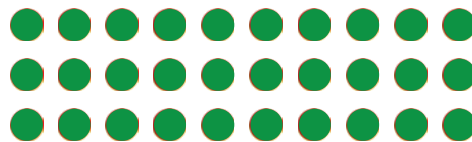**Learning Target:** Multiply by 11 or 12.
Success Criteria:
• I can use a model to multiply by 11 or 12.
• I can use known multiplication facts to multiply by
11 or 12.
• I can find the product of a number and 11 or 12.

Explore and Grow

Write an equation to match the array.

●●●●●●●●●●●
●●●●●●●●●●●
●●●●●●●●●●●

_____ × _____ = _____

Add a column to the array. Write an equation to match the new array.
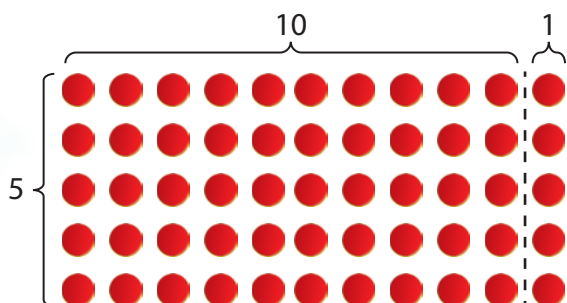
_____ × _____ = _____

MP **Repeated Reasoning** Explain how multiplying by 10 can help you multiply by 11 or 12. Complete the table.

10s, 11s, and 12s Facts													
×	0	1	2	3	4	5	6	7	8	9	10	11	12
10													
11													
12													

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Example Find 5×11.

Use the Distributive Property. Rewrite 11 as $10 + 1$.

Think: $11 = 10 + 1$

$$5 \times 11 = \quad 5 \times (10 + 1)$$

$$5 \times 11 = (5 \times 10) + (5 \times 1)$$

$$5 \times 11 = \underline{\quad\quad} + \underline{\quad\quad}$$
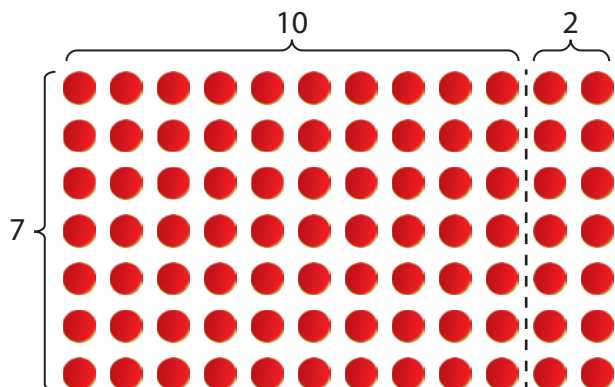
$$5 \times 11 = \quad\quad \underline{\quad\quad}$$

Example Find 7×12.

Use the Distributive Property. Rewrite 12 as $10 + 2$.

$$7 \times 12 = \quad 7 \times (10 + 2)$$

$$7 \times 12 = (7 \times 10) + (7 \times 2)$$

$$7 \times 12 = \underline{\quad\quad} + \underline{\quad\quad}$$

$$7 \times 12 = \quad\quad \underline{\quad\quad}$$

Show and Grow

Find the product.

1.

$$11 \times 8 = \quad (\underline{\quad} + \underline{\quad}) \times 8$$

$$11 \times 8 = (\underline{\quad} \times \underline{\quad}) + (\underline{\quad} \times \underline{\quad})$$

$$11 \times 8 = \quad \underline{\quad} \quad + \quad \underline{\quad}$$

$$11 \times 8 = \quad\quad \underline{\quad}$$

2.

$$12 \times 9 = \quad (\underline{\quad} + \underline{\quad}) \times 9$$

$$12 \times 9 = (\underline{\quad} \times \underline{\quad}) + (\underline{\quad} \times \underline{\quad})$$

$$12 \times 9 = \quad \underline{\quad} \quad + \quad \underline{\quad}$$

$$12 \times 9 = \quad\quad \underline{\quad}$$

✔ Apply and Grow: Practice

Find the product.

3.

$7 \times 11 = \quad 7 \times (\underline{\quad} + \underline{\quad})$

$7 \times 11 = (\underline{\quad} \times \underline{\quad}) + (\underline{\quad} \times \underline{\quad})$

$7 \times 11 = \quad \underline{\quad} + \underline{\quad}$

$7 \times 11 = \quad \underline{\quad}$

4.

