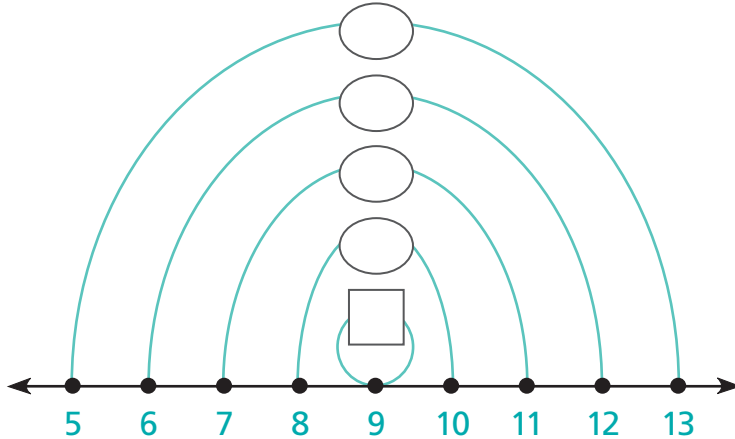


Extending the Multiplication Pattern

NCTM Standards 1, 2, 7, 8, 9, 10

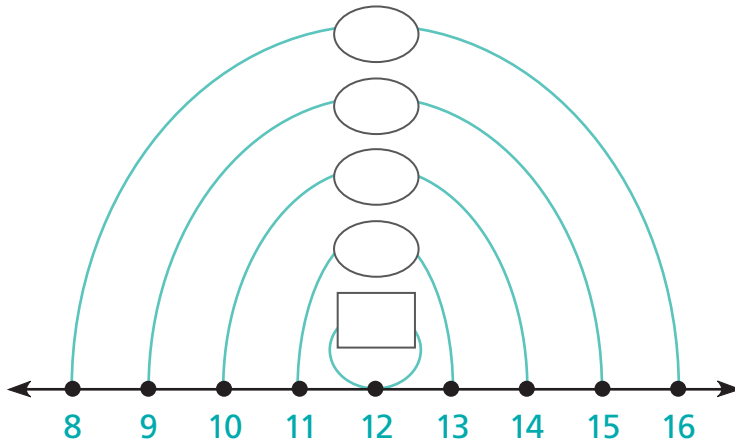
Complete the diagrams and tables.

1



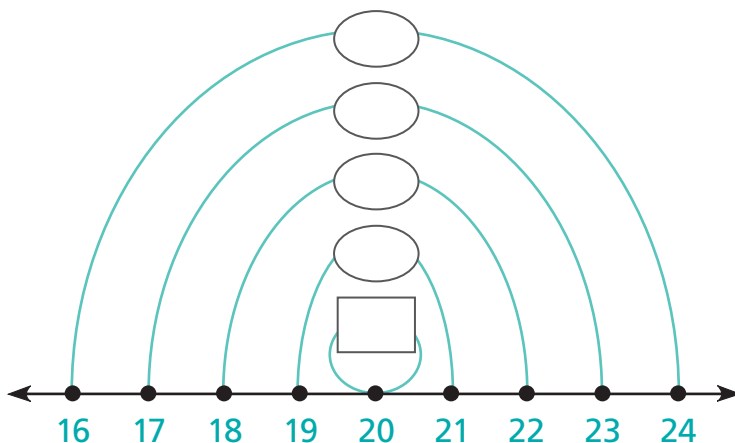
Steps Away	$9 \times 9 =$	<input type="text"/>
1	$8 \times 10 =$	<input type="text"/>
2	$7 \times 11 =$	<input type="text"/>
3	$6 \times 12 =$	<input type="text"/>
4	$5 \times 13 =$	<input type="text"/>

2



Steps Away	$12 \times 12 =$	<input type="text"/>
1	$___ \times ___ =$	<input type="text"/>
2	$10 \times ___ =$	<input type="text"/>
3	$___ \times 15 =$	<input type="text"/>
4	$8 \times 16 =$	<input type="text"/>

3



Steps Away	$20 \times 20 =$	<input type="text"/>
1	$___ \times ___ =$	<input type="text"/>
2	$___ \times ___ =$	<input type="text"/>
3	$___ \times ___ =$	<input type="text"/>
4	$___ \times ___ =$	<input type="text"/>

Complete the tables.

4	Steps Away	$11 \times 11 =$	<input type="text"/>
	4	$\underline{\quad} \times 15 =$	<input type="text"/>

5	Steps Away	$28 \times 28 =$	<input type="text"/>
	2	$\underline{\quad} \times \underline{\quad} =$	<input type="text"/>

6	Steps Away	$24 \times 24 =$	<input type="text"/>
	3	$\underline{\quad} \times \underline{\quad} =$	<input type="text"/>

7	Steps Away	$54 \times 54 =$	<input type="text"/>
	2	$\underline{\quad} \times \underline{\quad} =$	<input type="text"/>

Use these square number facts to complete the number sentences.

$25 \times 25 = \boxed{625}$

$26 \times 26 = \boxed{676}$

$27 \times 27 = \boxed{729}$

8

 $24 \times 28 = \text{○}$

9

 $21 \times 29 = \text{○}$

10

 $24 \times 30 = \text{○}$

11

 $22 \times 28 = \text{○}$

12

 $25 \times 29 = \text{○}$

13

 $22 \times 30 = \text{○}$



14 Challenge Would you use square numbers and the patterns of steps away to solve 21×24 ? Why or why not?
