re(Solve) MATHS BY INQUIRY — reSolve Fruit Shop

Y2

Summary of learning goals

- Students learn to use the array to determine how many are in a collection, using strategies such as skip counting, repeated addition and partitioning the array into smaller parts.
- Students recognise that some numbers can be represented as an array in different ways. They also see that some numbers cannot be represented as an array with two or more in each row and column.

Australian Curriculum: Mathematics (Year 2)

ACMNA031: Recognise and represent multiplication as repeated addition, groups and arrays.

ACMNA032: Recognise and represent division as grouping into equal sets and solve simple problems using these representations.

Summary of lessons

Who is this sequence for?

- This sequence is designed to introduce the array as a multiplicative structure. It is assumed that students will have had experience skip counting collections using different counts such as 2, 5 and 3.
- Students should also be able to create equal groups in a collection and be familiar with the concept of equal groups as representing multiplication.

Lesson 1: Working with Arrays

Students are presented with a picture of the reSolve Fruit Shop and are asked to find examples of how multiplication can be used to find 'how many?' or 'how much?'. Students explore how multiplication can be used to efficiently calculate how many pieces of fruit are in an array.

Lesson 2: Lemon Arrays

Students arrange lemons into different arrays for display in the reSolve Fruit Shop. They explore arrays that can be made using 24 and 12 lemons, then work out all the ways the lemons can be arranged in arrays when split into two unequal groups.

Australian Academy of Science

Reflection on this sequence

Rationale

Arrays allow students to see the structure of multiplication in the context of equal groups. It also allows for the visualisation of multiplicative properties such as commutativity and distribution. However, the array is often first presented to students abstractly and removed from a context (e.g. as a rectangular arrangement of counters or dots) and, as such, it holds little meaning for many children. It is important that students build meaning for the construct through real-world examples. They need to be provided the opportunity to use the array as a model of a real situation and, through this interaction, progressively abstract it for themselves so that it becomes a model for mathematical reasoning.

reSolve mathematics is purposeful

- This sequence introduces the array through a context that is easily imagined by students.
- Students explore multiplicative properties, including commutativity and distribution.

reSolve tasks are inclusive and challenging

- The tasks allow students to use strategies that they know and understand to solve the problems.
- The context provides access, as students can use the picture to count and solve the problems.

reSolve classrooms have a knowledge-building culture

- Discussion plays an important role in these tasks; the collective knowledge of the class is built as students share their thinking and the strategies they used.