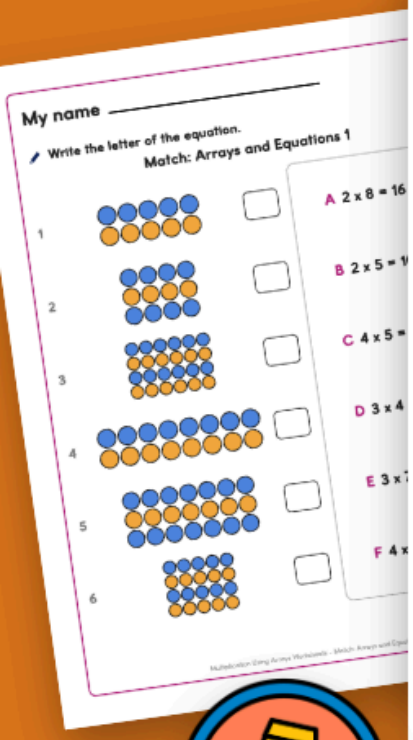
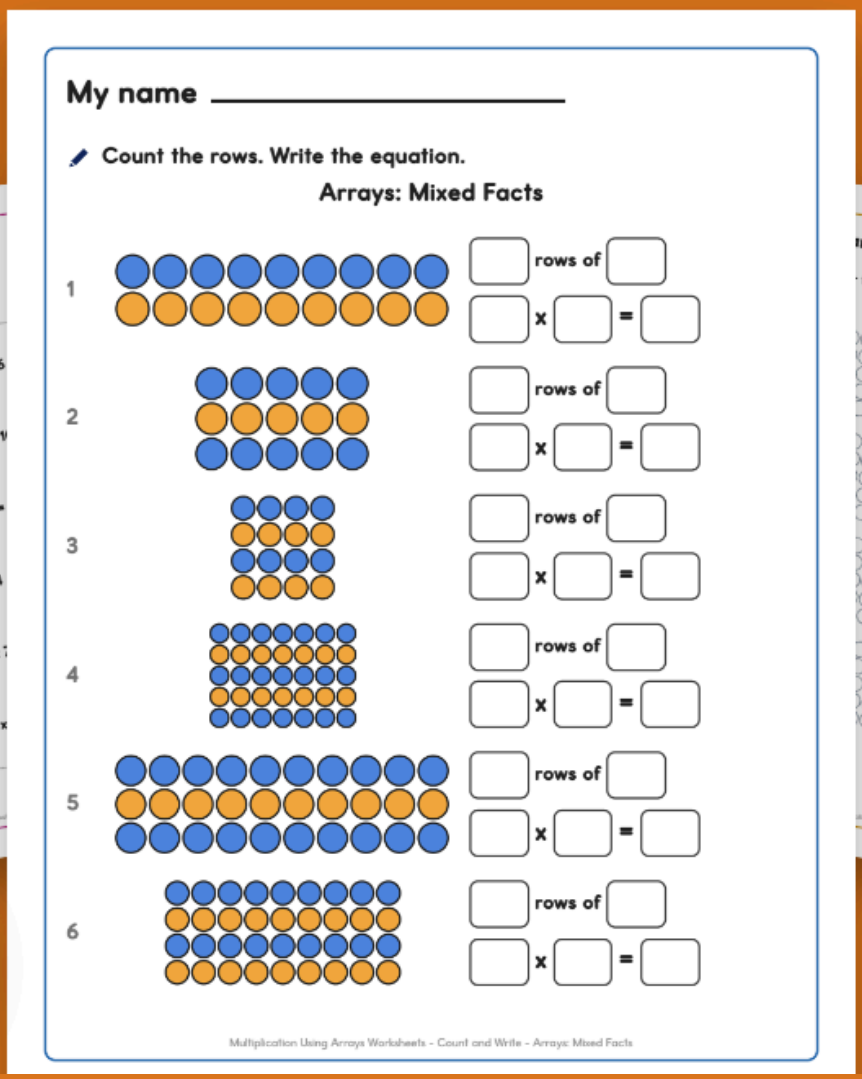
MULTIPLICATION USING ARRAYS

