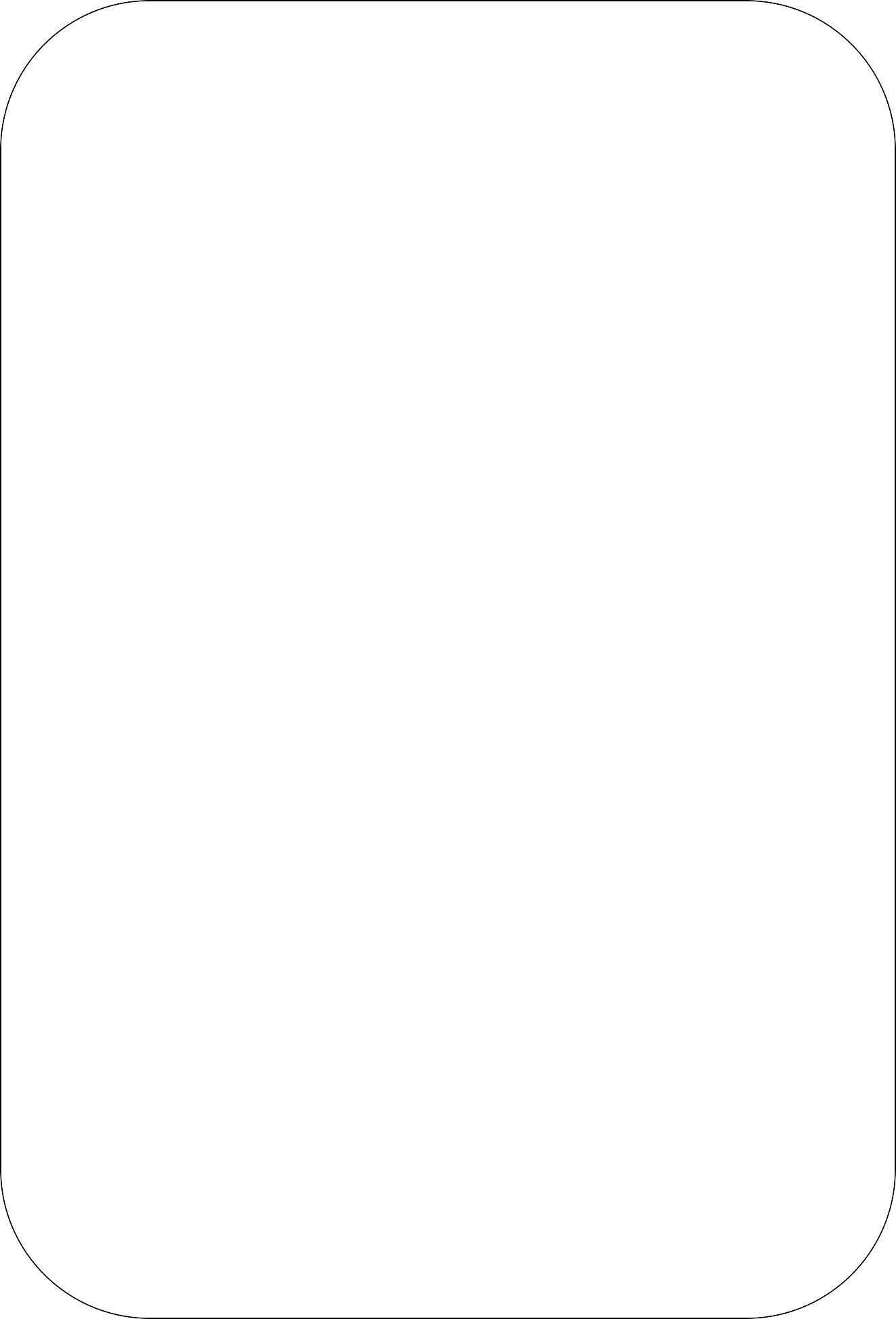
When faced with a calculation, children are able to decide which method is most appropriate and have strategies to check its accuracy. They will do this by asking themselves:

* Can I do this in my head?
* Can I do this in my head using drawing or jottings?
* Do I need to use a pencil and paper procedure?

The overall aim is that when children leave in

Year 6 they:

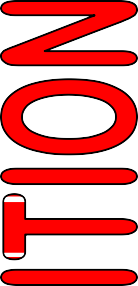
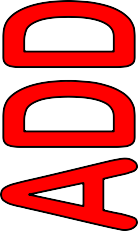
* have a secure knowledge of number facts and a good understanding of the four operations;
* are able to use this knowledge and understanding to carry out calculations mentally and to apply general strategies when using one-digit and two-digit numbers and particular strategies to special cases involving bigger numbers;
* make use of diagrams and informal notes to help record steps and part answers when using mental methods that generate more information than can be kept in their heads;
* have an efficient and reliable written method of calculation for each operation that children can apply with confidence when undertaking calculations that they cannot carry out mentally;

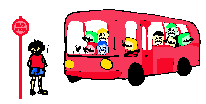


In order to become confident, efficient and

accurate mathematicians, children will be encouraged to:

* approximate their answers before calculating.
* check their answers after calculation using an appropriate strategy.
* consider if a mental calculation would be appropriate before using written methods.



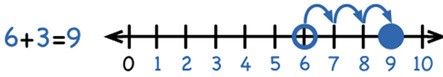


There are three people on the

bus. One more gets on. How many are there now?

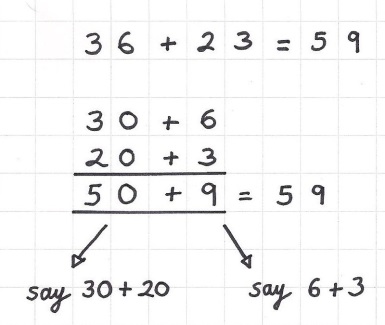
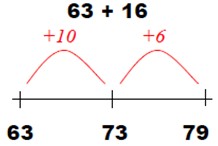
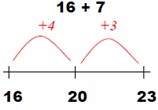
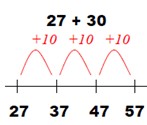
☺☺☺☺☺ ☺ 5 + 1 = 6

EYFS: Find one more than a number from 1 to 20

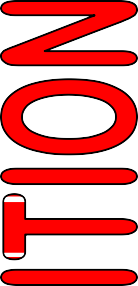
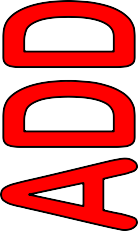


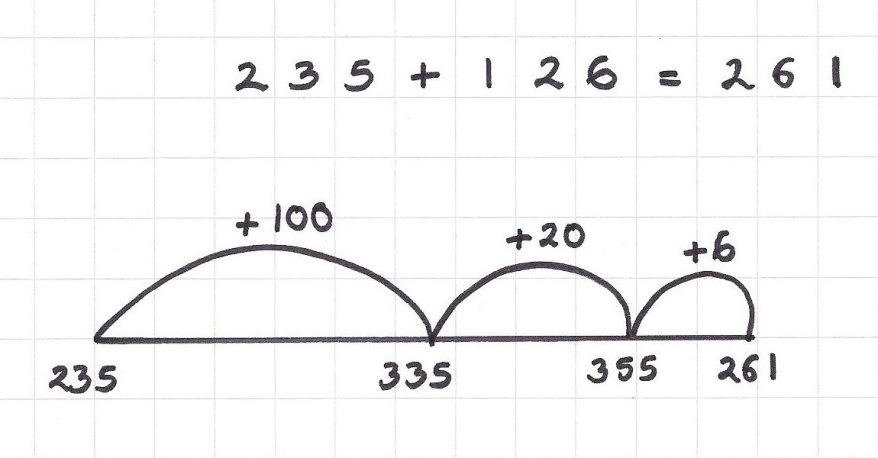
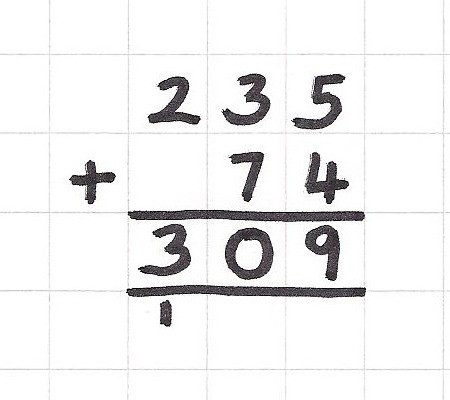
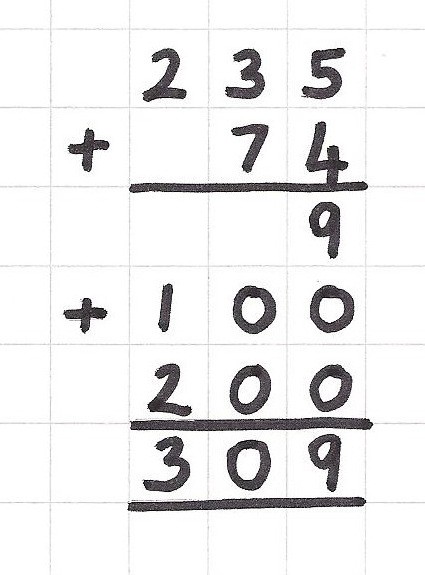
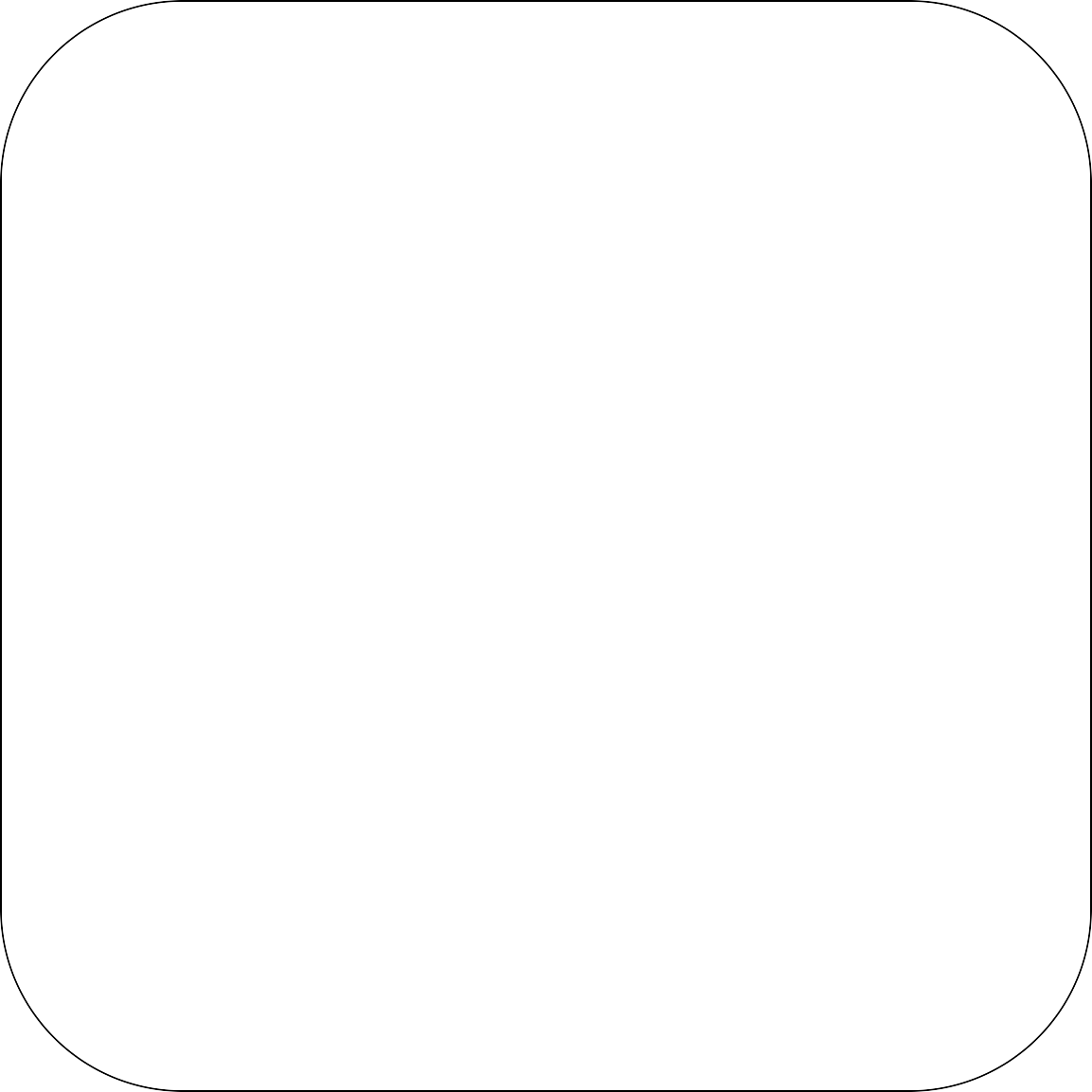
Use numbered number lines to add, by counting on in ones. Encourage children to start with the larger number and count on.

