

Fractions warm-up routine

Foundational concepts in fractions: Unit 2 — Resource

Unit 2 highlights the importance of providing a range of contexts for students to practise making and/or describing fractions.

Purpose

This activity enhances understanding of how to create, name and symbolically represent fractions of a set.



Materials

A set of counters or blocks for each student. The activities in the following sequence are based on 12 counters.

Activity sequence

Students work with a group of counters that can be partitioned into the fractions that you want to focus on for a particular lesson or series of lessons. In this example, the focus will be on halves and quarters.

The questions progress across the series to slowly incorporate higher levels of questioning. Embedded in the sequence are opportunities for students to hear and share reasoned explanations and enhance the depth of their conceptual understanding.

Halves

- Ask students to show you one-half of the counters. Observe how students find one-half. For example, you could note if they:
 - can recognise half immediately
 - make an array and then split it equally in two
 - count out one for one into two groups.
- Choose students to explain what they did based on your observations of the strategies used. Encourage students to consider more efficient strategies for creating a fraction.
- Ask students to write one-half in symbolic form and invite them to explain what this form means. Use this opportunity to reinforce the appropriate language and conventions of fractions.

Quarters

- Ask students to show you one-quarter of the counters. Observe how students create one-quarter. Watch for any students who immediately put four in each group because they associate quarters with 'four'.
- Choose students to explain what they did based on your observations of the strategies used. Continue to encourage students to consider more efficient strategies for creating a fraction.
- Ask students to write one-quarter in symbolic form and invite an explanation of what the symbolic format means.

Suggested follow-up activities

As students gain confidence working through the above sequence, you could extend understanding by:

- working through the sequence with different numbers of counters
- introducing other unit fractions such as thirds or fifths
- asking students to show multiples of the unit fractions you are focusing on.

Problem-based follow-up activities

As students gain confidence and understanding in creating, naming and representing fractions of a set, encourage deeper conceptual understanding by introducing problem-based activities using scenarios based on students' needs and interests. These could include scenarios such as:

- If I were allowed to have two-quarters of a packet that had eight lollies in it, how many could I have?
- If the packet had 12 lollies and I were allowed to have two-quarters of the packet, how many could I have?
 - Discuss with students how and why two-quarters of a packet in the two contexts above give different answers.
- Most students like playing handball at lunchtime. If three-quarters of the balls in a box of 12 mixed balls are handballs, how many handballs are there?

More information

If you would like more information, please visit the QCAA website www.qcaa.qld.edu.au and search for 'Foundational concepts in fractions'.



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