

School improvement tool 1

Literacy and numeracy self-assessment scales

Tool 1 was developed to determine baseline data. It is informed by research and was developed for implementation by a school, or group of schools, with high proportions of First Australians and EAL/D students, who may be from low socioeconomic backgrounds and do not speak standard Australian English at home.

As a PLC or PLT indicate the extent to which the following statements are true for your school. Be as accurate as possible to inform your planning and determine school improvement. It is recommended to use the tool every three months over multiple years to monitor and ascertain improvement in each criterion.

A = never
B = sometimes
C = often
D = always

		A	B	C	D
Whole-school approach to improvement through intervention					
1	All teachers determine current learning using data to inform their planning with a sense of urgency focused on age-cohort expectations and achievement.				
2	Staff work collaboratively around achievement data and other evidence to problem-solve intervention using coordinated strategies to respond when students aren't learning.				
3	The school uses data to identify students at risk and implements timely strategies to increase time and support for these students, monitoring effectiveness and implementing alternative strategies for those that are not making a difference.				
4	All teachers analyse student demographic and achievement data at a number of levels to inform school and individual teacher planning, provide effective feedback to students and ensure all intervention is efficient and defensible.				
English as second or foreign language					
5	All teachers celebrate students as learners of standard Australian English and implement support as needed for individual students while also celebrating students as speakers of their other specific language(s), which may be spoken by peers, family and community.				
6	All teachers use English as a second language (ESL) pedagogies and support all ESL learners. Teachers use a language learning perspective in all classroom teaching.				
7	All teachers actively monitor ESL learners' language acquisition and use ESL assessment data in planning for their improvement.				
Literacy					
8	All teachers implement a balanced literacy program that draws on skills, whole-language, genre and social-critical approaches.				
9	All teachers demonstrate confidence and ability to explicitly teach and assess literacy within a connected, inclusive and intellectually challenging curriculum.				
10	All teachers appreciate the importance of understanding their students' literacy learning needs and are engaged in successful refinement of literacy teaching practices through a cycle of data-based inquiry, experimentation, evaluation and revision.				
11	All teachers take responsibility for the literacy learning of all students in the school and consistently express a sense of optimism and high expectations for all students and student groups.				
12	All diagnostic assessment, intervention and monitoring of at-risk students and student groups is highly effective and aligned with mainstream classroom practice.				
13	All teachers are able to confidently and critically use data to progress their literacy teaching and students' literacy learning on a continual basis.				
14	All teachers are able to identify, explicitly teach and assess the literacies of the learning areas for which they are responsible.				

15	Whole-school literacy planning, implementation and evaluation is undertaken annually and informs classroom programs in a dynamic and ongoing manner.				
16	Teaching practice is de-privatised and effective practice is shared and celebrated within the school and community.				
17	The school has a clear, strong internal focus on issues of literacy instruction, student learning and expectations for teacher and student performance.				
18	Principals and other school leaders facilitate continual professional development around literacy.				
Numeracy					
19	All teaching staff, supported by school leaders, always teach mathematics using pedagogies that develop numerate behaviours.				
20	All teachers of mathematics explicitly teach the language of mathematics, making no assumptions of prior student knowledge or that students will inadvertently learn it.				
21	All teachers are able to recognise numeracy demands and teach the mathematics required when opportunities arise, and create opportunities to enhance the understandings in their own subject.				
22	All teachers of mathematics have undertaken mainstream professional development in mathematics pedagogical content knowledge and attend supplementary workshops.				
23	All teachers, supported by school leadership, use computational and digital technologies to enhance delivery of mathematics concepts in their teaching and educate parents and carers about this enhancement at every opportunity.				
24	Students are provided with flexibility to work collaboratively in mathematics lessons whenever possible.				
25	Students in all year groups are engaged with situations that are interesting and relevant and involve mathematical decision-making and problem-solving.				
26	All teachers confidently and critically use achievement data to progress their numeracy teaching and students' numeracy learning on a continual basis.				
27	Teachers use a broad range of assessment strategies and types (including open-ended and inquiry or investigative tasks) and validate one assessment type with another.				
28	All mathematics assessment criteria are made explicit to students in advance with examples of standards and student work samples.				
29	There is a clear, strong internal focus on issues of instruction, student learning and expectations for teacher and student performance concerning numeracy and mathematics.				
30	Principals and other school leaders facilitate continual professional development around numeracy.				
Embedding First Australians perspectives in schools					
31	Staff are committed to embedding First Australians perspectives in schools and classrooms and are embedding these in all school and classroom activities.				
32	The school is an inclusive environment informed by collaboration with First Australians staff, parents, carers and students.				
33	The school and staff are committed to working with First Australians communities to ensure both-ways approaches to all aspects of school operations, including curriculum planning and delivery.				
34	Teachers actively seek assistance and advice from First Australians staff, groups and communities when developing units of work.				
35	Teachers critique their own units of work to ensure cultural appropriateness and connection to what students know.				
36	Teachers include First Australians knowledge and perspectives in their planning.				
37	Teachers are able to critique resources to identify stereotypes and distortions.				