Year 1: Add with numbers up to 20

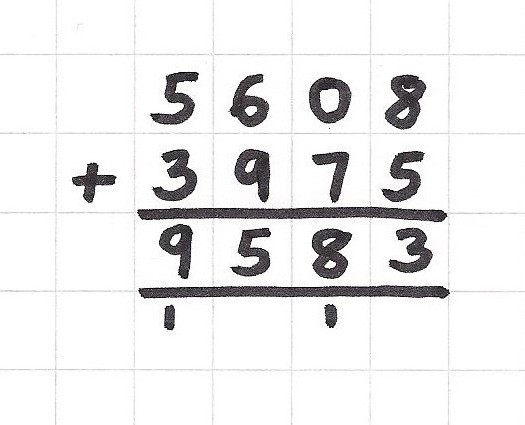
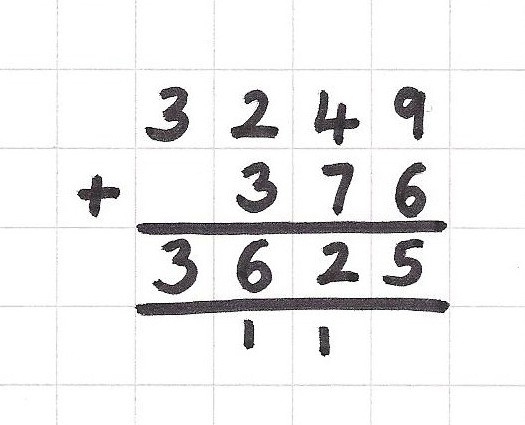


Year 2: Add with 2-digit numbers

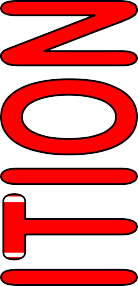
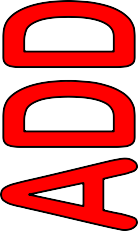


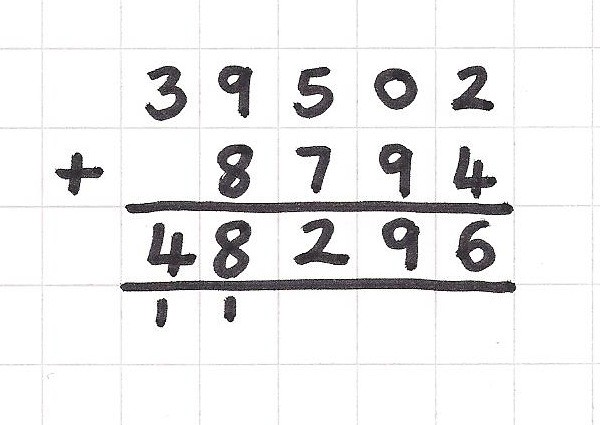
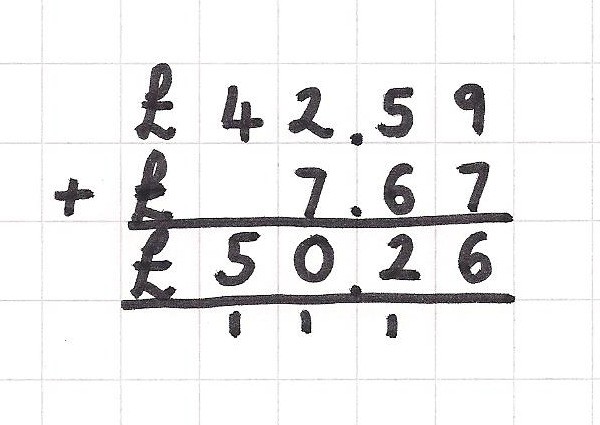


Year 3: Add numbers with up to 3 digits

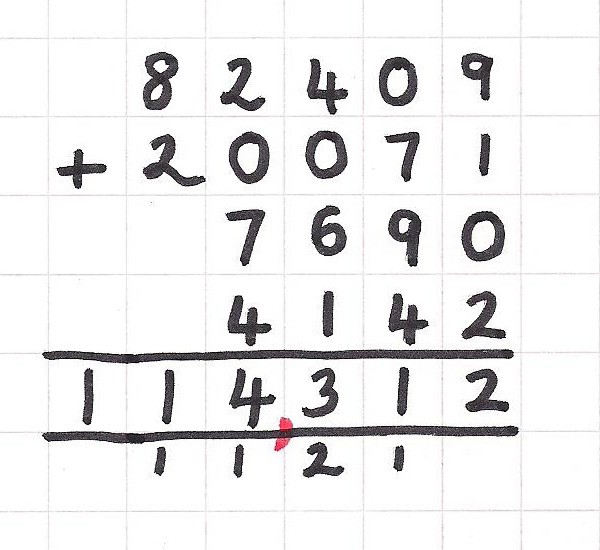
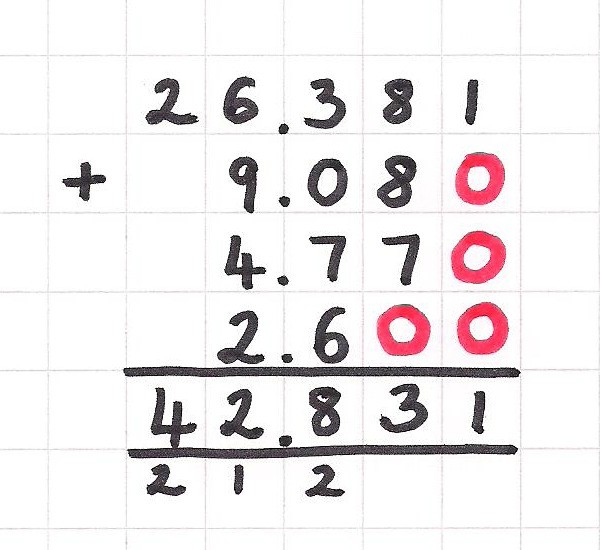


Year 4: Add numbers with up to 4 digits

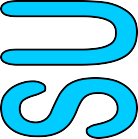


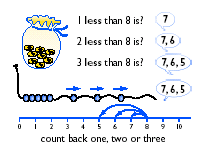
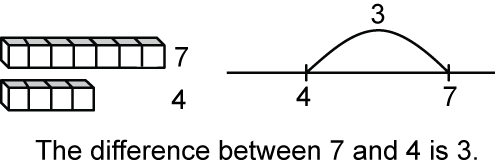
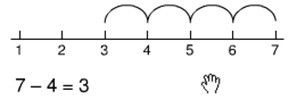


Year 5: Add numbers with more than 4 digits



Year 6: Add several numbers of increasing complexity



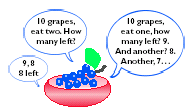
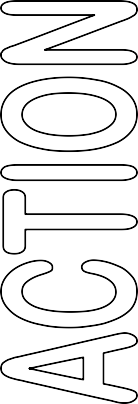


Count back in ones on a numbered number

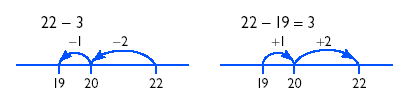
line to take away, with numbers up to 20

= Seven is ‘3 more than’ four

Year 1: Subtract from numbers up to 20



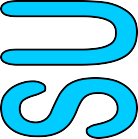
EYFS: Find one less than a number from 1 to 20

