



Commutativity

An array is made of straight rows and columns. Here is an array of dots:



I can see 2 rows of 9.

I can see 18 divided into 2 groups of 9.

I can see 9 rows of 2.

I can see 18 divided into 9 groups of 2.

I can use the array to write number sentences:

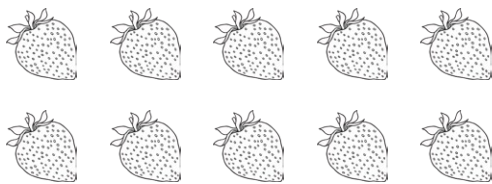
$$9 \times 2 = 18$$

$$18 \div 2 = 9$$

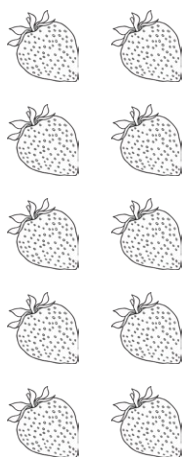
$$2 \times 9 = 18$$

$$18 \div 9 = 2$$

Here is an array made from strawberries.



Here it is turned the other way.



Describe what you notice.

Complete these number sentences:

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

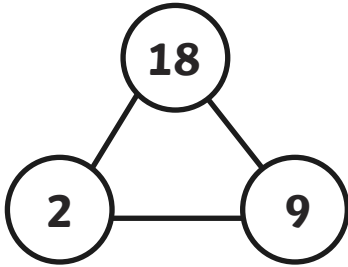
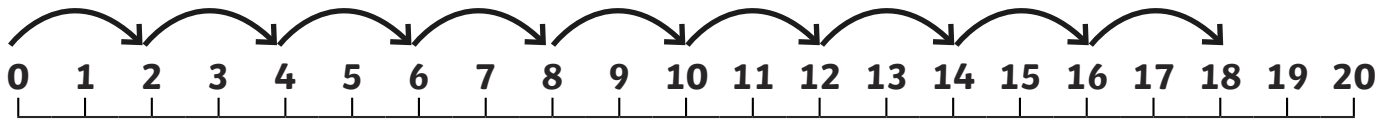
Now make an array from things you find at home.

Describe what you have made in sentences and then write 2 multiplication sentences and 2 division sentences for what you have made. Draw your array or take a picture of it to show your teacher.



Commutativity

1. Look at these images, they show the same thing in a different way.



| | | | | | | | | |
|----|---|---|---|---|---|---|---|---|
| 18 | | | | | | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |



Write 4 sentences to match these images.

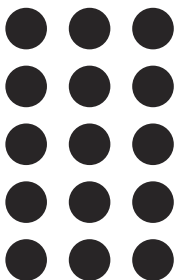
$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

2. Write number sentences and draw as many images as you can to go with this array.





Commutativity

3. Give me 6! Tick the number sentences that make 6 and cross any that don't.

$2 + 2 + 2 + 2$

$3 + 3$

3×3

2×3

3×2

$12 \div 2$

$12 \div 6$

Half of 12

Double 3



Answers

1. $9 \times 2 = 18$

$2 \times 9 = 18$

$18 \div 2 = 9$

$18 \div 9 = 2$

2. Accept any images that reflect the array.

$3 \times 5 = 15$

$5 \times 3 = 15$

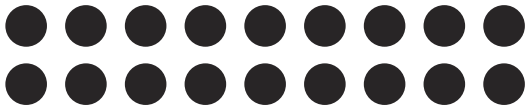
$15 \div 3 = 5$

$15 \div 5 = 3$

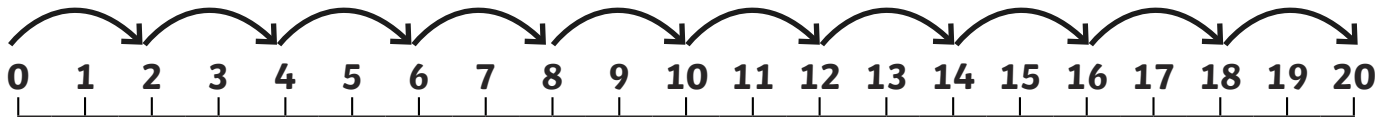
3. $2 + 2 + 2 + 2$ ✗ $3 + 3$ ✓ 3×3 ✗ 2×3 ✓ 3×2 ✓ $12 \div 2$ ✓
 $12 \div 6$ ✗ Half of 12 ✓ Double 3 ✓



Commutativity



1. Tick all the images and number sentences that match this array and put a cross through any that don't. Put a question mark against any you're not sure of.

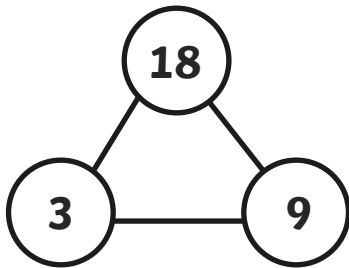


$$18 \div 2 = 9$$

$$18 \div 9 = 2$$

$$2 \times 9 = 18$$

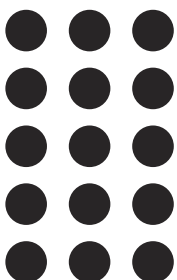
$$9 \div 2 = 18$$



| | | | | | | | | |
|----|---|---|---|---|---|---|---|---|
| 18 | | | | | | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |



2. Write number sentences and draw as many images as you can to go with this array.





Commutativity

3. Give me 10! Tick any statements that give a value of 10.

2×5

5×2

3×3

$20 \div 10$

$10 \div 20$

Half of 20

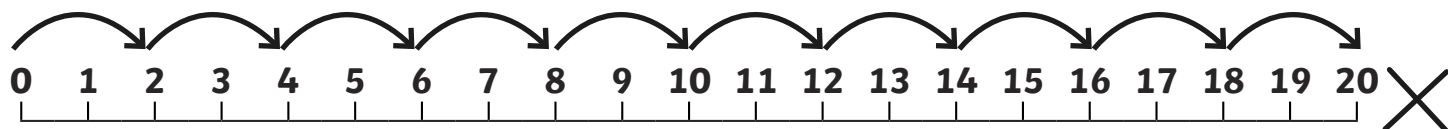
Double 5

4. Give me 20! Can you write some statements that give 20 and some that don't? Tick the correct ones and cross out any incorrect ones.

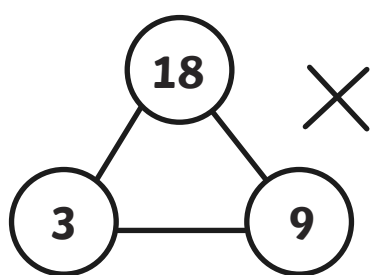


Answers

1. Use any question marks to assess children's understanding and familiarity with resources.



$$18 \div 2 = 9 \checkmark \quad 18 \div 9 = 2 \checkmark \quad 2 \times 9 = 18 \checkmark \quad 9 \div 2 = 18 \times$$



| | | | | | | | | |
|----|---|---|---|---|---|---|---|---|
| 18 | | | | | | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |



2. $3 \times 5 = 15$, $5 \times 3 = 15$, $15 \div 3 = 5$, $15 \div 5 = 3$. Accept any images that reflect the array.

3.

$$2 \times 5 \checkmark \quad 5 \times 2 \checkmark \quad 3 \times 3 \times \quad 20 \div 10 \checkmark \quad 10 \div 20 \quad \text{Half of 20} \checkmark \quad \text{Double 5} \checkmark$$

4. Accept any statements that are correctly ticked or crossed.