

Mathematics

Multiplying three 1-digit numbers.

Miss Thomas



OAK
NATIONAL
ACADEMY

Lesson agenda

Multiplying three 1-digit numbers.



Let's explore



Exploring the order we multiply three 1-digit numbers.

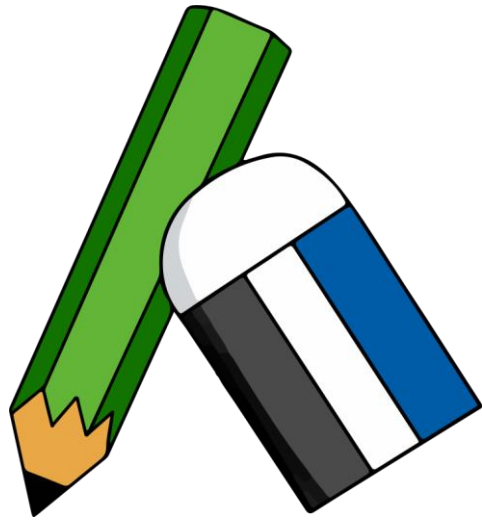


End of lesson quiz



You will need...

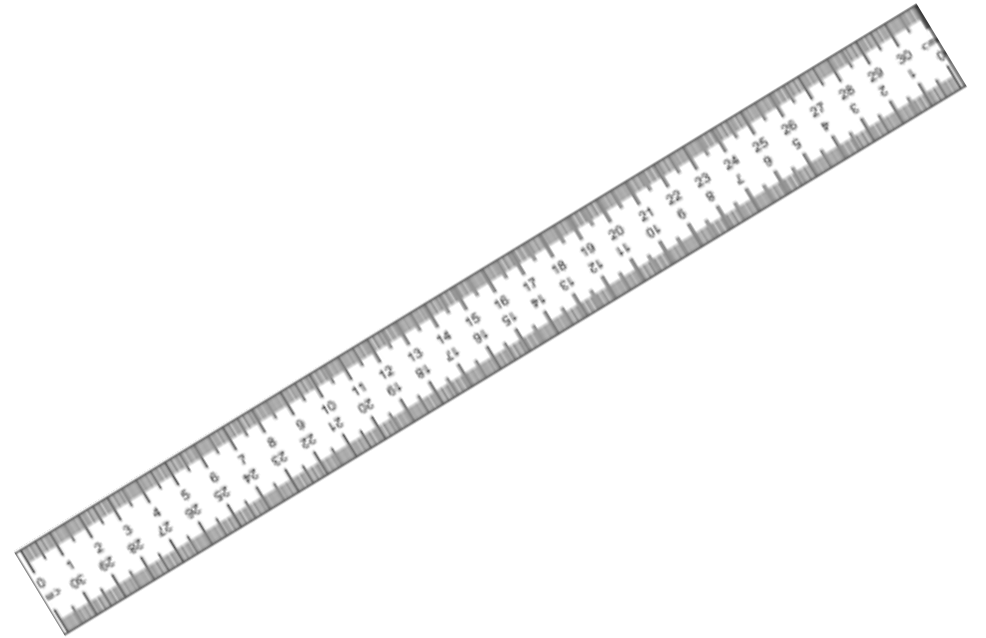
Item 1



Item 2

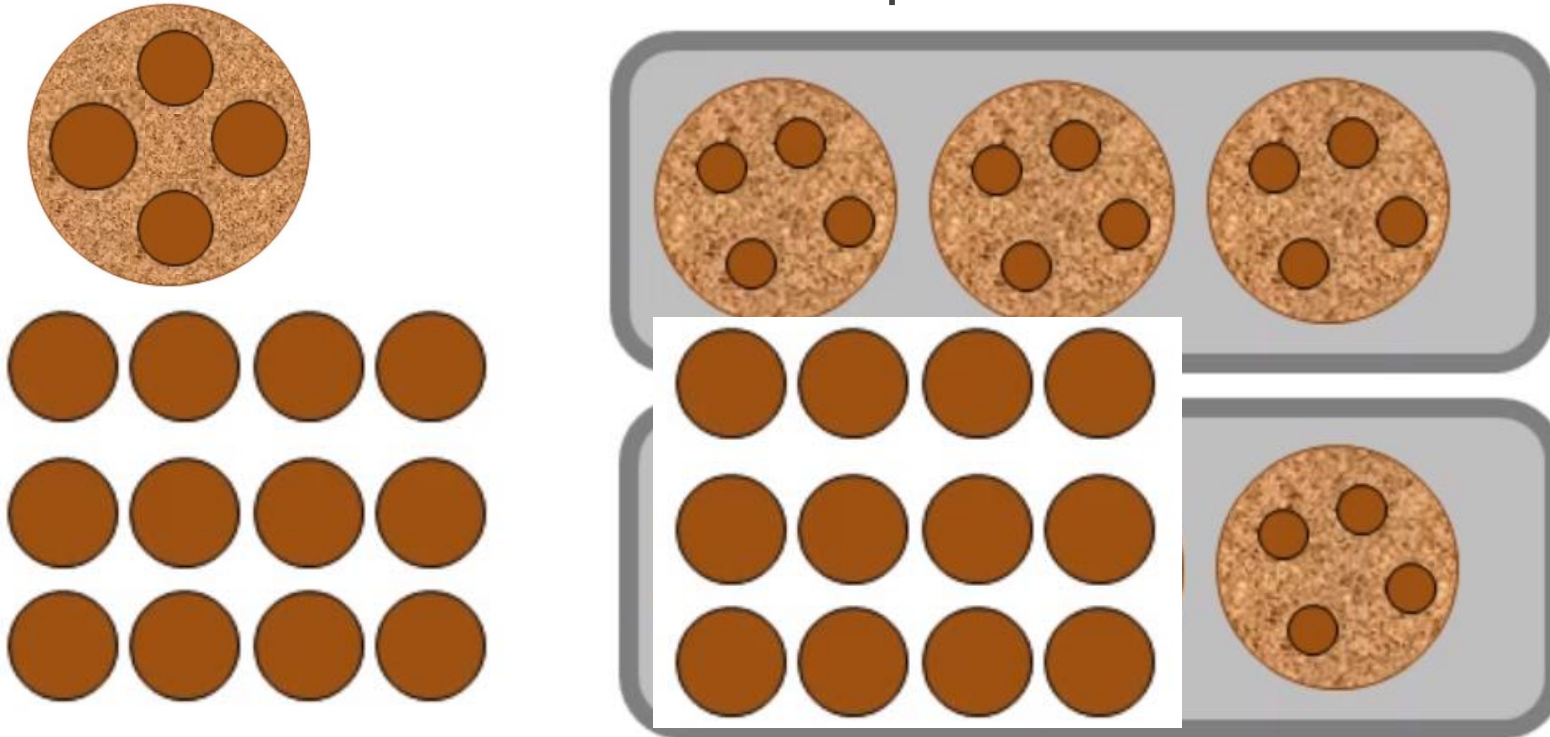


Item 3



