Students who are Gifted

10

171

Contents of this chapter

"To make forward progress from what they know to what they don't know yet, students who are gifted need differentiation. For these students, differentiation may mean different tasks and activities than their age peers—rich and meaningful tasks that lead to real learning."
– David Harvey, Consultant for Gifted Education

Many students who are gifted require differentiated programming and supports to meet their exceptional learning needs. The strategies and information in this chapter are based on findings from the research on giftedness and gifted education.

For a summary of research completed by the Centre for Gifted Education at the University of Calgary, visit Alberta Education's Web site at http://education.alberta.ca/apps/aisi/literature/ and click on Student Groups, then choose Understanding Giftedness, 2005.

Purposeful planning

With thoughtful planning, the provincial, standardized grade-level programs of study can be the beginning point for differentiating instruction that will provide appropriate challenge and support for students who are gifted. Students who demonstrate that they already know some content or are able to learn the content in much less time than their classmates, will benefit from content differentiation. Differentiating content for students who are gifted means creating opportunities within specific learning outcomes to explore a concept or skill in greater depth or breadth. The goal of differentiating for students who are gifted is to more deeply engage these students and maximize their learning potential.

Students who are gifted may demonstrate high ability in a single subject, more than one subject or in certain parts of several subjects. If what the student needs to learn, relative to his or her area of strength, is not within the instructional plans for the class then, without differentiation, that student may be the one in the class who learns the least.

There are a number of ways to differentiate content for students who are gifted, including making content and related learning activities more:
- abstract
- complex
- interrelated
- constrained (Harvey 2000, pp. 70–71).

These strategies also may be used in conjunction with flexible pacing.

172

Making content more abstract

Abstract content focuses less on specific, factual information and more on concepts and generalizations. Building on abstraction means encouraging students to consider ideas in general terms, and to move more fluidly between facts and broad understandings. For example, a student who is gifted in math could quickly move beyond manipulatives into identifying patterns and relationships. Artistic representations can challenge students to explore and synthesize concepts in abstract terms. For example, students could identify patterns and relationships through a dance, song or theatrical presentation. Thinking in more abstract terms can provide greater challenge and complexity for students.

Making content more complex

Content can be made more complex by introducing additional variables, other considerations, different sources and alternate viewpoints to a learning task. The original content remains, but is compared, contrasted or combined with other information or concepts. For example, a basic learning activity of surveying the class to find out how many students come to school by walking, biking, bussing or car could be made more complex by asking students to gather additional information in the survey and use this to compare distance from school with various modes of transport.

173

Making content interrelated

Students who are gifted often spot the potential for applying ideas or methods from one field of study to others. Build on this ability by looking for potential connections from one subject to the next, and challenging students to use knowledge, processes and skills in different combinations. For example, students could take science knowledge about weather and climate, and use it in a social studies inquiry about how people adapt to their environment.

Interrelatedness also can be explored across space or time. For example, students could be challenged to think about how humans adapt to their physical environments across geographic regions or what meaning humans have ascribed to weather conditions throughout history.

Making content more constrained

Interestingly enough, making content more constrained can sometimes present as many worthwhile challenges as making it more complex. By lessening the degrees of freedom in an activity, it is possible to concentrate students' focus and encourage them to go more deeply into a particular aspect of a learning outcome. For example, a basic assignment to write a poem about traffic during rush hour could be channeled into a more constrained assignment of writing the poem only about the traffic sounds during rush hour.

Flexible pacing

Often students who are gifted may benefit from moving through grade-level learning outcomes at a different rate than classmates. Flexible pacing can take a variety of forms, including:

- allowing students to complete some outcomes more quickly in order to spend additional time on more challenging outcomes and related activities
- allowing students to do a deeper exploration of specific learning outcomes that are especially meaningful to them
- moving students to an appropriate starting point in the program of studies based on pre-testing
- streamlining how a student moves through the program of studies to eliminate repetition of previously learned materials.

The goal of these flexible pacing strategies is to provide opportunities for students to spend more time on outcomes and activities that will enrich their learning.

Consider the following approach.