School improvement tool 2

Numeracy teaching and learning

Tool 2 is designed to support schools to identify and progress toward their numeracy goals. It was developed to support schools to understand the vision and the steps involved in implementing practices aligned to maximising student numeracy achievement. The goal, indicators of success and levels of achievement are described in ways that support schools to evaluate their progress towards the goal.

Levels of quality

The school leadership team champions the teaching and learning of numeracy in the school. Schools should have a balanced approach to numeracy teaching and learning with highly successful teaching practice and delivery. Indicators that this is happening in the school are:

1. The majority of teachers use a balanced approach to the teaching and learning of numeracy that includes the teaching of mathematics skills, problem-solving and application.
2. Numeracy is taught using a modelled, shared and guided scaffolding approach that leads to increased student independence.
3. Numeracy and standard Australian English are taught concurrently with teachers recognising that students do not need language control in standard Australian English to be numerate in standard Australian English.
4. Teachers use a cycle of data-based inquiry, intervention implementation, evaluation of strategy effectiveness, revision and celebration of success, both at school and classroom levels.
5. Numeracy, and mathematics, is taught in ways that enable higher-order thinking and increased challenge for intellectual quality.
6. All teachers take shared responsibility for the numeracy learning of every student in the school, with high expectations expressed.
7. All teachers confidently and responsibly use student numeracy achievement data to inform teaching practices.

Outstanding quality

- ✦ Teachers always teach mathematics using pedagogies that develop numerate behaviours and explicitly teach the language of mathematics.
- ✦ Teachers demonstrate confidence and ability to explicitly teach and assess numeracy within connected, inclusive and intellectually challenging curriculum.
- ✦ Teachers use learning areas as opportunities to model and teach numeracy; subject specialists recognise and attend to the numeracy demands as tagged in the curriculum, and identify and use numeracy opportunities in every lesson.
- ✦ Teachers appreciate the importance of understanding their students' numeracy learning needs and are engaged in refinement of their own practice through a cycle of data-based inquiry, experimentation, evaluation and revision.

- ✦ Teachers take responsibility for the numeracy learning of all students and consistently express a sense of efficacy (we can do this!) and high expectations for all students.
- ✦ Teachers able to confidently and critically use data to progress their teaching and students' learning.

High quality

- ✦ Teachers are able to deliver a balanced numeracy program and collaborate with other teachers for a whole-school approach.
- ✦ Teachers are able to develop connected and intellectually challenging numeracy curriculum.
- ✦ Teachers attend to the numeracy demands tagged in the Australian Curriculum in their lesson planning.
- ✦ Teachers recognise the more obvious numeracy opportunities and draw student's attention to them.
- ✦ Teachers work towards the explicit teaching and assessing of the numeracies in the Australian Curriculum learning areas.
- ✦ Teachers have data literacy skills that enable them to work collaboratively to critically analyse data, and achieve success in developing their own teaching practices that improve students' numeracy outcomes.

Medium quality

- ✦ Teachers understand what a balanced numeracy program is and have identified their professional development needs in relation to this.
- ✦ Teachers know that numeracy includes a problem-solving dimension and include this in most mathematics lessons.
- ✦ Teachers attend to numeracy demands tagged in the Australian Curriculum when they are considered essential and look for numeracy opportunities across the curriculum.
- ✦ Teachers are aware of the need for quality pedagogies and explicit teaching and assessment of the numeracies of the Australian Curriculum learning areas and have identified their professional development needs in relations to this.
- ✦ Teachers are aware of the need to analyse standardised test data and classroom-based assessment data to respond to individual students' numeracy learning needs, but this is often done in a superficial way with mixed results.

