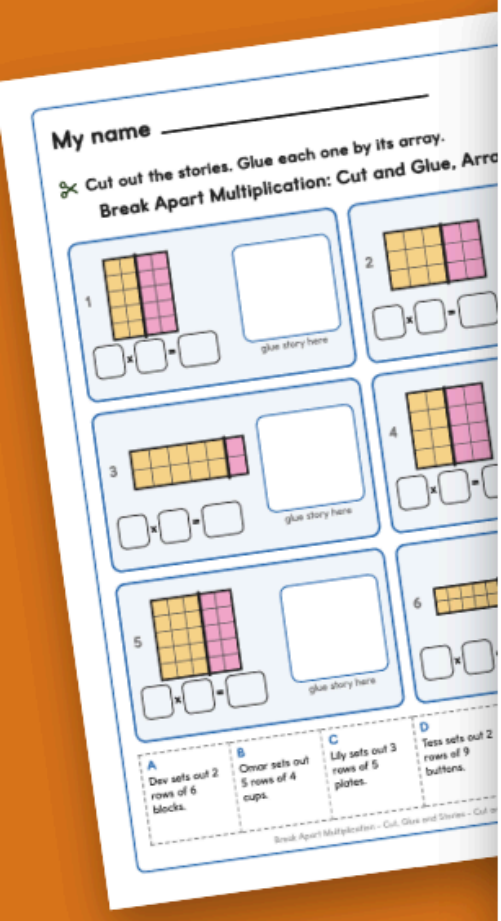
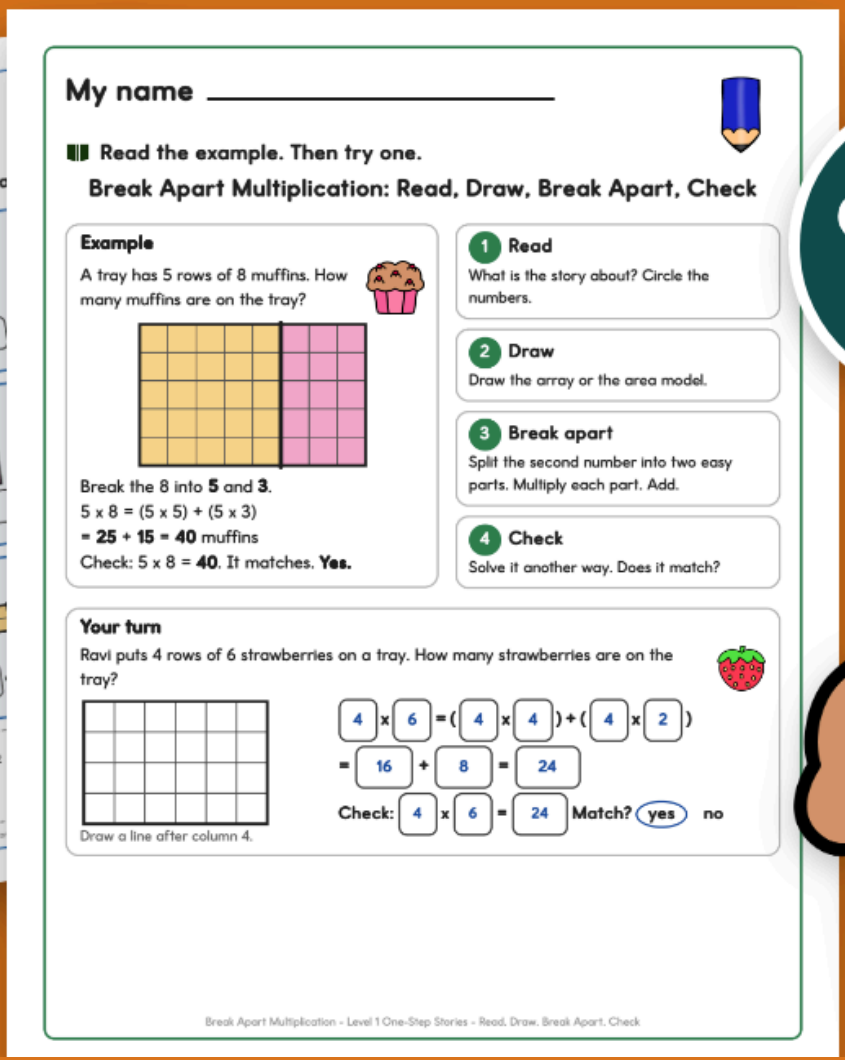
BREAK APART MULTIPLICATION WORD PROBLEMS