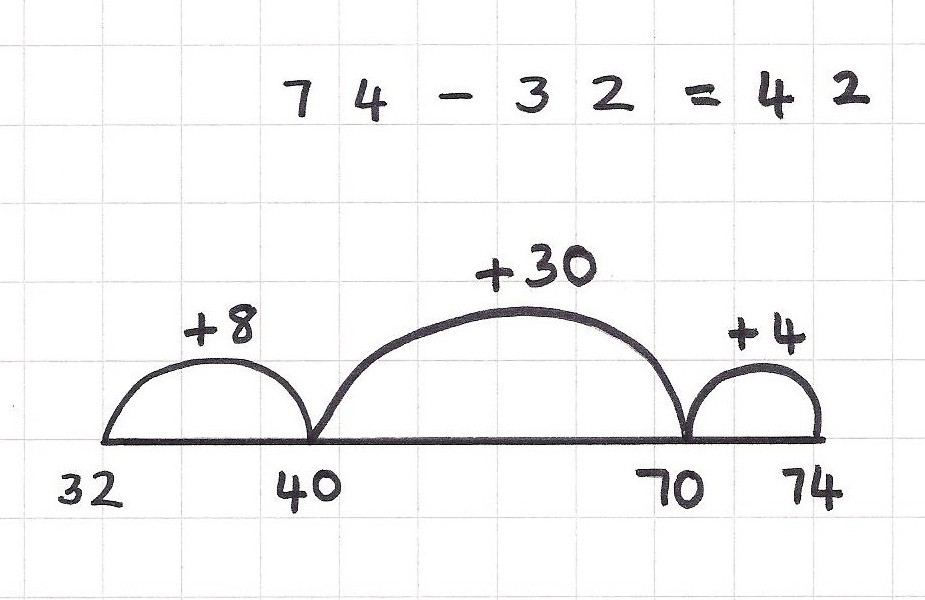
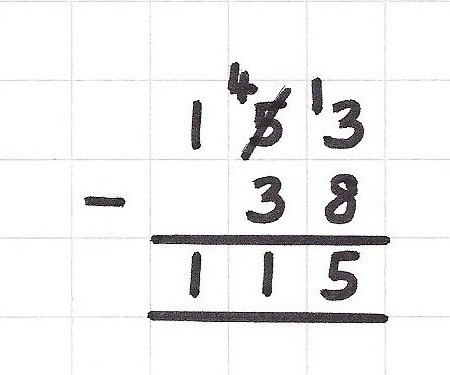
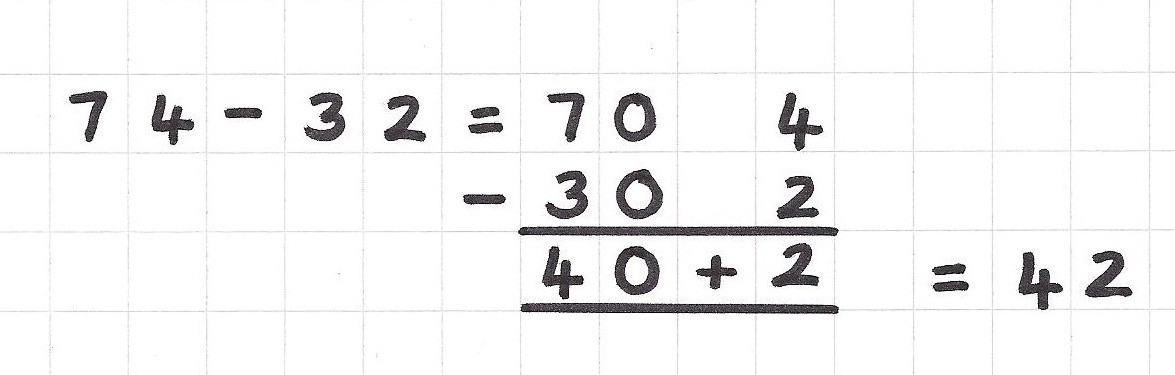
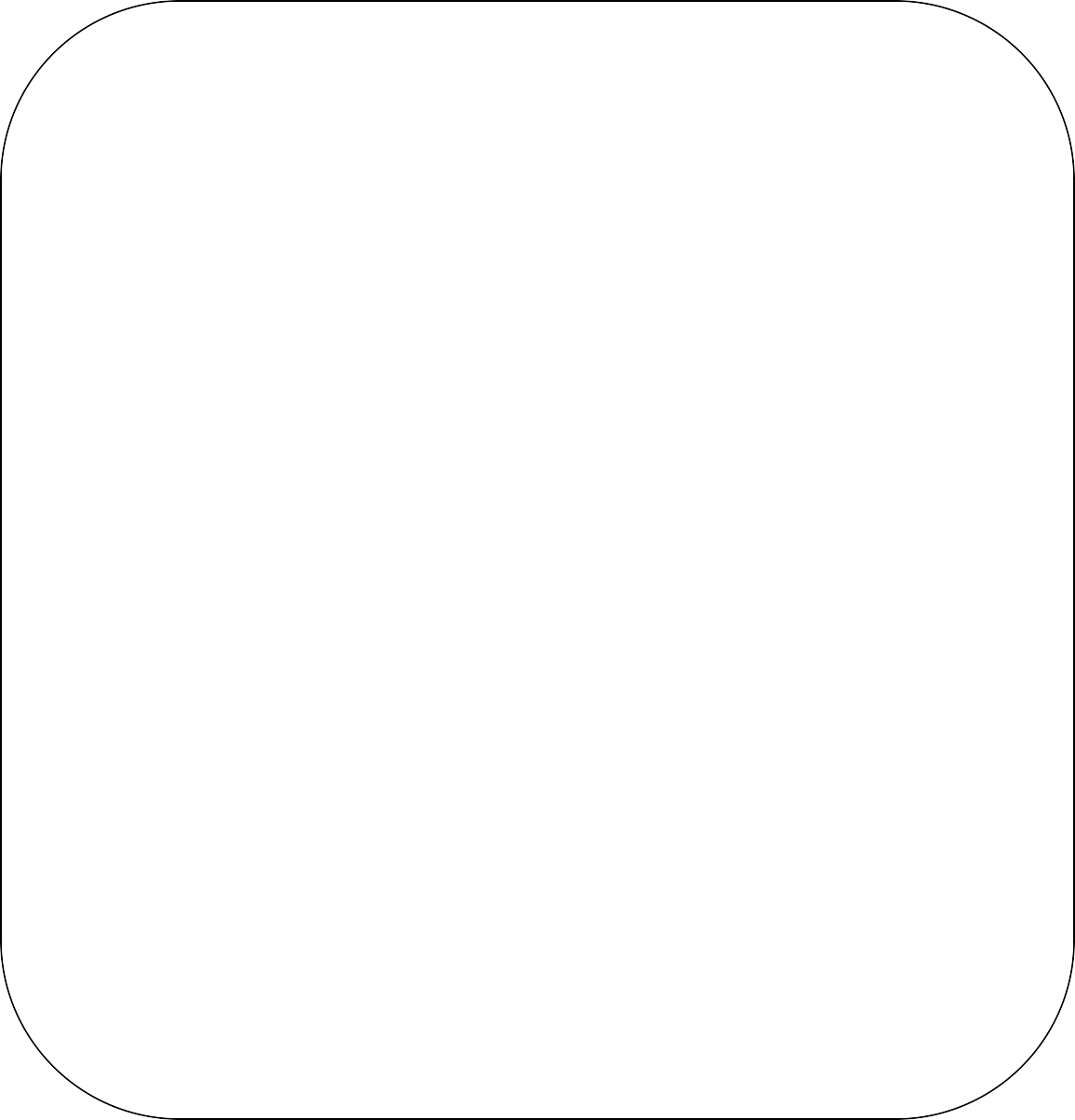
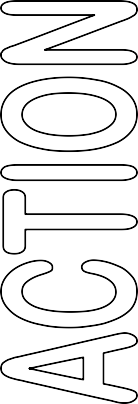


Counting back

Counting on

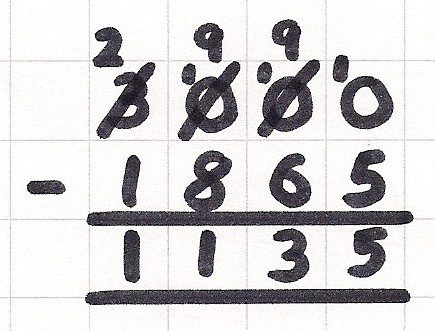
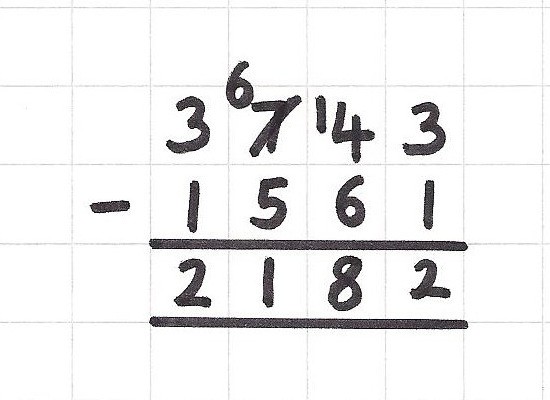
Year 2: Subtract with 2-digit numbers



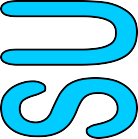


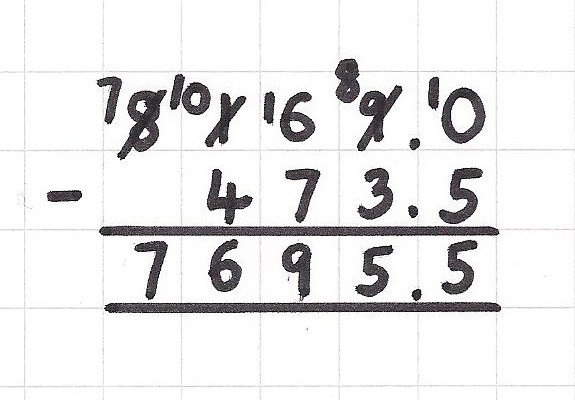
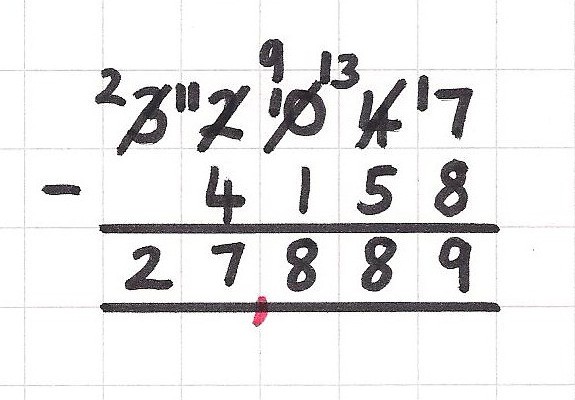
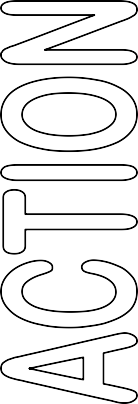
Counting on

