

Assessment Strategies in *Nelson Mathematics 9*

Nelson Mathematics 9 has various assessment activities in each lesson. The assessment strategies balance traditional pencil-and-paper activities with other approaches, such as interviews, portfolios, and observation.

The *Teacher Resource* helps teachers to develop a broad range of assessment, recording, and reporting strategies. Assessment activities are embedded in the instructional design of each chapter. Some of these activities provide a summative assessment of students' learning of skills, knowledge, processes, and concepts in the chapter. Others give formative feedback on student progress. The combination maximizes the opportunities to assess student work and understanding.

Suggestions appear in the margin of the *Teacher Resource* whenever there is an opportunity for assessment. There are four or five such assessment suggestions for each lesson.

Note that after this section, there is a series of blackline masters the teacher can use for assessment.

Assessment Features in Each Chapter

Feature	Purpose and Description	Location
<i>The Chapter Problem</i>	<ul style="list-style-type: none"> requires the use of skills and knowledge that correspond to the essential outcomes of the chapter developed incrementally throughout the chapter upon completion, provides a model for approaching the case studies provides formative assessment information as students work through the project an ongoing opportunity for consolidation and review of skills, knowledge, and processes 	<p>In the student text:</p> <ul style="list-style-type: none"> a statement of the <i>Chapter Problem</i> all component activities <p>In the <i>Teacher Resource</i>:</p> <ul style="list-style-type: none"> suggestions for preparation, management, and assessment a blackline master of a generic rubric whose categories match those of the achievement chart in the mathematics curriculum (just before the teaching notes and suggestions for the chapters)
<i>The Challenge</i>	<ul style="list-style-type: none"> summative assessment of knowledge, skills, and understanding for the unit context is similar to problems done in the chapter address the most important outcomes of the unit 	<p>In the student text:</p> <ul style="list-style-type: none"> a statement of the <i>Challenge</i> <p>In the <i>Teacher Resource</i>:</p> <ul style="list-style-type: none"> performance expectations a discussion of the problem and suggestions for assessment, use, and management a blackline master of a rubric whose categories match those of the achievement chart in the mathematics curriculum
<i>Practise, Apply, Solve</i>	<ul style="list-style-type: none"> questions and problems that relate to each section in a chapter may be used as review or extra practice exercises or as a bank of assessment tasks 	<p>In the student text:</p> <ul style="list-style-type: none"> all of the questions and problems answers to all questions and problems in the Answers section <p>In the <i>Teacher Resource</i>:</p> <ul style="list-style-type: none"> expected responses to accommodate a range of student performance levels worked solutions to more challenging questions
Extension and Enrichment Activities	<ul style="list-style-type: none"> allow students to extend their understanding of the chapter concepts in a somewhat different context 	<p>In the student text:</p> <ul style="list-style-type: none"> one or two in the <i>Chapter Review Test</i> <p>In the <i>Teacher Resource</i>:</p> <ul style="list-style-type: none"> a discussion of extension activities and suggestions for assessment, use, and management
<i>Chapter Review Test</i>	<ul style="list-style-type: none"> represents the level of performance expected of most students after completing the chapter 	<p>In the student text:</p> <ul style="list-style-type: none"> the test itself answers to all questions in the Answers section <p>In the <i>Teacher Resource</i>:</p> <ul style="list-style-type: none"> blackline masters of additional sample tests for Applied and Academic classes including answers, scoring rubrics, and marking schemes (at the end of the teaching notes for each chapter)

Assessment Strategy Chart

This chart will help you select appropriate tasks and scoring methods for a specific assessment purpose.

To assess:	You could use:	And score the work with a:
the amount of work a student has completed	<ul style="list-style-type: none"> • a homework check • a notebook check • a work log • a portfolio 	<ul style="list-style-type: none"> • content checklist or profile • rating scale • holistic scale • analytical scale
what a student knows or how well the student can perform a task	<ul style="list-style-type: none"> • a test • a game • teacher questioning • an interview or conference • observation • a focused assignment • homework collection • a portfolio 	<ul style="list-style-type: none"> • skills checklist • anecdotal record • performance checklist • knowledge checklist • group-, peer-, or self-assessment • rating scale • holistic scale • analytical scale • rubric
the level at which a student understands mathematical concepts, principles, and processes	<ul style="list-style-type: none"> • teacher questioning • creation of alternative representations • creation of review notes or summaries • creation of sample problems or model solutions • error analysis or evaluation of other students' work • generation of assessment criteria or rubrics • an interview or conference • a mind map or concept web • a journal • a written report • observation • peer tutoring and coaching • a portfolio • a presentation, seminar, or debate 	<ul style="list-style-type: none"> • anecdotal record • process checklist • concept checklist • group-, peer-, or self-assessment • rating scale • holistic scale • analytical scale • rubric
the ability of a student to form connections, solve problems, and apply acquired knowledge in new situations	<ul style="list-style-type: none"> • a case study, challenge problem, assignment, project, math fair, or investigation • brainstorming • teacher questioning • an assigned independent study • contest performance • a problem-solving journal or portfolio • observation while thinking aloud • a mind map or concept web • alternative representations • development of approaches to a problem • written or oral problem analysis 	<ul style="list-style-type: none"> • anecdotal record • problem-solving checklist • group-, peer-, or self-assessment • rating scale • holistic scale • analytical scale • rubric • negotiated set of criteria
a student's teamwork skills	<ul style="list-style-type: none"> • a group assignment or worksheet • brainstorming • a group performance task or investigation • a group presentation • a group test • a discussion, debate, or seminar • observation 	<ul style="list-style-type: none"> • anecdotal record • group process checklist • group progress report • performance checklist • collaborative skills checklist • group-, peer-, or self-assessment • rating scale • holistic scale • analytical scale • rubric • negotiated set of criteria

To assess:	You could use:	And score the work with a:
the ability of a student to work and learn independently	<ul style="list-style-type: none"> • independent study • assignment, project, or investigation • journal • portfolio • report, seminar, or presentation on an extension topic • independent research project • work log or diary • test • an interview or conference 	<ul style="list-style-type: none"> • anecdotal record • process checklist • progress checklist with milestones • self-assessment • rating scale • holistic scale • analytical scale • rubric • negotiated set of criteria in a learning contract
student attitude and behaviour	<ul style="list-style-type: none"> • observation • self-reporting • journal • work log • questionnaire • an interview or conference 	<ul style="list-style-type: none"> • anecdotal record • group-, peer-, or self-assessment • behaviour checklist • time-on-task profile • rating scale • holistic scale • analytical scale • rubric
the ability of a student to manage time and projects effectively	<ul style="list-style-type: none"> • assignment planning calendars • task analysis • work log • project diary or journal • project plan with milestones • peer monitoring • progress conferences 	<ul style="list-style-type: none"> • anecdotal record • group-, peer-, or self-assessment • project completion checklist • rating scale • holistic scale • analytical scale • rubric

Assessment References and Resources

- *The Ontario Curriculum, Grades 9 and 10: Mathematics, 1999*
- *The Ontario Curriculum, Grades 9 and 10: Program Planning and Assessment, 1999*
- *Guide to the Provincial Report Card, Grades 9–12*
- *Balanced Assessment in Mathematics*. Harvard Graduate School of Education.
See <http://gseweb.harvard.edu/~etc/ba/>