Arrays and Area Models





GRADES 3-4



Bright Path Sped

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One classroom license

- This file is for one classroom: one teacher, one group of students.
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This is a fillable PDF

- Open it in a PDF reader (Adobe Acrobat Reader, Preview, or your browser), click into a box, type, and Save As.
- The name line and every number box are type-in fields. The arrays and area models are printed pictures: print the page and let students draw the line and color with a pencil or crayon.
- It works offline once downloaded.

Print at 100 percent

Turn off fit to page and shrink to fit so the squares stay big enough to count and to draw on. Pages print in color or in black and white. The two parts of an array are light tints, and in black and white they print as two shades of gray with a dark line between them. The cutting pages need scissors and a glue stick.

Student work

A filled-in tracker carries a student's name. Keep it in the data folder, and use a first name only on any page that leaves your hands.

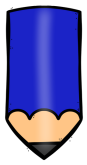
Need help?

If a box will not behave or a page will not print the way you expect, use Ask a Question on the product page before leaving a review. Every question is read, and a fix to the file ships as a free update: re-download it any time from My Purchases.

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PREVIEW

My name _____



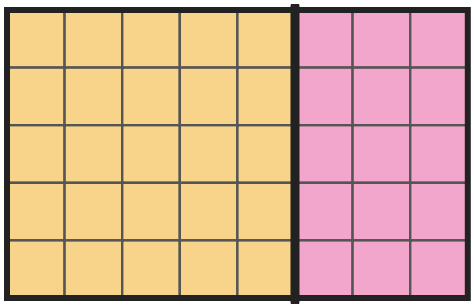
Read the example. Then try one.

Break Apart Multiplication: Read, Draw, Break Apart, Check

Example

A tray has 5 rows of 8 muffins. How many muffins are on the tray?





Break the 8 into **5** and **3**.

5 x 8 = (5 x 5) + (5 x 3)

= **25** + **15** = **40** muffins

Check: 5 x 8 = **40**. It matches. **Yes.**

1 Read

What is the story about? Circle the numbers.

2 Draw

Draw the array or the area model.

3 Break apart

Split the second number into two easy parts. Multiply each part. Add.

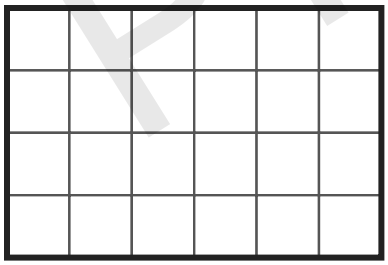
4 Check

Solve it another way. Does it match?

Your turn

Ravi puts 4 rows of 6 strawberries on a tray. How many strawberries are on the tray?





Draw a line after column 4.

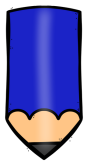
☐ x ☐ = (☐ x ☐) + (☐ x ☐)

= ☐ + ☐ = ☐

Check: ☐ x ☐ = ☐ **Match?** **yes** **no**

PREVIEW

My name _____

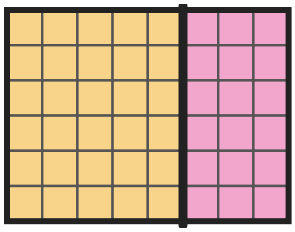


Read. Look at the split. Fill in the boxes.

