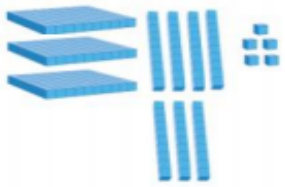
Year 3 Addition & Subtraction

Strategy and Guidance	CPA
Add and subtract numbers mentally, including: • a three-digit number and ones; • a three-digit number and tens; • a three-digit number and hundreds Pupils learn that this is an appropriate strategy when they are able to use known and derived number facts or other mental strategies to complete mental calculations with accuracy. To begin with, some pupils will prefer to use this strategy only when there is no need to regroup, using number facts within 10 and derivations. More confident pupils might choose from a range of mental strategies that avoid written algorithms, including (but not exhaustively): • known number facts within 20, • derived number facts, • 'Make ten', • round and adjust See Year 2 guidance for exemplification of these – the use of concrete manipulatives other than Dienes blocks is important in reinforcing the use of these strategies. It is important that pupils are given plenty of (scaffolded) practice at choosing their own strategies to complete calculations efficiently and accurately. Explicit links need to be made between familiar number facts and the calculations that they can be useful for and pupils need to be encouraged to aim for efficiency.	It is important to model the mental strategy using concrete manipulatives in the first instance and pupils should be able to exemplify their own strategies using manipulatives if required, with numbers appropriate to the unit they are working on (3-digit numbers in Units 1 & 4; 4-digit numbers in Unit 13). However, pupils should be encouraged to use known facts to derive answers, rather than relying on counting manipulatives or images. No regrouping 345 + 30 274 - 50 1128 + 300 1312 - 300 326 + 342 856 - 724  I know 4 + 3 = 7, so 4 tens plus 3 tens is equal to 7 tens. 345 + 30 = 375. With some regrouping 416 + 25 232 - 5 383 + 130 455 - 216 611 + 194 130 - 40

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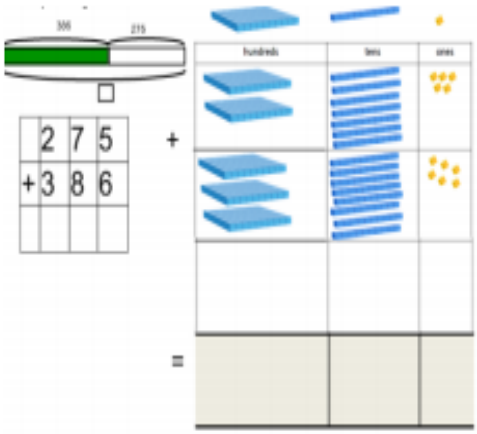
Written column method for calculations that require regrouping with up to 4-digits

Dienes blocks should be used alongside the pictorial representations during direct teaching and can be used by pupils both for support and challenge. Place value counters can also be introduced at this stage. This work revises and reinforces ideas from Key Stage 1, including the focus on place value – see Year 2 exemplification. Direct teaching of the columnar method should require at least one element of regrouping, so that pupils are clear about when it is most useful to use it. Asking them 'Can you think of a more efficient method?' will challenge them to apply their number sense / number facts to use efficient mental methods where possible. As in Year 2, pupils should be given plenty of practice with calculations that require multiple separate instances of regrouping. In Year 3 they become more familiar with calculations that require 'regrouping to regroup'. Understanding must be secured through the considered use of manipulatives and images, combined with careful use of language. Pupils should be challenged as to whether this is the most efficient method, considering whether mental methods (such as counting on, using known number facts, round and adjust etc.) may be likelier to produce an accurate solution.

Pupils requiring support might develop their confidence in the written method using numbers that require no regrouping. See Unit materials for extra guidance on this strategy.

As for the mental strategies, pupils should be exposed to concrete manipulatives modelling the written calculations and should be able to represent their written work pictorially or with concrete manipulatives when required.

Again, they should be encouraged to calculate with known and derived facts and should not rely on counting images or manipulatives.



5 + 6 = 11 so I will have 11 ones which I regroup for 1 ten and 1 one.

Regrouping (including multiple separate instances)

672 + 136	734 – 82
468 + 67	831 - 76
275 + 386	435 – 188

'Regrouping to regroup'

204 – 137

1035 - 851

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Find 10, 100 more or less than a given number

As pupils become familiar with numbers up to 1000, place value should be emphasised and comparisons drawn between adding tens, hundreds (and, in the last unit of the Summer term, thousands), including use of concrete manipulatives and appropriate images. After initial teaching, this should be incorporated into transition activities and practised regularly.