1. Identify learning objectives for the whole class according to the program of studies.
2. Pre-test the entire class to identify students who would benefit from an opportunity to work at a faster or more independent pace or at a deeper, more abstract level.
3. Plan appropriate enrichment or challenging activities for those students who require them.
4. Eliminate unnecessary review and practice activities for those students who have mastered the material.
5. Keep accurate records of activities and assessments to ensure individual students have the opportunity to explore and apply all learning outcomes.

For more information on planning, see *Chapter 2: Purposeful Planning*.

Learner profiles

Each student who is gifted has an individual profile of abilities, needs, interests and learning preferences. However, there are a number of general characteristics and developmental issues that often are associated with giftedness and that have important implications for learning. Common intellectual characteristics of students who are gifted include:

- advanced intellectual achievement
- high motivation and interest
- verbal proficiency
- problem-solving ability
- logical thinking
- creativity.

Some of these characteristics appear in students at all ability levels, but they are more prevalent and more pronounced in students who are gifted. Being aware of these characteristics can help you develop a more accurate and relevant learner profile for each student. Other elements that may be particularly important for the learner profiles of these students are developmental issues, learning difficulties and strengths. For more information on learner and class profiles, see *Chapter 3: Developing Learner Profiles*.

Developmental issues

Typical developmental issues faced by all students also are experienced by students who are gifted. These issues may be complicated by the exceptional learning needs and characteristics many students who are gifted demonstrate, particularly during adolescence. Students who are gifted may face a variety of challenges, including perfectionism, underachievement, uneven or asynchronous development and learning difficulties. For some students who are gifted, a combination of characteristics may lead to difficulties with peer relations, avoidance of risk taking or excessive self-criticism.

Students who may be more at risk emotionally, socially and academically include:

- divergent thinkers who suggest ideas that are logical to them but unusual to classmates
- creative high achievers, particularly those with artistic gifts, who may experience feelings of isolation or depression, and, as a result, may be subject to anxiety, insomnia, feelings of worthlessness, loss of energy or decreased ability to concentrate.

175

For more information and sample strategies that teachers and parents can use to help students who are gifted manage common developmental issues, see *The Journey: A Handbook for Parents of Children who are Gifted and Talented* (Alberta Learning, 2004), available at http://education.alberta.ca/admin/special/resources/journey.aspx.

Perfectionism

Perfectionism is a pattern of characteristics and behaviours that includes compulsiveness about work habits, over concern for details, unrealistically high standards and rigid routines. Perfectionism can develop at various stages of development for various reasons, but for many students it is simply a part of their personality, not necessarily the result of parental pressure or any other outside influence. Perfectionism can be thought of as part of the experience of being gifted, which can be used in a positive way to achieve excellence.

However, perfectionism can become a serious issue for some students. To monitor the effects of perfectionism, teachers and parents need to ask questions like, "Are these attitudes and behaviours barriers for this student?" and "Do they prevent this student from experiencing success and happiness?"

Perfectionism may be creating problems if the student:
- feels like he or she never does things well enough
- sets unrealistic standards based on his or her advanced reasoning ability even though other skill areas may not be as well developed
- feels inferior or defeated if he or she does not meet these high standards
- becomes so terrified of doing something wrong, he or she refuses to try new things and actually accomplishes very little
- in extreme cases, develops compulsive behaviours that require professional medical or psychological assistance.

Use patience and understanding to positively channel a student's perfectionism. Other considerations include the following.
- Be aware of expectations that you create for the student. Ensure they are reasonable and allow the student to be an individual, to express himself or herself and to make mistakes.
- Help students set reasonable and reachable goals and expectations.
- Help students develop time management skills.
- Help students develop an understanding of perfectionism and how it affects others.
- Create a safe environment in which mistakes are part of learning and students feel supported, no matter what.

Underachievement
In relation to giftedness, the term underachievement describes the performance of students whose achievement level at school falls far below their cognitive ability. This discrepancy is not caused by an underlying learning disability, attention deficit/hyperactivity disorder or any other disorder that may be affecting their achievement. Rather, students underachieve in school for a variety of social and emotional reasons. Some specific causes of underachievement in students who are gifted include:
- poor self-image
- lack of a future vision or dream to work toward
- problems within the family that divert student thinking and effort
- feelings of anxiety
- the desire to fit in with their peer group
- the desire to rebel
- the desire to avoid participating in special programming
- feelings of stress based on the need to please others or their own unrealistic expectations
- disinterest in subject-area topics and related learning activities
- work that is too easy or too difficult
- work that is meaningless and repetitive to the student
- fear of failure.

