

**Connection**

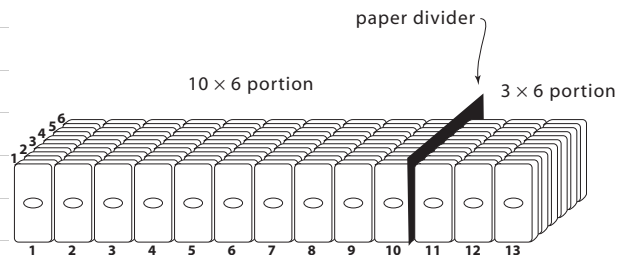
In Section 1 (Teaching the Lesson), students make **arrays to model partial products**. Students can use Digi Blocks and array platforms to partition the product into partial products.

**Materials** for pairs of students

- single blocks
- array platform
- 3" x 5" index card, cut in half lengthwise
- **Partial Products** activity sheet (next page)

**Lesson**

- Teachers should make a transparency of the Array Platform recording sheet found in the Appendix. Ask a volunteer to build the problem  $6 \times 13$  with blocks on the array platform, as 6 rows of 13. The numbered axes make it easy to see the number of rows and the number of columns.
- Ask for a volunteer to take a card and cut through the array to show a smaller part that is easy for him/her to compute mentally. Ask the student to describe the partial product (e.g.  $10 \times 6 = 60$ ). Ask the student to describe the remaining partial product (e.g.  $3 \times 6 = 18$ ). Ask: **If we add those two parts together, will we have the answer to  $6 \times 13$ ? (yes)** Draw the array and a line to show where the product was partitioned.
- Ask: **Why does it make sense to look for multiples of 10: 10, 20, 30, etc.?** (We can do the multiplication mentally thinking about the shift.)
- While pairs of partners are working on the **Partial Products** activity sheet, circulate and ask some students to discuss the partial products they chose and how they know they have the complete answer, or product.



Name \_\_\_\_\_

## Partial Products

Build the arrays on the array platform with your partner.  
Partition (split) the array with the index card.  
Write the partial products and fill in the blanks.

Example

$4 \times 16$

partial product:  $\underline{4} \times \underline{10} = \underline{40}$

partial product:  $\underline{4} \times \underline{6} = \underline{24}$

$\underline{40} + \underline{24} = \underline{64}$

$4 \times 16 = 64$

1.  $5 \times 22$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$\underline{\quad} + \underline{\quad} = \underline{\quad}$

$5 \times 22 = \underline{\quad}$

2.  $8 \times 18$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$\underline{\quad} + \underline{\quad} = \underline{\quad}$

$8 \times 18 = \underline{\quad}$

3.  $3 \times 24$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$\underline{\quad} + \underline{\quad} = \underline{\quad}$

$3 \times 24 = \underline{\quad}$

4.  $9 \times 12$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$\underline{\quad} + \underline{\quad} = \underline{\quad}$

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

5.  $7 \times 15$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$\underline{\quad} + \underline{\quad} = \underline{\quad}$

$7 \times 15 = \underline{\quad}$

6.  $4 \times 21$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$\underline{\quad} + \underline{\quad} = \underline{\quad}$

$4 \times 21 = \underline{\quad}$

7.  $5 \times 19$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

partial product:  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

$\underline{\quad} + \underline{\quad} = \underline{\quad}$

$5 \times 19 = \underline{\quad}$