Year 3: Subtract with 2 and 3-digit numbers

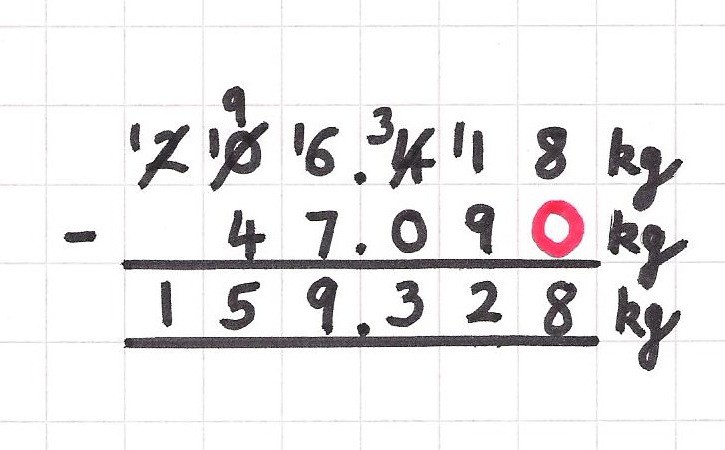
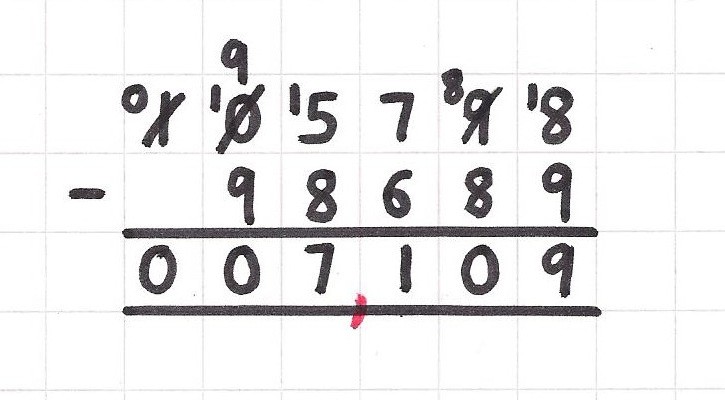
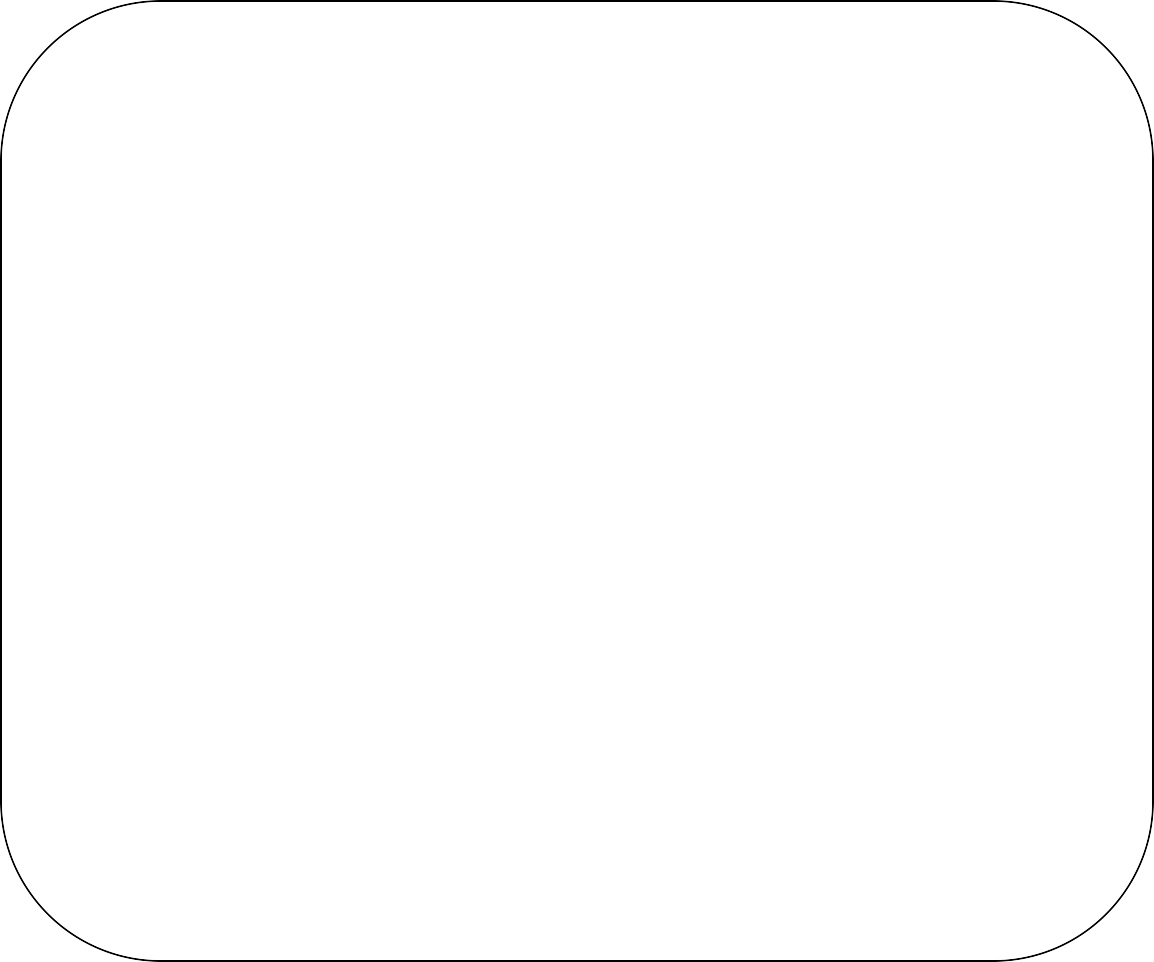


Year 4: Subtract with up to 4-digit numbers

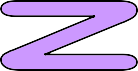
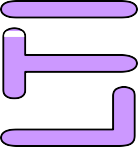
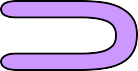
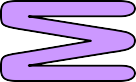


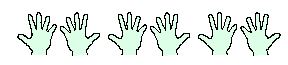
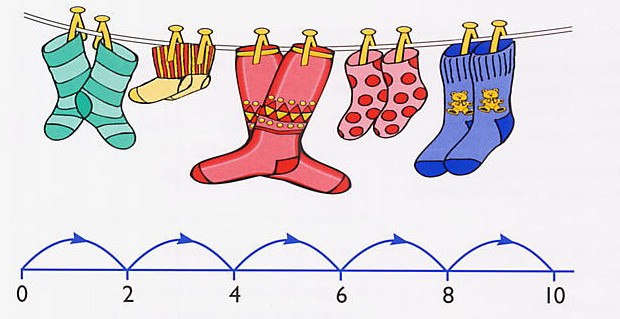


Year 5: Subtract with at least 4-digit numbers

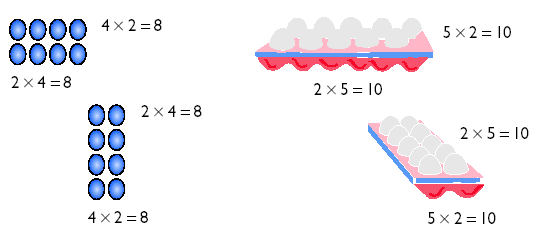


Year 6: Subtract with increasing large and more complex numbers and decimal values



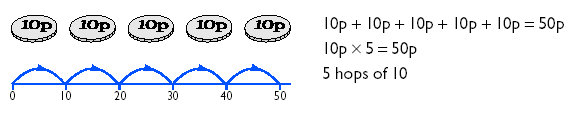
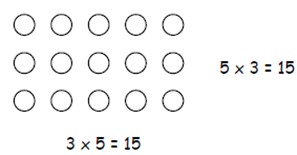
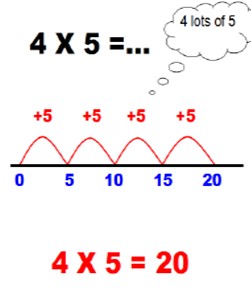


EYFS: Solve practical problems that involve doubling

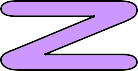
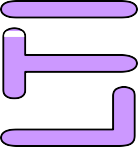
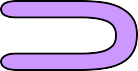
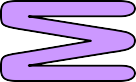


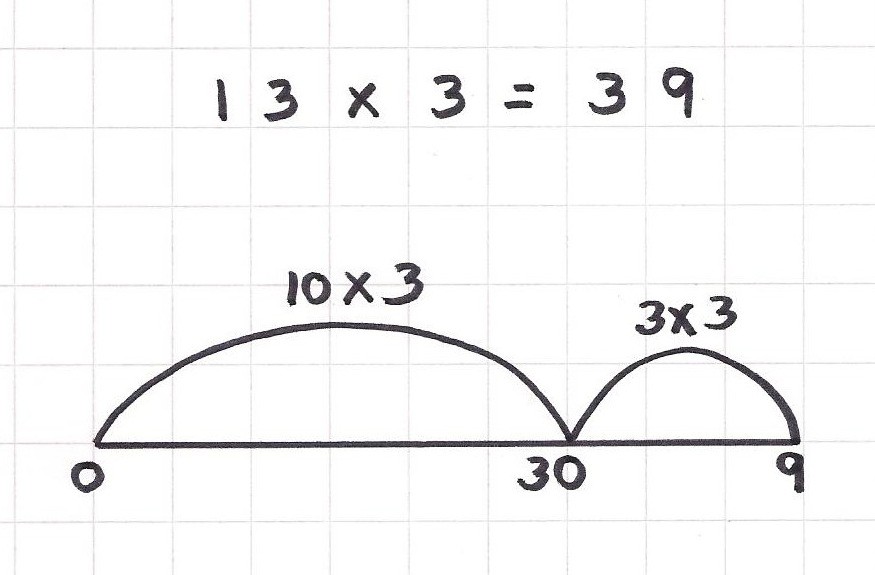
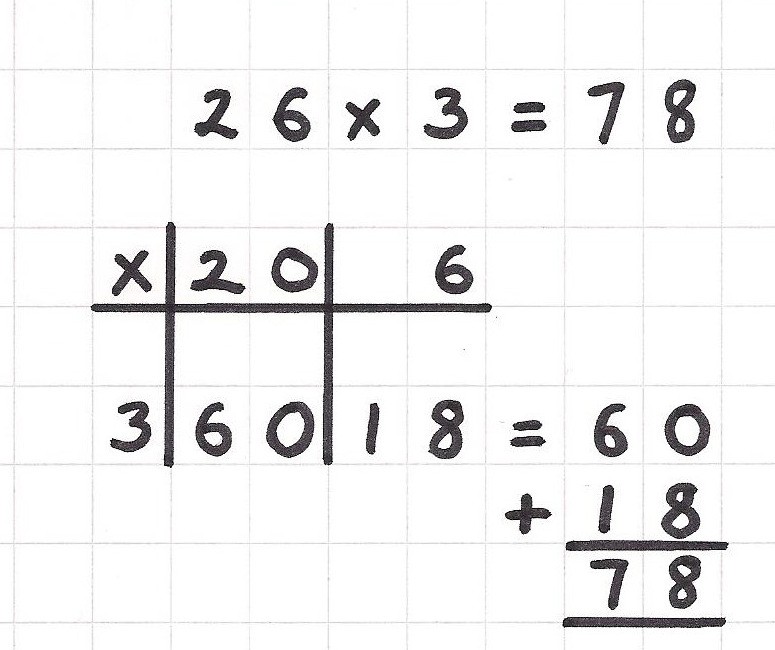
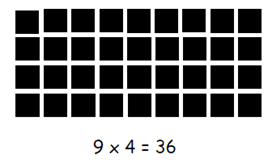
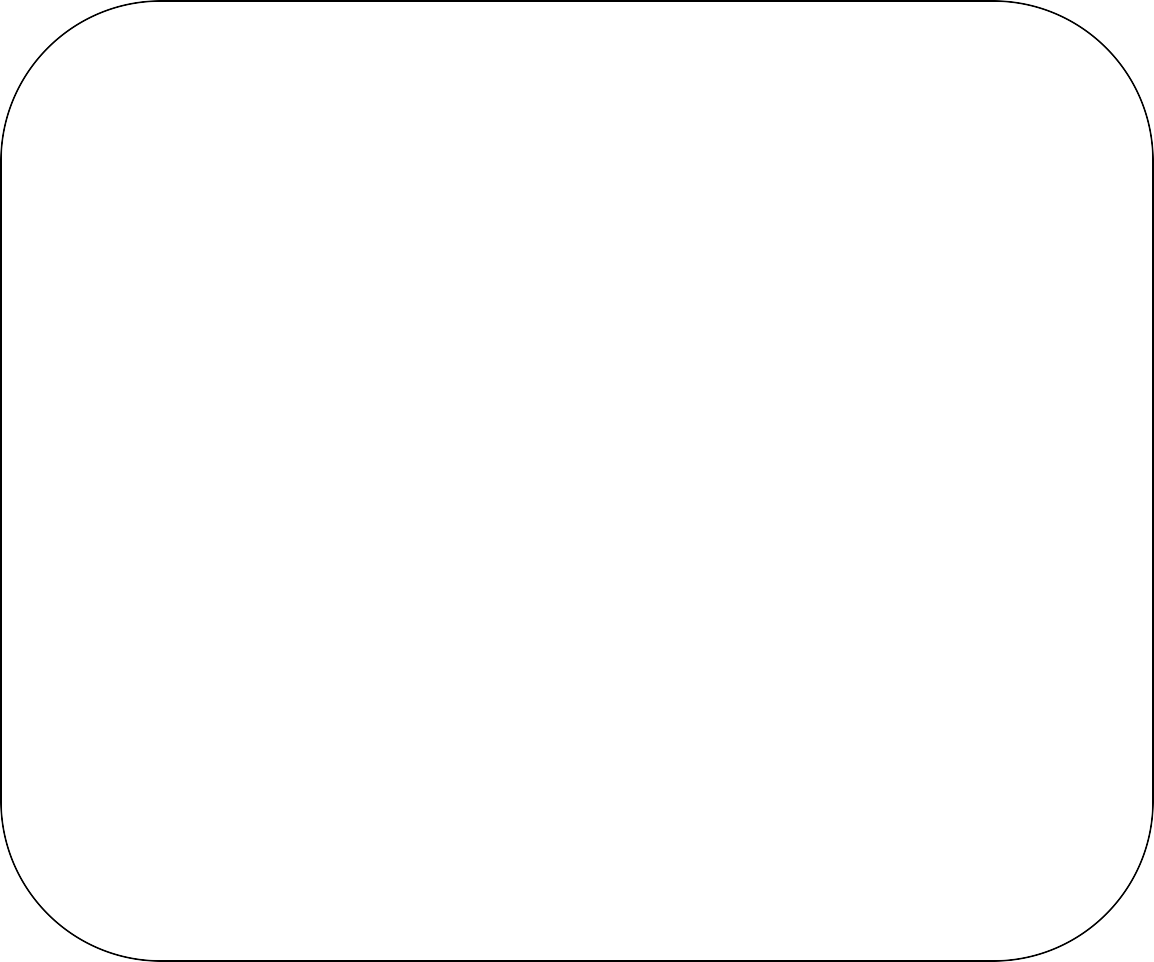
3 + 3 + 3 + 3 + 3 = 15

