Begin with the Program of Studies

With thoughtful planning, the program of studies has potential to appropriately challenge students who are gifted. However, the content, learning activities and/or instruction may need to be adjusted to meet a student’s ability level and learning needs. Look for specific learning outcomes that can create opportunities for students who are gifted to explore a concept or skill in greater depth and/or breadth.

Use Differentiated Instruction

Differentiated learning for students who are gifted means enhanced opportunities for thinking and learning, not just for doing more work. Differentiating instruction involves thoughtfully modifying the following elements:

- **content**
- **process**
- **products**
- **environment**
- **assessment**.

Although these elements are interrelated and influence one another, it is helpful to consider them separately.

**Content**

The content is what students are studying and are expected to learn. Students who demonstrate that they already know some content or can learn the content in much less time than their classmates, will benefit from content differentiation. Differentiating content for students who are gifted means that topics are explored in greater depth or breadth. For example, this could happen by using more advanced texts and resource materials. Differentiated content can be part of an individualized program planning (IPP) goal or can be identified as an accommodation.

There are a number of ways to differentiate content for students who are gifted, including making it more:

- abstract
- complex
- interrelated
- constrained (Harvey 2000, pp. 70–71).
Making content more abstract
Abstract content focuses less on specific, factual information and more on concepts and generalizations. Building in 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 mathematics could quickly move beyond manipulatives into identifying patterns and relationships. 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.

Making content more interrelated
Students who are gifted often spot the potential for applying ideas or methods from one field of study to another. Teachers can build on this ability by looking for potential connections from one subject to the next, and challenging students to use knowledge, process 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 can also be explored across space and/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 the curriculum. For example, a basic assignment to write a poem about traffic during rush hour could be channelled into a more constrained assignment of writing the poem only about the traffic sounds during rush hour.
Process

The process is how students make sense of concepts, generalizations and learning outcomes. It is how the teacher adapts the instructional strategy and what type of learning strategies the students use. Differentiated process focuses on such things as higher-order thinking skills, open-ended and problem-solving tasks, and learning at more complex levels. Process can be differentiated in a variety of ways, including creating opportunities for choice, collaboration and meaningful research. Students benefit from opportunities to make choices, set goals, engage in self-reflection and participate in self-assessment. Many students who are gifted will benefit from processes that develop effective study, and organizational and interpersonal skills. Flexible pacing, questioning techniques, anomalies and paradoxes, tiered assignments, and independent projects are all effective strategies for differentiating process.

Flexible pacing

This strategy allows students to move through the graded curriculum at a different rate. Flexible pacing can take a variety of forms. Some examples include:

- allowing students to complete some outcomes more quickly and to spend additional time on more challenging 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 pretesting
- compacting or streamlining the grade-level program of studies to eliminate repetition of previously learned materials.

The goal of all of these flexible pacing strategies is to provide opportunities for students to spend more time on outcomes and activities that will enrich their learning. When considering options for flexible pacing, a gradual process may be most effective. For example, teachers could start by accelerating students through small chunks of curriculum and then by moving them onto larger chunks after a number of successful experiences.

Questioning techniques

Questions that draw on advanced levels of information require leaps of understanding and challenge students’ 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 can also peak 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, to become immersed in the principles and to build a clearer understanding of a particular aspect of a field of study (Harvey 2000, p. 70).

Tiered assignments
Tiered assignments are parallel tasks that have varied levels of complexity, depth, abstractness and support. Students work on different levels of activities, all focused on the same essential concept or learning 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 and should 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.

<table>
<thead>
<tr>
<th>Tier 1</th>
<th>Tier 2</th>
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</thead>
<tbody>
<tr>
<td>• Describe an ant community in pictures or words.</td>
<td>• Describe an ant community using at least three sentences with at least three describing words in each sentence.</td>
</tr>
<tr>
<td>or</td>
<td>• Make a PowerPoint explaining how what you learned about ant communities helps you to understand living and working together in a human community.</td>
</tr>
<tr>
<td>• Use a Venn diagram to compare an ant community to your community.</td>
<td>or</td>
</tr>
</tbody>
</table>

Independent projects
Independent projects let students identify issues or topics of interest, plan an investigation and synthesize the findings. Projects can offer enrichment and meaningful engagement for many students who are gifted. It is important to recognize that students may need to be taught the skills to do this kind of independent work.
Products

The products of learning are the ways in which students explore and demonstrate their understanding of content and process. Differentiating products means providing opportunities for students to demonstrate their thinking and learning in different ways, including written, oral, manipulative, discussion, display, dramatization, artistic, graphic representation and service learning.

For example, conventional 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 PowerPoint slide show, videoconferencing or a performance, could be a better type of learning experience for these students.

Students who are gifted often need to produce, what Dr. Joseph Renzulli calls, “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.