Kaira has 2 trays. Each tray has 3 cookies. Each cookie has 4 chocolate chips. How many chocolate chips are there altogether?

1. How might you represent this?
2. What would the equation look like?



$$3 \times 4 \times 2 = 24$$

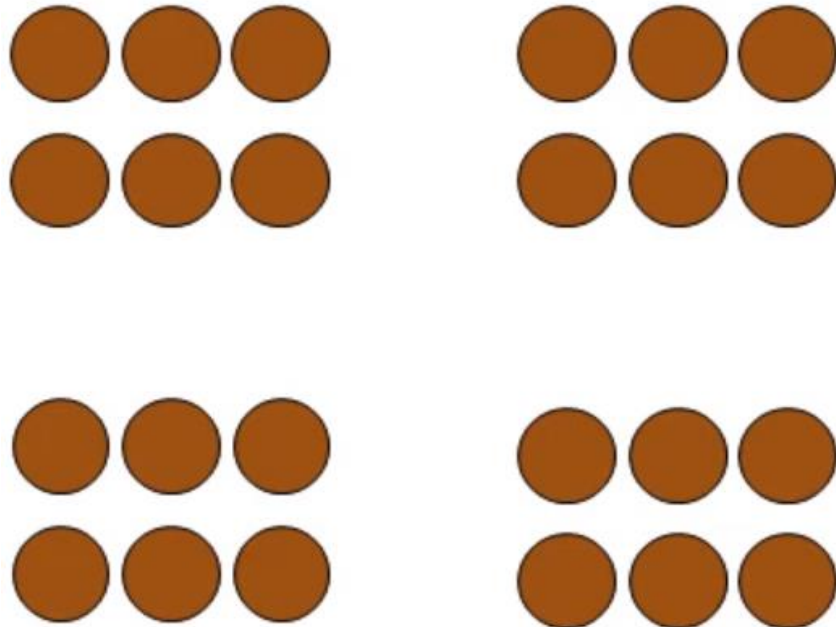
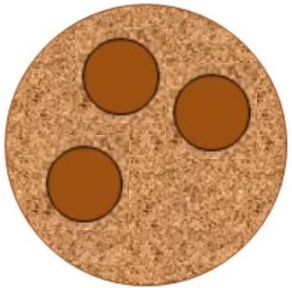
$$3 \times 4 = 12$$

$$12 \times 2 = 24$$



Luca has 4 trays. Each tray has 2 cookies. Each cookie has 3 chocolate chips. How many chocolate chips are there altogether?

