New Zealand Government

AFTER 3 YEARS AT SCHOOL: STRATEGIES AND RESOURCES THAT WILL HELP (including what research says)

MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

THE MATHEMATICS STANDARD

QUESTIONS	SOURCE
How do I know my focus students' strengths and their learning needs?	The Progress and Consistency Tool relating to mathematics aspects provides extensive background material to assist teachers to make judgments about their students' strengths and needs: http://assessment.tki.org.nz/Progress-and-Consistency-Tool/The-PaCT-framework/PaCT-aspects/Mathematics-aspects The Junior Assessment of Mathematics is generally used with students in Years 1-3 to identify students' strengths and needs at Levels 1 and 2 of the NZC but may be appropriate for students with more significant learning needs at Year 4: http://www.nzmaths.co.nz/junior-assessment-mathematics The GloSS (Global Strategy Stage) interview investigates students skills and understandings across the three strategy domains: http://www.nzmaths.co.nz/gloss-forms The IKAN assessment focuses on students' number knowledge (but is not a complete test of number): http://www.nzmaths.co.nz/ikan-forms The Assessment Resource Banks (ARBs) provide a range of assessment activities for students working between Levels 2-5 of NZC: http://arb.nzcer.org.nz/ Similarly information about the Progressive Achievement Tests (PAT) for use with students from Years 3-10 is also available from NZCER: http://www.nzcer.org.nz/tests/pat-mathematics Information about registering for, and use of the e-asTTle assessments for students working between Levels 2-6 is available from tki: http://e-asttle.tki.org.nz/
How can I give my focus students more and better opportunities to improve their mathematics?	The following link directs teachers to the NZC updates: http://nzcurriculum.tki.org.nz/Curriculum-resources/NZC-Updates Update 4 provides information on literacy and numeracy and the integration of the key competencies. A number of professional development modules are available through this link to the NZ Maths site: http://www.nzmaths.co.nz/professional-development The NZ Maths site provides access to a large range of mathematics units across the number and algebra, geometry and measurement and statistics strands and across the curriculum levels. In addition a range of curriculum support materials are available: http://www.nzmaths.co.nz/teaching-material
Where do I go to get more information about teaching and learning mathematics for my focus students?	NZC Curriculum Update 17 provides background information and case studies of schools as they develop a range of mathematics interventions for their students: http://nzcurriculum.tki.org.nz/Curriculum-resources/NZC-Updates/Issue-17-February-2012/Mathematics-learning-Three-tiers-of-support The following link directs teachers and principals to information on the *Programme For Students (PFS)* support *Accelerated Learning in Mathematics (ALiM)* that may be available for schools supporting students with significant learning needs: http://nzcurriculum.tki.org.nz/System-of-support-incl.-PLD/School-initiated-supports/Accelerated-Learning-in-Literacy-Mathematics The best evidence synthesis (BES) on effective pedagogy in Pangarau/Mathematics provides extensive background on the links between pedagogy and achievement in mathematics: http://www.educationcounts.govt.nz/publications/series/2515/5951 The cases exemplified in the BES exemplar at this link describe the chnages two teachers made in their mathematics teaching that led to substantial student gains in 1 year: http://www.educationcounts.govt.nz/topics/bes/spotlight-on/spotlight-on-mathematics-pangarau The following link to the resource finder on the NZ Maths site provides access to multiple teaching resources across curriculum levels, strands and objectives. It should be noted that students with more significant needs may need to be working at curriculum levels lower than that expected for their year group: http://www.nzmaths.co.nz/resource-finder

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How do I help my focus students?	This link has specific resources to support learners not on track to meet expected outcomes: http://www.nzmaths.co.nz/accelerating-learning
And how do I help the students in my class who have a range of English proficiency? How can I target my classroom teaching for these students with their diverse language skills and needs?	This link provides specific guidance, support and activities to engage students whose first language is not English in mathematics learning: http://esolonline.tki.org.nz/ESOL-Online/Teacher-needs/Pedagogy/ESOL-teaching-strategies/Oral-language/Teaching-approaches-and-strategies/Thinking/Ensuring-maths-units-meet-the-needs-of-ESOL-students The following resource provides a wealth of information about how you can provide more opportunities for your students to learn and practise their reading skills in authentic curriculum contexts: http://esolonline.tki.org.nz/ESOL-Online/Teacher-needs/Reviewed-resources/Supporting-English-Language-Learning-in-Primary-School-SELLIPS If students best fit English language learning needs are closer to Years 1-2 use the book appropriate to those years. These resources give suggestions for helping not only those students who are learning English as an additional language, but also those students who would benefit from explicit English language support. They give suggestions for developing students' academic, cross-curricular English language. This report from the Quality Teaching and Research Development project highlights a number of classroom practices and teaching approaches found to support the learning of Maori and Pasifika students in English Medium education: http://www.educationcounts.govt.nz/publications/91416/english-medium-education/49176 The *LEAP (Language Enhancing the Achievement of Pasifika Students)* resource provides support for teachers of students in years 1-8 who are acquiring English language proficiency. It is important to note that teachers should use resources below students' year levels where those students' needs are greater: http://leap.tki.org.nz/About-LEAP The following link to the NZC learning stories describes a project in which a year 3 teacher engaged in an inquiry around the use of mathematical discourse to increase the achievement of her Māori students: http://nzcurriculum.tki.org.nz/Curriculum-stories/Case-studies/Teachers-as-learners-Inquiry/Learning-stories/Story-5
Where can I get some specific ideas from, especially for different learning areas and different levels of the NZC?	This link to the NZ maths site provides access to a range of cross-curricular units with mathematical elements at a range of different levels: http://nzmaths.co.nz/node/1949
How can I get started with planning mathematics in different learning areas?	Teachers will need to register to use this part of the NZ maths site for planning teaching and learning to meet students' mathematical learning needs: http://nzmaths.co.nz/planning-space