

Learning Goal

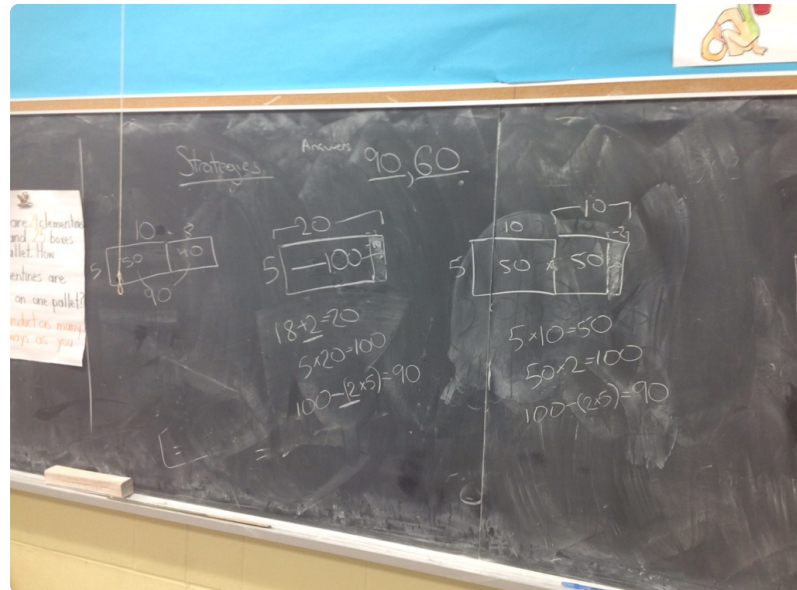
We are learning how to think flexibly about multiplying two digit numbers, using a variety of strategies


Minds On

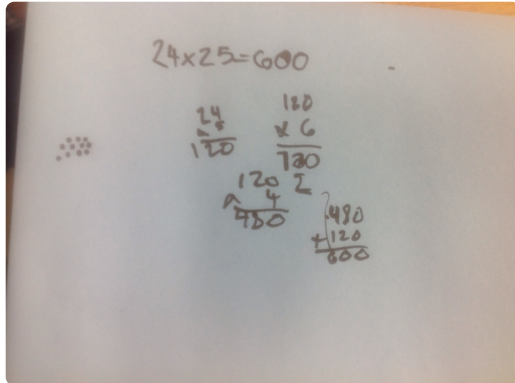
Number talk

$$18 \times 5 =$$

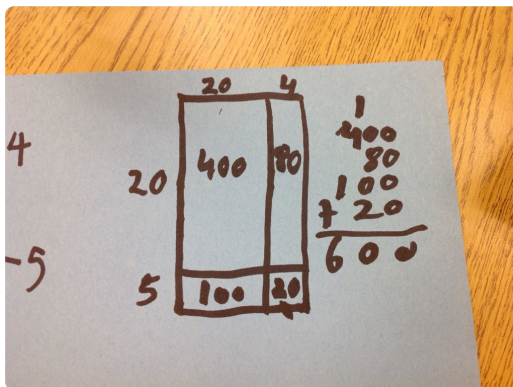
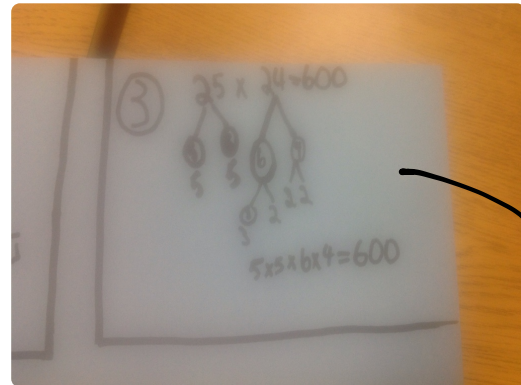
24 clementines in a box, and 25 boxes on a pallet, how many clementines are there in a delivery? Find the product in as many ways that you can.



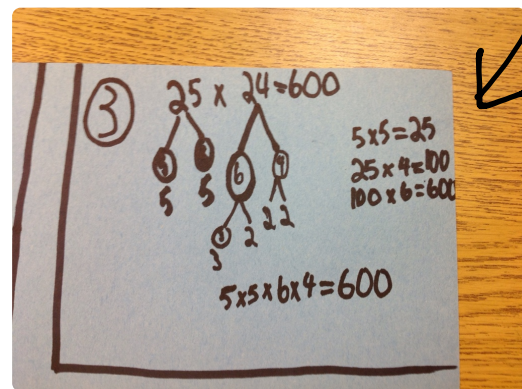
Strategy	Key Questions to Ask	Who and What	Order
Partial Products	Is there another way you could multiply these numbers? Does it work for any 2 digit #?		
Arrays	Could you decompose those numbers another way? Does this work with other numbers?		
Doubling/halving	Why does this work?		
Repeated Addition	How could you write this as a multiplication sentence? How is this linked to multiplication?		
Number line			
Known fact/Friendly #	Why did you choose that #? Is there a friendlier number you could find?		
"In the box" 	Is there another way? Which one is the tens? The ones?		



