Newfoundland and Labrador
Department of Education

# TEACHING STUDENTS WHO ARE

# GIFTED AND TALENTED

## A Handbook for Teachers

2013

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# Introduction

***…Society gains from the advancement of all abilities and from the highest development of all its members, whatever their strengths. That which nurtures and actualizes each individual nourishes us as a society.***

(Clark, 1997)

Our challenge as educators is to address the needs of each student. Every individual requires opportunities to learn, grow, and be challenged to strive for excellence. Students with exceptional gifts, talents and learning potential have needs that require specific attention. With careful nurturing and appropriate education, gifted and talented students have the potential to make a unique contribution to their communities and the world. When this does not happen, the price we and they pay is “lost academic growth, lost creative potential and sometimes lost enthusiasm for educational success and eventual professional achievements and substantial contributions to society” (Davis & Rimm, 2004).

There are some theorists who differentiate between the terms “gifted” and “talented” with regard to domain area of strength or degree of exceptionality. This document does not designate differences between these terms but uses the descriptor “gifted and talented” as is most commonly found in the associated body of literature.

Students who are gifted and talented demonstrate, or have the potential to demonstrate, exceptionally high capability with respect to an exceptional ability to learn, create or perform; and/or well above average cognitive ability globally or within a specific domain (academic or non academic).

Demonstrations of, or potential for, exceptionally high capability may be with respect to intellect, creativity, or the skills associated with specific disciplines. Students who are gifted and talented often demonstrate outstanding abilities in more than one area. They may demonstrate extraordinary intensity of focus in their particular areas of talent or interest. However, they should not be expected to have strengths in all areas of intellectual functioning. A student may be gifted and talented in one area but not in another. They may also have other accompanying exceptionalities. This is a departure from the more traditional view that a student who is gifted and talented is equally strong in all areas. The provincial definition of the exceptionality *Gifted and Talented* makes this very clear. To that end, a single cut off score on an ability measure may not tell the whole story or support a final decision. While lower ability students tend to be low in all areas of mental ability, it is not as likely that high ability students are uniformly high (Morelock and Feldman, 2003). The higher the ability, the more likely this is to be the case. Those individuals we consider to be most outstanding in a field such as Bach, Shakespeare or Einstein, are usually outstanding in a single area. It is very rare that an individual reaches the apex of several domains.

A variety of services will be required to meet the diverse needs of the gifted and talented learner. Since students who are gifted and talented form a heterogeneous population, their individual needs, experiences, aptitudes and interests vary. Programming for these students often requires a blend of opportunities available both in the school and in the community. The more extraordinary the abilities of the student, the more necessary it becomes to expand the options beyond the regular classroom.

Details of this programming should be reflected in the student's Individual Education Plan (IEP) with its attachments.

# Conceptions/ Misconceptions of Giftedness

***"Myths are created and continue to exist because they explain phenomena that are not easily understood or appear to validate ambiguous ideas with ambiguous evidence"***

*(*Kaplan*,* 2009*)*

***"Aristotle maintained that women have fewer teeth than men; although he was twice married, it never occurred to him to verify this statement by examining his wives' mouths."***

Bertrand Russell, The Impact of Science on Society

Within the community and the education system there are many misconceptions about students who are gifted and talented. Some of the more common are discussed here.

1. **Gifted and talented students are high achievers**.
   Many students who are gifted and talented are high achievers. However, there are many students who have very high potential but who are underachieving. The reasons for this are complex and may result from causes both inside and outside of school. However, the school has significant power in trying to address these situations. Conversely, not all high achieving students are gifted and talented. Many students are making full use of their abilities and work ethic to strive for fine results. Some of these students may be reaching their full potential. While this is commendable and to be encouraged, this is not an indication that the student is necessarily gifted and talented.

2. **All children/people are gifted and talented.**
   All students are unique individuals with areas of strengths. Each has a valuable contribution to make and deserves an education that helps him or her reach his or her potential, but not all students are gifted and talented.

3. **Gifted students will do fine with or without special programming.**
   Some very able students will succeed despite less than challenging programming. Some students receive their challenges and enrichment through activities provided outside of school. However, some students who are not challenged will not learn work habits and motivation, and may not achieve according to their abilities. We would think it unreasonable to demand that a star athlete train for the Olympics without a coach. Similarly, we cannot expect the "raw talent" of our students who are gifted and talented to develop to their potential without guidance from well trained, challenging teachers. If these students do not experience challenge and rigour, they never learn to equate achievement with effort and it makes it very difficult to develop a growth mindset. This may also lead to self esteem issues and underachievement. They may appear to do fine on their own, but without proper challenge, some students who are gifted and talented:

   - become bored and unruly
   - learn to slow down to avoid "more of the same"
   - underachieve
   - act out and become disruptive
   - become non-compliant
   - learn to blend in with their peers
   - drop out – either physically or mentally

   When and if work finally does present a challenge, it also presents a threat. Students who are gifted and talented may lack learning skills and may refuse to

tackle something at which they cannot immediately be perfect. This may compromise the development of some of our most able students – a loss for the child and for society.

Please refer to the section on underachievement and the article in Appendix C: *What A Child Doesn't Learn* by Tracy Inman.

**4. Gifted and talented students come from advantaged homes.**

Some gifted and talented students do come from advantaged homes and the education system has often been able to identify and serve many of these children. However, many gifted and talented students come from less advantaged backgrounds and may not be as readily identified. Being familiar with characteristics of giftedness- even those such as behaviours which may present in a more negative light - may help give better indication as to what is going on in these cases and how we might help develop their strengths.

5. **Co-operative learning or other forms of group work are an effective way to meet the needs of gifted and talented students.**

It is important for all students to learn to work with others of differing abilities. However, the research regarding gifted and talented students in traditionally structured cooperative learning groups is less positive than for many other segments of the student population. Students who are gifted and talented should sometimes be afforded the opportunity to form a group together in order to delve deeper into a topic or to challenge each other to higher level discussion and thinking. There are many grouping options which may be better suited to addressing the needs of students who are gifted and talented.

**6. Gifted and talented students have trouble getting along with peers.**

Very often students who are gifted and talented get along well with others and are leaders both in and out of school. Occasionally, a student who is "profoundly gifted" may not share interests typical of others of his or her own age and finds it difficult to relate to age peers. However, even within this population the statement is not always true.

7. **Gifted education is elitist.**

We aim to provide educational opportunities that will enable each student to develop fully according to his or her potential. Meeting a child's need by adding more challenge is no more elitist than giving another student large print handouts or extra time for task completion if these are required. We must be responsive to the student's needs. Fair is not always equal. Equal is not always fair.

Some of these questions were drawn from New Brunswick Department of Education (2007).

## Elements of a Program for a Student who is Gifted and Talented

Regardless of how services are delivered, there are some common elements which characterize an individualized program appropriate for a student who is gifted and talented:

- It is different in pace, scope, and complexity, in keeping with the nature and extent of the exceptionality.
- It provides opportunities for students to interact socially and academically with both age peers and peers of similar abilities (intellectual peers).
- It incorporates adaptations and/or extensions to content, process, product, pacing and learning environment.
- It goes beyond the walls of a school and into the larger community.