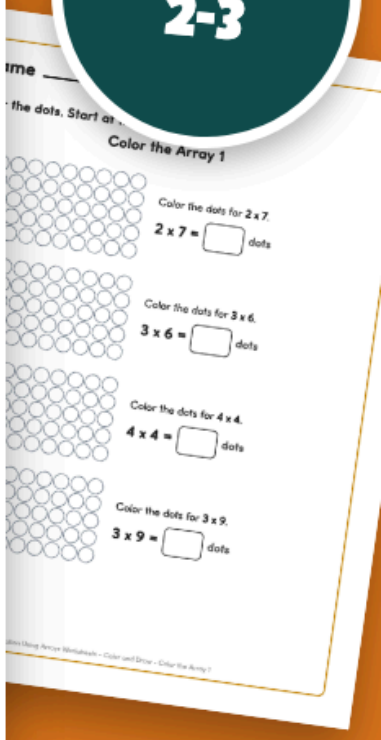
MULTIPLICATION DOT GRIDS

28 PAGES

GRADES 2-3







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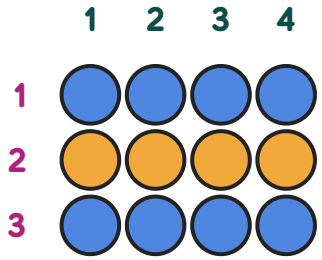
PREVIEW

My name _____

Read the examples. Then try one.

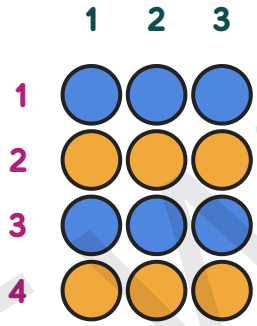
What Is an Array?

An array has rows and columns



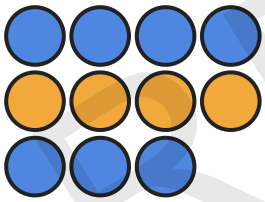
Rows go across. Columns go down.
3 rows of 4 is **12 dots**.
3 x 4 = **12**

Turn it around



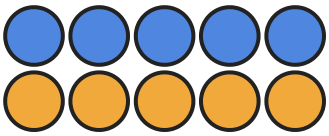
Now it is **4 rows of 3**.
Same dots: **12**.
4 x 3 = **12**

Not an array



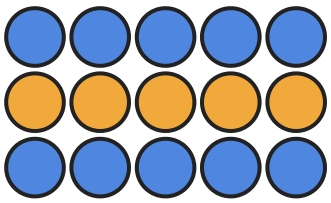
One row is short. Every row must have the same number of dots.

Say it



2 rows of 5.
First number: rows. Second number: dots in each row.
2 x 5 = **10**

Your turn



_____ **rows of** _____

_____ **x** _____ **=** _____

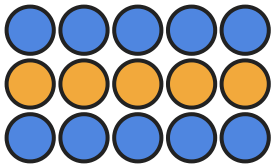
PREVIEW

My name _____

Is every row the same? Write yes or no.

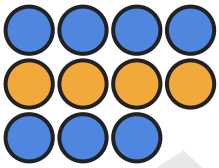
Is It an Array?

1



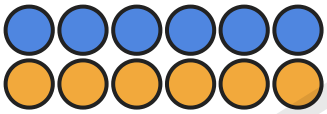
Array? ☐

2



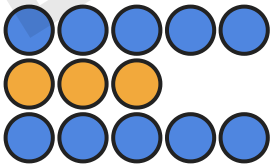
Array? ☐

3



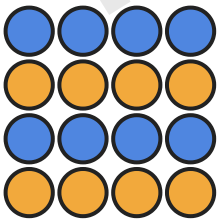
Array? ☐

4



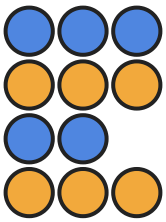
Array? ☐

5



Array? ☐

6



Array? ☐

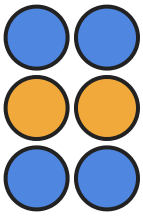
Write **yes** or **no**. Check: does every row have the same number of dots?