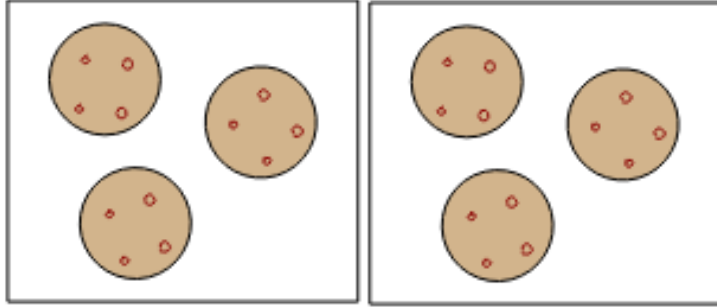
1. How might you represent this?
2. What would the equation look like?



$$3 \times 2 = 6$$
$$6 \times 4 = 24$$

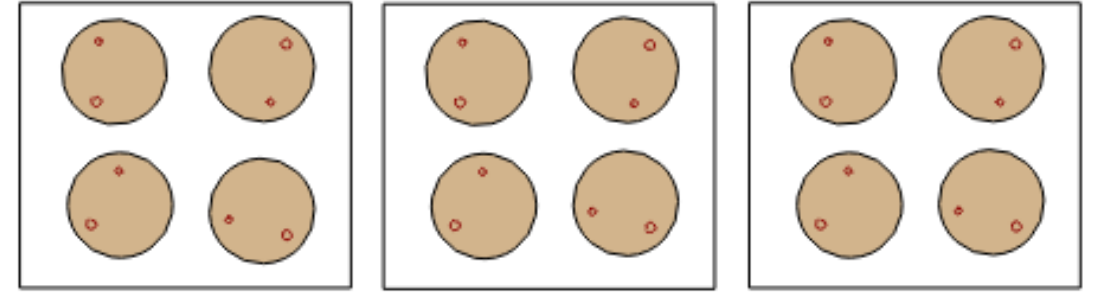


$$2 \times 3 \times 4 = 24$$

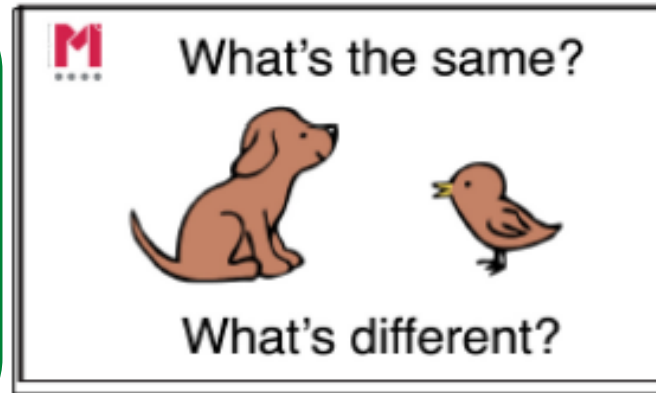


1. The order in which we multiply the factors was different each time.

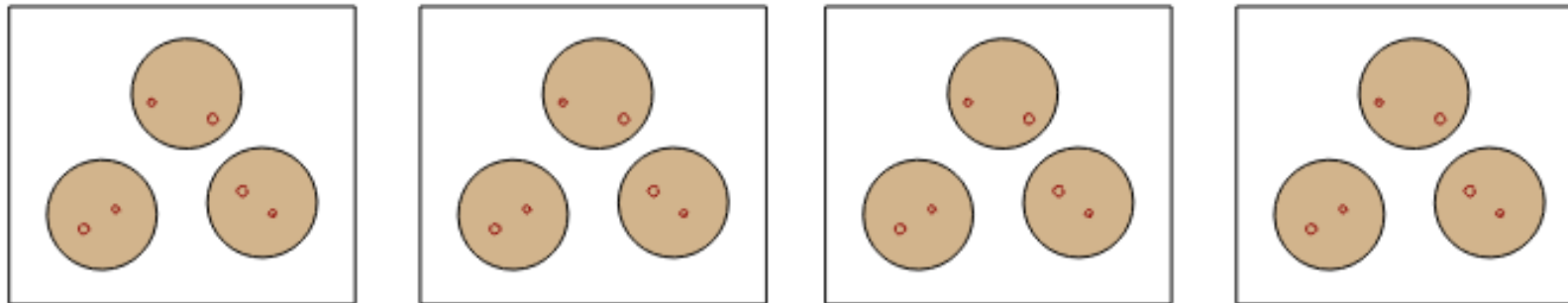
$$3 \times 4 \times 2 = 24$$



1. The factors are the same- they are always 2, 3 and 4.
2. The product is always the same - it is always 24.



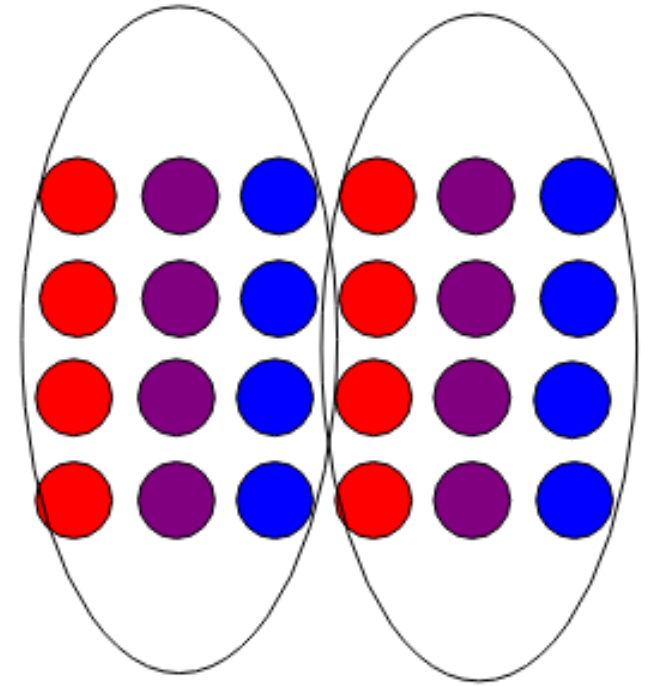
$$4 \times 3 \times 2 = 24$$



Let's Explore