Supplemental services for a gifted and talented student could include (but not be limited to) some of the following elements:

- independent guided study
- specialist teachers
- flexible groupings which provide opportunities for learning with intellectual peers
- mentorships
- consultative services to assist teachers in expanding experiences in the regular classroom
- accelerating/telescoping/compacting some or all of the student's program
- opportunities to take enriched courses such as modified courses with 8 designation (such as World Geography 3282 which indicates World Geography with outcomes added or extended upwards), Advanced Placement, International Baccalaureate, or honours courses

It is important to recognize the individual characteristics of school districts and their communities in designing services for students who are gifted and talented. For example, students who are gifted and talented may benefit from the use of information technology which will increasingly facilitate access to information sources and program and instructional opportunities not readily physically available in all communities.

# Identification

***What makes a child gifted and talented may not always be good grades in school, but a different way of looking at the world and learning.***

***-- Chuck Grassley***

***Not everything that can be counted counts,***
***and not everything that counts can be counted.***

***-- Albert Einstein***

## *PROVINCIAL DEFINITION OF GIFTED AND TALENTED*

Students who are gifted and talented demonstrate, or have the potential to demonstrate, exceptionally high capability with respect to:

- an exceptional ability to learn, create or perform;
- well above average cognitive ability globally or within a specific domain (academic or non academic)

Giftedness may be evident in, but not limited to, the following domains:

- Linguistic – Students gifted in this area can tell rich stories or report with accuracy either orally or in written form on experiences they have had. They have an understanding of the function and rules of language and a facility with second language acquisition.

- Logical-mathematical – Students possess extraordinary skills in logic, abstractions, reasoning, scientific thinking and investigation, and the ability to perform complex calculations.

- Spatial – Students demonstrate spatial judgment and an ability to visualize. In children and youth, a facility with puzzles or other spatial problem solving activities are good indications, as is being good at designing objects.

- Musical – Students display greater sensitivity to sounds, rhythms, tones, and music.

- Bodily-kinesthetic – Students with this ability can be seen moving expressively in response to different musical and verbal cues or demonstrating exceptional sporting ability in organized games or in the playground. They may enjoy acting or performing.

- Interpersonal –These students are skilled in interaction with others. They are leaders and organizers in the classroom, knowing how and where other children spend their time. They are sensitive to the needs and feelings of others.

- Intrapersonal –These students have introspective capacities; a keen knowledge and understanding of their own ability as well as a range of emotions. They can be very single-minded about a topic on which they are working.

- Naturalistic – Students in this area are sensitive to nature and their place in it. They have the ability to nurture and grow things, recognize and classify, and interact easily with animals. They may also be able to discern fluctuations in their natural surroundings.

- Technological - Like any student with a gift, technologically gifted students need to have their gifts recognized and nurtured. One area of expertise is computer programming and another is expertise as a technology consumer using hardware and software. They have a high interest in technology and spend much of their free time developing their technology skills.

Gifted and talented behaviours may be dynamic. They may only become evident in response to certain stimuli or opportunities. Gifts and talents may also coexist with other exceptionalities.

### *Services*

Students may be recognized as gifted or talented following a process appropriate to the domain in which the exceptionality is demonstrated. These students may require a range of school-based services depending on level of their strengths, needs and functioning. Many differentiation strategies are appropriate for these learners. Curriculum compacting, tiered assignments and independent study are particularly suited for very able learners. Subject acceleration, grade skipping or advanced programming are other possibilities.

Programming decisions are made by the student's program planning team and may include accommodations, modified prescribed courses (to extend the curriculum and add challenge) or curricular alternate courses (above the grade level offerings of the prescribed curriculum). Alternate programs may also be applicable if there are social - emotional or other matters which need to be addressed. These options would not negatively impact graduation or post-secondary options for a student who is gifted and talented.

## Identification

According to the Newfoundland and Labrador Department of Education, a student may be identified as gifted and talented either globally or in a particular domain. For this reason, an overall IQ score is not the only criterion for identification. If a student is in the very superior range on an overall IQ score, there is little doubt that he or she will exhibit, or has the potential for, gifted behaviours. If a student is gifted in a particular domain, an overall score may not reflect this strength area. The criteria for individual domains will vary according to the domain. Please consult *The Role of Standardized Testing in Identification* on page 25 for a further discussion of IQ scores.

## *Toward an Inclusive Identification Process*

No single criterion should be established for access to, or exclusion from, services for students who are gifted and talented. Assessment and identification must use multiple criteria and information from a variety of sources. Examples of these include teacher observation including checklists, inventories, anecdotal records, records of achievement and accomplishments, portfolios, work samples, commendations and awards, nominations by teachers, parents and peers, interviews with parents and/or student (as appropriate), formal assessment of cognitive ability, achievement, aptitude and creativity. Opinions of practising professionals are often required especially for performance-based areas such as art, music, drama, and bodily-kinesthetic domains.

There are certain general characteristics which are common to gifted and talented learners. These indicators are included here to give a general picture of the students we are considering. No student is expected to exhibit all of these and characteristics may be evident only at a particular time or in response to certain stimuli. Conversely, the display of a number of these behaviours may indicate that further exploration of the student's abilities and potential are warranted.

## *General Characteristics*

Characteristics associated with giftedness and talent become apparent early in life. Each child who is gifted and talented has an individual profile of abilities, needs, intelligences and learning styles. However, as a group, children who are gifted and talented tend to:

- reason well *(good thinker)*
- learn rapidly
- have an extensive vocabulary
- have an excellent memory
- have a long attention span *(if interested)*
- be sensitive *(feelings easily hurt)*
- show compassion
- demonstrate perfectionism
- be morally sensitive
- have strong curiosity
- persevere in their interests
- have a high degree of energy
- seem "out of synch" with age-mates or prefer the company of adults
- have a wide range of interests
- have a great sense of humour

- be an early or avid reader *(if too young to read, loves being read to)*
- show judgment mature for age *at times*
- be a keen observer
- have a vivid imagination
- be highly creative
- question authority
- have facility with numbers
- excel at jigsaw puzzles
- remember with little practice
- work quickly
- see abstract relationships, patterns and/or alternative views
- generate explanations, theories, ideas and solutions
- reveal unusual or unique responses
- be highly self-directed and independent
- seem intense in expression or feelings of justice and/or empathy
- demonstrate particular physical aptitudes

Some of these general characteristics appear in all children, but are more prevalent in children who are gifted and talented. For instance, many children demonstrate sensitivity and/or perfectionism, but in children who are gifted and talented, these tendencies are more predominant and appear at a more extreme level.

Teachers need to be aware of characteristics of students who may be gifted and talented in order to be better prepared to identify the root of some of the behaviours seen in the classroom. When asked to nominate students for advanced or gifted programming, many teachers seem to identify the “teacher pleasers”. These are the children who get good grades, whose hands go up to answer questions, who always have their homework complete, or who are eager to contribute and work diligently on any task presented to them. These are generally high achieving students but they may not be the most able.