PREVIEW

My name _____

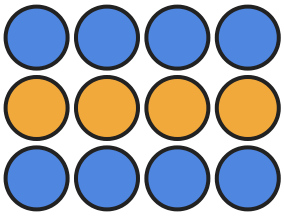
Count the rows. Write the equation.

Arrays: Facts with 3

1 

☐ rows of ☐

☐ x ☐ = ☐

2 

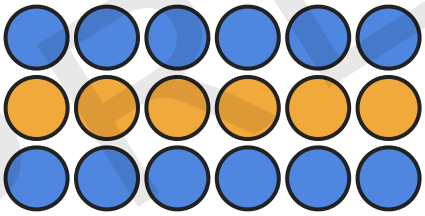
☐ rows of ☐

☐ x ☐ = ☐

3 

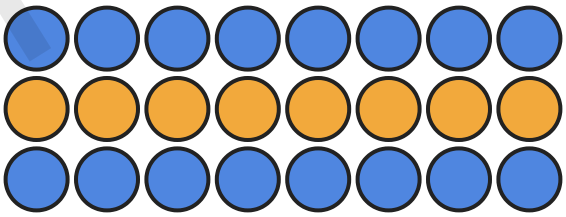
☐ rows of ☐

☐ x ☐ = ☐

4 

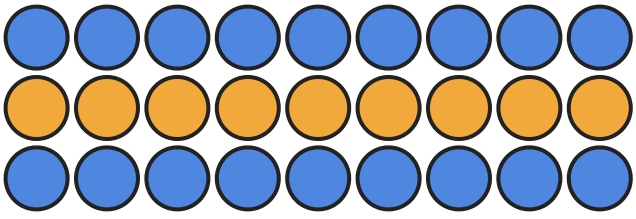
☐ rows of ☐

☐ x ☐ = ☐

5 

☐ rows of ☐

☐ x ☐ = ☐

6 

☐ rows of ☐

☐ x ☐ = ☐

PREVIEW

My name _____

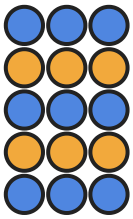
Count the rows. Write the equation.

Arrays: Facts with 5

1 

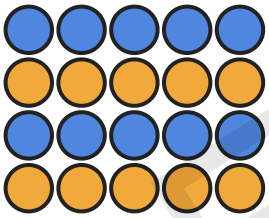
☐ rows of ☐

☐ x ☐ = ☐

2 

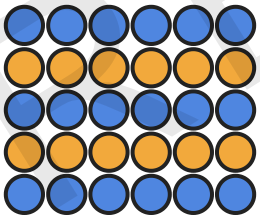
☐ rows of ☐

☐ x ☐ = ☐

3 

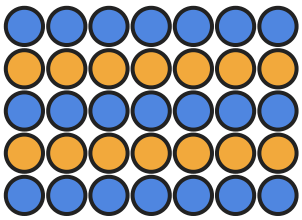
☐ rows of ☐

☐ x ☐ = ☐

4 

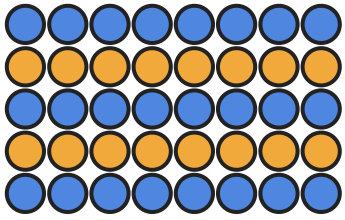
☐ rows of ☐

☐ x ☐ = ☐

5 

☐ rows of ☐

☐ x ☐ = ☐

6 

☐ rows of ☐

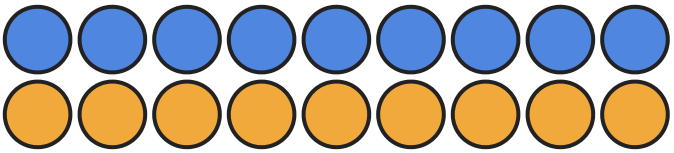
☐ x ☐ = ☐

PREVIEW

My name _____

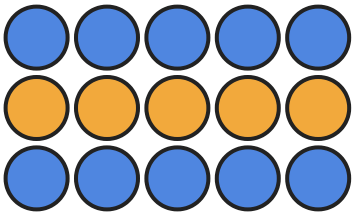
Count the rows. Write the equation.