Underachievement can manifest in various ways in the classroom. Students who underachieve can be disruptive or withdrawn. They may engage in power struggles with their teachers or they may become apathetic, surrendering their passion for learning and not completing tasks. One of the most serious consequences of underachievement is early school leaving. A common assumption is that boredom with schoolwork is the cause of underachievement, and that the solution is to increase the difficulty and workload for the student. However, this approach can be counterproductive for students who are already disengaged. It is important that students have meaningful and challenging work to do at school and receive appropriate guidance and support at home.

To help students overcome underachievement, consider the following:
- provide ongoing support and encouragement
- help students understand the connection between effort and results
- involve students in setting realistic and meaningful goals for learning.

Asynchronous development
Asynchrony is uneven development in the rates of intellectual, emotional and physical development. Asynchronous development can be a characteristic of students who are gifted. This means students may:
- feel out-of-sync with same-age peers and age-appropriate learning activities and topics
- demonstrate different maturity levels in different situations, which could result in difficulties adjusting emotionally and socially.

These tendencies can increase with the student's degree of giftedness, and can make students vulnerable to feelings of frustration and social isolation. Students who experience asynchronous development respond best to a sensitive and flexible approach to instruction. The greatest need of students who experience asynchronous development is a caring and supportive learning environment where it is safe to be different.

Learning difficulties
Some students who are gifted also may have learning difficulties such as specific learning disabilities, attention deficit/hyperactivity disorder or Asperger's syndrome. These twice-exceptional students often have difficulty reaching an academic level that matches their measured potential, and their giftedness may go unrecognized or be ignored.

Students who are simultaneously gifted and have a disability can pose a special challenge for both teachers and parents. It is important to recognize and understand this dual exceptionality and collaborate with parents, other teachers and the student to ensure that instruction addresses both their exceptional strengths and their exceptional needs.

Identification of strengths

For students who are gifted, learning needs often are related to strengths rather than defects or weaknesses. A need can be an extension of a strength or can involve learning to use a strategy to support that strength. It is essential to use multiple sources of information to identify an individual student's strengths and areas of need. As much as possible, involve students in the process, so they begin to identify and understand their own strengths and interests. Look for ways to identify not only academic needs but also social, emotional and psychological needs that affect learning.

Consider the following types of questions.

- What strengths and talents does this student demonstrate?
- What is happening now in the student's educational programming?
- What led to this student being identified as gifted?
- What kind of data will give a fuller picture of this student; e.g., academic, social, emotional, psychological?
- What do this student's particular interests and accomplishments tell us about this student's learning needs?
- How can information about the student's abilities, interests and motivation inform differentiated instruction?

There are a wide variety of tools and strategies that students can use to identify and assess their own strengths, needs and areas of interest. Creating opportunities for students to explore their own strengths will help students learn about themselves and advocate for their own exceptional education needs.

Assessment

Students who are gifted require differentiated assessment strategies in order to accurately demonstrate what they know and can do, and to allow you to make effective decisions about future instruction. These students need assessment tasks that generate rich, dynamic and valid data to gauge progress and inform programming decisions for individual students. For information on assessment, see *Chapter 4: Differentiated Assessment*.

Assessment for instructional planning

Students who are gifted often have pre-existing knowledge that overlaps with learning outcomes in the provincial grade-level program of studies. Assessing students at the start of a new term or unit allows you to determine their background knowledge, existing understandings and readiness related to new content. This information is vital in making decisions about whether and how to differentiate content and instruction.

Assessment *for* learning

Differentiating assessment for students who are gifted often involves making these students more active partners in their own assessment process. Consider ways to involve students in developing and using criteria or rubrics to reflect on their own work and make adjustments throughout the learning process. Learning logs, journals, portfolios and other interactive strategies also can be used to differentiate the assessment process.

Information used for assessment *for* learning should be descriptive and framed in the context of coaching, self-assessment and reflection. The main purpose is to help students learn and grow, so they can keep themselves motivated and challenged.