Some of the characteristics of gifted and talented learners are not perceived as positively by teachers. Some of these highly capable students are:

- easily bored by routine tasks
- perfectionistic
- non compliant
- inattentive
- underachieving
- extremely emotionally sensitive
- dually exceptional

If the material presented to the student is not in his or her zone of proximal development, he or she may tune out. A teacher may never see the ability of a student if he or she is not prompted to display it. Imagine for a moment that you were asked to sit through the same meeting day after day. It would not take an adult long to start making a shopping list or write a letter or somehow disengage from the proceedings. A child who is gifted and talented may do the same thing only he or she is then labelled as inattentive or non cooperative. Underachievement or misbehaviour may not be far behind if nothing is done to challenge this student.

Janice Szabos and Bertie Kingore have combined their work to create this 3 column list differentiating three types of learners.

### *High Achiever, Gifted Learner, Creative Thinker*

| A High Achiever... | A Gifted Learner... | A Creative Thinker... |
|---|---|---|
| Remembers the answers. | Poses unforeseen questions. | Sees exceptions. |
| Is interested. | Is curious. | Wonders. |
| Is attentive. | Is selectively mentally engaged. | Daydreams; may seem off task. |
| Generates advanced ideas. | Generates complex, abstract ideas. | Overflows with ideas, many of which will never be developed. |
| Works hard to achieve. | Knows without working hard. | Plays with ideas and concepts. |
| Answer the questions in detail. | Ponders with depth and multiple perspectives. | Injects new possibilities. |
| Performs at the top of the group. | Is beyond the group. | Is in own group. |
| Responds with interest and opinions. | Exhibits feelings and opinions from multiple perspectives. | Shares bizarre, sometimes conflicting opinions. |
| Learns with ease. | Already knows. | Questions: What if... |
| Needs 6 to 8 repetitions to master. | Needs 1 to 3 repetitions to master. | Questions the need for mastery. |
| Comprehends at a high level. | Comprehends in-depth, complex ideas. | Overflows with ideas--many of which will never be developed. |
| Enjoys the company of age peers. | Prefers the company of intellectual peers. | Prefers the company of creative peers but often works alone. |
| Understands complex, abstract humour. | Creates complex, abstract humour. | Relishes wild, off-the-wall humour. |

| A High Achiever... | A Gifted Learner... | A Creative Thinker... |
|---|---|---|
| Grasps the meaning. | Infers and connects concepts. | Makes mental leaps: Aha! |
| Completes assignments on time. | Initiates projects and extensions of assignments. | Initiates more projects than will ever be completed. |
| Is receptive. | Is intense. | Is independent and unconventional. |
| Is accurate and complete. | Is original and continually developing. | Is original and continually developing. |
| Enjoys school often. | Enjoys self-directed learning. | Enjoys creating. |
| Absorbs information. | Manipulates information. | Improvises. |
| Is a technician with expertise in a field. | Is an expert who abstracts beyond the field. | Is an inventor and idea generator. |
| Memorizes well. | Guesses and infers well. | Creates and brainstorms well. |
| Is highly alert and observant. | Anticipates and relates observations. | Is intuitive. |
| Is pleased with own learning. | Is self-critical. | Is never finished with possibilities. |
| Gets A s. | May not be motivated by grades. | May not be motivated by grades. |
| Is able. | Is intellectual. | Is idiosyncratic. |

(Kingore, 2004)

# Definitions of Giftedness

## Historical Overview

There is no universally accepted definition of giftedness. The term was first used by Francis Galton in 1869. He referred to adults who demonstrated exceptional talent in a particular area as gifted. Galton considered gifted children to be those who showed the potential to become gifted adults. Lewis Terman expanded Galton's definition of gifted children to include those with an IQ of 140 or more. In the early 1900s, Terman began a long-term study which found that IQ alone could not predict success in adulthood. Leta Hollingsworth was another contributor in the field of giftedness. She believed that giftedness was inherited and that nurturing home and school environments were crucial factors in its development. These early uses of the term *gifted* have led to different uses of the word and different ways of defining giftedness even today.

Current definitions of *giftedness* that consider adult achievement add factors such as task commitment or motivation. Definitions that consider giftedness as potential to be developed make a distinction between what a child is capable of achieving and what the child will achieve. The fact that a child has exceptional potential is part of what makes him or her gifted. The child's environment determines whether potential leads to achievement, so people who define gifted this way stress the importance of providing an appropriate environment.

### Asynchronous Development

Linda Silverman added a new dimension to definitions of *giftedness* when she included the uneven development of gifted children, which she called asynchronous development. Definitions of giftedness that include asynchronous development consider not only IQ and talent, but also emotional traits of gifted children, such as heightened sensitivity.

In 1991 a group of gifted and talented professionals and parents known as the Columbus Group defined giftedness as "asynchrony." Their definition explains why a gifted child might be years ahead of peers with certain cognitive skills while more typical or even immature in other areas of development.

### Columbus Group Definition

> Giftedness is 'asynchronous development' in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm. This asynchrony increases with higher intellectual capacity. The uniqueness of the gifted renders them

> particularly vulnerable and requires modifications in parenting, teaching and counselling in order for them to develop optimally.
>
> (Columbus Group, 1991 as quoted in Duke University, 2007)

Stephanie Tolan puts this theory into concrete examples:

> A young gifted child may appear to be many ages at once. He may be eight (his chronological age) when riding a bicycle, twelve when playing chess, fifteen when studying algebra, ten when collecting fossils and two when asked to share his chocolate chip cookie with his sister. This variability in behaviour and perception is difficult for parents and schools to handle and difficult for the child as well. It is hard to "fit in" consistently when so much of the child's environment is structured by chronological age, an age which may be for the gifted child the least relevant aspect of his development.
>
> (Tolan, n.d.)

## Overexcitabilities

Kazimierz Dabrowski was a Polish psychiatrist and psychologist who worked with creative adults and adolescents. In his theory of Positive Disintegration he listed five overexcitabilities as part of advanced development. These overexcitabilities are in the areas of physical, sensual, creative, intellectual and emotional. These overexcitabilities are an abundance of energy that can result in creative endeavours and advanced emotional and ethical development in adulthood. Overexcitabilities are a genetic predisposition of the nervous system to respond more intensely to stimuli. The overexcitabilities “feed, enrich, empower and amplify talent.” (Tolan, 1999). This causes those with strong overexcitabilities to have experiences which are more intense than usual.

These overexcitabilities describe the intensity of some individuals who are gifted and talented as well as some of the ways in which they sometimes look and behave unusually. Not all gifted people have all excitabilities; however, highly gifted people tend to have all five.

To summarize the five areas of overexcitabilities:

### Psychomotor

This is often thought to mean that the person needs lots of movement and athletic activity, but can also refer to the issue of having trouble smoothing

out the mind's activities for sleeping. Lots of physical energy and movement, fast talking, lots of gestures, sometimes nervous tics.