Break Apart Multiplication: Array Stories, Split Shown

1 Maya sets out 6 rows of 8 strawberries on a tray. How many strawberries are there?





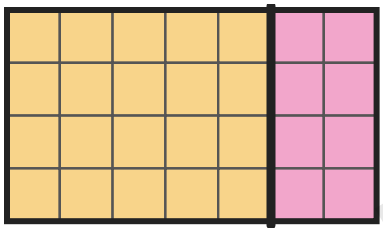
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ **Match?** yes no

2 A bakery tray has 4 rows of 7 muffins. How many muffins are on the tray?





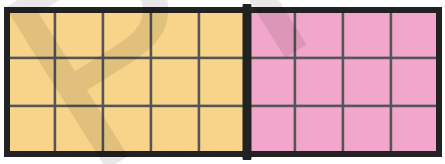
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ **Match?** yes no

3 Leo plants 3 rows of 9 bean seeds. How many seeds does he plant?





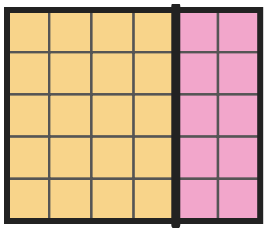
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ **Match?** yes no

4 Priya stacks 5 rows of 6 books on a cart. How many books are on the cart?





□ x □ = (□ x □) + (□ x □)

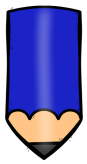
= □ + □ = □

Check: □ x □ = □ **Match?** yes no

PREVIEW

Preview · Bright Path Sped

My name _____

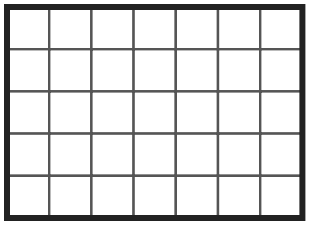


Read. Draw the line. Fill in the boxes.

Break Apart Multiplication: Array Stories, Draw the Line

1 Omar lines up 5 rows of 7 tomatoes on a table. How many tomatoes are there?





Draw a line after column 5.

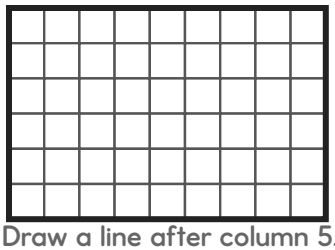
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ **Match?** yes no

2 Tess presses 6 rows of 9 leaves in a book. How many leaves are in the book?





Draw a line after column 5.

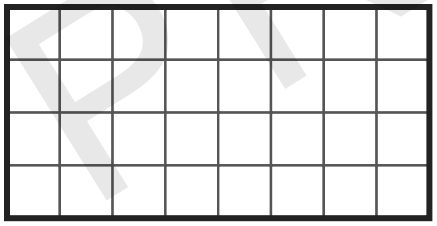
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ **Match?** yes no

3 Zoe sets out 4 rows of 8 pencils for art class. How many pencils is that?





Draw a line after column 5.

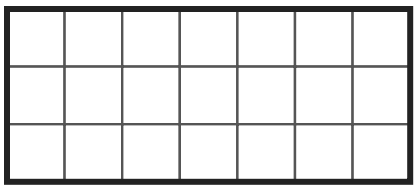
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ **Match?** yes no

4 Ben fills 3 rows of 7 jars with jam for a sale. How many jars does he fill?





Draw a line after column 4.

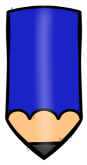
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ **Match?** yes no

PREVIEW

My name _____



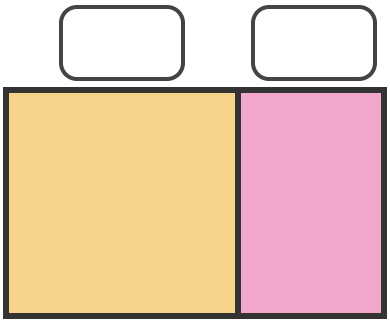
Read. Break apart. Then add more.