Year 1: Multiply with concrete objects, arrays and pictorial representations



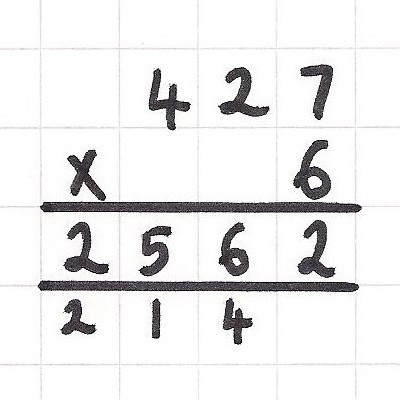
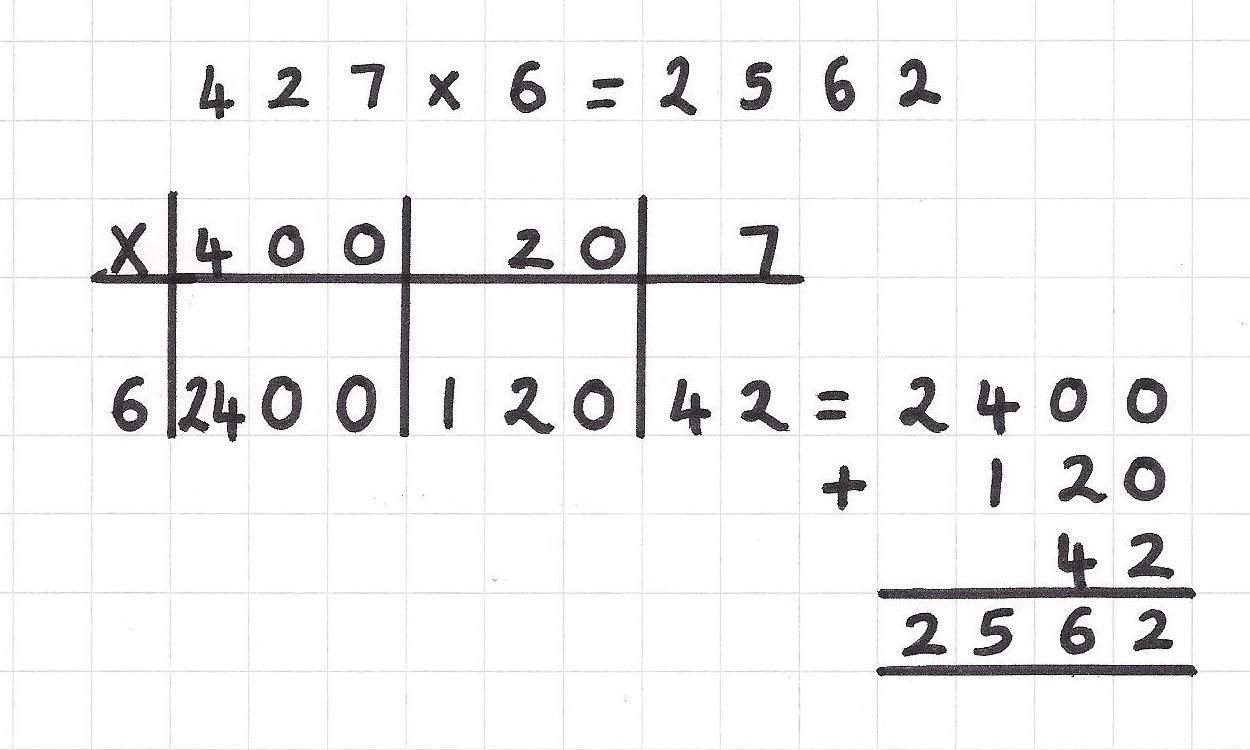
Year 2: Multiply using arrays and repeated addition (using at least 2s, 5s and 10s)





Grid multiplication

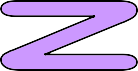
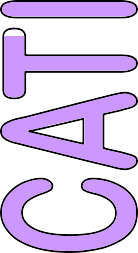
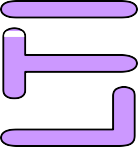
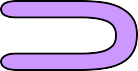
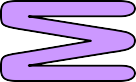
Year 3: Multiply 2-digit numbers by a 1-digit number

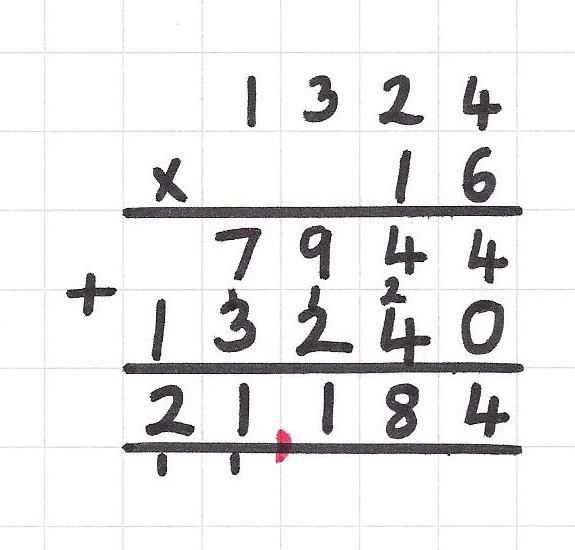
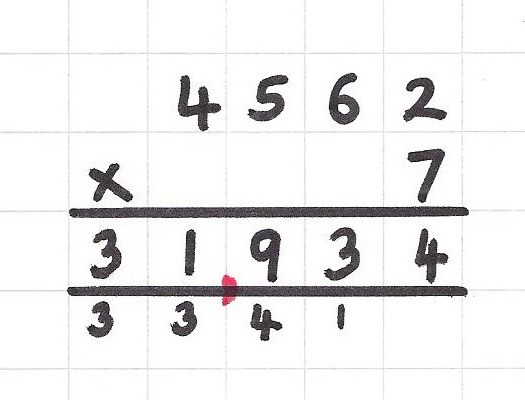