**Sensual**

Here's the "cut the label out of the shirt" demand, the child who limps as if with a broken leg when a sock seam is twisted. Also a love for sensory things -- textures, smells, tastes etc. or a powerful reaction to negative sensory input (bad smells, loud sounds, etc.) The kids tend to be sensitive to bright lights (squinting in all the family photographs, etc.), harsh sounds. A baby who cries when the wind blows in his face, for instance; a toddler who cries at the feel of grass on bare legs and feet. Another important aspect of this is aesthetic awareness -- the child who is awed to breathlessness at the sight of a beautiful sunset or cries hearing Mozart, etc.

**Imaginational**

These are the dreamers, poets, "space cadets" who are strong visual thinkers, use lots of metaphorical speech. They day dream, remember their dreams at night and often react strongly to them, believe in magic (take a long time to "grow out of" Santa, the tooth fairy, elves and fairies, etc.).

**Intellectual**

Here's the usual definition of giftedness. Kids with a strong "logical imperative," who love brain teasers and puzzles, enjoy following a line of complex reasoning, figuring things out. A love of things academic, new information, cognitive games, etc.

**Emotional**

This includes being "happier when happy, sadder when sad, angrier when angry," etc. Intensity of emotion. But also a very broad range of emotions. Also a need for deep connections with other people or animals. Unable to find close and deep friends (Damon and Pythias variety) they invent imaginary friends, make do with pets or stuffed animals, etc. Empathy and compassion. A child who needs a committed relationship will think herself "betrayed" by a child who plays with one child today and another tomorrow and refers to both as "friends." This is also the OE that makes the kids

susceptible to depression.

Dabrowski believed emotional OE to be central -- the energy center from which the whole constellation of OEs is generated.

Highly gifted people tend to have all 5 of these, but different people lead with different OEs. The engineer types lead with Intellectual, the poets with Emotional and Imaginational, etc. But variations in the levels of the individual OEs explain a great deal about the temperamental differences we see!

(Tolan, 1999)

**Pre-referral strategies**

One of the exceptionalities recognized by the Department of Education is Gifted and Talented. As such, the procedures and continuum of services available for students with exceptionalities apply. The process of pre-referral will involve a period of problem solving in order to try to address the needs of the student being considered. In many cases, the need will actually be for additional challenge rather than addressing any problems the student may encounter with the prescribed curriculum. Other indicators may include non curricular things such as not being engaged, being bored, or even undesirable behaviours which may relate to a lack of challenge.

Strategies which may be tried during the pre-referral process may include such things as curriculum compacting where preassessment identifies outcomes previously mastered and which can therefore be omitted from the student's assignments, or where new material may be covered at a pace more rapid than that of many other members of the class. Independent study may be another strategy tried at this stage in order to allow a student to explore a topic of interest to greater depth. This may work well in conjunction with curriculum compacting where the material compacted frees time for independent or in-depth work. Grouping strategies may be useful during pre-referral. This may include the option of working independently or allowing like-ability grouping for a particular topic where several strong students may work together in order to deepen the experience under consideration by the level of thinking, discussion, or product which results. Differentiation of materials is another strategy which may be considered. When students are using reference materials, students who are highly able may be able to be directed to more complex sources. This could be a higher level text or novel or a different website which treats the topic under consideration in greater depth or detail. Differentiation of product is another option. This could be particularly useful in tiered instruction when more able students may be asked to complete their tasks with more independence than other class members or be given differing criteria for their product.

Should identification as gifted and talented result, the program planning team may deem a particular approach to be a necessity in a student's programming. In such a case, a strategy such as curriculum compacting or independent study may be subsequently reflected as accommodations on the student's Record of Accommodations form. For further details regarding these strategies, refer to Instructional/Differentiation strategies beginning on page 99. For details regarding accommodations, please consult the *Service Delivery Model for Students with Exceptionalities* available at www. cdli.ca/sdm or http://www.gov.nl.ca/edu/k12/studentsupportservices/publications/sdm_document.pdf

## The Role of Standardized Testing in Identification

Assessments of cognitive abilities using standardized instruments such as the Wechsler Intelligence Scale for Children-IV (WISC-IV) have historically played a major role in the identification of students as gifted and talented. However, the movement in the field has been toward a more broad consideration of multiple factors in making such a determination rather than a black and white decision based on a cut off score on an IQ test. There is little doubt that a student who has an overall IQ score in the very superior range does indeed have special gifts and talents. However, using a cut off level on a single score will miss students who have extremely high abilities in a single area or whose gift and/or talent may be in a less "academic" area. (Please see **Notes to Assessors** in Appendix B for further information about the use of standardized cognitive abilities tests with students who may be gifted and talented.)

Areas such as visual art, drama, music and athletics require a 'threshold" intellectual ability level. Renzulli (1986) cites the work of many researchers who suggest that "that once the IQ is 120 or higher other variables become increasingly important." (p. 9) These variables would include such characteristics as interest, task commitment and physical attributes. Clearly, an identification process which considers merely one score on a single cognitive ability test will not give all of the requisite information. Performance areas such as these must be evaluated using the same criteria as applied to the practicing professional in that field. For example, an actor is evaluated by a number of theatre critics and public response to his or her presentation. An artist, musician, or athlete is similarly evaluated by peers and/or practicing professionals. This should also be the case with students for whom identification as gifted and talented in a performance realm is being considered. A student who has been recognized in a number of national art contests or a dancer who is accepted into the national ballet school has been recognized as exceptional by the professionals in the field. This would be just as valid an identification of exceptional ability in that field as any score on a cognitive ability test.

## Related Human Resources

Just as schools may not be solely responsible for identification of students who are gifted and talented, they are not exclusively responsible for programming for that student in his or her area. In many fields there will be shared roles for home, school and community. No one would demand that a school be responsible for providing national competitive levels for a student who has been identified as a gifted and talented hockey player. In this case the school may be involved by adjusting cardio conditioning levels or procedures in the physical education program to better match the athlete's needs. There may be instances where curriculum compacting or independent study may be useful teaching and learning strategies for a student who is sometimes out of class in order to attend specialized training or activities.

The education of gifted and talented children follows the philosophy of inclusive education: all teachers have responsibility for all learners. That is not to say that they have sole responsibility. Schools are partners in the education of these students. They can often extend or facilitate learning in a strength area. A gifted and talented student actor may use compacted time in language arts to explore Pulitzer Prize winning plays. A school may help facilitate a mentorship for a student who is a gifted and talented sculptor and arrange for different complexities or levels of processes and products in his or her art class. A gifted musician and talented may be provided opportunities to perform at school-related functions and supported with teaching and learning strategies which allow more flexibility to allow for travel out of province for specialized instruction. Depending on their age and interests, students who show leadership strengths may be encouraged to become involved in many aspects of school life from student councils to special projects. Students who are gifted and talented in more academic areas such as math, science, or writing may indeed require extensions to the corresponding curriculum. Many of these cases can be addressed through the use of differentiated resource materials, curriculum compacting, tiered instruction, and independent study. These would be part of the role of the classroom or subject teacher, perhaps in consultation with a curriculum expert if the subject is in an areas outside the comfort level of the teacher.