Arrays: Mixed Facts

1 

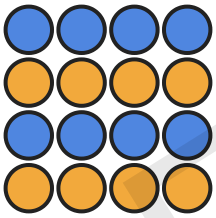
[ ] rows of [ ]

[ ] x [ ] = [ ]

2 

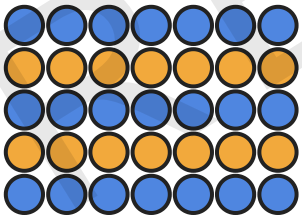
[ ] rows of [ ]

[ ] x [ ] = [ ]

3 

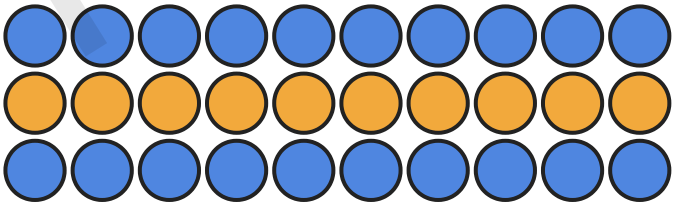
[ ] rows of [ ]

[ ] x [ ] = [ ]

4 

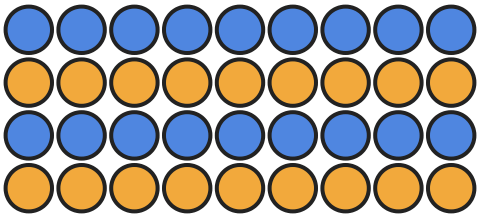
[ ] rows of [ ]

[ ] x [ ] = [ ]

5 

[ ] rows of [ ]

[ ] x [ ] = [ ]

6 

[ ] rows of [ ]

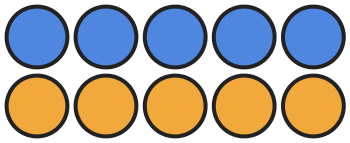
[ ] x [ ] = [ ]

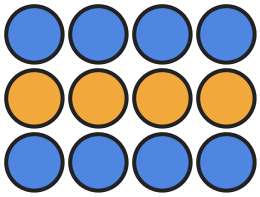
PREVIEW

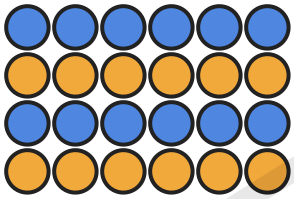
My name _____

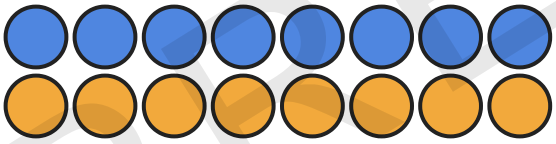
Write the letter of the equation.

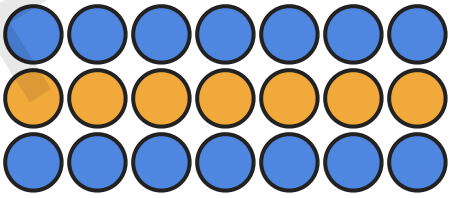
Match: Arrays and Equations 1

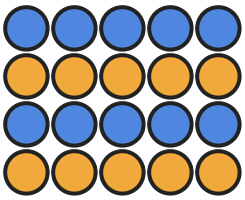
1  ☐

2  ☐

3  ☐

4  ☐

5  ☐

6  ☐

A $2 \times 8 = 16$

B $2 \times 5 = 10$

C $4 \times 5 = 20$

D $3 \times 4 = 12$

E $3 \times 7 = 21$

F $4 \times 6 = 24$

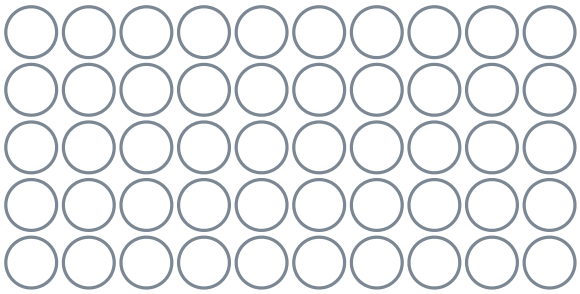
PREVIEW

My name _____

Color the dots. Start at the top left.

