Conceptual progression and curriculum connections for PAT Rational Number

This document provides information about how the conceptual progress stages from the PAT Rational Number assessment align with phase expectations for the New Zealand Curriculum. Rational number progress is complex, and the progress stages are focused on a conceptual progression of fractions, decimals, and proportional reasoning.

The progress stages and curriculum phases are related, but they are not interchangeable.

Connection between progress stages and curriculum phases

The table below shows the connection between rational number progress stages and the curriculum phases.

Progress Stage	Score range	Curriculum connection	What the progress stage describes
Stage 1 Beginning Awareness	Below 40	Mainly Phase 1 foundations	Familiar part-whole fractions and simple fractions as operators, often with visual or everyday support.
Stage 2 Early Exploring	40 to 49.9	Later Phase 1 and early Phase 2 content	Familiar fractions, decimals and percentages; simple equivalence and straightforward procedures, often using common benchmarks.
Stage 3 Exploring Relationships	50 to 59.9	Later Phase 2 and early Phase 3 content	Connections among common fractions, decimals and percentages, and emerging work with fractio nal amounts.
Stage 4 Developing Understanding	60 to 69.9	Phase 3 and early Phase 4 content	Comparison and operation with less familiar rational numbers across representations.
Stage 5 Confident Application	70 to 79.9	Later Phase 3 and Phase 4 content	Flexible use of fractions, decimals and percentages, including explanation and application in contexts.
Stage 6 Sophisticated Reasoning	80 and above	Later Phase 4 content	Complex, multi-step rational-number and proportional reasoning in less familiar situations.

Sources: Rational Number Adaptive Assessment Kaiako Guide; New Zealand Curriculum Mathematics and Statistics Phases 1 to 4.

Curriculum expectations to compare with the assessment evidence

The table below highlights the end-of-phase expectations for rational number, and related evidence to compare with the expectations. A range of evidence is needed across the breadth of a phase before a teacher can judge whether an end-of-phase expectation has been met. The Rational Number assessment can indicate the kinds of item demands students are increasingly likely to manage, and support monitoring over time. It cannot certify curriculum-phase attainment.

Curriculum phase	Broad end-of-phase expectation	Evidence to compare with the expectation
Phase 1 Years 0 to 3	By the end of Year 3, students identify and compare fractions in sets, number lines and shapes, using materials to support reasoning.	Look for understanding of the whole, equal partitioning, unit fractions, simple comparison and representation.
Phase 2 Years 4 to 6	By the end of Year 6, students understand decimals to thousandths, find a whole from a fraction, and connect fractions, decimals and percentages.	Look for equivalence across representations, magnitude, part and whole problems, and emerging proportional reasoning.
Phase 3 Years 7 to 8	By the end of Year 8, students operate with fractions and decimals and explain work with percentages, ratios and proportional relationships.	Look for flexible strategy choice, justification, fraction and decimal operations, scaling, percentages and ratio reasoning.
Phase 4 Years 9 to 10	By the end of Year 10, students calculate and estimate using rational and irrational numbers and apply ratio, proportion, percentages and rates in practical problems.	Look for transfer to unfamiliar and multi-step contexts, rates, percentage change, generalisation and connections among strategies.

Sources: Rational Number Adaptive Assessment Kaiako Guide; New Zealand Curriculum Mathematics and Statistics Phases 1 to 4.