The school can be a partner is helping students find and explore their areas of strengths and passions. They may be able to offer opportunities for in-depth or advanced studies in some areas or may be able to help connect students to community and/or online resources such as mentors, competitions, web events, advanced information resources, or facilitate instances of independent study or dual enrollment. While Instructional Resource Teachers or Guidance Counsellors may play roles such as facilitating an independent study or offering social-emotional programs regarding perfectionism, self-esteem, etc., the student who exhibits gifts in a particular curricular area would probably be in closer contact with a teacher who has a specialty or interest in that area. For

example, a student who is interested in advanced chemistry would be drawn toward a chemistry teacher who would have the knowledge of the area required to direct him or her to topics, contacts or sources of information. In many cases, the teacher is quite receptive to finding a student with a particular interest in his or her area, too.

There will also be students whose abilities, knowledge and pace of learning will require further extension and perhaps even modification of the prescribed curriculum or alternate courses. Since Gifted and Talented is an exceptionality recognized by the Newfoundland and Labrador Department of Education, these cases would follow the guidelines and decision-making procedures outlined in the *Service Delivery Model for Students with Exceptionalities*. This model advocates determining the extent of a student's need and has the school Service Delivery Team discuss programming required as well as what human resources might be applied to it. As the model outlines, accommodations and modifications are largely the role of the classroom subject teacher. However, others may be involved as appropriate. If a student needs to learn to use a piece of software in order to deal with data from an independent investigation, it might be the learning resource teacher or the technology teacher who can take the lead role in that. If a student needs someone to monitor his or her independent study in a particular area, there may be a role for a teacher with expertise in that area to periodically conference with the student. If a student undertakes the independent study of a high school course (following the guidelines of High School Certification) the teacher who is responsible for that course during the school timetable might be willing to periodically let that student join the class to write particular assessments or participate in assessment situations. There may be a role for an IRT or a guidance counsellor to facilitate an online course for an advanced student taking an above level course through distance education. This is the process of decision making which is to employed when designing and implementing programming for any student with an exceptionality, including those who are gifted and talented.

Strengths of students are recognized in many areas, however, changes in programming would be most likely in the areas addressed by the provincial curriculum. It would be possible to see extensions, modifications, and even alternate courses in areas such as math, music, language, science, art, or social studies. It would be unlikely that a student would have a course in leadership or technology. Opportunities to develop these skills would be provided to the student as options in curriculum products or processes or in co- or extra-curricular situations.

## *Predictive Behaviours and Programming Suggestions*

Although standardized cognitive ability testing may play an informative role in the identification of students who are gifted and talented, each area of the provincial definition (see page 14 or www.gov.nl.ca/edu/k12/studentsupportservices/gifted.html#Definition) has sets of predictive behaviours which may help any program planning team dealing with questions of identification and programming. The sections of the provincial definition have been broken apart by subject area and each treated separately with accompanying suggestions for teachers regarding possible ways to address the needs of students who have strengths in these particular areas. It is acknowledged that individual students will not exhibit all of the characteristics in any particular area and that different suggestions for teaching and learning may appeal or apply to different students. This is a resource to suggest where teachers might begin.

Many of these suggestions which follow may also be useful in extending the learning of students with particular strengths or interests in the specific curricular area but who have not been identified as Gifted and Talented. Many strategies may also be appropriately used during the pre-referral stage as part of the investigation perhaps leading to a formal identification with an exceptionality.

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED STUDENTS IN ATHLETICS

How do I recognize if a student in my class is gifted in athletics and how can I support his or her need?

### Identification

Kinesthetic learners demonstrate high-level ability within the contexts of physical education and/or tactile learning or have the potential to do so. They excel in one or more of the following areas:

- **Physical**: physiological pre-disposition to excel in a particular sport or activity; competence and fitness in performing physical activities, strong awareness of body in space
- **Social:** excel in leadership, teamwork, assertiveness and similar concepts; desire to have others share in their enthusiasm and passion; display confidence in ability
- **Personal:** enthusiastic and passionate; capacity for self-regulation; self-discipline; time management skills; self-belief; goal oriented; need for challenge; highly motivated to achieve personal best; internal drive to excel; resilient; persistent; and commitment to mastery of skills
- **Cognitive:** shown in planning (including motor); knowledge and understanding of physical/sports concepts; decision making under pressure
- **Creative:** learners respond to challenges with fluency, originality and sensitivity

Adapted from the Leeds University Model of Talent Development for Youth Sport Trust (n.d.).

Students gifted and talented in the area of athletics display many of the following characteristics:

- agility, balance, coordination and speed that is better developed than age peers. Speed, in particular, appears to be a quality that is more innate, difficult to "teach" and often separates the "exceptional" athletes
- ability to combine their movements fluently, precisely, and accurately in a range of contexts and activities
- an unusual interest in learning skills, rules of the sport(s) or activity, and mastering skills

- a high level of commitment to mastery of physical skills
- a combination of physical skill and cognitive ability to follow the sport/game/activity and correctly apply their skills at the right time
- an interest in teaching others the skill or concept and the ability to break down the skill to make it easier to learn
- exceptional leadership qualities within the context of the sport or activity. G/T students actively engage others and take pride in not only performing well themselves, but assisting peers and teammates in playing/doing well.
- exceptional in one or more sports
- enjoyment in using tools or lessons which involve active/practical participation
- outstanding memory regarding how to do things after they've done them once (motor memory)
- good motor coordination

**Support**

Meeting the diverse needs of gifted athletes can be achieved using a variety of strategies including:

- physical exercise
- aerobic routines
- SMART Board or similar interactive display hardware
- interactive sports and games
- field trips with active involvement
- opportunities to teach physical skills to others
- incorporated multimedia resources (computer, video camera, PowerPoint presentations, photography camera, etc.) into programs (teacher presentations and student presentations)

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN THE DRAMATIC ARTS

How do I recognize if a student in my class is gifted in dramatic arts and how can I support his or her need?

## Identification

Giftedness in the dramatic arts encompasses a variety of intelligences. Students who are gifted in dance may also exhibit many of these physical attributes.

There has not been a great body of research done on the identification of children who show talent in dramatic arts. Much of the research discusses predictive behaviours that are common to all areas of the arts. The following may indicate exceptional dramatic abilities or strength in other creative arts:

- displays interest and motivation in the performing arts
- demonstrates elaboration and flexibility of thought and movement
- exhibits uninhibited intellect
- displays imagination – creates games with a “cast of characters”
- brings dramatic situations to a climax with a well-timed ending when telling a story
- shows ability to communicate verbally and/or through bodily-kinesthetic means
- demonstrates an excellent memory
- mimics facial and body expressions of others, even speech patterns and intonation; communicates feelings by means of facial expressions, gestures and bodily movements
- exhibits a sense of humour
- shows mutual respect (empathy) for the feelings and experiences of others; recognizing that everyone is important in the creative process
- shows risk taking and presence (appearing bright, confident, and theatrical in front of other)

(Fishell, Johnson & Chrysantou, 2003; Alberta Learning, 2000)

In reading biographies of actors, it is often noted that they were either the class clown (Jim Carrey for example) or painfully shy, only able to overcome shyness when given the opportunity to “become another character”.

