

Summary of learning goals

- This task focuses on organising a collection of objects and using skip counting as an efficient way to count.
- Students then look at unitising 10; that is, seeing 10 ones as 1 ten. This allows students the opportunity to explore the patterns formed and build a deeper understanding of our place-value system.

Australian Curriculum: Mathematics (Year 2)

ACMNA028: Group, partition and rearrange collections up to 1000 in 100s, 10s and 1s to facilitate more efficient counting.

Summary of lessons

Who is this sequence for?

- Year 2 students but it can be easily adapted for use in earlier or later grades by adjusting the size of numbers in the count.
- It is assumed students have developed an understanding of one-to-one counting skills and can recite numbers to at least 100.
- Students should have experience using equal groupings and be developing an understanding of unitising groups.

Lesson 1: Counting Large Collections

Students count a large collection of Unifix cubes. As they count, students are encouraged to think of efficient counting strategies and effective ways to keep track of their count. This will lead students to thinking about ways in which they can order their count so that the place-value properties can be clearly seen. Using groups of 10, the place-value structure will be evident to students.

Reflection on this sequence

Rationale

Place value is a complex understanding developed over time through mathematical reasoning. One important understanding in place value is that of unitising. Unitising describes the cognitive process of recognising a group as a unit. In place value, students must create 10 ones as one unit; that is, 10 ones become 1 ten. This makes sense of 24 as being made up of 2 tens and 4 ones, where the tens are each a complete unit, and the ones are also a unit, just smaller in value. As such, unitising is a multiplicative understanding that is not limited to place value. The concept is used in many areas in maths, including skip counting, multiplication and measurement. Rather than being a teachable skill, it is an understanding built over time through multiple experiences of creating and using groups.



reSolve mathematics is purposeful

- This task looks at our place-value sequence through counting a collection of cubes. Creating a stack of 10 loose ones makes a new unit that is 1 ten. Organising the cubes in stacks of tens and loose ones neatly models the number in the collection and its place-value parts.



reSolve tasks are inclusive and challenging

- This is a task that all students can engage in. The teacher moderates the number of cubes provided to students based on the ability of the students.
- A scaffold is provided to help teachers assess students' skills based on the way they count. This helps the teacher pose appropriate questions to promote deeper inquiry and challenge the thinking of students.



reSolve classrooms have a knowledge-building culture

- This task promotes learning through active engagement and exploration, initially using concrete materials and then moving into a more abstract count.
- Students share their methods and are encouraged to re-count their collection based on what they have seen and learnt from their classmates. As there is not one right way to count, students are confident to take risks and explore multiple ways to approach the task.