Assessment *of* learning

Students who are gifted often require opportunities to create differentiated products in order to fully demonstrate their thinking and learning. Differentiated products may include written, oral, manipulative, discussion, display, dramatization, artistic, graphic representation and service learning. For example, writing assignments may not be the best way for some students to show their learning. Some students may think quicker than their hands can write. An action product, such as a multimedia slide show, or a dramatic performance, could be a better type of learning experience for these students.

Students who are gifted often benefit from producing "real-life products" for real audiences. These products go beyond the typical research paper or report to alternatives that develop individual students' talents and curiosities, and can be shared and used by others. Consider ways that alternate products could be used to:
- broaden the range of student experiences
- expand students' ways of learning and of expressing themselves
- challenge students in their areas of strength
- create opportunities for students to explore hidden talents and use gifts they might not otherwise use
- allow students to learn in a deeper and more advanced way through their preferred learning style.

Whatever products students develop, think carefully about the role of grading for these students. Be cautious using test or term marks as main indicators of growth. Many of these students may already have high averages and there is little benefit in focusing on moving a mark up only one or two points. Futhermore, if you already have evidence to support the highest claim that can reasonably be made about a student's achievement, there is no need for the student to complete more assessment tasks related to a particular learning outcome.

Assessment *of* learning information should provide summary and, hopefully, celebratory descriptions of learnings and achievements.

179
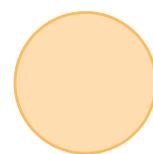
Differentiated learning experiences

Differentiated instruction for students who are gifted means enhanced opportunities for thinking and learning, not just more work to do. Students who are gifted benefit from learning environments in which they have opportunities to:

- gain understanding of self and others
- explore their own learning strengths and needs
- learn and practise coping skills that assist in their growth and development
- take risks and see mistakes as learning opportunities
- practise leadership and service within the school community.

For most students, an enriched learning environment can be provided within the regular classroom by substituting or adding activities that foster higher-level thinking skills and problem solving. Many instructional strategies and learning activities that challenge individual students can benefit other students in the class as well. For example, activities such as debates, which involve students in creative and challenging learning, may be connected directly to learning outcomes in a variety of subjects.

For more information on differentiated learning experiences, including scaffolded instruction, flexible grouping and choice, see *Chapter 5: Differentiated Learning Experiences*.

Meaningful activities

A useful starting point for identifying meaningful activities for students who are gifted is to consider how individual student characteristics are linked to specific learning needs. The following chart illustrates sample characteristics and the type of learning needs that may be associated with them.[1]

180

---

1. Chart adapted from the Department of Education, Employment and Training, State of Victoria, *Bright Futures Resource Book: Education of Gifted Students* (Melbourne, Australia: Department of Education, State of Victoria, 1996), p. 30. Copyright owned by the State of Victoria (Department of Eucation and Early Childhood Development). Used with permission.

Characteristic	Learning Need
• unusual retentiveness …	• exposure to quantities of information
• advanced comprehension …	• access to challenging learning activities
• varied interests …	• exposure to a wide range of topics
• high level of verbal skills …	• opportunities for in-depth reflection and discussion
• accelerated pace of thinking …	• individually paced learning
• flexibility of thought processes …	• challenging and diverse problem-solving tasks
• goal-directed behaviours …	• longer time spans for tasks
• independence in learning …	• more independent learning tasks
• analytical thinking …	• opportunities for higher-level thinking
• self-motivation …	• active involvement in learning
• emotional sensitivity …	• opportunities to explore and reflect on affective learning
• interest in adult issues …	• exposure to real-world issues
• holistic thinking …	• integrated approach to learning
• avid reader …	• access to diverse materials

Goal setting

An important way to ensure activities are meaningful is to involve students in setting learning goals and monitoring their own progress as much as possible. Participating in their own goal setting helps students who are gifted to practise higher-order and metacognitive thinking. It also encourages them to take ownership for their learning, to set realistic expectations and to celebrate and value their progress.