Low quality

- ✦ Teachers are aware of the need for a balanced numeracy program, but find it difficult to implement, relying on approaches that they are familiar with.
- ✦ Teachers know that numeracy includes a problem-solving dimension and try to do some problem-solving with students each week.
- ✦ Teachers have some understanding of pedagogy that produces deep learning and there is some professional conversation about how numeracy pedagogy can be improved.
- ✦ Teachers are aware of their students' diverse numeracy learning needs but have limited confidence in addressing these, relying largely on commercial packages that are not connected to numeracy learning in the learning areas.

School improvement tool 3

Progress scales

Tool 3 is a set of progress scales that scaffold the steps used by a school to implement the goal expressed as a vision. It is important when implementing any goals to know:

- ✦ where you want to be (the vision)
- ✦ where you are now (your starting point)
- ✦ how to get where you want to be.

The scales describe the achieved vision (level 5) and the scaffolding or steps needed to attain the vision (levels 1–4). There is a separate scale for each of the four key areas that schools may need to address to improve student numeracy achievement. These four key areas are:

- ✦ teacher belief and intervention
- ✦ learning communities and de-privatising practice
- ✦ intervention
- ✦ data literacy.

The scales support a conversation between the principal and leadership team, and the leadership team and the staff. The conversation may also involve the school council or parents and carers groups. These conversations would focus on which level the school is currently at and what strategies are needed to reach the goals. The scales may also be used to drive school planning and target-setting processes, particularly those concerning the time frames for reaching each goal.

Whole-school approach to improvement through intervention

Domain	Level 1	Level 2	Level 3	Level 4	Level 5
Teacher belief and intervention	Teachers feel compelled to teach and get through the course believing that those not able to learn have genetic, inherited and environmental problems, and lower expectations accordingly.	Teachers accept that they play a major role in student learning but recognise they may need to develop skills to identify and address student needs.	Teachers develop skills to identify students' current learning and seek professional development and peer mentoring to better teach students at their point of need.	Teachers begin to address learning gaps and to 'reach down' to students current learning levels and 'pull them up'.	Teachers teach students by determining current learning levels to inform their planning with a sense of urgency, focused on age-cohort expectations and achievement.
Learning communities and de-privatising practice	Teachers work individually in classrooms, rarely sharing teaching strategies, assessment approaches or expertise.	Teachers begin to share pedagogical strategies, articulating their understandings about expected learning, goals, strategies, materials, resources, pacing, questions, concerns and results.	Teachers willingly examine robust data (including NAPLAN) offering reasons behind their own practices that may be contributing to these on reflection and making suggestions about what they might change.	Teachers hold collaborative conversations about student learning, examine robust data and discuss implications for their own and others' pedagogy, planning and assessment.	Staff work collaboratively around achievement data and other evidence to problem-solve intervention using coordinated strategies to respond when students aren't learning.

Domain	Level 1	Level 2	Level 3	Level 4	Level 5
Intervention	The school identifies groups of students at risk and provides resources for long-term remediation with little or no monitoring of effectiveness. Variable learning by students is accepted).	The school begins to recognise that variable learning for different students is not acceptable and that time and support levels need to vary to ensure equitable learning. They undertake intervention, remediation and withdrawal by trying different approaches and monitoring effectiveness.	The school identifies ways to provide additional time and support for at-risk students with minimal or no additional resources.	The school quickly identifies students who need additional time and support for equitable learning and moves resources to provide intervention rather than remediation (including for gifted under-achievers).	The school uses data to identify students at risk and implements timely and urgent strategies to increase time and support for these students, monitoring effectiveness and implementing alternative strategies for those that are not making a difference.
Data literacy	Teachers and schools generate data through summative assessment to inform decisions about reporting student achievement patterns in data not analysed to inform planning or decision-making.	Teachers recognise the importance of student data in facilitating reflective decision-making about their own teaching practices (especially teaching strategies, quality of the assessment tasks, their understanding of the curriculum intent, and their identification and recognition of individual student needs).	Teachers develop data literacy skills facilitated by the school leadership team and engage in professional discussions about what the data is saying.	Teachers use student achievement data to inform planning and some intervention strategies.	Teachers analyse student demographic and achievement data at a number of levels to inform school and individual teacher planning, provide timely feedback to students, and ensure all intervention is effective, efficient and defensible.