Color the Array 1

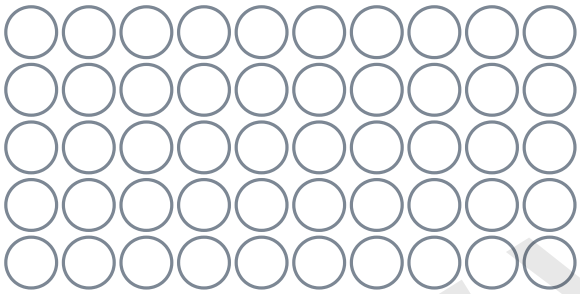
1



Color the dots for **2 x 7**.

2 x 7 = ☐ **dots**

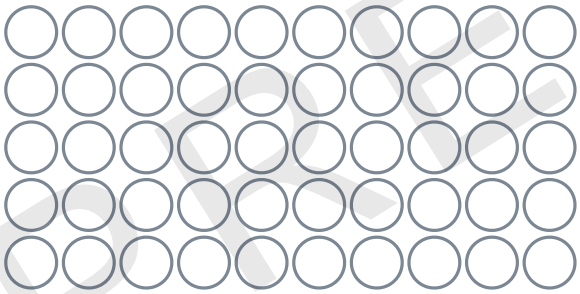
2



Color the dots for **3 x 6**.

3 x 6 = ☐ **dots**

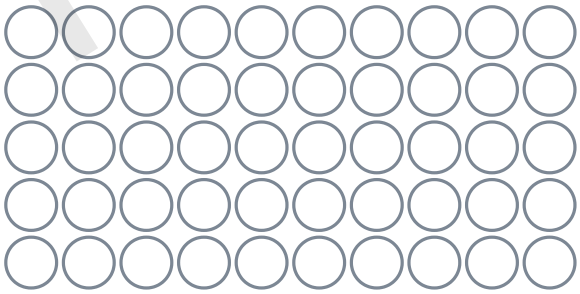
3



Color the dots for **4 x 4**.

4 x 4 = ☐ **dots**

4



Color the dots for **3 x 9**.

3 x 9 = ☐ **dots**

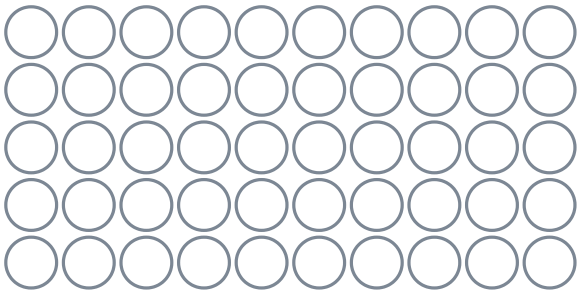
PREVIEW

My name _____

Read. Color the array. Write the equation.

Array Stories

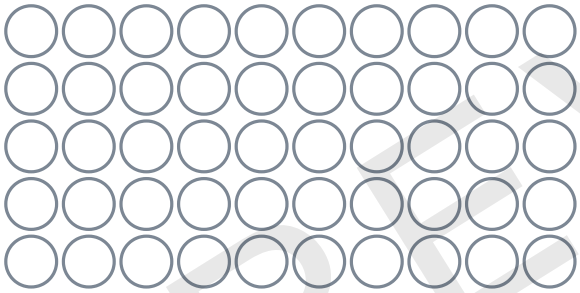
1 A teacher puts chairs in 4 rows. There are 5 chairs in each row. How many chairs?



☐ x ☐ = ☐

Answer: ☐ chairs

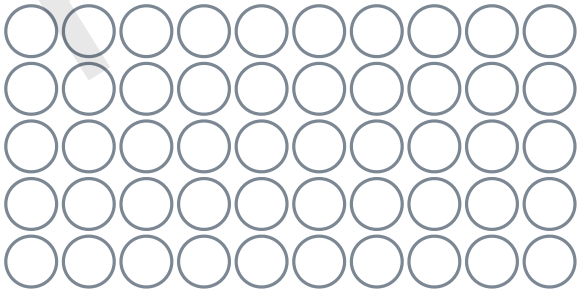
2 A garden has 3 rows of plants. Each row has 8 plants. How many plants?



