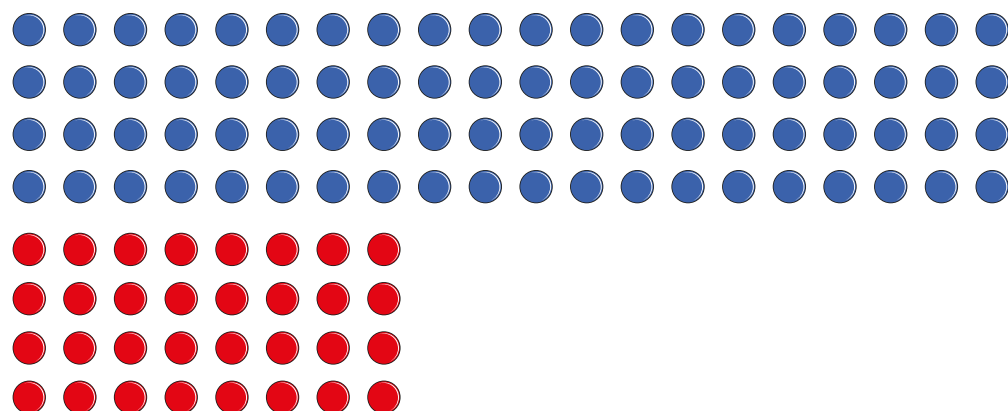


Efficient multiplication

- 1 Class 4 are multiplying 28×4 mentally.
They are trying two different methods.

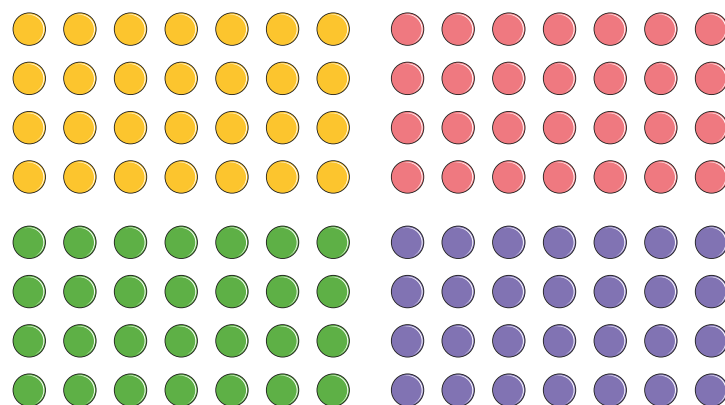
a) Complete their calculations.

Method 1



$$20 \times 4 + 8 \times 4 = \boxed{80} + \boxed{32} = \boxed{112}$$

Method 2



$$4 \times \boxed{28} = \boxed{112}$$

- b) Which method do you find easier?
Talk about it with a partner.
- c) What other methods could you use to work out 28×4 ?

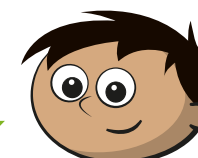
E.g. $(4 \times 30) - (4 \times 2)$

- 2 Mo, Amir and Annie worked out 35×6 in 3 different ways.



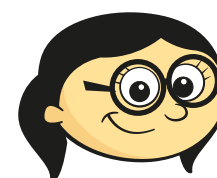
Mo

I multiplied
30 by 6 and then added
5 more lots of 6



Amir

I multiplied
35 by 2, then multiplied
that answer by 3



Annie

I multiplied
5 by 6, then multiplied
that answer by 7

- a) Work out the answer using each method to show that they are all correct.

Mo

$$\begin{aligned} 30 \times 6 &= 180 \\ 5 \times 6 &= 30 \\ 180 + 30 &= \underline{210} \end{aligned}$$

Amir

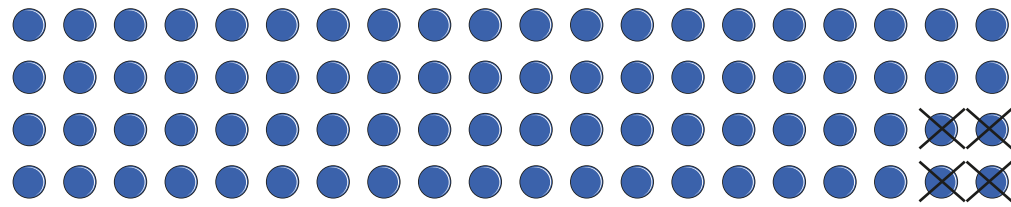
$$\begin{aligned} 35 \times 2 &= 70 \\ 70 \times 3 &= \underline{210} \end{aligned}$$

Annie

$$\begin{aligned} 5 \times 6 &= 30 \\ 30 \times 7 &= \underline{210} \end{aligned}$$

- b) Who has used the most efficient method?
Talk about it with a partner.

- 3 Scott is working out 21×4



$$\begin{aligned} 20 \times 4 &= 80 \\ 80 - 4 &= 76 \\ 21 \times 4 &= 76 \end{aligned}$$

- a) What mistake has Scott made?

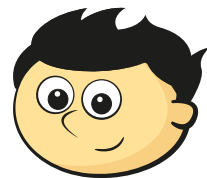
He has taken 4, he should have added it.

- b) What is the correct answer?

84

- 4 Jack works out 36×9

$$\begin{aligned} 36 \times 9 \\ 36 \times (10 - 1) \\ 360 - 36 &= 324 \end{aligned}$$



Adapt Jack's method to work out 36×99

$$36 \times 99 = \boxed{3,564}$$

- 5 Esther has found a quick way to multiply 84 by 5

$$\begin{aligned} 84 \times 5 \\ 84 \times 10 &= 840 \\ \text{(then divide by 2) which is } &420 \end{aligned}$$

Use Esther's method to complete the calculations.

$$43 \times 5 = \boxed{215}$$

$$74 \times 5 = \boxed{370}$$

$$62 \times 5 = \boxed{310}$$

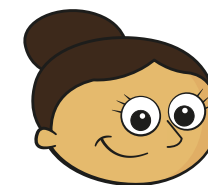
- 6 Tommy and Dora are both working out 25×8

$$25 \times 8 = 25 \times 10 - 25 \times 2$$



- a) Use Tommy's method to work out the answer.

200



$$25 \times 8 = 50 \times 8 \div 2$$

- b) Use Dora's method to work out the answer.

200

- c) Whose method do you prefer? Why?

Various answers.

- d) Do you know another method?