Grid multiplication

Short multiplication

Year 4: Multiply 2 and 3-digit numbers by a 1-digit number

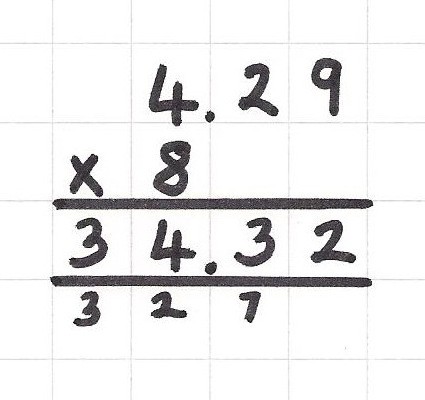
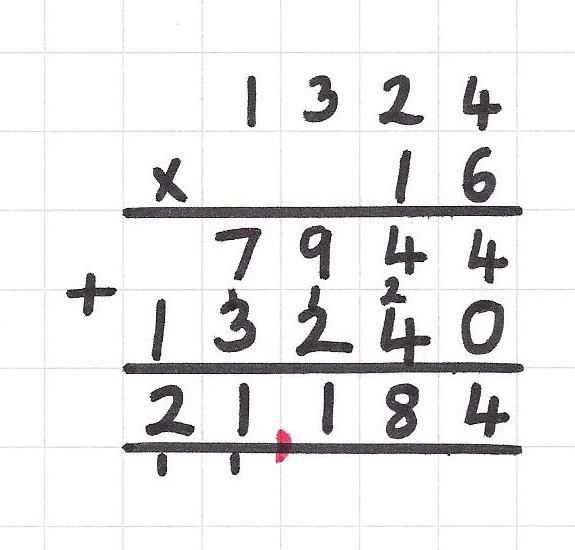
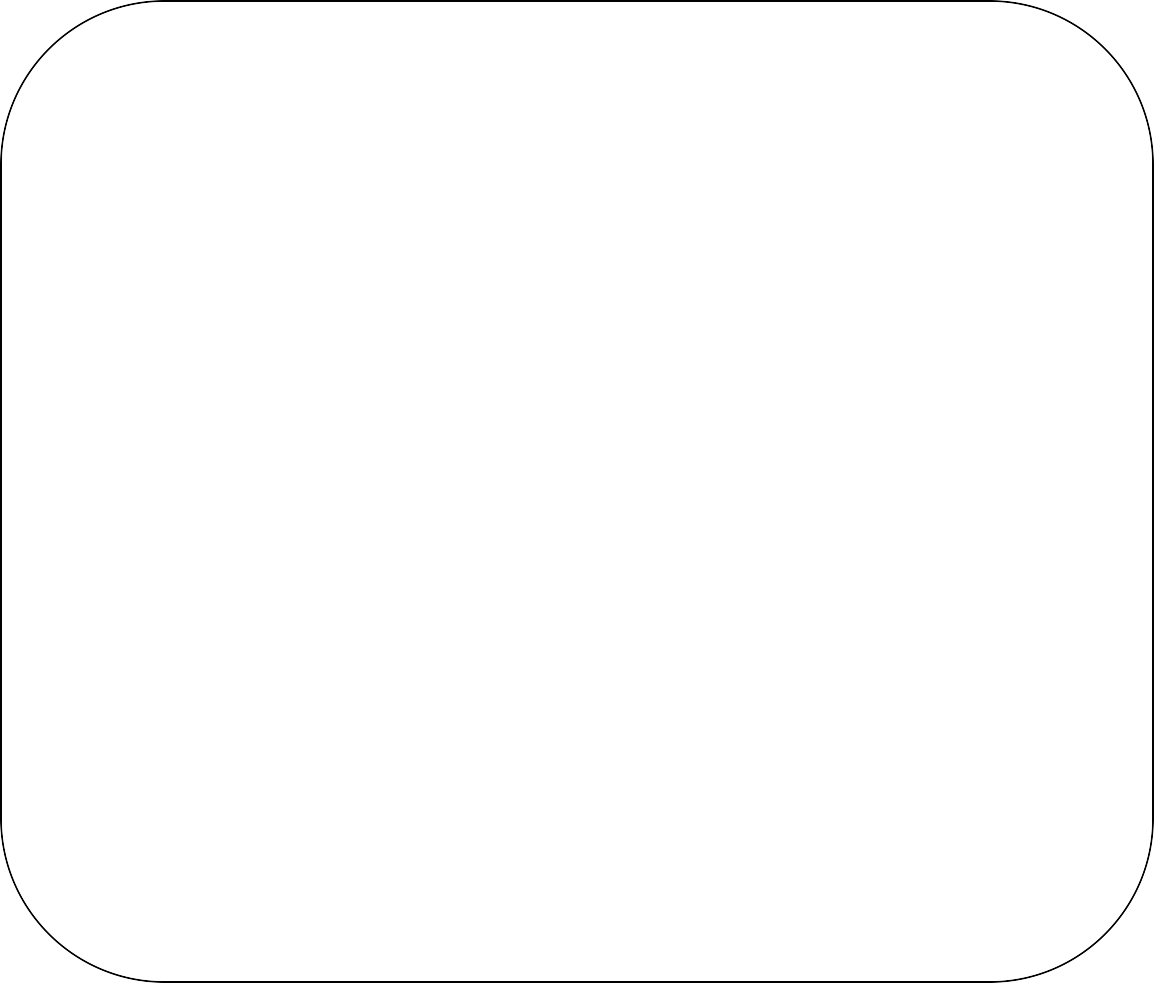




Short multiplication

Long multiplication

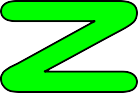
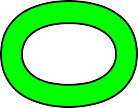
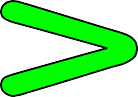
Year 5: Multiply up to 4-digit numbers by 1 or 2 digit numbers



Short multiplication

Long multiplication

Year 6: Multiply up to 4-digit numbers by 1 or 2 digit numbers (see Year 5) and multiply decimals with 2 decimal places by a 1-digit number.





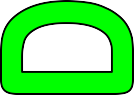
6 cakes are shared equally

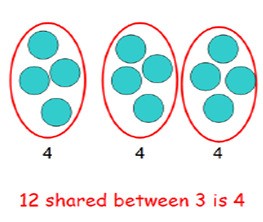
between 2 children. How many cakes do they have each? SHARING

There are 6 cakes, how

many children can have 2 each? GROUPING

EYFS: Group, share and halve a number of objects

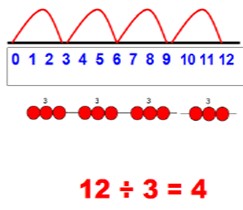
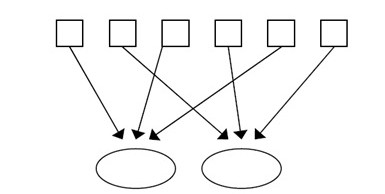
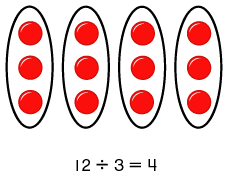




Grouping:

Sharing:

Year 1: Group and share small quantities



6 sweets are shared between 2 people. How many do they

each get?

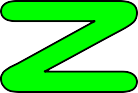
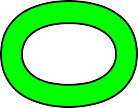
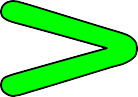
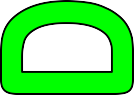
There are 6 sweets, how many

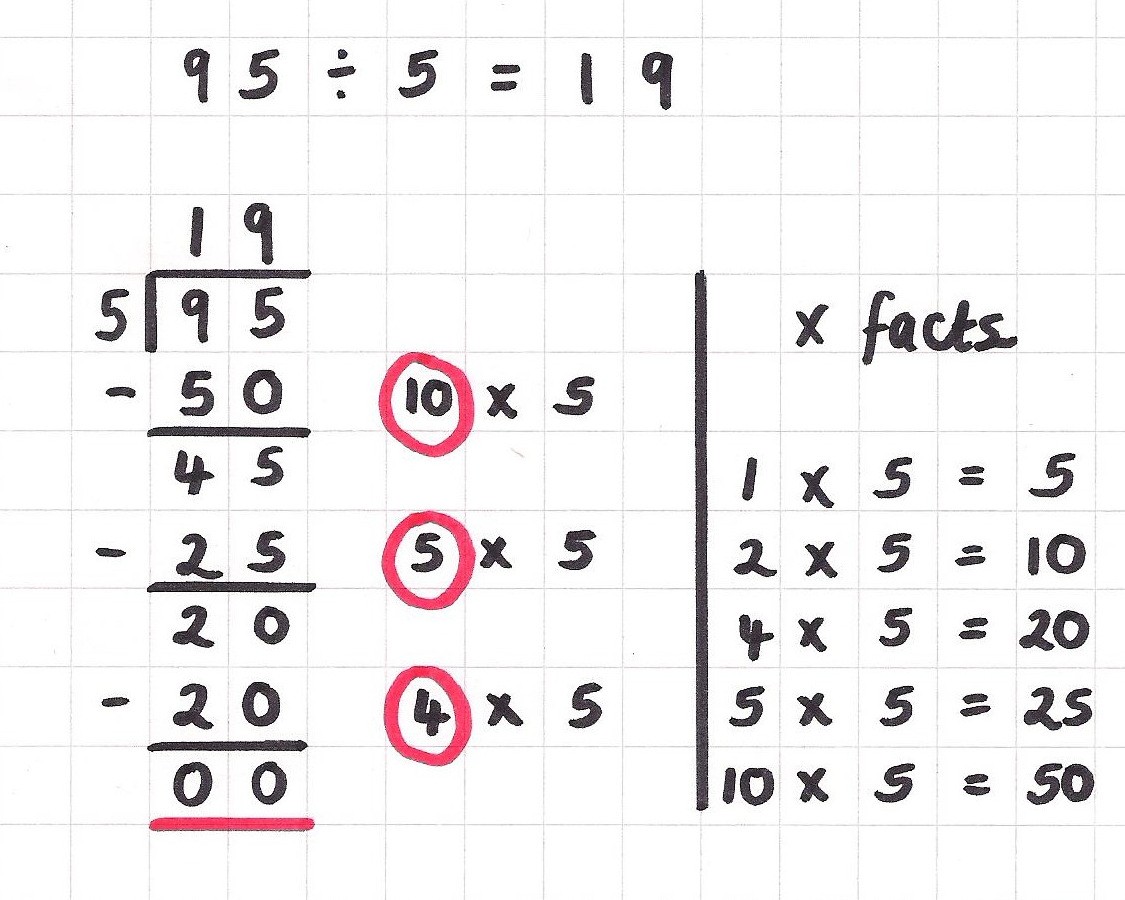
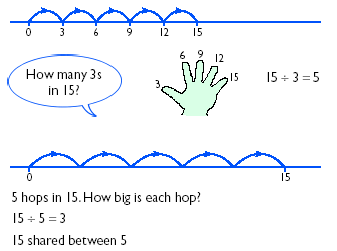
people can have 2 sweets each?