☐ x ☐ = ☐

Answer: ☐ plants

3 A baking sheet has 5 rows of cookies. Each row has 6 cookies. How many cookies?



☐ x ☐ = ☐

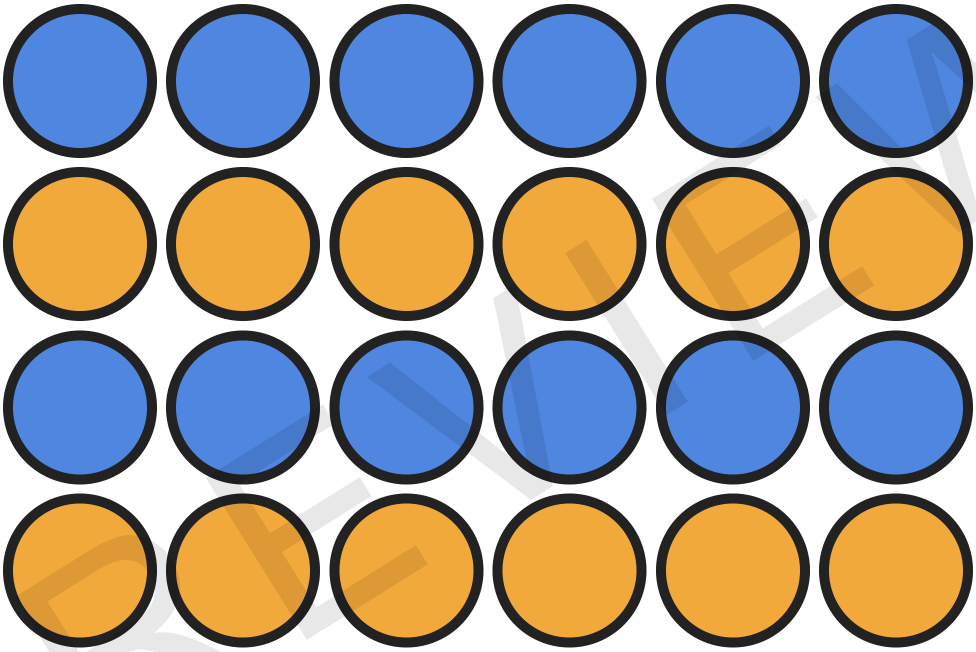
Answer: ☐ cookies

PREVIEW

Preview - Bright Path Sped

Array

Dots in equal rows



PREVIEW

4 rows of 6

4 x 6 = 24

24 dots

Answer Key 1

Count and write pages. Each answer is for the item number on its page.

Page 6: Arrays: Facts with 2

1) 2 rows of 3; 2 x 3 = **6**
2) 4 rows of 2; 4 x 2 = **8**
3) 2 rows of 6; 2 x 6 = **12**
4) 5 rows of 2; 5 x 2 = **10**
5) 2 rows of 8; 2 x 8 = **16**
6) 2 rows of 9; 2 x 9 = **18**

Page 7: Arrays: Facts with 3

1) 3 rows of 2; 3 x 2 = **6**
2) 3 rows of 4; 3 x 4 = **12**
3) 5 rows of 3; 5 x 3 = **15**
4) 3 rows of 6; 3 x 6 = **18**
5) 3 rows of 8; 3 x 8 = **24**
6) 3 rows of 9; 3 x 9 = **27**

Page 8: Arrays: Facts with 4

1) 4 rows of 2; 4 x 2 = **8**
2) 4 rows of 3; 4 x 3 = **12**
3) 5 rows of 4; 5 x 4 = **20**
4) 4 rows of 6; 4 x 6 = **24**
5) 4 rows of 7; 4 x 7 = **28**
6) 4 rows of 8; 4 x 8 = **32**

Page 9: Arrays: Facts with 5

1) 5 rows of 2; 5 x 2 = **10**
2) 5 rows of 3; 5 x 3 = **15**
3) 4 rows of 5; 4 x 5 = **20**
4) 5 rows of 6; 5 x 6 = **30**
5) 5 rows of 7; 5 x 7 = **35**
6) 5 rows of 8; 5 x 8 = **40**