The main purpose for designing alternate products is to:

- broaden the range of students’ experiences
- expand students’ ways of learning and 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
- create opportunities for students to develop organization and time management skills.

Encourage higher-order thinking

Bloom’s taxonomy (Bloom 1956) provides a useful framework for designing learning activities that promote higher levels of thinking related to both process and product. Bloom proposes that at the most basic level 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 are gifted.
### Taxonomy of Thinking

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Trigger Words</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synthesis</strong></td>
<td>Reform individual parts to make a new whole.</td>
<td>Compose • Design • Invent • Create • Hypothesize • Construct • Forecast • Rearrange parts • Imagine</td>
<td>Lesson plan to teach other students • Song • Poem • Story • Advertisement • Invention • Other creative products</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Judge the value of something vis-à-vis criteria. Support judgement.</td>
<td>Judge • Evaluate • Give opinion • Give viewpoint • Prioritize • Recommend • Critique</td>
<td>Decision • Rating • Editorial • Debate • Critique • Defence • Verdict • Judgement</td>
</tr>
<tr>
<td><strong>Analysis</strong></td>
<td>Understand how parts relate to a whole. Understand structure and motive. Note fallacies.</td>
<td>Investigate • Classify • Categorize • Compare • Contrast • Solve</td>
<td>Survey • Questionnaire • Plan • Solution to problem or mystery • Report • Prospectus</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>Transfer knowledge learned in one situation to another.</td>
<td>Demonstrate • Use guides, maps, charts, etc. • Build • Cook</td>
<td>Recipe • Model • Artwork • Demonstration • Craft</td>
</tr>
<tr>
<td><strong>Comprehension</strong></td>
<td>Demonstrate basic understanding of concepts and curriculum. Translate into other words.</td>
<td>Restate in own words • Give examples • Explain • Summarize • Translate • Show symbols • Edit</td>
<td>Drawing • Diagram • Response to question • Revision • Translation</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td>Remember something previously learned.</td>
<td>Tell • Recite • List • Memorize • Remember • Define • Locate</td>
<td>Quiz or test • Skill work • Vocabulary • Facts</td>
</tr>
</tbody>
</table>

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**Environment**

The environment refers to the physical and social setting where learning takes place, as well as the conditions under which a student is working. 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 some students, an enriched learning environment can be provided within the regular classroom by replacing or extending the regular programs of study with activities that foster higher-level thinking skills and problem solving. This type of individualized programming can address learning needs without drawing undue attention to differences. Teachers may also choose instructional strategies and learning activities that challenge students who are gifted and 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.

**Assessment**

Differentiating assessment for students who are gifted can mean making these students more active partners in their own assessment process. Teachers can involve students in developing and/or using criteria or rubrics that will enable students to reflect on their own work and make adjustments throughout the learning process. Portfolios and other multidimensional strategies can also be used to differentiate the assessment process. The goal is to generate rich and dynamic data to inform programming decisions for individual students.
Instructional Considerations for Students Who Are Gifted continued

<table>
<thead>
<tr>
<th>Mathematics</th>
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<th>Science</th>
<th>Social Studies</th>
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**Content**

- Make activities more complex (e.g., comparative studies, more variables)
- Accelerate activities from concrete to abstract; move quickly
- Extend activities beyond the learning outcomes
- 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

Charts on pages 8 to 13 adapted with permission from the work of David Harvey, Elk Island Public Schools Regional Division No. 14 (Sherwood Park, Alberta, 2005).
### Instructional Considerations for Students Who Are Gifted

**Mathematics**
- Use pretesting to reduce or eliminate unnecessary learning activities
- Decrease the amount of review
- Decrease the amount of repetition
- Organize mini-tutorials
- Develop a learning contract
- Increase time span for assignments (to allow students to go deeper)
- 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
- 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)

**Language Arts**

**Science**

**Social Studies**

### Process

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### Process (continued)

- Increase the use of evidence of reasoning (e.g., supporting, opinions, debates)
- Make activities more open-ended (e.g., learning centres, tic-tac-toe menu, learning contracts)
- 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
### Instructional Considerations for Students Who Are Gifted

#### Mathematics
- 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 completions (e.g., focus on learning logs and self-reflection rather than on completed project)
- Create opportunities to reflect and record process

#### Language Arts

-

#### Science

-

#### Social Studies

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### Physical Environment

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- Create interest centres that are available throughout the school day
- Increase access to computer laboratory
- 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, labs)

### Social and Psychological Environment

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- Flexible grouping
- Partner and small group work
- Ability grouping for some tasks
- Interest grouping for some tasks
- 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
- Explore opportunities for leadership
### Instructional Considerations for Students Who Are Gifted

#### Assessment

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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
References