Year 2: Group and share, using the ÷ and = sign

Sharing

Grouping

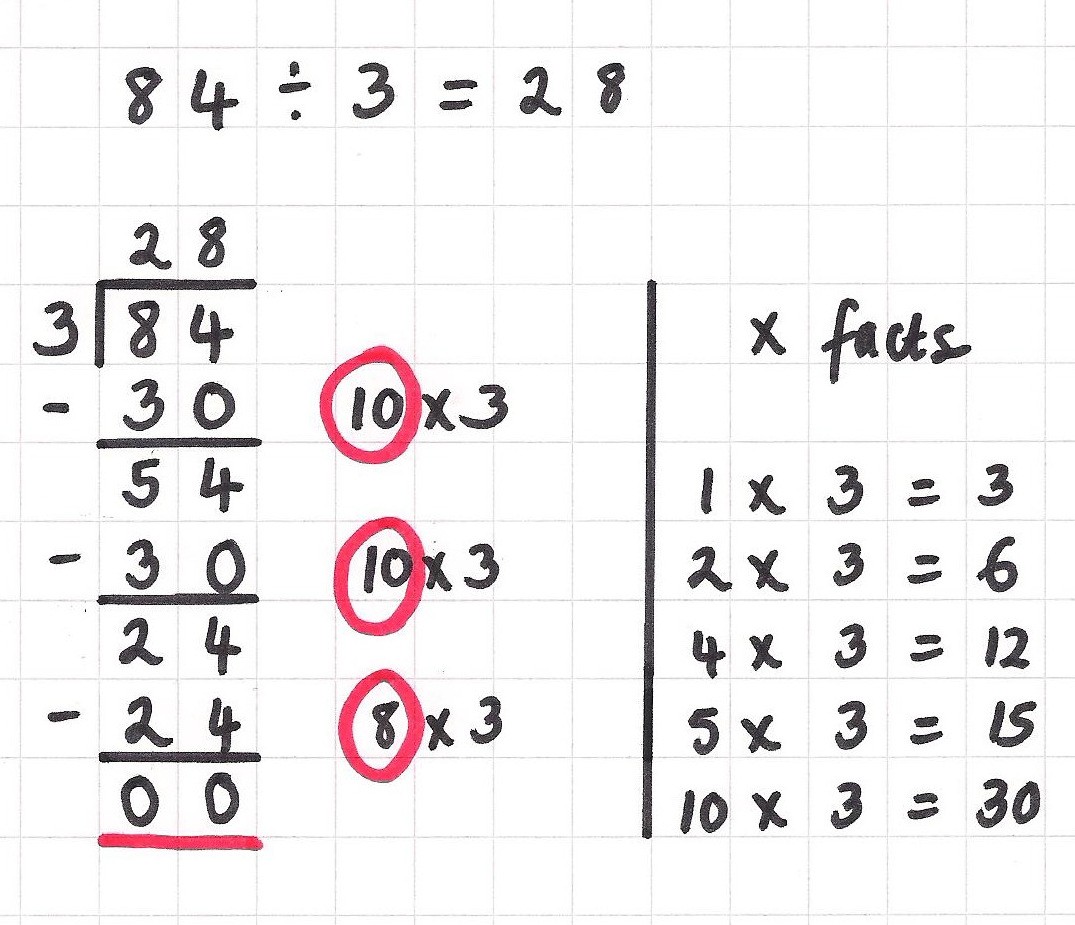
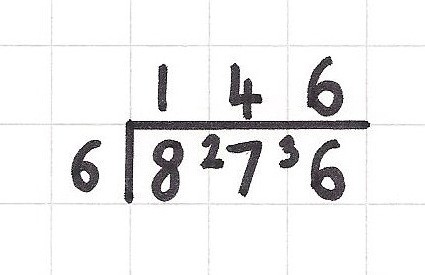
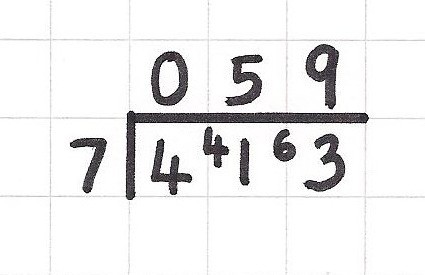
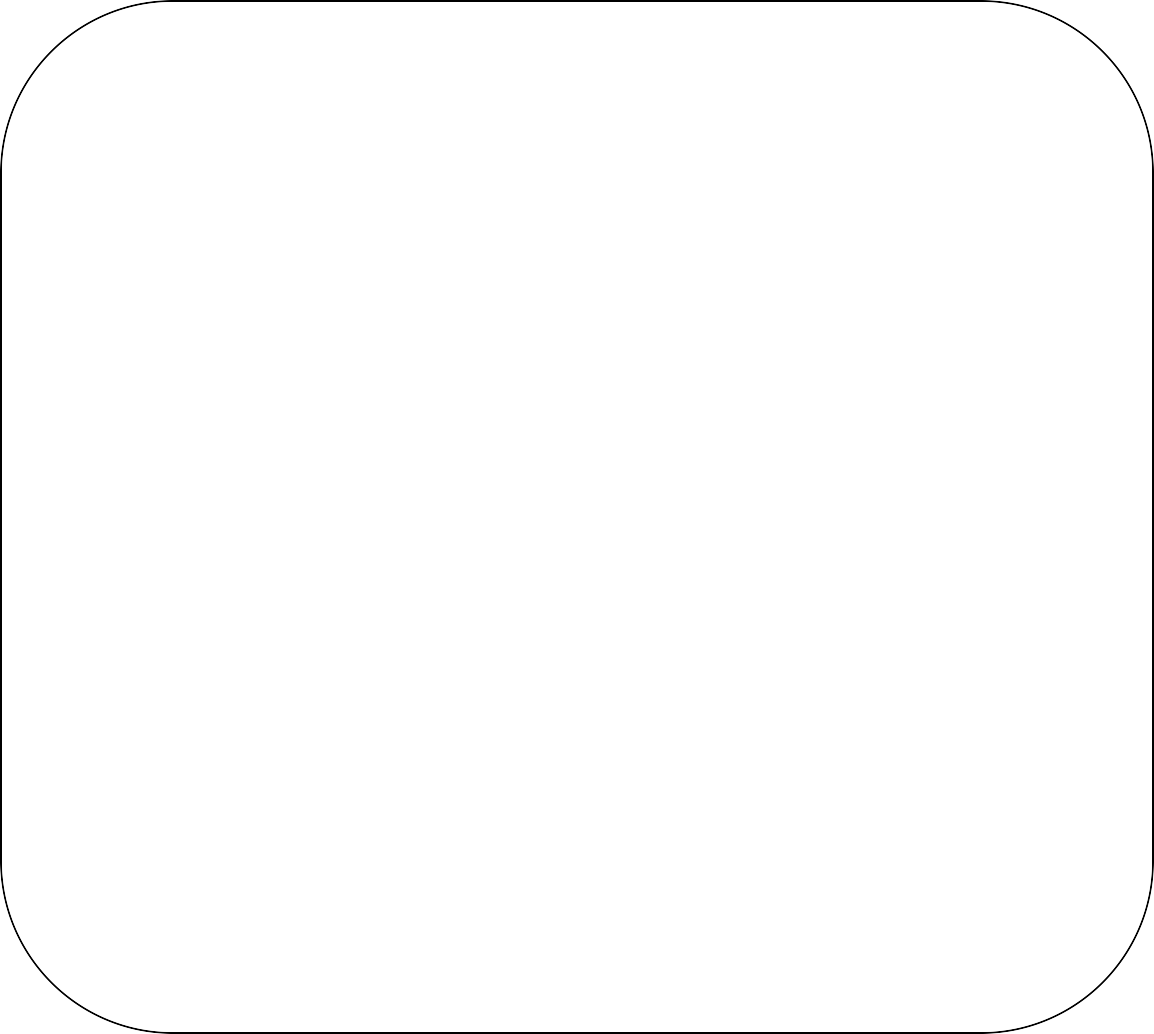




Long division

(Chunking method)

Year 3: Divide 2-digit numbers by a 1-digit number (where there is no remainder in the final answer)

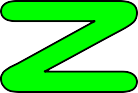
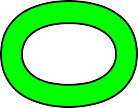
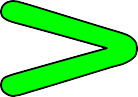
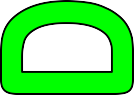


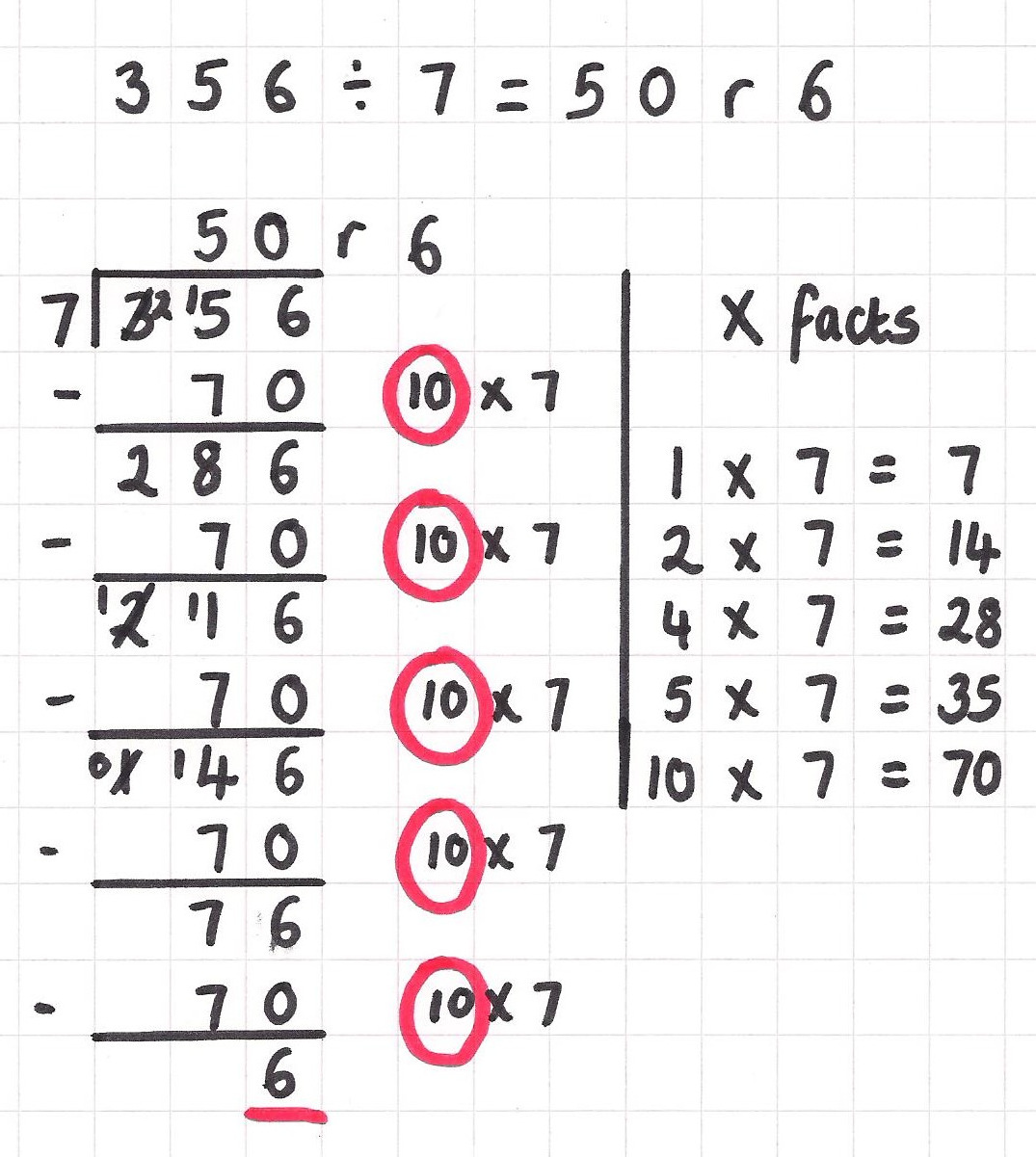
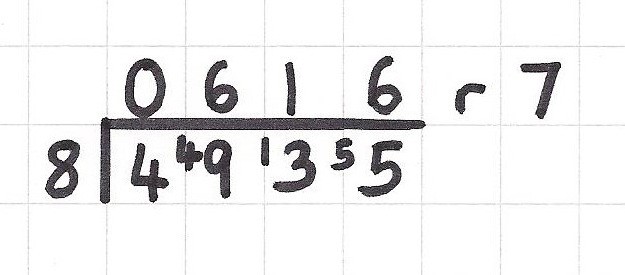
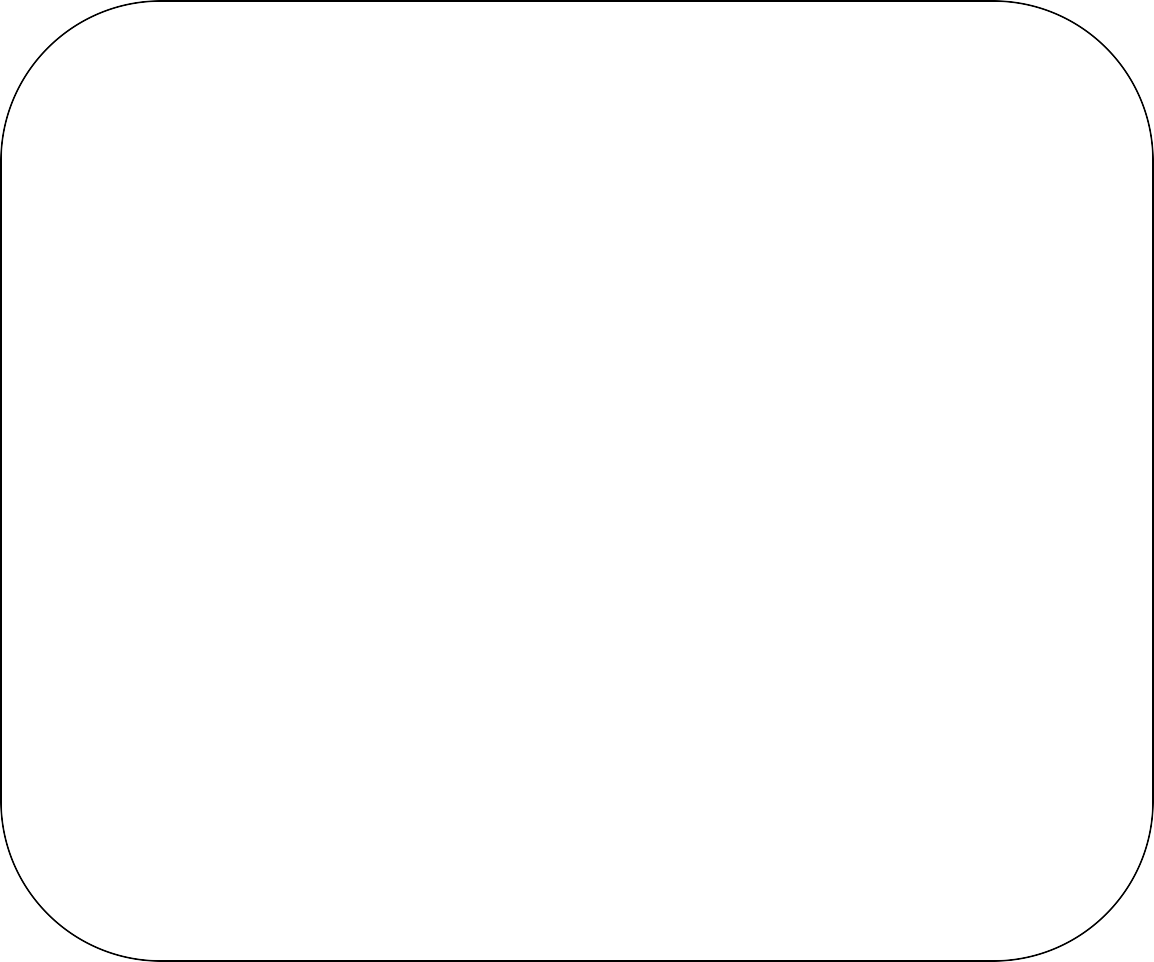
Long division