Page 10: Arrays: Facts with 10

1) 2 rows of 10; 2 x 10 = **20**
2) 3 rows of 10; 3 x 10 = **30**
3) 4 rows of 10; 4 x 10 = **40**
4) 5 rows of 10; 5 x 10 = **50**
5) **0**

Page 11: Arrays: Mixed Facts

1) 2 rows of 9; 2 x 9 = **18**
2) 3 rows of 5; 3 x 5 = **15**
3) 4 rows of 4; 4 x 4 = **16**
4) 5 rows of 7; 5 x 7 = **35**
5) 3 rows of 10; 3 x 10 = **30**
6) 4 rows of 9; 4 x 9 = **36**

Scoring a page

An item is right when every box in it is right (rows, columns and the answer). Where a student shows work, any correct method earns the item. A first number and second number swapped is the turn-around of the same array: ask the student to point to the rows.

Mix-ups to watch for

- **Rows and columns swapped.** On page 7 item 3 the array is 5 rows of 3: 5 x 3 = 15. A child who writes 3 rows of 5 has turned the array; the answer is the same, so ask the child to point to a row.
- **Counting rows instead of dots.** A child who writes 5 for item 3 counted the rows only. Say: how many dots in all?
- **Adding the two numbers.** 5 + 3 = 8, not 15. Ask: how many dots are in the first row, and how many rows are there?
- **Not an array.** On page 5 a picture with a short row is a no, even when the rows look nearly the same.
- **Uneven coloring.** On the color pages, every colored row must start at the left and have the same number of dots.

PREVIEW

Preview · Bright Path Sped

Class Record

Write each score out of the number on the page's own header.

Class _____ Teacher _____ Dates _____

Student	Facts of 2 (of 6)	Facts of 3 (of 6)	Facts of 4 (of 6)	Facts of 5 (of 6)	Facts of 10 (of 5)	Mixed (of 6)	Notes

PREVIEW

Write the number of items right on each page. A blank cell means not given yet, never zero. The page with the lowest class total is the one to teach again.

Preview · Bright Path Sped

Arrays at Home

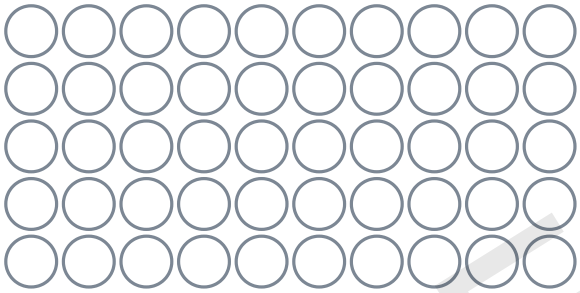
Send this page home with a child, or hand it to a family at a conference.

Student _____ Week of _____

How to help at home, in three steps

- Find something laid out in equal rows, such as a muffin pan, an egg carton, a window or a tray of ice cubes. Say: this is an array.
- Count the rows. Count how many are in each row. Write both numbers in the boxes.
- Multiply the two numbers. Say it out loud: how many in all? Then color the same array on the dot grid.

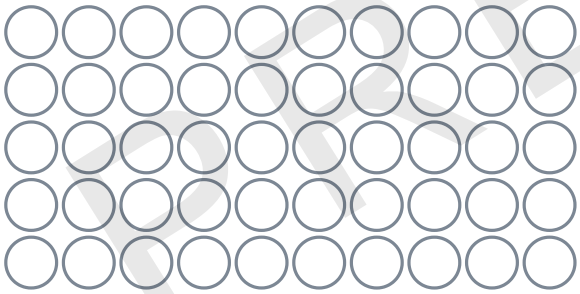
Our arrays



Our first array is

☐ **rows of** ☐

☐ **x** ☐ **=** ☐



Our second array is

☐ **rows of** ☐

☐ **x** ☐ **=** ☐

Try saying

- "How many rows? How many in each row?"
- "If we turn it around, do we get the same number in all?"

Note from the teacher

Note from home

PREVIEW