Numeracy

Understanding numeracy	Level 1	Level 2	Level 3	Level 4	Level 5
What is numeracy?	Teaching and administration staff, and parents and carers believe that mathematics and numeracy are the same thing.	Teaching and administration staff know the difference between mathematics and numeracy and that numeracy includes a problem-solving and reasoning dimension.	Parents, carers and the school community know the difference between mathematics and numeracy and the numeracy demands of the curriculum learning areas are recognised.	Teaching staff sometimes teach mathematics using pedagogies that develop numerate behaviours and are supported by the school administration to do so. Teachers include problem-solving and reasoning in their learning programs.	Teaching staff always teach mathematics using pedagogies that develop numerate behaviours with support from the school administration. Numeracy opportunities in the curriculum learning areas are maximised for deep student understanding. Teachers teach cognitive reasoning skills.
Numeracy across the curriculum	Level 1	Level 2	Level 3	Level 4	Level 5
Teacher knowledge of mathematics language	Teachers assume student knowledge of mathematical language when teaching mathematics.	Teachers of mathematics are aware of the particular language of the mathematics learning area including syntax, semantics, symbolic and instructional language..	Some teachers of mathematics specifically teach the mathematical language demands required when teaching mathematics.	Most teachers of mathematics explicitly teach the mathematical language required when teaching mathematics.	All teachers of mathematics explicitly teach the language of mathematics, making no assumptions of prior student knowledge or that students will inadvertently learn it.
Ability of teachers to identify and teach numeracy demands across learning areas	Teachers of learning areas other than mathematics have no recognition that there are numeracy demands in their learning area.	Teachers of learning areas other than mathematics are aware that there are numeracy demands in their area and recognise them but are unsure how to address them.	Teachers of learning areas other than mathematics are able to address numeracy demands in a limited range of opportunities.	All teachers of learning areas other than mathematics are able to recognise numeracy demands and teach the mathematics required when opportunities arise. Teachers sometimes use mathematical opportunities to enhance the understandings in their own learning area.	All teachers of learning areas other than mathematics are able to recognise numeracy demands and teach the mathematics required when opportunities arise. Teachers create and use mathematical opportunities to enhance the understandings in their own area.
Teacher numeracy knowledge and pedagogy	Level 1	Level 2	Level 3	Level 4	Level 5
Teacher knowledge of mathematics	Teachers of mathematics are not generally confident with mathematics and their depth of knowledge is limited.	Teachers of mathematics are motivated to believe they can improve their knowledge and confidence with mathematics.	Some teachers of mathematics have undertaken professional development, or learning about the NNLP.	Nearly all teachers of mathematics have undertaken professional development or learning about the NNLP and supplementary workshops.	All teachers of mathematics have undertaken professional development or learning about the NNLP and supplementary workshops. All teachers deeply understand and feel confident about the mathematics they are required to teach.