★ **Associative law:** factors can be multiplied in any order and the product will be the same.

There are six possible orders to the equation to find the product of 2, 3 and 4. Can you represent them all using an array?



"I have shown the equation $3 \times 4 \times 2$. I can see three groups of four, two times."



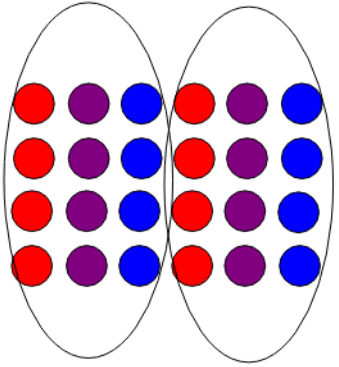
**Pause the video to
complete your task**



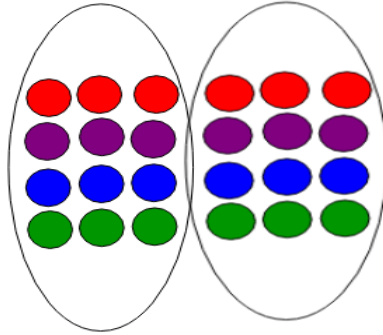
Resume once you're finished



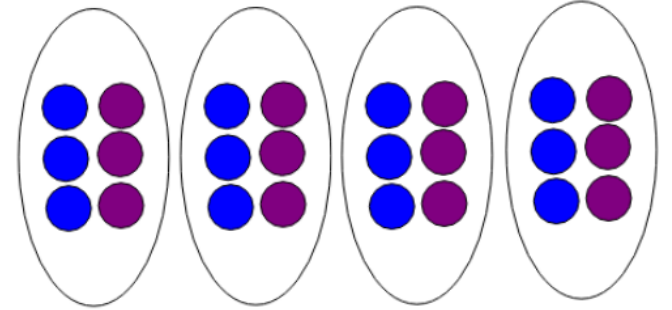
Let's explore answers



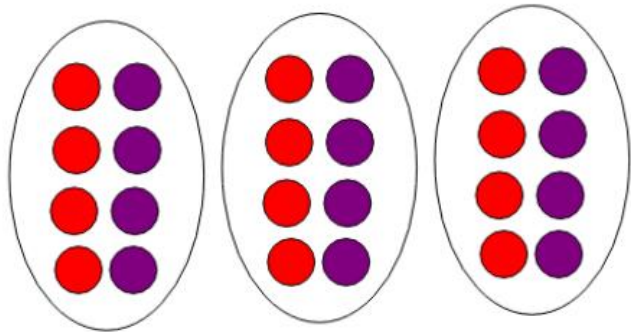
3 groups of 4, 2 times
 $3 \times 4 \times 2$