Break Apart Multiplication: Two Steps, Add More A

1 Nia has 5 rows of 12 strawberries. Her friend gives her 24 more strawberries. How many strawberries does Nia have now?



5



□ x □ = (□ x □) + (□ x □)

= □ + □ = □

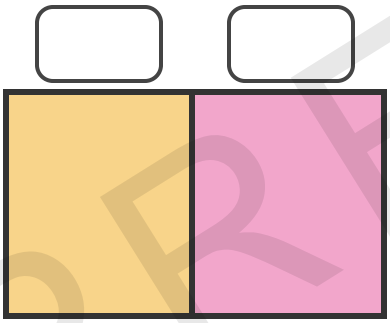
Then: □ + □ = □ **strawberries**

Check: □ x □ = □ **Match? yes no**

2 A box has 6 rows of 6 crayons. Then 14 more crayons are put in the box. How many crayons are in the box now?



6



□ x □ = (□ x □) + (□ x □)

= □ + □ = □

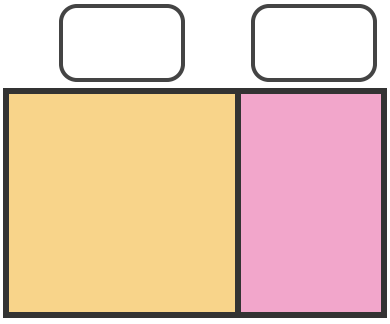
Then: □ + □ = □ **crayons**

Check: □ x □ = □ **Match? yes no**

3 Lena lines up 4 rows of 11 oranges. She adds 27 more oranges. How many oranges does she have in all?



4



□ x □ = (□ x □) + (□ x □)

= □ + □ = □

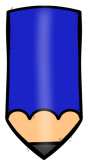
Then: □ + □ = □ **oranges**

Check: □ x □ = □ **Match? yes no**

PREVIEW

Preview · Bright Path Sped

My name _____



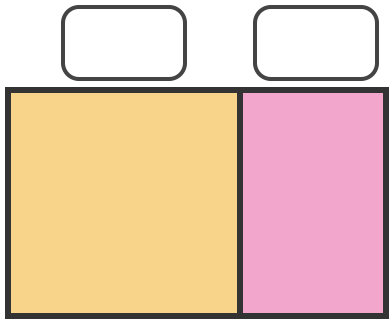
Read. Break apart. Then take away.

Break Apart Multiplication: Two Steps, Take Away A

1 Priya has 7 rows of 7 grapes. She uses 8 grapes for a fruit salad. How many grapes are left?



7



□ x □ = (□ x □) + (□ x □)

= □ + □ = □

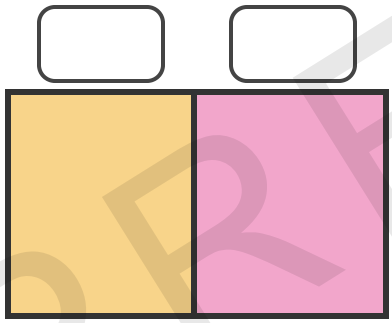
Then: □ - □ = □ grapes

Check: □ x □ = □ Match? yes no

2 Sam picks 3 rows of 6 tomatoes. He gives 5 tomatoes to a friend. How many tomatoes are left?



3



□ x □ = (□ x □) + (□ x □)

= □ + □ = □

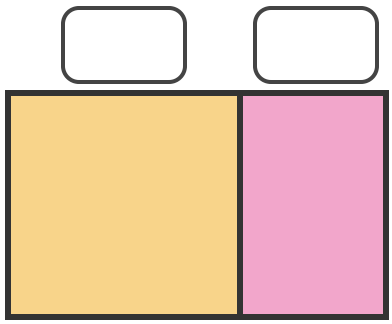
Then: □ - □ = □ tomatoes

Check: □ x □ = □ Match? yes no

3 A bakery tray has 6 rows of 12 muffins. The bakery sells 28 muffins. How many muffins are left?



6



□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Then: □ - □ = □ muffins

Check: □ x □ = □ Match? yes no

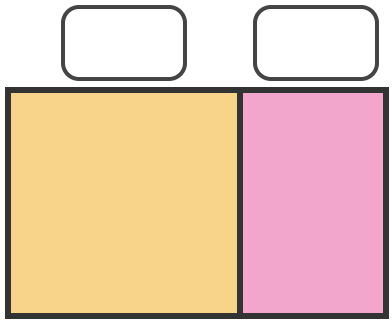
PREVIEW

My name _____

Read. Break into tens and ones. Fill in the boxes.

