$\qquad$

## Multiplication with Arrays

When you multiply, think of the multiplication symbol as having the meaning "rows of."

The fact $3 \times 6$ would actually mean "3 rows of 6 ."
To solve this fact, draw 3 rows of 6 symbols.

$$
\begin{array}{ll}
X X X X X X & \\
X X X X X X & 3 \text { rows of } 6 \text { symbols equals } 18 \text { symbols. } \\
\times X X X X X & 3 \times 6=18
\end{array}
$$

Symbols arranged in neat rows and columns are called arrays.
Look at each array. Count the symbols in each row and column carefully. Write the multiplication fact for each.

1. OOOOOOOO

OOOOOOOO $\qquad$ rows of $\qquad$ equals $\qquad$ OOOOOOOO 00000000 $\qquad$ x $\qquad$ $=$ $\qquad$
2.

$\qquad$ rows of $\qquad$ equals $\qquad$
$\qquad$ x $\qquad$ $=$ $\qquad$
3.

$\qquad$ rows of $\qquad$ equals $\qquad$
$\qquad$ X $\qquad$ $=$ $\qquad$

Now try this: On the back of this paper, draw an array for each of these facts:
$7 \times 4$
$8 \times 3$
$9 \times 6$
$3 \times 7$
$8 \times 5$

## ANSWER KEY

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\begin{array}{ll}
\mathrm{XXXXXX} \\
\mathrm{XXXXXX} & \\
\mathrm{XXXXXX} & 3 \text { rows of } 6 \text { symbols equals } 18 \text { symbols. }
\end{array}
$$

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1. ○○○○○○○○
$\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$ rows of 8 equals $\underline{32}$
○○○○○○○○
○○OOOOOO
$\underline{4} \times \underline{8}=\underline{32}$
2. 


$\underline{5}$ rows of $\underline{9}$ equals $\underline{45}$

$$
\underline{5} \times \underline{9}=\underline{45}
$$

4 rows of $\underline{4}$ equals $\underline{16}$
$\underline{4} \times \underline{4}=\underline{16}$

Now try this: On the back of this paper, draw an array for each of these facts:

$$
\begin{array}{lllll}
7 \times 4 & 8 \times 3 & 9 \times 6 & 3 \times 7 & 8 \times 5
\end{array}
$$