Student involvement in their own goal setting can be promoted in a variety of ways and contexts, including:
- in learning logs, journals and communication books
- through individual student–teacher conferences
- during class time, within specific subject areas or types of learning activities (e.g., spelling, keyboarding, study skills, mathematics, research projects, physical education, music) or in areas of personal growth (e.g., leadership skills, self-management, organization)
- in classroom discussions and celebrations of individual and group accomplishments
- by teachers and other adults modelling how they use the goal-setting process in their own work and personal lives.

181

You can support students in setting effective goals by teaching them strategies such as the following "SMART" acronym.

Specific: written in clear language. Work with students to ensure that the wording of goals specifically and accurately expresses want they want to achieve.

Measurable: provides information for assessing progress and achievement of the goals. For example, help a student transform a vague goal such as "I will be fast at keyboarding" into a more measurable goal such as "By January 30, I will keyboard at 25 words per minute on three trials on *Superkey*." Progress toward measurable goals can be monitored through graphs, log books and other data-recording strategies.

Achievable: realistic for the student. Students who are gifted benefit most when their goals are both realistic and optimistic. High achieving students sometimes strive for excellence or goals that may not seem reasonable from another person's perspective but may be entirely possible for that student.

Relevant: meaningful for the student. Encourage students to identify goals that are relevant to their immediate and future plans. Emphasize that worthwhile goals can be set in many areas of life, including personal, athletic, financial and organizational.

Time-limited: can be accomplished in a specific time period. Goals may be short- or long-term. Long-term goals can be broken down into short-term objectives, as in plans for a long-term research project.

Once these goals have been set, look for ways that activities and instruction can support students in achieving their goals. Work with students to monitor their progress and adjust goals as needed. Providing opportunities for group as well as individual goal setting can help students see the function and process of goal setting in a variety of contexts.

Tiered assignments

Tiered assignments are parallel tasks that have varied levels of complexity, depth, abstractness and support. Students in the class all focus on the same learning outcome but work on different *levels* of activities related to the outcome. These types of assignments allow students who are gifted to work at a more challenging level. Tasks from one tier to the next should differ in level of complexity, not simply be more or less work.

Designing a tiered assignment involves selecting a skill or concept, developing basic learning activities and then creating higher-level variations by changing variables such as using advanced materials, moving toward a more abstract concept, reducing support, making it more open-ended, and/or making it faster paced.

For example, a tiered assignment for a Grade 2 science class studying communities might offer the following types of activities.

Tier 1		Tier 2
• Describe an ant community in pictures or words.	or	• Describe an ant community using at least three sentences with at least three describing words in each sentence.
• Use a Venn diagram to compare an ant community to your community.	or	• Make an electronic slide show explaining how what you learned about ant communities helps you understand living and working together in a human community.

Questioning techniques
Questions that draw on advanced levels of information require leaps of understanding and challenge student thinking. Open-ended questions invite critical and creative thinking, and nurture the development of students' capacities to frame their own questions.

Anomalies and paradoxes
Presenting anomalies and paradoxes also can stimulate the interest of students who are gifted. Glitches in logic upturn a tidy view of the world and create opportunities for students to enter into a deeper inquiry, become immersed in the principles and build a clearer understanding of a particular aspect of a field of study (Harvey 2000, p. 70).

Independent projects
Independent projects can offer challenge and engagement for many students who need academic enrichment. Such projects let students identify issues or topics of interest, plan an investigation and synthesize the findings.

Components of an independent study project include:
- identifying and developing a focus
- developing skills in creative and critical thinking
- using problem-solving and decision-making strategies
- learning research skills
- developing project management strategies
- keeping learning logs
- reflecting on and evaluating the process and product
- sharing the product with an intended audience from beyond the classroom
- keeping a portfolio of results.

Independent studies help students move from being teacher-directed to student-directed. With teacher support and coaching, students learn how to decide on a focus, develop a plan of action and follow it through, and monitor the process. Students take part in developing criteria for assessment and work collaboratively with the teacher. It is important to recognize that students may need to be explicitly taught the skills to do this kind of independent work. They also need to be clear on the product, processes and behavioural expectations. Some students may benefit from an independent study agreement that outlines learning and working conditions and lays out basic expectations.

Possibilities for independent study could include such activities as:
- writing and recording a script
- creating a magazine or picture book on a topic of interest
- developing a slide show presentation on a topic of interest and presenting it to other students
- writing a story and sharing it with younger students
- creating a display about a story read or topic researched
- writing a new ending to a story or movie.