Break Apart Multiplication: Tens and Ones Stories A

1 Ravi packs 3 boxes. Each box holds 14 crayons. How many crayons does he pack?



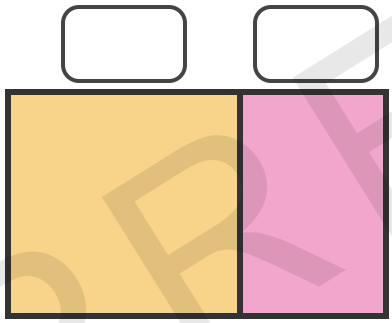
3

□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ Match? yes no

2 A shelf has 4 baskets. Each basket holds 15 pencils. How many pencils are there?



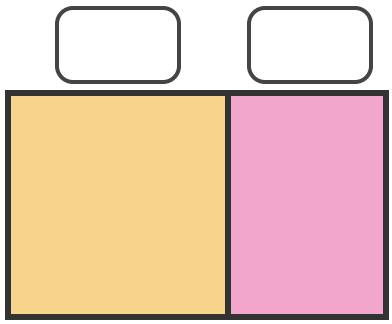
4

□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ Match? yes no

3 Zoe makes 2 bags. Each bag has 17 grapes. How many grapes is that?



2

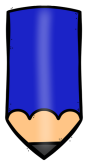
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ Match? yes no

PREVIEW

My name _____

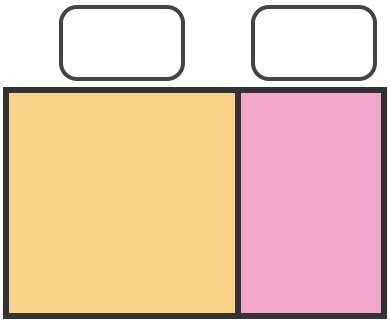


Read. Break into tens and ones. Fill in the boxes.

Break Apart Multiplication: Tens and Ones Stories C

1 A class plants 4 rows. Each row has 23 seeds. How many seeds is that?





4

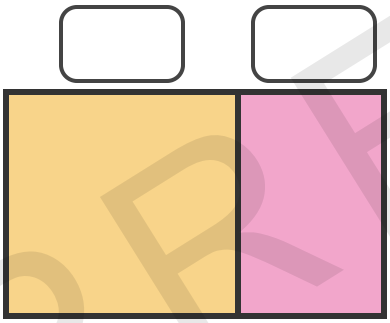
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ Match? yes no

2 Kai has 3 baskets. Each basket holds 32 leaves. How many leaves does he have?





3

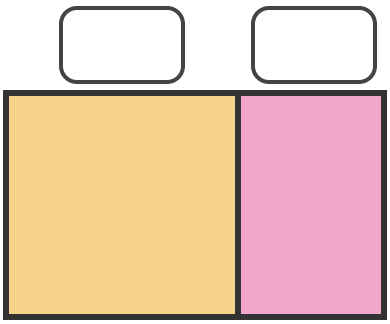
□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ Match? yes no

3 A box has 45 bananas. Max buys 2 boxes. How many bananas does he buy?





2

□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Check: □ x □ = □ Match? yes no

PREVIEW

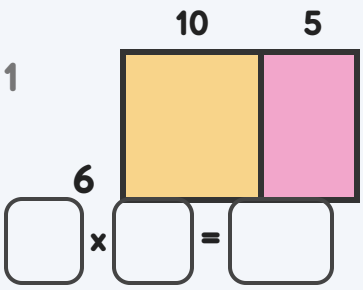
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My name _____

Cut out the stories. Glue each one by its model.