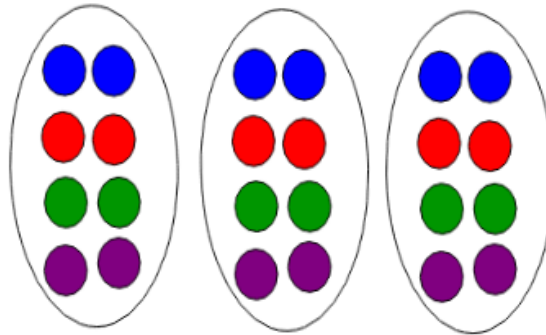
4 groups of 3, 2 times
 $4 \times 3 \times 2$



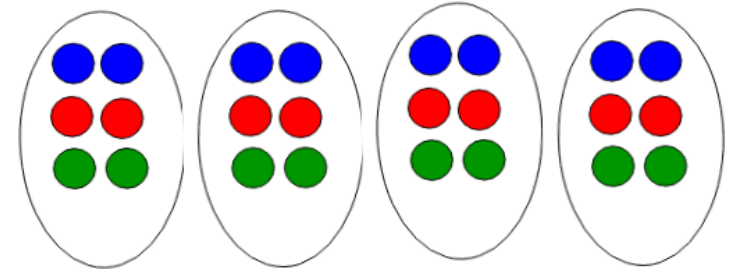
2 groups of 3, 4 times
 $2 \times 3 \times 4$



2 groups of 4, 3 times
 $2 \times 4 \times 3$



4 groups of 2, 3 times
 $4 \times 2 \times 3$



3 groups of 2, 4 times
 $3 \times 2 \times 4$



I would multiply $7 \times 3 = 21$ first. I would then work out 21×4 , by doubling 21, and doubling the answer.



Jake

$$7 \times 3 \times 4 = 84$$

I would multiply $7 \times 4 = 28$ first. Then to work out 3×28 , I would double 28, then add 28.



Yousef

I would multiply $3 \times 4 = 12$ first. I would then work out 12×7 which is easy because I know my 7 times table.



Ayah



1. Which do you think is the easiest order to multiply the digits of this equation in?
2. Which do you think is the most difficult? Why?

$$7 \times 2 \times 9 = 126$$

I did $7 \times 9 \times 2$. I know that 7 multiplied by 9 is 63. I can then double 63 to multiply it by 2, which is 126. The product of 7, 9 and 2 is 126



I did $7 \times 2 \times 9$. I know that 7 multiplied by 2 is 14. I can use derived facts to find 14 multiplied by 9. 14 multiplied by 10 is equal to 140. 9 groups of 14 is 14 less than 140, which is 126. The product of 7, 2 and 9 is 126.



Independent Task

Create three 1-digit multiplication equations. Use the associative law to solve the equation.



1. _____ x _____ x _____ = _____
2. _____ x _____ x _____ = _____
3. _____ x _____ x _____ = _____
4. _____ x _____ x _____ = _____



**Pause the video to
complete your task**



Resume once you're finished



Independent Task

Create three 1-digit multiplication equations. Use the associative law to solve the equation.



1. $4 \times 1 \times 2 = 8$

2. $2 \times 1 \times 3 = 12$

3. $3 \times 4 \times 5 = 60$

4. $5 \times 6 \times 7 = 210$

5. $7 \times 8 \times 9 = 504$

6. $6 \times 4 \times 5 = 120$

7. $2 \times 8 \times 9 = 144$

8. $7 \times 3 \times 5 = 105$

9. $8 \times 6 \times 7 = 336$

10. $7 \times 8 \times 3 = 163$

11. $6 \times 5 \times 2 = 60$

12. $2 \times 5 \times 3 = 30$

13. $7 \times 4 \times 5 = 140$

14. $5 \times 1 \times 7 = 35$

15. $1 \times 8 \times 2 = 16$



Now complete the quiz!