Higher-order thinking

Bloom's taxonomy (Bloom 1956) provides a useful framework for designing learning activities that promote higher-levels of thinking. Bloom proposes that at the most basic level of thinking, we acquire knowledge and comprehension. At higher levels we learn how to apply principles and to analyze, evaluate and synthesize. Assuming that students have no background in a topic of investigation, they would move from knowledge and comprehension to application before working with the higher-order skills of analysis, evaluation and synthesis. The latter three levels are associated with critical thinking. Consider how the following chart of this taxonomy of thinking can be used to plan for differentiating products and processes for students who need additional challenges.

Taxonomy of thinking

Category	Definition	Differentiated processes	Differentiated products
Synthesis	• Rearrange and/or alter individual parts to create an original concept, idea or product	Compose • Design • Invent • Create • Hypothesize • Construct • Forecast • Rearrange parts • Imagine • Adapt	Organize event • Song • Poem • Story • Advertisement • Invention • Other creative products
Evaluation	• Judge value of something • Create standards or criteria • Support judgement	Judge • Evaluate • Give opinion • Give viewpoint • Prioritize • Recommend • Critique • Prove	Decision • Rating • Editorial • Debate • Critique • Defence • Verdict • Judgement
Analysis	• Understand how parts relate to a whole • See relationships • Find uniqueness	Investigate • Classify • Categorize • Compare • Contrast • Solve • Take part • Simplify	Survey • Graph • Questionnaire • Plan • Solution to problem or mystery • Report • Proposal, position paper
Application	• Make use of learned knowledge • Transfer knowledge from one situation to another	Demonstrate • Use guides, maps, charts, etc. • Build	Recipe • Model • Artwork • Demonstration • Craft • Illustrate
Comprehension	• Demonstrate basic understanding of concepts and skills • Paraphrase in own words	Restate in own words • Give examples • Explain • Summarize • Translate • Show symbols	Drawing • Diagram • Response to question • Translation • Retelling
Knowledge	• Ability to remember specific facts, ideas or vocabulary	• Match • Recognize • Tell • Recite • List • Memorize • Remember • Define • Locate • Recall • Label • Define	Quiz • Skill work • Vocabulary activities • Facts • Matching activities

185

Mentorships

Mentorship is an effective strategy for facilitating the differentiated learning needs of students. Mentorships give students opportunities to develop relationships with adult experts who share their passion for a specific area of interest. In a successful mentorship, the mentor and student will have compatible learning and communication styles. Mentorships provide opportunities for students to engage with adults for a variety of purposes, such as interviews, individual projects, connection to the local community and exploring career options.

The following steps may help you organize successful mentoring relationships.

1. Identify what (not whom) the students need.
2. Discuss with the students whether they would like to work with a mentor and, if so, what they would like to gain from the relationship.
3. Identify appropriate mentor candidates. Explore contacts from the local community. Do the appropriate reference checks as directed by school jurisdiction policy.
4. Interview and screen the mentors. Be explicit about the goals, learning strategies and potential benefits for both the student and mentor. Provide training as required.
5. Match mentors with students.
6. Prepare students for the mentorship. Ensure they understand its purpose, benefits, limitations and commitments and put this in writing so it can be referenced throughout the relationship.
7. Monitor the mentor relationship to ensure that it is achieving its goals. Renegotiate the relationship, as needed, and seek new mentors if students are not benefiting.

Other learning environments

In addition to differentiated experiences in the classroom, some students will benefit from programming that involves one or more alternative learning environments such as the following.

- Cluster grouping: Small groups of students receive advanced instruction in reading, mathematics or other content, or work on alternate assignments.
- Out-of-grade placement: Students are placed with a higher grade for certain subjects such as language arts, mathematics and/or science.
- Online courses: Students use web-based e-mail, digital content, videoconferencing and direct linkage with teachers.
- Seminars and special projects: Students participate in interdisciplinary studies, special interest groups or other projects.
- International Baccalaureate (IB): Students participate in special academic programs that are internationally developed and recognized for academic rigour.

- Advanced Placement (AP): Students participate in senior high school courses that follow the prescribed AP program and students who successfully complete examinations in the program may apply for advanced credit or placement at post-secondary institutions.

