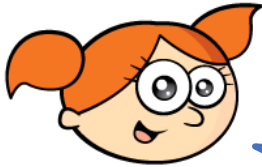


# EFFICIENT MULTIPLICATION

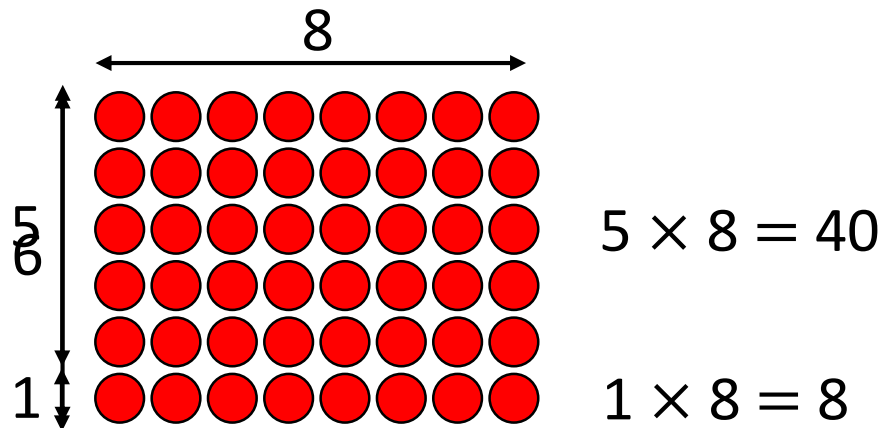


$$6 \times 8 = \boxed{48}$$

What methods could you use to calculate  $6 \times 8$  if you did not know the answer?



I partitioned 6 into 5 and 1



$$6 \times 8 = \boxed{48}$$

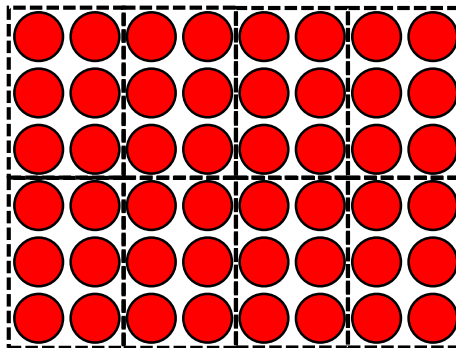
What methods could you use to calculate  $6 \times 8$  if you did not know the answer?



$$6 \times 8 = 2 \times 3 \times 8$$

Double 24 is 48

$$2 \times 3$$



$$3 \times 8 = 24$$

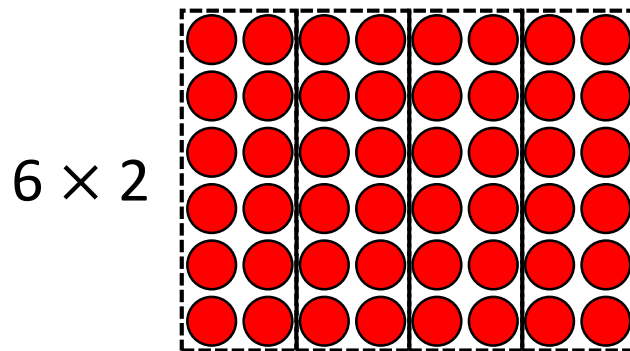
$$3 \times 8 = 24$$

$$6 \times 8 = \boxed{48}$$

What methods could you use to calculate  $6 \times 8$  if you did not know the answer?



$$6 \times 8 = 6 \times 2 \times 4$$



$$6 \times 2 \times 4$$

Two blue arrows point from the 6 and 2 in the equation above to the 12 in the equation below.

$$12 \times 4 = 48$$

$$6 \times 2 \times 4$$

Two blue arrows point from the 6 and 2 in the equation above to the 24 in the equation below.

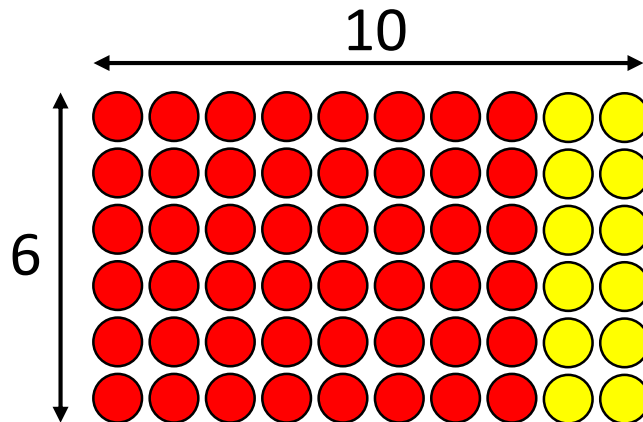
$$24 \times 2 = 48$$

$$6 \times 8 = \boxed{48}$$

What methods could you use to calculate  $6 \times 8$  if you did not know the answer?



