

Numeracy assessment guide

This numeracy assessment guide provides an overview and advice on some effective numeracy assessment approaches.

The approaches are categorised according to the assessment advice below.

Assessment is the process of gathering and interpreting evidence of learning to make informed inferences and decisions about how well students are progressing.

- **Assessment for learning** occurs when teachers use inferences about student progress to inform their teaching.
- **Assessment as learning** occurs when students reflect on and monitor their progress to inform their future learning goals.
- **Assessment of learning** occurs when teachers use evidence of student learning to make judgements on student achievement against goals and standards.

Each assessment approach has particular strengths and limitations based on the type of information gathered about students' knowledge, skills and behaviours.

ASSESSMENT APPROACH	PURPOSE	STUDENT APPLICABILITY	STRENGTHS	LIMITATIONS
Early Years Numeracy Interview <ul style="list-style-type: none"> • Assessment for learning • Assessment of learning 	<ul style="list-style-type: none"> • To assess numeracy knowledge, skills and behaviours, using a one-to-one interview 	<ul style="list-style-type: none"> • Suitable for use from when a student begins school, and then at the beginning of each school year. • Useful diagnostic tool for students experiencing difficulty beyond Year 4 	<ul style="list-style-type: none"> • Provides a snapshot at a point in time • Can be electronic or hard copy • Parts of the interview can be used throughout the year to assess progress • Tasks are linked to points of mathematical growth with a student profile of mathematical knowledge, skills and behaviours provided against stages of mathematical growth 	<ul style="list-style-type: none"> • Provides assessment to the end of Level 3 of the Victorian Essential Learning Standards (VELS) • Does not include chance and data, decimals or fractions • May need further assessment for some students in Years 3 and 4
Teacher Observations <ul style="list-style-type: none"> • Assessment for learning • Assessment of learning 	<ul style="list-style-type: none"> • To assess student thinking processes, attitudes, knowledge, skills, behaviours • and progress 	<ul style="list-style-type: none"> • Small group teaching provides rich opportunities for observation 	<ul style="list-style-type: none"> • Provides information for improving learning and performance in the short and long term • Regular maintenance and analysis related to the stages of mathematical growth can be used 	<ul style="list-style-type: none"> • Requires documented evidence of observations

ASSESSMENT APPROACH	PURPOSE	STUDENT APPLICABILITY	STRENGTHS	LIMITATIONS
			to inform teaching	
Self-assessment • Assessment as learning	<ul style="list-style-type: none"> • To encourage students to take increasing responsibility for their learning • To promote the development of metacognitive skills 	<ul style="list-style-type: none"> • Involves students in reflecting on their learning and focusing on what they should or could learn next • Enables students to recognise, articulate and share their understandings about their development and helps them set new goals • Supports students to develop metacognitive skills 	<ul style="list-style-type: none"> • Helps teachers better appreciate their students' perspectives, understandings, challenges and confusions • Can be facilitated through learning journals requiring students to reflect on particular tasks and record their strengths, achievements and areas for improvement 	<ul style="list-style-type: none"> • Effective prompts are required to assist students self assess
Learning Journals • Assessment as learning	<ul style="list-style-type: none"> • For students to document reflections about their learning and consider ways it might be improved 	<ul style="list-style-type: none"> • Students reflect on particular tasks or mathematical ideas and record their strengths, achievements and future learning strategies 	<ul style="list-style-type: none"> • May be structured, focusing on a particular aspect of mathematics • Written prompts and sentence starters are effective in helping students • May take place daily, weekly or at other specified times • Students can engage in regular formal reflection • Can be discussed during parent-teacher interviews • Can be incorporated into written reports 	<ul style="list-style-type: none"> • Students need support with developing reflection strategies
Peer Assessment • Assessment as learning	<ul style="list-style-type: none"> • For students to learn from each other's constructive comments about their learning and ways it might be improved • To encourage students to take increasing 	<ul style="list-style-type: none"> • Collaborative environment where students learn from each other • Whole class share time is an ideal opportunity for peer assessment 	<ul style="list-style-type: none"> • Students have the opportunity to reflect how other students learn in mathematics and can incorporate strategies into their learning 	<ul style="list-style-type: none"> • A class culture of trust needs to be created

ASSESSMENT APPROACH	PURPOSE	STUDENT APPLICABILITY	STRENGTHS	LIMITATIONS
	responsibility for their learning and the learning of others			
Individual Mathematics Portfolio <ul style="list-style-type: none"> • Assessment for learning • Assessment as learning • Assessment of learning 	<ul style="list-style-type: none"> • To provide a record of development over time • To provide teachers, students and parents with evidence of a student's strengths and areas for improvement 	<ul style="list-style-type: none"> • Evidence can include information from an early numeracy interview, annotated work samples, self –assessments, anecdotal notes, an individual learning plan, a numeracy teaching plan, student reports, etc. • Needs to be systematically collated to give a current picture of the student's progress • Needs to be analysed regularly and reviewed to inform teaching programs and learning experiences 	<ul style="list-style-type: none"> • Transfer with students when they transfer into new classes • Useful when writing reports • Useful for discussions between parents, teachers and students and in particular for teacher, parent and student interviews • Students can be involved in selecting, annotating and organising evidence of their learning 	<ul style="list-style-type: none"> • Time for conversations to understand annotations
AIM <ul style="list-style-type: none"> • Assessment of learning 	<ul style="list-style-type: none"> • To provide a snapshot of achievement at a point in time • To provide a rating against state benchmarks • To report to parents 	<ul style="list-style-type: none"> • Year level appropriate • Indicates a student's standard at a point in time 	<ul style="list-style-type: none"> • Standardised • Criterion referenced 	<ul style="list-style-type: none"> • Multiple choice
Other Approaches used in your school				

www.education.vic.gov.au/studentlearning/assessment/preptoyear10/tools/

Department of Education

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