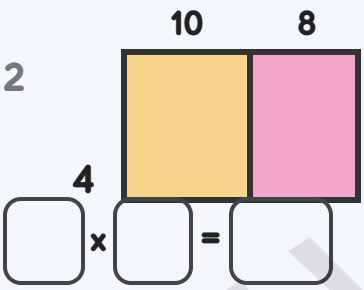
Break Apart Multiplication: Cut and Glue, Model Stories

1



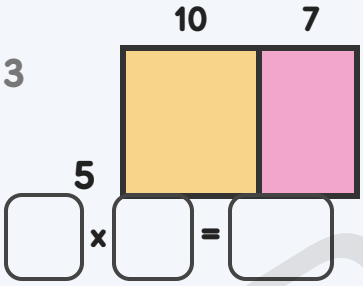
glue story here

2



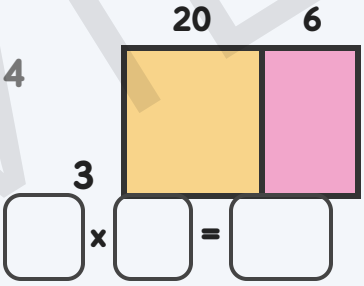
glue story here

3



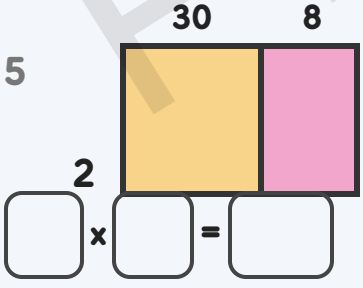
glue story here

4



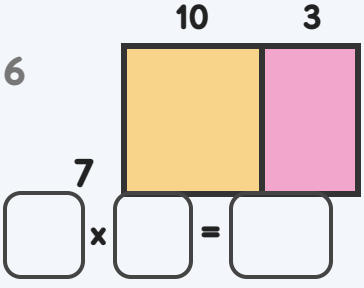
glue story here

5



glue story here

6



glue story here

A	B	C	D	E	F
Each of 3 jars holds 26 buttons.	Pam has 4 boxes. Each box has 18 pencils.	7 rows with 13 seeds in each row.	2 packs with 38 cards in each pack.	6 bags with 15 marbles in each bag.	5 trays of 17 muffins.

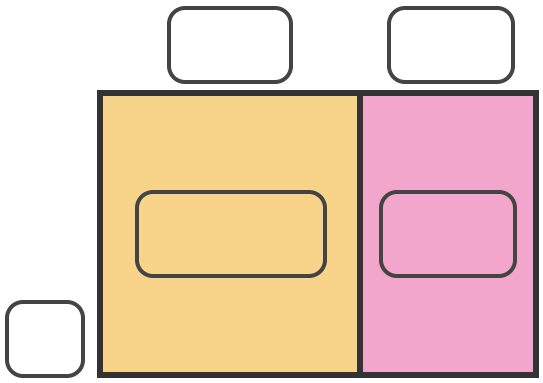
PREVIEW

My name _____

Write a story. Fill in the model.

Break Apart Multiplication: Write Your Own, Area Model

1 My story:



□ x □ = (□ x □) + (□ x □)

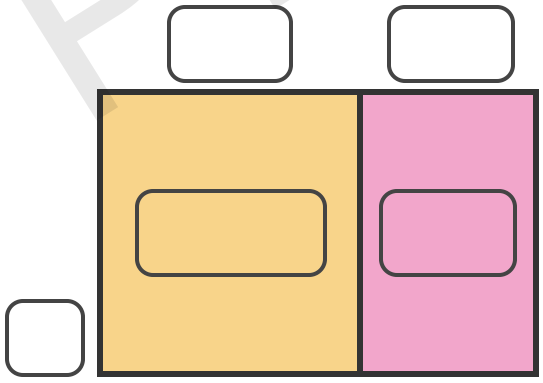
= □ + □ = □

Trade with a partner. Your partner checks it.