I did  $6 \times 10$  then  
subtracted 12



$$6 \times 10 = 60$$

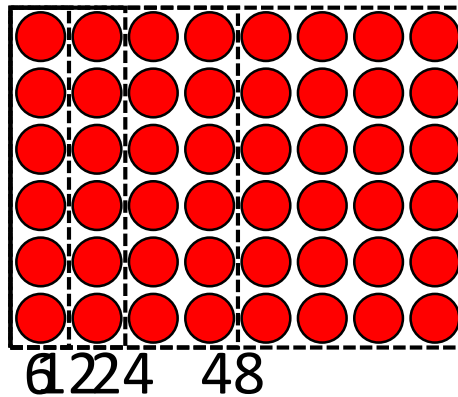
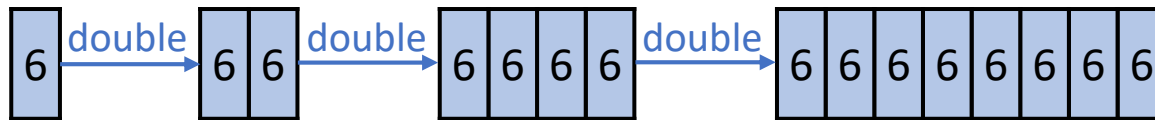
$$60 - 12 = 48$$

$$6 \times 8 = \boxed{48}$$

What methods could you use to calculate  $6 \times 8$  if you did not know the answer?



Double, then double,  
then double again

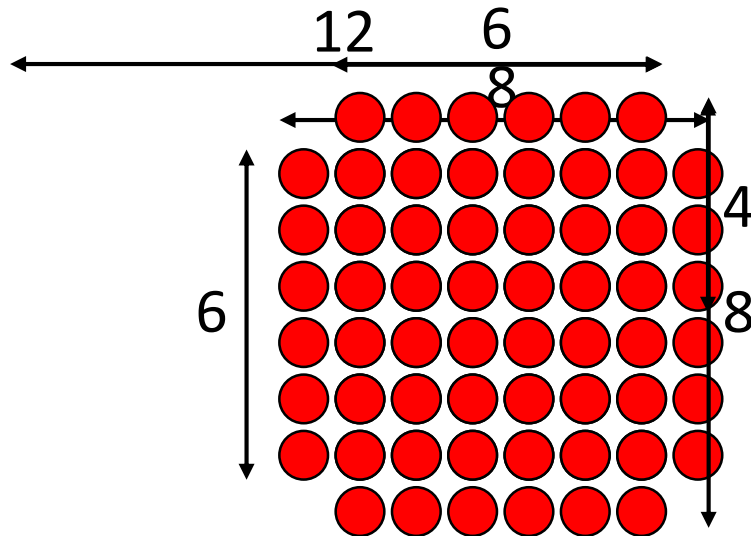


$$6 \times 8 = \boxed{48}$$

What methods could you use to calculate  $6 \times 8$  if you did not know the answer?



If you double one factor and halve one factor the product stays the same



$$6 \times 8$$

$$12 \times 4$$

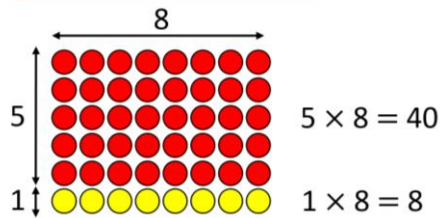
$$24 \times 2$$

$$5 \times 28 = \square$$

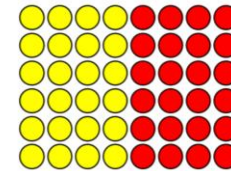
Use one of these methods to solve the equation.