187

**Tool 1: Differentiated Learning and Teaching Strategies
for Students Who are Gifted**

Mathematics	Language Arts	Science	Social Studies		Content
✓	✓	✓	✓	✓	Content
					Make activities more complex; e.g., comparative studies, more variables
					Accelerate activities from concrete to abstract, move quickly
					Modify outcomes from a higher grade level
					Extend activities beyond the program of studies
					Increase range and variety of topics available
					Increase quantities of information available
					Increase the variety of information available
					Use tiered assignments according to student readiness
					Investigate related themes or ideas from various disciplines
					Explore related ethical issues
					Do an in-depth study of a related self-selected topic
					Develop expanded library research skills
					Develop expanded Internet research skills

188

Mathematics	Language Arts	Science	Social Studies		Process
✓	✓	✓	✓	✓	Process
					Use pre-testing to reduce or eliminate unnecessary learning activities
					Decrease the amount of review
					Decrease the amount of repetition
					Organize mini-tutorials
					Develop a learning contract
					Use computer-based instruction; e.g., digital resources, web-based instruction
					Create opportunities for higher-level thinking skills
					Increase time span for assignments to allow depth
					Increase opportunities for primary research and data collection
					Increase opportunities for in-depth discussion
					Increase opportunities for in-depth reflection
					Increase the diversity of problem-solving opportunities
					Emphasize inquiry processes
					Use mentorship
					Create opportunities to use creativity; e.g., fluency, flexibility, originality, elaboration
					Create simulations
					Increase opportunities for application to real-world situations

189

Mathematics	Language Arts	Science	Social Studies		Process (continued)
✓	✓	✓	✓	✓	
					Use more inductive thinking; e.g., working from the specific to the general
					Use more deductive thinking; e.g., working from the general to the specific
					Increase the use of evidence of reasoning; e.g., supporting opinions, debates
					Create more opportunities for student choice; e.g., learning centres, tic-tac-toe menu, learning contracts
					Make activities more open-minded
					Create expanded opportunities for critical thinking, evaluating and decision making
					Create time for browsing and exploring
					Investigate possibilities for videoconferencing
					Organize partnerships through technological communications; e.g., e-mail, conference boards, e-mentor
					Create opportunities to teach others

190

Mathematics	Language Arts	Science	Social Studies	Product
✓	✓	✓	✓	✓
				Provide for choice of product
				Incorporate service learning
				Apply to real-life problems and situations
				Challenge student to incorporate higher-order thinking skills; e.g., analysis, evaluation, synthesis
				Encourage different targets for assessment and evaluation; e.g., focus on learning logs and self-reflection rather than on completed project
				Create opportunities to reflect and record process

191

192

Mathematics	Language Arts	Science	Social Studies	
✓	✓	✓	✓	✓	Physical Environment
					Create interest centres that are available throughout the school day
					Increase access to computers and other technology
					Increase access to library
					Increase access to diverse materials and resources
					Share examples of excellence and exceptional achievement
					Increase access to community resources; e.g., colleges, universities, laboratory
					Social and Psychological Environment
					Use flexible grouping
					Create opportunities for partner and small group work
					Create opportunities for ability grouping for some tasks
					Create opportunities for interest grouping for some tasks
					Create opportunities for independent work
					Create opportunities for exchange of ideas
					Encourage intellectual risk taking
					Design self-pacing learning opportunities
					Create opportunities for self-reflection
					Offer choice
					Encourage risk taking and experimentation
					Organize self-directed learning that incorporates pursuit of interests

Mathematics	Language Arts	Science	Social Studies	
✓	✓	✓	✓	✓	**Assessment, Evaluation and Reporting**
					Create opportunities for demonstrating mastery early
					Incorporate student self-assessment including reflection on progress, achievements and challenges
					Create performance-based assessments
					Schedule regular student–teacher conferencing
					Incorporate student-developed criteria and standards
					Develop assessment based on application of skills to real problems
					Incorporate creativity as important criteria component
					Develop criteria for assessing critical thinking, evaluating and decision making
					Develop criteria for assessing decision-making skills
					Arrange for a real audience for student work
					Arrange for expert review of student work

193

194