

Summary of learning goals

- To use direct comparison to order a collection of objects from shortest to longest. Students order their collection using a variety of strategies, and record and talk about their results appropriately.

Australian Curriculum: Mathematics (Foundation)

ACMMG006: Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language.

Summary of lessons

Who is this sequence for?

- This sequence has been written as an introduction to measurement. Students do not need to have prior experience in making direct and indirect comparisons. They should be able to count with one-to-one correspondence to at least 20.

Lesson 1: Five Woolly Worms

Students are provided with a bag of 'worms' (i.e. pieces of wool). They use direct comparison to order their worms from shortest to longest, then create another two woolly worms to add to their collection.

Lesson 2: Drawing Worms

Students use chalk to draw three wiggly worms on concrete. They then compare the lengths of the worms using informal units or indirect comparison.

Reflection on this sequence

Rationale

A key concept in measurement is that objects have multiple attributes that can be measured. This sequence focuses students' attention on the attribute of length. The students initially measure length using direct comparison and then move to using indirect comparison. Comparing items directly helps students develop an understanding of length. Indirect comparison requires the students to use appropriate informal units to compare the length of objects. Using direct and indirect comparison allows students to order the length of objects and build associated language.



reSolve mathematics is purposeful

- This sequence focuses on a substantial mathematical idea: that shapes or objects have attributes that can be measured. Length is one of these attributes. Students explore this idea through a hands-on context that is imaginative and engaging.



reSolve tasks are inclusive and challenging

- The task begins with students directly comparing the length of their 'worms'. This shared experience helps facilitate the more abstract task of comparing lengths using indirect comparison.



reSolve classrooms have a knowledge-building culture

- The class builds a shared understanding of how to measure length accurately, using direct and indirect comparison.

Acknowledgements

These lessons were adapted from: McDonough A, Cheeseman J & Clarke D, 2003, *Woolly worms: teaching notes*. In: Bright G & Clements D, eds, *Classroom activities for learning and teaching measurement*, pp. 3–6, National Council of Teachers of Mathematics, Reston, VA.