Check: □ x □ = □

Match? yes no

2 My story:



□ x □ = (□ x □) + (□ x □)

= □ + □ = □

Trade with a partner. Your partner checks it.

Check: □ x □ = □

Match? yes no

PREVIEW

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Answer Key 2: Level 2

Each answer is for the problem number on its page.

Page 9: Two Steps, Add More A

1) 5 x 10 = 50, 5 x 2 = 10; 60. Then 60 + 24 = **84** strawberries

2) 6 x 3 = 18, 6 x 3 = 18; 36. Then 36 + 14 = **50** crayons

3) 4 x 10 = 40, 4 x 1 = 4; 44. Then 44 + 27 = **71** oranges

Page 10: Two Steps, Add More B

1) 8 x 5 = 40, 8 x 3 = 24; 64. Then 64 + 15 = **79** books

2) 5 x 10 = 50, 5 x 1 = 5; 55. Then 55 + 30 = **85** seeds

3) 7 x 10 = 70, 7 x 1 = 7; 77. Then 77 + 15 = **92** pencils

Page 11: Two Steps, Take Away A

1) 7 x 5 = 35, 7 x 2 = 14; 49. Then 49 - 8 = **41** grapes

2) 3 x 3 = 9, 3 x 3 = 9; 18. Then 18 - 5 = **13** tomatoes

3) 6 x 10 = 60, 6 x 2 = 12; 72. Then 72 - 28 = **44** muffins

Page 12: Two Steps, Take Away B

1) 9 x 5 = 45, 9 x 4 = 36; 81. Then 81 - 17 = **64** tomatoes

2) 8 x 5 = 40, 8 x 4 = 32; 72. Then 72 - 25 = **47** leaves

3) 4 x 10 = 40, 4 x 2 = 8; 48. Then 48 - 19 = **29** oranges

Two steps

Step one is the break apart. Step two uses the product from step one. In story 1 on page 9, 5 x 12 = 60; then 60 + 24 = 84. The area models show the split so the two parts are given by the picture; the product is written in the Then line from the total of the break apart.

Words that tell the second step

Plus: gives her more, adds more, put in the box, a second shelf, in all, both. Minus: uses, gives to a friend, sells, knocks over, drive away, fall off, how many are left. Every Level 2 story says in words which one it is, and the page title says add more or take away.

If an answer is different

- Look at the Then line first: was the second step done with plus or minus, as the page says?
- Then look at the two products: each is the first number times one part, and the parts add to the second number.
- A different split of the second number is fine if the total of the break apart is the same.

