

Multiplication - as "Rows of" or "Arrays"

Teacher Information: It is important that students start seeing multiplication in the array layout as this is the most efficient form of conceptualizing larger multiplication questions, and seeing the "turnaround facts".

Without familiarity with this layout students become stuck in the "groups of" conceptualization and may find it difficult to move past it.

Activity

Students each need access to approximately 35 Unifix cubes*. If available, use cubes rather than round counters, as they show rows more clearly.

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6. **Introduce arrays: encourage students to place the cubes in rows that are straight and close together.**

Use the term "array" often so students begin to associate it with multiplication.

7. **Ask students to make arrays to show other examples.**

8. **Discuss turnaround facts: for example, $3 \times 4 = 4 \times 3$**

Show three rows of four, ask students to change the array (prompt them to rotate the array if they find it difficult) to show four rows of three. Ask students what they notice (the total in both cases is the same).

Make sure students form their arrays closely together.

Write the sentences.

9. **Repeat with other number sentences.**



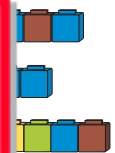
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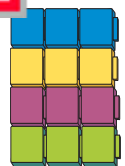


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$$4 \times 3 = 12$$

$$3 \times 4 = 12$$



Teacher Instructions: Make sure students are using their cubes in arrays to solve these multiplication questions.

1. Use your cubes to answer these questions. Use arrays to show them.

- | | |
|------------------------|------------------------|
| a) 5 rows of 4 = _____ | d) 3 rows of 5 = _____ |
| b) 2 rows of 6 = _____ | e) 6 rows of 4 = _____ |
| c) 7 rows of 2 = _____ | f) 2 rows of 9 = _____ |

2. Use your cubes to draw the arrays.

- a) 4 x 3 = _____
- b) 2 x 6 = _____
- c) 3 x 5 = _____

3. Draw the arrays.



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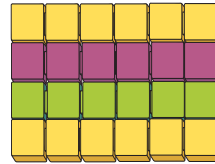
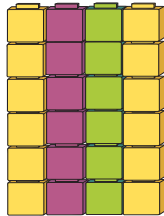


b) $5 \times 4 =$ _____

c) $4 \times 2 =$ _____

Teacher Instructions: Make sure students are using their cubes in arrays to solve these multiplication questions.

1. Write the two multiplication sentences that go with these pictures.



2. Use your cubes in arrays to answer these questions.

Turn
Write



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cts.

3. Write

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ay on

the left. Draw lines to match the sentences to the arrays on the right.



multiplication
sentence

turnaround