$12 \times 4 = \quad (\underline{\quad} + \underline{\quad}) \times 4$

$12 \times 4 = (\underline{\quad} \times \underline{\quad}) + (\underline{\quad} \times \underline{\quad})$

$12 \times 4 = \quad \underline{\quad} + \underline{\quad}$

$12 \times 4 = \quad \underline{\quad}$

5. $8 \times 12 = \underline{\quad}$

6. $11 \times 2 = \underline{\quad}$

7. $9 \times 11 = \underline{\quad}$

8. $3 \times 12 = \underline{\quad}$

9.
$$\begin{array}{r} 12 \\ \times \ \ 5 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 12 \\ \times \ \ 1 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 6 \\ \times \ 11 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 11 \\ \times \ 11 \\ \hline \end{array}$$

Compare.

13. $11 \times 9 \bigcirc 10 \times 10$

14. $4 \times 11 \bigcirc 6 \times 7$

15. $8 \times 9 \bigcirc 12 \times 6$

16. A soccer team has 11 positions and 3 players for each position. How many players are on the team?

17. **DIG DEEPER!** Explain how you can use 11×6 and the Distributive Property to find 11×12.

Think and Grow: Modeling Real Life

Example You are carrying 9 cartons of eggs. Each carton has 12 eggs. After dropping the eggs, 95 are not broken. How many eggs do you break?
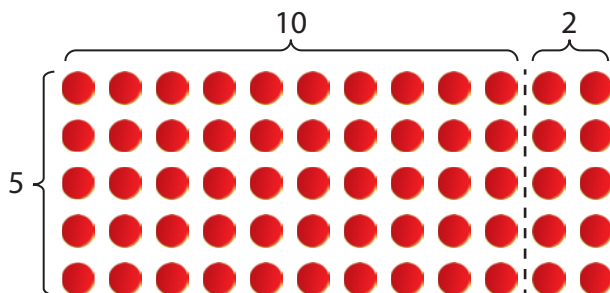
Multiplication equation:

Subtraction equation:

You break _____ eggs.

Show and Grow

18. You buy 12 packs of water balloons. There are 10 red balloons and 5 blue balloons in each pack. How many more red balloons do you have than blue balloons?

19. You have two video streaming apps. You pay $7 each month for one and $4 each month for the other. How much do you pay for the two apps in one year? Explain.

Name _____

Example Find 5×12.

Use the Distributive Property. Rewrite 12 as $10 + 2$.

$5 \times 12 = \quad 5 \times (10 + 2)$

$5 \times 12 = (5 \times 10) + (5 \times 2)$

$5 \times 12 = \quad \underline{50} + \underline{10}$

$5 \times 12 = \quad \underline{60}$

Find the product.

1.

$12 \times 8 = \quad (\underline{} + \underline{}) \times 8$

$12 \times 8 = (\underline{} \times \underline{}) + (\underline{} \times \underline{})$

$12 \times 8 = \quad \underline{} + \underline{}$

$12 \times 8 = \quad \underline{}$

2.

$10 \times 11 = \quad 10 \times (\underline{} + \underline{})$

$10 \times 11 = (\underline{} \times \underline{}) + (\underline{} \times \underline{})$

$10 \times 11 = \quad \underline{} + \underline{}$

$10 \times 11 = \quad \underline{}$

3. $3 \times 11 = \underline{}$

4. $12 \times 10 = \underline{}$

5. $2 \times 12 = \underline{}$

6. $11 \times 9 = \underline{}$

7. $\begin{array}{r} 7 \\ \times\ 12 \\ \hline \end{array}$

8. $\begin{array}{r} 5 \\ \times\ 11 \\ \hline \end{array}$

9. $\begin{array}{r} 11 \\ \times\ 0 \\ \hline \end{array}$

10. $\begin{array}{r} 12 \\ \times\ 12 \\ \hline \end{array}$

Compare.

11. $4 \times 12 \bigcirc 8 \times 6$

12. $11 \times 7 \bigcirc 9 \times 9$

13. $2 \times 11 \bigcirc 4 \times 6$

14. A bakery sells 5 dozen bagels. How many bagels does the bakery sell?

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15. **MP** **Patterns** What pattern do you notice in the digits of these products? Use a property to explain why this pattern occurs.

×	1	2	3	4	5	6	7	8	9
11	11	22	33	44	55	66	77	88	99

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16. **DIG DEEPER!** Your friend says that all multiples of 12 are also multiples of 3 and 6. Is your friend correct? Explain.

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17. **Modeling Real Life** A teacher buys 3 dozen flowers. She gives 1 flower to each of her 25 students and puts the rest in a vase. How many flowers does she put in the vase?

18. **Modeling Real Life** A summer camp has 12 cabins. There are 8 beds and 4 cots in each cabin. Are there enough beds and cots for 150 campers? Explain.

Review & Refresh

Estimate the sum or difference.

19. 76,858 + 64,164 = _____

20. 390,725 − 192,036 = _____