Teachers and others looking for predictive behaviours in young children may often overlook the shy child unless he/she is given the opportunity to “become another character”. A teacher may also not appreciate the talent of the “class clown” when learning is constantly being disrupted.

### Inventories and Tests

Inventories and tests are useful in identifying students who are gifted. In many cases, the type or combinations of types of inventories used are specific to the curriculum and to the task at hand. In some cases, inventories will apply for future potential, and in other cases, for immediate recognition. Teachers should use the test or inventory best suited to their own situations. They include:

- checklists
- interviews
- auditions (Practising professionals will recognize this talent, so do not hesitate to invite someone)
- role playing and/or improvisation
- activities involving movement
- choral speech
- story telling

### Support

Enrichment opportunities may take many forms, including but not limited to:

- encouraging students to attend performances at local professional theatres, local dance studios or visiting productions, and to read as many reviews as possible
- auditioning for all productions available (school productions, community productions, and annual drama festivals provide many opportunities)
- studying various theatre (dance) genres, as well as social studies and literature
- recruiting professionals to provide workshops on specific aspects (the Newfoundland Labrador Arts Council is a good first contact www.nlac.nf.ca/index.htm )

- inviting professionals to discuss and critique student productions
- placing promising students into mentoring programs which put students directly in touch with professional actors, playwrights, dancers, etc.
- offering creative drama where students interpret events, stories or statements in their own actions and dialogue. Creative drama encompasses imagination and creativity (students dress up and pretend to be someone else), pantomime, improvisation, and children's theatre
- investigating online sources to enrich the understanding of theatre arts and dance such as www.stomponline.com
- offering opportunities for drama as a method to illustrate a student's learning or understanding; include dramatic means as a product choice

## IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN LANGUAGE ARTS (English, Français, Core French)

How do I recognize if a student in my class is gifted in language arts and how can I support his/her need in my classroom?

### Identification

Students who are gifted in the language areas of reading, writing, and communication skills will demonstrate competencies in some or all of the following areas:

- Awareness of language (rhyme, accent, intonation in spoken language, grammar and relationships with other languages)
- Communication skills – tends to write and talk with creative flair exceptional for their age, often using metaphors or poetry; expresses ideas fluently and succinctly
- Reasoning and arguing – reasons at an abstract and hypothetical level in both spoken and written language; can justify opinions convincingly, knows how to use questioning strategies to challenge the points of view of others
- Literacy - Reads early and avidly with a wide range of literary interests. Reads for personal pleasure

### *Support*

High ability learners benefit from language arts curriculum differentiation in the five following areas:

***Literature:*** Literature should provide many experiences for students to read quality texts.

- Students should read broadly across subject matters and may develop a familiarity with favourite authors and their lives.
- Emphasis on critical reading and the development of analysis and interpretation skills should be a focal point.
- Independent identification of connections with self or others, within text and between texts, text to author

***Writing:*** A writing program for highly able learners should emphasize the development of skills in expository and persuasive writing.

- Gifted and talented students also need experience in writing in other forms such as narrative and informative, graphic novel, etc. using appropriate models for development.
- For older students, copying the style of favourite authors would be a useful exercise to gain control over written forms.
- Teachers may find some gifted and talented writers have internalized the writing process and may not need to work through the process to produce a polished piece of writing.

***Language Study:*** The formal study of grammar and vocabulary might be a component of advanced language study for gifted and talented students. An integrated language study approach across these areas is highly desirable.

Major language emphasis should involve:

- understanding the syntactic structure of the language and its concomitant uses
- promoting vocabulary development
- fostering an understanding of word relationships (analogies) and origins (etymology)
- introducing philology - the study of language as it changes in the course of time - also called diachronic linguistics
- investigating coined words and languages *(*J.R.R. Tolkien coined several languages in his works.)
- developing an appreciation for semantics, linguistics, and the history of language

***Oral Communication:*** Gifted and talented students can profit from a balanced exposure to oral communication both through listening and speaking. An emphasis on oral interpretation and drama productions provide one of many venues for creative talented learners to develop higher level skills.

Major emphases should include developing the following skills:

- evaluative listening
- debate, especially for use in formal argument
- discussion, particularly question-asking, probing, and building on ideas stated

- filming or recording
- dramatic exercises such as monologue development and/or performance

***Other Languages***: Students advanced in verbal ability can benefit greatly from the study of second or other languages.

***Other strategies for curriculum differentiation might include:***

- Using poetry to help gifted and talented students explore the quality of words including the power of metaphoric language and the subtly and complexity of meaning. Without the constrictions of a rhyming scheme, free verse allows a student to focus on imagery and to experiment with various writing styles.
- A study of the structure of words (e.g., Greek and Latin stems) which lends a sense of history and also helps with advanced vocabulary especially in science and technology. Standardized tests such as SATs often use such vocabulary "stem" words.
- Purposeful journal writing which requires them to write, rephrase, and reflect on their thoughts.
    - This may define types for different purposes: dialogue (written conversation), literary (response to literature read), subject (record information on particular topic)
- Literature circles which allow small groups of students to discuss a literary work in depth. This stresses reflection and critical thinking.
- Cluster grouping of students with similar interests or ability to work on group or individual projects.
- Technology exploration such as blogs or script writing.
- Writing spoofs, sequels or prequels. The student must master the style of the original author in order to be effective with such as task.
- Journal publications for virtual or print audiences e.g., NL Arts and Letters Competition, Riddlefence, Newfoundland Quarterly, Herald, Owl, Chickadee, etc.
- Alternate forms of research (e.g., a photo essay instead of a formal research paper )

**Points to Consider**

Books at a reading level higher than the grade level may be provided to an individual student provided an adult offers guidance appropriate to the student's interests, reading ability, and reading background.

Remember that although a student may be ABLE to read a book at a particular level, the content or language may or may not be appropriate for the student's age and experience*. Consider: Just because an eight –year-old can read a teen novel does not mean that the content would be developmentally and experientially appropriate*.

Gifted and talented writers require a good balance between impressionistic creative writing and analytic expository writing as well as reading a similar variety of texts in fiction or informational books.

Librarians, teachers or volunteers can lead discussions of a book the students have read – focusing on main themes and ideas, encouraging high level thinking such as analysis and synthesis rather than plot summaries and statements of fact.

The school's Learning Resource Teacher or librarian may be part of the team providing service and programming for students gifted and talented in Language Arts by:

- providing support in developing and supervising independent projects,
- assisting in selection of appropriate reading material,
- working with students in an alternate setting
- arranging peer conferencing
- matching students for book talks via video conferencing

Please see Appendix F for sample literature circle activities.

## STUDENTS IN FRENCH IMMERSION PROGRAMS

Regardless of language of instruction, exceptionally able learners often have special learning skills and needs which require consideration when planning instruction.

More able learners can often process astounding amounts of information in a very rapid manner without significant amounts of review or drill. They often come with a great deal of the planned curriculum already mastered, and an ability to very quickly acquire any concept they have not yet met.