Teacher numeracy knowledge and pedagogy	Level 1	Level 2	Level 3	Level 4	Level 5
Teacher use of technology to enhance mathematics learning	Teachers generally believe computational technologies limit student understanding of mathematics and reduce skill acquisition. Calculators are used as reward for early completion of work or to check answers.	Teachers begin to believe that computational technologies can enhance numeracy acquisition.	Some teachers use computational technologies occasionally to enhance the delivery of mathematics concepts in their teaching.	Most teachers use computational technologies regularly to enhance the delivery of mathematics concepts in their teaching.	All teachers use computational technologies always to enhance the delivery of mathematics concepts in their teaching and educate parents and carers about this enhancement at every opportunity.
Teacher use of pedagogies that foster independence and collaboration	Students work mostly independently, classes are teacher-oriented and require little decision-making. Some collaboration is encouraged.	Students occasionally work in groups but the class is still predominantly teacher-centred. Students are not taught to maximise the strengths of cooperative learning situations.	Students regularly work in groups in a structured framework with the teacher highly scaffolding tasks and output required.	Students are encouraged to work collaboratively whenever possible. Group norms are established and practiced. Community, parent and carer involvement and participation is also encouraged.	Students are provided with the flexibility to work collaboratively whenever possible. Students are responsible for setting their own goals and targets. Community, parent and carer involvement and participation is actively sought.
Teacher use of pedagogies that foster motivation and purpose	The purpose for learning is unclear and students are motivated to pass a test, complete a task or other intrinsic motivation.	The purpose for learning is unclear. Students are motivated by teacher rewards and other encouragements to present their best work.	The teacher makes the purpose clear to students and motivates them to learn using some real-life connection.	Students are motivated to learn through relevant tasks situated in engaging contexts.	Students are engaged with situations that are interesting and relevant and involve decision-making and problem-solving, thus learning is self-motivated.
Teacher use of assessment data to inform planning	Teachers do not access student numeracy benchmark data and do not use their own classroom assessment data to inform planning.	Teachers use numeracy benchmark data and classroom assessment data in non-reflective ways. The link to their own practice is not considered.	Teachers begin to use classroom-based assessment data in combination with numeracy benchmark test data to consider how they might improve their own practice.	Many teachers collaborate with colleagues to discuss classroom and numeracy benchmark data, critically comparing student achievement and evaluating it to inform their practice.	All teachers are able to collaboratively, confidently and critically use student achievement data to progress their numeracy teaching and students' numeracy learning on a continual basis, sharing what's working with colleagues.
Comprehensive assessment	Teachers use mostly formal tests and no attention is paid to individual learning styles and ways of demonstrating learning.	Teachers place greater weighting on test results than other evidence and assessments are narrow, and focus on student completion of a common product rather than processes used in their production.	Teaching staff use a few different assessment strategies and types but focus on mostly factual, closed responses and right or wrong answers.	Teaching staff use a variety of assessment strategies and types allowing for multiple entry points and different responses.	Teachers use a broad range of assessment strategies and types (including open-ended and inquiry or investigative tasks) and assess processes and products and validate one assessment type with another.
Explicit criteria	Criteria is not made explicit or explained to students.	Criteria is shared informally with students at completion.	Criteria is formally made explicit to students in advance.	Criteria is made explicit to students in advance and scaffolded.	All criteria is made explicit to students in advance with examples of standards and student work samples.

Teacher numeracy knowledge and pedagogy	Level 1	Level 2	Level 3	Level 4	Level 5
Focus on higher-order skills for numeracy achievement	Teachers focus primarily on facts, methods and procedures that promote recall and algorithmic facility.	Teachers teach some mathematics tasks in blocks (for example, problem-solving on Friday) rather than embedded in every lesson.	Teachers realise that explicit teaching of concepts will promote deep learning but are limited by their own understanding and skill.	Teachers ensure that most mathematical concepts are taught through teaching strategies that encourage reasoning, communication and application.	Teachers ensure that all mathematical concepts are taught through teaching strategies that encourage reasoning, communication and application and that students are explicitly taught how to reason, communicate and apply.
Numeracy leadership	Level 1	Level 2	Level 3	Level 4	Level 5
Facilitation, encouragement and support	Judgements about what students could and should learn in mathematics and numeracy are left to individual teachers operating in isolation from each other.	There is discussion but not agreement among the principal and teachers about the mathematics and numeracy outcomes they seek, and the methods used to achieve them.	The principal is able to recognise quality teaching of mathematics for numeracy attainment and is successfully able to shape opinion about the purpose of change in numeracy teaching and learning having secured agreement with a significant number of staff about what constitutes effective practice.	There are shared expectations among teachers, administrators, and students about what constitutes good work and a set of processes for observing whether these expectations are being met in the teaching and learning of mathematics and numeracy in the school.	There is a clear, strong internal focus on issues of instruction, student learning and expectations for teacher and student performance concerning numeracy and mathematics, and a deployment of resources to match the focus, particularly in seeking professional development opportunities for staff.
Goals and expectations	The principal has neither set goals nor developed plans to support teachers as they trial approaches learnt during numeracy professional development.	The principal has developed plans to enhance the numeracy knowledge and skills that teachers, teacher aides and assistant teachers have developed, but the goals are ambiguous.	The principal leads the enhancement of teachers' numeracy teaching capacity through professional learning connected to and derived from teachers' work with their students.	Principals ensure that the knowledge and skills of individual teachers in teaching mathematics and numeracy are shared with all. Classroom modelling is encouraged and risk-taking in the teaching of mathematics and numeracy is supported. Appropriate outside assistance is sought when the skills of staff are judged as failing to meet system requirements.	Principals and other curriculum leaders have facilitated continual professional learning about numeracy. Learning about numeracy is valued as both an individual and collective good and all teachers are expected to contribute to collective research. The school is able to support other schools in the region in their efforts to improve student numeracy outcomes.