Multiplication: Trays of arrays

**(Y4)**

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| To read the most recent version of this sequence, download associated resources, and view embedded professional learning including classroom videos and work samples, visit: [https://resolve.edu.au/teaching-sequences/year-4/multiplication-trays-arrays](https://resolve.edu.au/teaching-sequences/year-4/multiplication-trays-arrays?utm_source=docx&utm_medium=sequence_overview&utm_campaign=trays_arrays) |

# Sequence overview

## About this sequence

Students learn to use the properties of multiplication to solve multiplication problems which are represented as an array.

## Australian Curriculum: Mathematics (Year 4)

### Achievement standard

Students use their proficiency with addition and multiplication facts to add and subtract, multiply and divide numbers efficiently.

### Strand

**Number**

**AC9M4N06-** Develop efficient strategies and use appropriate digital tools for solving problems involving addition and subtraction, and multiplication and division where there is no remainder.

**Algebra**

**AC9M4A02–**Recall and demonstrate proficiency with multiplication facts up to 10 x 10 and related division facts; extend and apply facts to develop efficient mental strategies for computation with larger numbers without a calculator.

# Tasks in this sequence

## Task 1 • How many cupcakes?

An array can be partitioned to form smaller arrays. Adding the products of the smaller arrays together gives the total in the original array.

## Task 2 • How many bread rolls?

In multiplication, factors can be partitioned and distributed to make partial products. Partitioning factors to create well-known facts, such as tens, is particularly helpful. The partial products are then added together to find the product of the original multiplication. This property is known as the distributive property of multiplication.

## Task 3 • How can I work it out?

In multiplication, factors can be partitioned and distributed to make partial products. Partitioning factors to create well-known facts, such as tens, is particularly helpful. The partial products are then added together to find the product of the original multiplication. This property is known as the distributive property of multiplication.

## Task 4 • Packing rolls

Halving one number in a multiplication means we need to double the other number to ensure the total remains the same. Equivalence in multiplication is maintained no matter how the numbers are grouped.

## Task 5 • Packing cakes

Dividing one number by 4 in a multiplication means we need to multiply the other number by 4 to ensure the total remains the same. Equivalence in multiplication is maintained no matter how the numbers are grouped.

## Task 6 • Transforming arrays

Equivalence in multiplication is maintained no matter how the numbers are grouped. This property is known as the associative property of multiplication.

## Task 7 • Card sort

In multiplication, factors can be partitioned and distributed to make partial products. The partial products are then added together to find the product of the original multiplication (distributive property).

Equivalence in multiplication is maintained no matter how the numbers are grouped (associative property).

## Suggested implementation

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|  | **Week 1** | **Week 2** |
| **Monday** | **Task 1 • How many cupcakes?**   * Launch and Explore * Gallery walk | **Task 4 • Packing rolls**   * Launch and Explore * Connect * Summarise |
| **Tuesday** | **Task 1 • How many cupcakes?**   * Connect * Summarise | **Task 5 • Packing cakess**   * Launch and Explore * Connect * Summarise |
| **Wednesday** | **Task 2 • How many bread rolls?**   * Launch and Explore * Connect * Summarise | **Task 6 • Transforming arrays**   * Number string * Complete the activity Transforming arrays |
| **Thursday** | **Task 3 • How can I work it out?**   * Number string * Complete the activity How can I work it out? | **Task 6 • Transforming arrays**   * Number string   **Task 7 • Card sort**   * Complete the card sort activity |
| **Friday** | **Task 3 • How can I work it out?**   * Number string * Gallery walk and discussion | **Task 7 • Card sort**   * Create your own card sort activity |