Exceptionally able learners may be very strong in a global sense, or may have particular areas of strengths or interests. In French Immersion instruction, exceptional strength in language requires special consideration. Strengths in other areas such as mathematics or science will also be affected since the language and terminology affects all areas of instruction.

It has often been suggested that French Immersion classes are appealing to very able children as they present a more challenging atmosphere since instruction is in a second language. However, several studies suggest that it "did not appear as cognitively stimulating for gifted students as some of the research suggests" (Lanmark-Kaye, 1996) and that it "does not provide sufficient challenges for gifted students."(Karovitch, Shore & Delcourt, 1996) Very able students in French Immersion settings may still require additional challenge despite working in a second language.

Some high ability students also develop a trait of perfectionism. These students may hesitate to take the risks of expressing themselves in a second language unless they are able to do so without error. The atmosphere and culture of the classroom must therefore demonstrate that the goal of language is to communicate a desired message rather than grammatical perfection. These students need encouragement to freely take risks in all aspects of their language learning as well as ample opportunity for oral interaction.

Although it is true for all students, it is essential for exceptionally able learners to be convinced that what they are doing is authentic and meaningful within the particular context. Each subject area has inherent language structures, vocabulary and text types. A French immersion student who is gifted and talented and whose programming is to be beyond the prescribed grade level curriculum in a particular area would require prior explicit instruction and experience with related vocabulary and structures. Various means such as audio and video recordings can effectively expose a student to pertinent language. However, he or she must be provided opportunities to use and reuse these terms and structures in interactive settings in order to internalize the accurate use of the language.

The government of Newfoundland and Labrador offers students and schools opportunities to further their French language learning. For details of bursary and other types of opportunities, please visit www.gov.nl.ca/edu/k12/french/bursaries.html

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN MATHEMATICS

How do I know if a child in my class is gifted and talented in mathematics and how can I support him/her in developing this gift?

## Identification

Students gifted and talented with math abilities may differ from the average in any of the following ways:

- spontaneous formation of problems
- flexibility in handling data
- mental agility or fluency of ideas
- data organization ability
- originality of interpretation
- fast learning pace of new concepts
- keen observation skills
- powerful questioning skills
- depth of their understanding
- unique problem solving skills
- ability to make inferences from patterning

## Support

Meeting the diverse needs of gifted and talented mathematics students can be achieved using many different strategies.

- Curriculum compacting - where learning is pre-assessed and instruction compacted or streamlined to eliminate repetition or allow for faster paced progress through new material.
- Flexibly grouping advanced math students within or across classrooms to allow them the opportunity to work together with other like-minded students
- Cross-grade grouping involving differentiation of curriculum and instruction on a group level. This would see a flexibly paced program delivered by achievement level rather than by age or grade.

- Advanced content opportunities such as mentorships, online learning options, dual enrolment between institutions, or Advanced Placement or other college-level classes held in high school may be possible for advanced math students. Planning for these options must begin at elementary or middle school/ junior high levels to ensure there are no gaps in learning; and ensure graduation requirements are met.
- Acceleration is another option for gifted and talented students. Subject acceleration may be possible while staying with grade level peers for other subjects. Each district has its own policies in this matter, so check with your school administrator.
- Distance learning is another possibility for students in a less populous area of the province where content specialist teachers are not as common or where there are not like-minded students with whom to collaborate. The Centre for Distance Learning and Innovation (CDLI) has many courses and multimedia learning resources; these are frequently updated and expanded so check at www.cdli.ca .

**Other points to consider**

- Collaboration between the classroom teacher and a colleague with a clear view of mathematical developmental sequences and interconnections is vital if the classroom teacher is not a content expert in mathematics.

- If using above-level textbooks, be certain to choose those which emphasize problem solving, real-world applications and conceptual thinking over rote memorization of algorithms.

- Encourage multiple solutions, problem solving and open ended thinking.

- Emphasize spatial relationships in addition to computation and algorithms. At various levels this may include activities such as tangrams, reading 3D charts and graphs, drawing scale items from multiple viewpoints, placing blocks in containers with no wasted space.

- Encourage participation in mathematical contests. They may be motivational as a way for like-minded math students to meet and build relationships, and affirm and encourage their math abilities. The Department of Mathematics at Memorial University of Newfoundland (MUN) has an active “Math in the Community” program, www.mun.ca/math/community . The University of Windsor, www.themathleague.com/, and the University of Waterloo, cemc.math.uwaterloo.ca/contests/contests.html also organize annual contests nationwide. Summer programs are also organized by several Canadian

universities, in particular through Shad Valley (www.shadvalley.ca ), but fees vary.

- Emphasize cross-curricular connections with technology. This may involve the use of tools such as a graphing calculator, math computer games, computer programs that emphasize design or drafting techniques in greater depth.

- Emphasize the role and actions of mathematicians. Students need to understand that mathematicians may work on the same problem for many years and that math is more than calculating rote problems in a specific category. By studying or interviewing mathematicians, or encouraging long-term projects with no immediate solution, teachers may illustrate "thinking like a mathematician" and using the language of the discipline.

- Provide hands-on activities, interesting problems and connections to mathematical occurrences in everyday life.

- Once basic skills are mastered, encourage high levels of math abstraction, problem solving and open-ended projects.

- Incorporate conceptual thinking such as patterns, systems and relationships organized around major mathematical themes.

- Provide opportunities for students to reflect, prove and improve on their ideas through a variety of mechanisms. This will emphasize metacognition and independence. Journaling might be one way to address this.

- Extracurricular programs are other popular options to extend learning for interested math students. Some examples are school-based or district-based Math Leagues or Math Clubs. The Mathematics Special Interest Council of the Newfoundland and Labrador Teachers' Association, supported by Memorial University of Newfoundland and its Department of Mathematics and Statistics, has sponsored a high school math league since 1987 and added a Junior high Math League in 2004 ( www.math.mun.ca/~mleague ). The Western School District also has elementary level Math League events which are based, in large part, on the prescribed curriculum outcomes.

- Recognize that explaining every step of a solution may be challenging for students gifted and talented in math. It may be akin to watching an entire movie and then being asked about one individual frame. This is not to say that students who are gifted and talented should not be asked to explain their work. It may be more a matter of asking about the process rather than minutia. A student who is gifted and talented may not be able to explain why 8 and 3 is 11. In his or her

mind that is an automatic leap. He or she does not think at that level any more than we think about how to breathe.

- Other useful sites include:

  Kangaroo Math
  http://www.math.concordia.ab.ca/kangaroo/

  Mathematical Marathon
  http://www8.umoncton.ca/umcm-mmv/index.php

  Cambridge University
  http://nrich.maths.org/public/index.php

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN MUSIC

How do I recognize if a student in my class is gifted and talented in music and how can I support his/her development through the music curriculum?

## Identification

Behaviours which may indicate particular ability in music fall into three main areas: **skills, motivation and creativity**. No student would be expected to exhibit all of these, but the presence of many in combination may be indicative that further consideration is required by a music professional regarding appropriate recommendations, opportunities and/or programming for the individual. See Appendix A regarding guidelines for professionals making such observations.