I partitioned 6 into 5 and 1



$6 \times 8 = 6 \times 2 \times 4$



$$6 \times 2 \times 4$$

$$\swarrow \searrow$$

$$12 \times 4 = 48$$

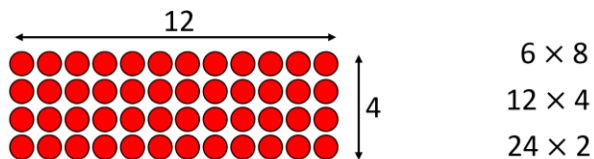
$$6 \times 2 \times 4$$

$$\swarrow \searrow$$

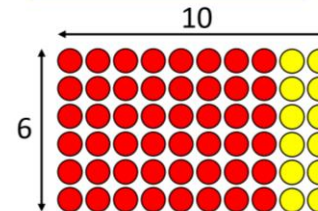
$$24 \times 2$$



If you double one factor and halve one factor the product stays the same



I did  $6 \times 10$  then subtracted 12



$$6 \times 10 = 60$$

$$60 - 12 = 48$$



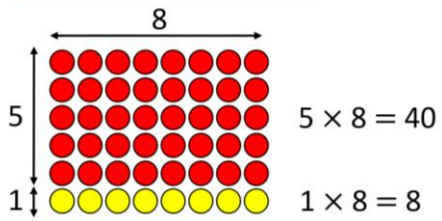
$$5 \times 28 = \boxed{140}$$

↙   ↘

20   8



I partitioned 6 into 5 and 1



$$5 \times 20 = 100$$

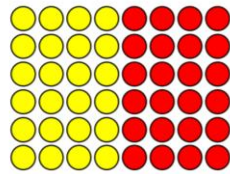
$$5 \times 8 = 40$$

$$100 + 40 = 140$$

$$5 \times 28 = \boxed{140}$$



$$6 \times 8 = 6 \times 2 \times 4$$



$$6 \times 2 \times 4$$

$$12 \times 4 = 48$$

$$6 \times 2 \times 4$$

$$24 \times 2$$

$$5 \times 2 \times 14$$

$$10 \times 14 = 140$$

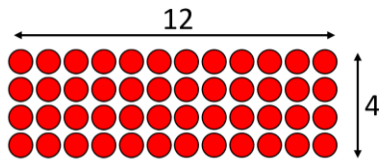
$$5 \times 7 \times 4$$

$$20 \times 7 = 140$$

$$5 \times 28 = \boxed{140}$$

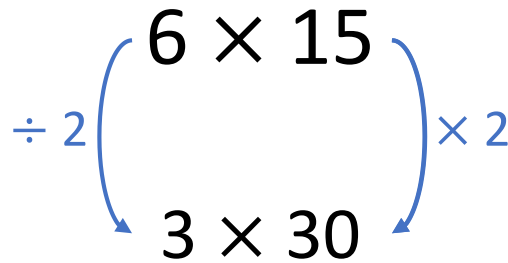
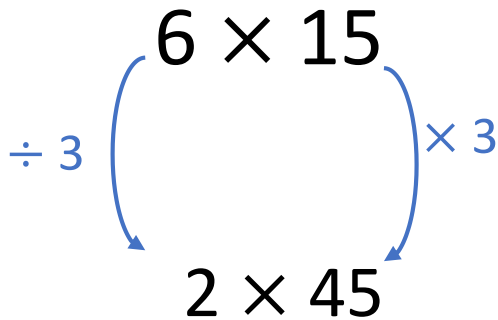


If you double one factor and halve one factor the product stays the same



$$\begin{aligned} 6 \times 8 \\ 12 \times 4 \\ 24 \times 2 \end{aligned}$$

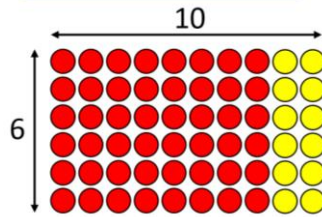
$$\begin{aligned} 5 \times 28 \\ 10 \times 14 \end{aligned}$$



$$5 \times 28 = \boxed{140}$$



I did  $6 \times 10$  then  
subtracted 12



$$6 \times 10 = 60$$

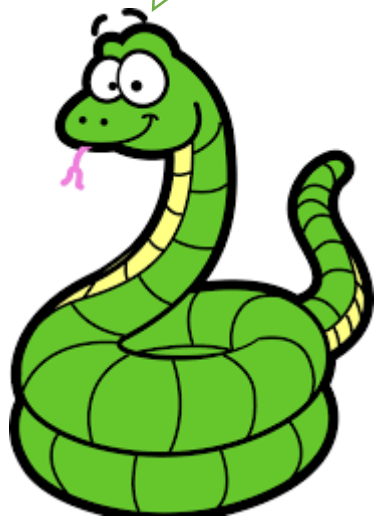
$$60 - 12 = 48$$

$$5 \times 30 = 150$$

$$5 \times 2 = 10$$

$$150 - 10 = 140$$

Use the methods that you have just learnt to solve the problems on the worksheet. Refer back to the slides if you get stuck. Find a method that works for you!



You might find that different methods are more efficient for different calculations!