PREVIEW

Preview · Bright Path Sped

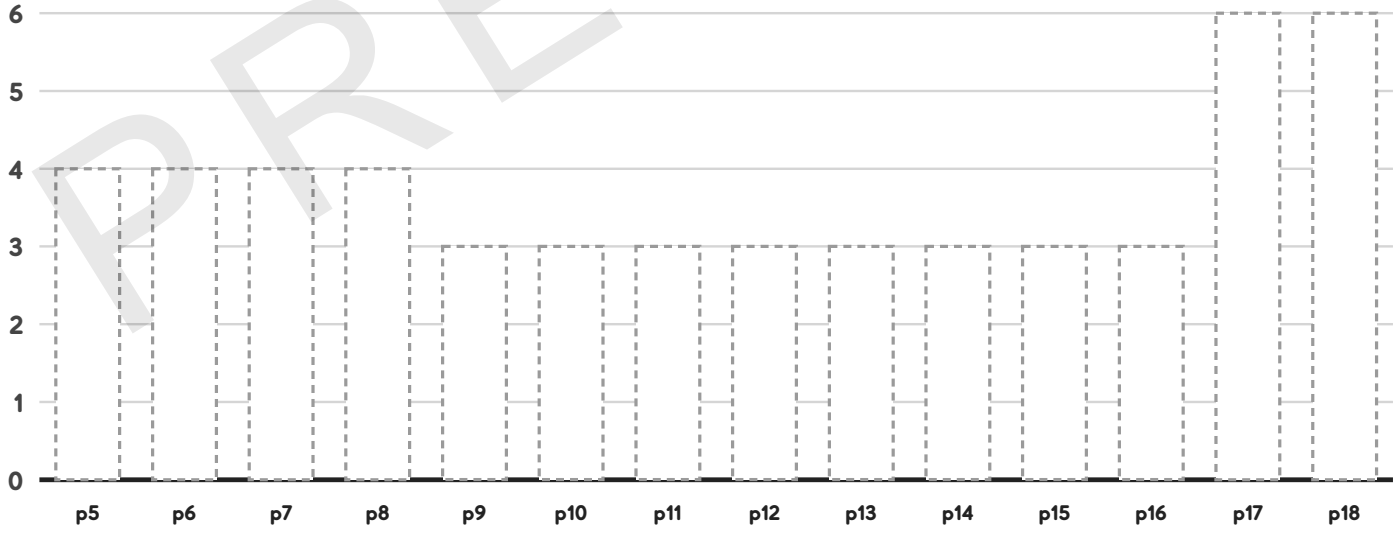
Tracker and Roll-Up

Write the date and how many were right. Then color the column for that sheet. A blank row means not done yet, never wrong.

Student _____ Teacher _____ School year _____

Page	Sheet	Date	Right	Out of	Notes
5	Array Stories, Split Shown			4	
6	Array Stories, Split Shown 2			4	
7	Array Stories, Draw the Line			4	
8	Array Stories, Choose the Line			4	
9	Two Steps, Add More A			3	
10	Two Steps, Add More B			3	
11	Two Steps, Take Away A			3	
12	Two Steps, Take Away B			3	
13	Tens and Ones Stories A			3	
14	Tens and Ones Stories B			3	
15	Tens and Ones Stories C			3	
16	Tens and Ones Stories D			3	
17	Cut and Glue, Array Stories			6	
18	Cut and Glue, Model Stories			6	

Roll-up: color one column for each sheet, up to the number right. The dashed box is the most it can be.



Notes for the team

PREVIEW

Preview · Bright Path Sped

Break Apart at Home

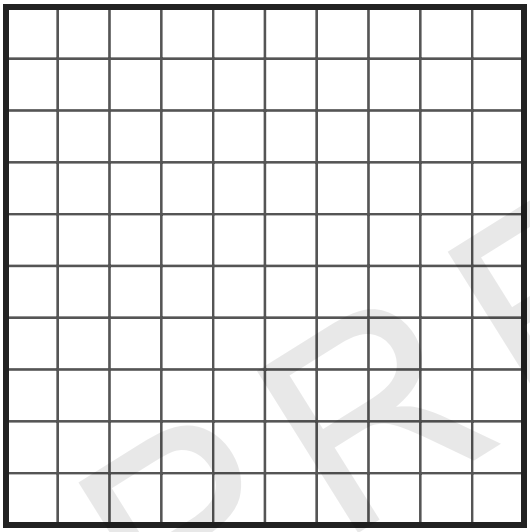
Send this page home with a child, or hand it to a family at a conference.

Student _____ Week of _____

How to help at home, in three steps

- Pick a multiplication fact that feels hard. Say it out loud with your child, rows first: for example, 4 rows of 7.
- Color that many squares on the grid. Draw a line to split the second number into two easy parts.
- Multiply each part, then add. Then make up a short story for the fact and read it to each other.

Our family array



Our fact ☐ x ☐

Part 1 ☐ x ☐ = ☐

Part 2 ☐ x ☐ = ☐

Total ☐ + ☐ = ☐

Try saying

- "Which part is easy? How can you split the other number?"
- "Do the two parts add up to the whole?"

Note from the teacher

Note from home

PREVIEW