(Chunking method)

Short division

Year 4: Divide up to 3-digit numbers by a 1-digit number (without remainders initially)



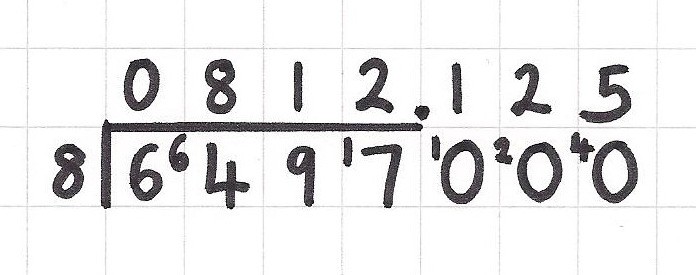
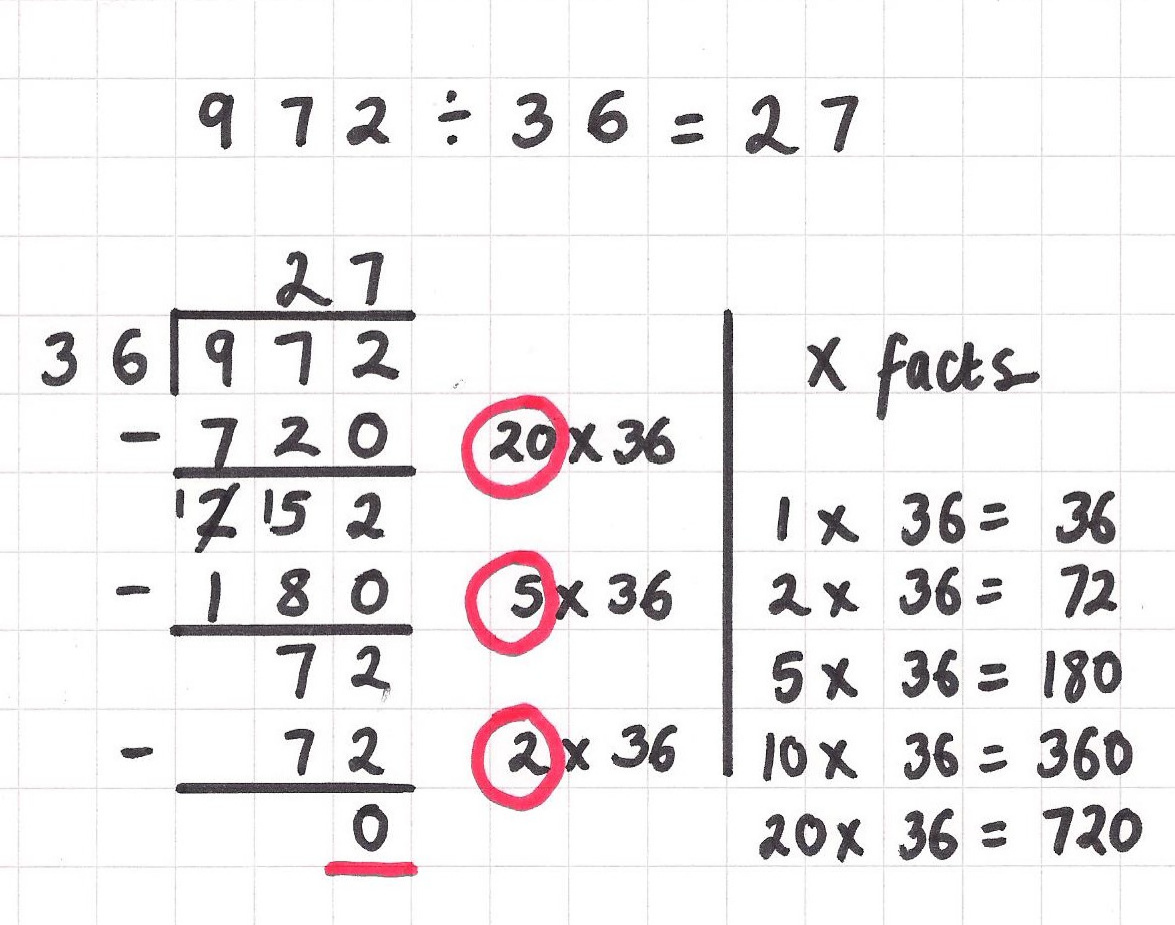
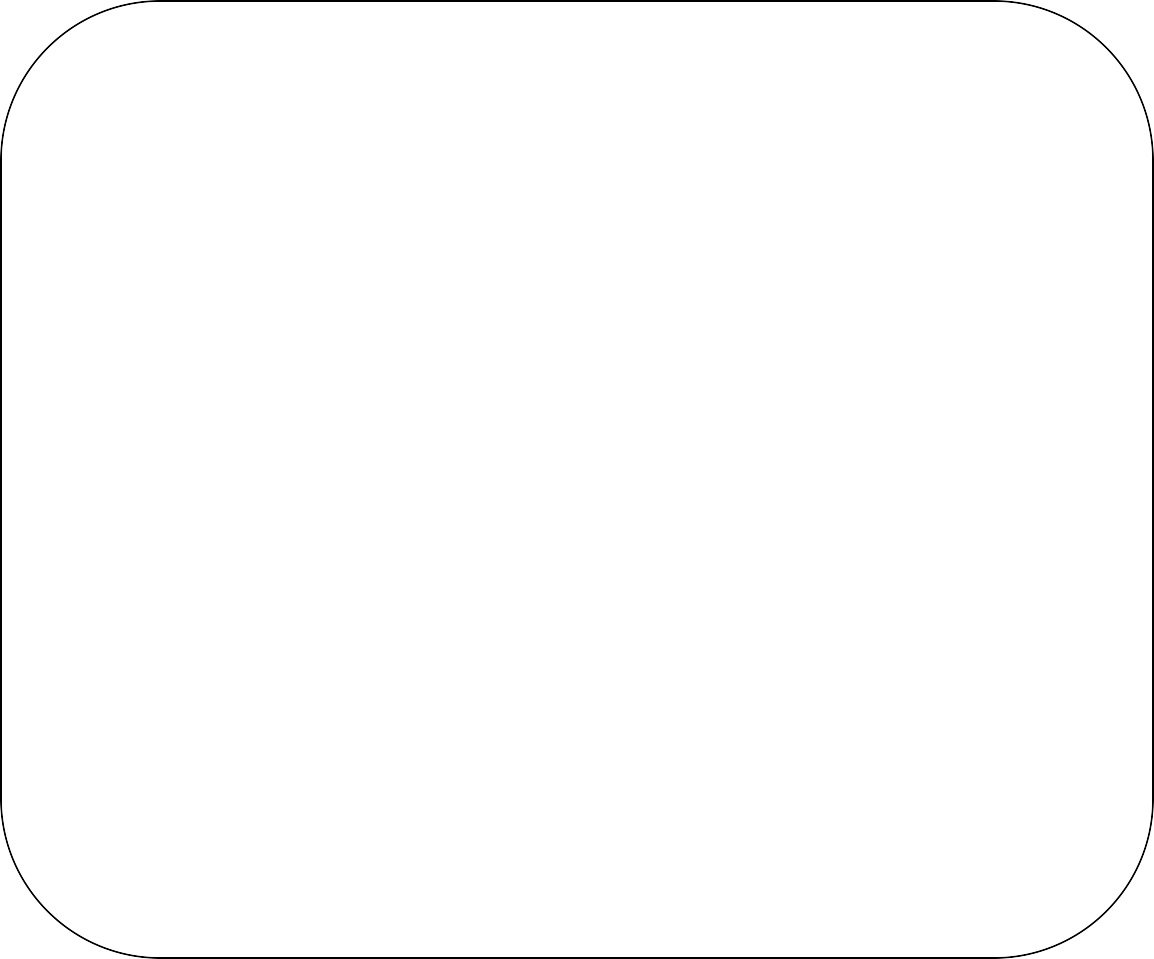


Short division

Long division

(Chunking method)

Year 5: Divide up to 4 digits by a 1-digit number, including those with remainders.



Short division

Long division

(Chunking method)

Year 6: Divide at least 4 digits by both 1-digit and 2-digit numbers (including decimal numbers and quantities)