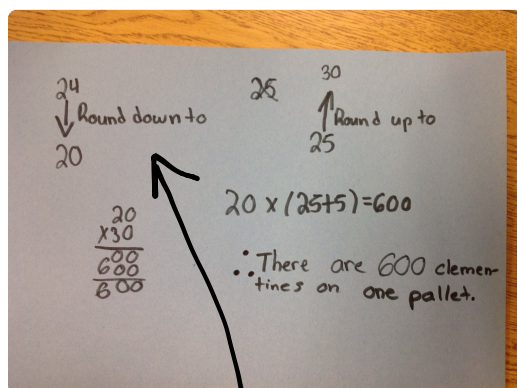
Where are these numbers coming from?
What did you do to get 600?
from?



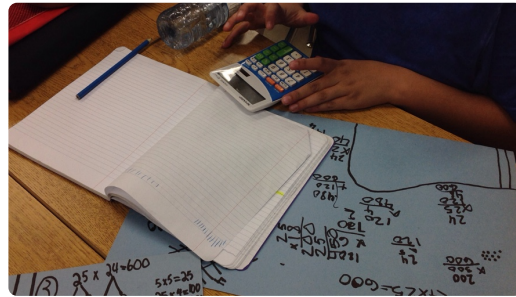
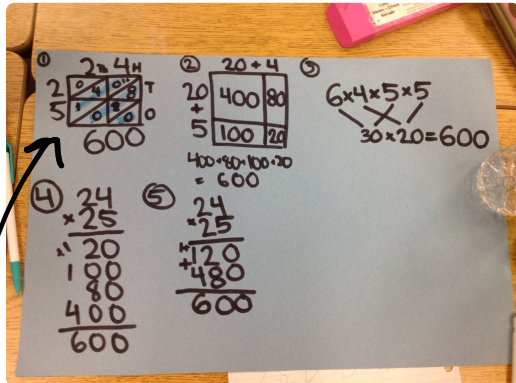
The array



Partial Products

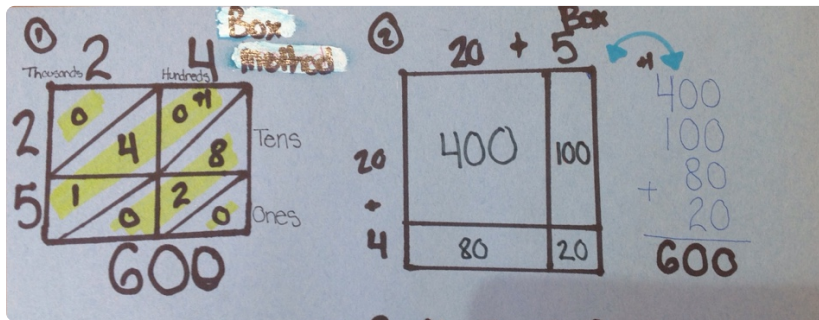


Does this work all of the time?



Counting up, calculator

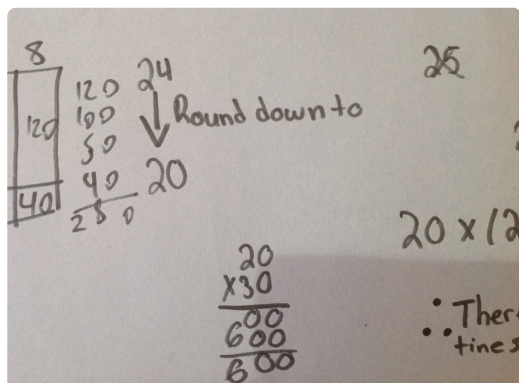
The Debrief First



The "box" method and the array
-what is the same about these two strategies and what is different

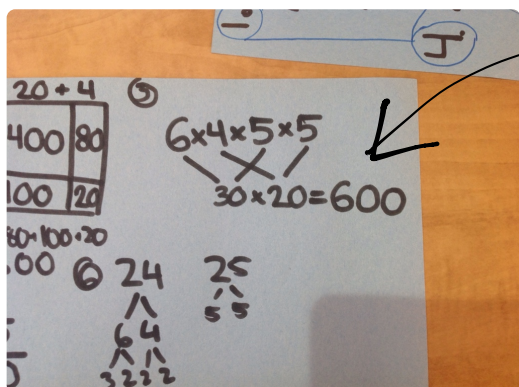
Talk with your partner, then discuss as a whole group

-are there times when one would be more useful than the other?



Second

Some students used, what they called, an "estimation strategy", and by a fluke it worked in this case. Why did it work?



Because when you look at the factors and think about the numbers flexibly, there is a 30 and a 20 in there

Will this estimation strategy work when multiplying any two digit numbers together?