### Skills - Musical Awareness and Discrimination

Rhythm

- can find and maintain the underlying pulse or beat
- puts the beat in the body and fluidly responds to rhythm
- replicates rhythmic patterns accurately
- can play repeating patterns
- waits for proper moment to begin

Perception of sound

- perceives differences in tone and pitch and can match pitches
- responds to dynamics
- can replicate melodic phrases
- is able to sustain an independent part
- has a high degree of aural memory/musical memory
- able to spontaneously transfer musical learning from one instrument to another

Co-ordination

- moves easily through space
- able to do two or more things at the same time and can work with both hands
- can control body in movement and freeze

### Motivation

Enthusiasm

- responds joyfully
- eager to participate
- asks questions/is curious

- is open to unfamiliar styles of music

Ability to focus
- directs attention
- makes full commitment to the task
- is interested and involved in class activities
- listens carefully
- follows instructions

Perseverance
- improves over time
- takes time to think
- is able to take and use corrections
- perseveres in musical activities
- refines ideas
- constructively critiques musical works of others and self

**Creativity**

Expressiveness
- responds with sensitivity
- performs with energy and intensity
- is fully involved
- communicates feelings

Composition and Improvisation
- improvises spontaneously
- makes surprising or unusual statements
- creates sounds in original ways
- makes up songs
- experiments with and manipulates sound
- performs and reacts to music with personal expression and involvement

Young children tend to be very receptive to music and keen to take part, but there are some general characteristics which may identify those children who have a greater than average interest and ability in music. In very young children, the following indicators may be useful:

- memorizes music from notation quickly without any apparent effort (not rote learning)
- can repeat, usually after just one hearing, complex melodic phrases given by the teacher (either vocally or “play by ear”)
- can sing/play music with a natural awareness of musical phrasing

- demonstrates the ability to communicate through music
- matches pitch/sings in tune
- is able to communicate through music
- can transfer musical learning from one instrument to another ("find" the tune just sung on the guitar, recorder, etc.)

(adapted from Sousa, 2003)

**Support**

Gifted and talented musicians would benefit from music curriculum differentiation or enrichment through:

**Listening**

- Directed listening
- Ear training
- Comparing and contrasting various recording/interpretations of a given piece of music
- Oral/aural transmission of folk music

**Performance**

- Part singing for young singers
- Ostinato and/or descant
- Solo parts or small ensembles
- Interpretive movement
- Co-curricular ensembles
- Opportunities for performance
- Supplemental parts
- Chording a melody
- Improvisation
- Translating between various instruments

**Composition**

- Transposition
- Using many clefs and ledger lines
- Form analysis
- More complex composition requirements
- Experimentation with various forms
- Using composition or other music software

**Other**

- Sight reading

- Exploration of historical style
- Examination of parallels between artistic and architectural historical periods
- Independent study on composer/period/style/instrument
- Mentorship
- Curriculum compacting

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN SCIENCE

How do I recognize if a student in my class is gifted and talented in science and how can I support his or her need?

## Identification

Science is a curricular area that captures the natural curiosity and intellectual spirit of most gifted and talented students.

Students who are gifted and talented in science are likely to:

- be imaginative when considering suggestions and strategies for investigations
- decide quickly how to investigate problems and manipulate variables
- understand the concepts of reliability and validity to analyze data and spot patterns easily
- read widely, particularly non-fiction science or science fiction
- enjoy researching self-selected facts and applying scientific theories, ideas and models (but may approach undemanding work casually and carelessly)
- be inquisitive about how things work and why things happen (They may be dissatisfied with simplified explanations and insufficient detail.)
- ask many questions, suggesting that they are willing to hypothesize and speculate to underlying mechanisms and greater depth
- think logically, perhaps even skipping steps in reasoning, providing plausible explanations for phenomena (they may be methodical in their thinking, but not in their recording)
- suggest objective arguments, using combinations of evidence and creative ideas, and question other people's conclusions (including their teacher's!)
- strive for maximum accuracy in measurements of all sorts, and take pleasure, for example, from reading gauges as accurately as possible (sometimes beyond the accuracy of the instrument)
- make connections quickly between facts and concepts they have learned, using more extensive vocabulary than their peers
- think abstractly at an earlier age than usual and understand models and use modeling to explain ideas and observations, often to the teacher
- be easily bored by over-repetition and may not need the same amount of reinforcement as other students

- enjoy challenges and problem solving, while often being self-critical
- be self-motivated, willingly putting in extra time -- Will be quick to learn new facts and apply higher-order thinking skills within similar contexts

**Support**

It is vital to enrich and extend the curriculum for students who are gifted and talented in science by using a variety of methods, depending on the context. For example:

- sharing and encouraging students' curiosity, allowing them to speculate without necessarily needing the correct answer
- incorporating differentiated instruction and tiered assignments to build on prior knowledge and prompt continued growth
- telecollaboration with an organized use of web resources and collaboration tools holds significant potential for differentiated instruction
    - The GLOBE project supports primary and secondary students, teachers and scientists in 111 countries (in 2010) to collaborate on inquiry-based investigations of the environment and the Earth system (www.globe.gov)
- enriching and extending their breadth of knowledge by drawing on information that goes beyond that provided for most students, perhaps allowing students to explore beyond the prescribed curriculum expectations and resources
- encouraging participation in scientific contests and camps. They may be motivational as a way for like-minded science students to meet and build relationships, and affirm and encourage their science abilities.
    - The Chemical Institute of Canada sponsors a national Chemistry contest. www.cheminst.ca/index.php?ci_id=1852&la_id=1
    - The Canadian Association of Physicists sponsors a national Physics contest. www.cap.ca/en/activities/medals-and-awards/prizes-students/high-school-prize-exam/2011-hs-exam-coordinators
    - The University of Toronto sponsors a national Biology contest.

      http://biocomp.utoronto.ca/about
    - The University of British Columbia sponsors a national science contest for students in grade 10 or lower. http://outreach.phas.ubc.ca/smith/en/english.php
    - The Perimeter Institute for Theoretical physics has a summer camp for students in grades 11 and 12.

      www.perimeterinstitute.ca/en/Outreach/Students/The_International_Summer_School_for_Young_Physicists/

- using scaffolding to enable gifted science thinkers to succeed despite weaknesses in other areas (e.g., providing writing frames)
- giving access to more demanding texts and information for research
- encouraging self-assessment and goal setting (McTighe & O'Connor, 2005)
- occasionally giving students the chance to extend an investigation to make it more challenging
- challenging students to provide explanations and connections as well as information
- encouraging students to take part in activities outside the school and allowing them to take some responsibility for organizing such activities
- encouraging students to carry out further investigative work at home, if necessary providing age-safe simple equipment and materials

**Points to Consider**

- Collaboration between the classroom teacher and a colleague with a clear view of science is vital if the classroom teacher is not a content expert. This is as important in elementary as it is in secondary.
- Teachers who are enthusiastic about their subject and interested in students' ideas often inspire their students' need to be challenged.
- Understanding the need for pacing, optimal instructional conditions and ability grouping are also important aspects of science education for students gifted and talented in the area.
- Up-to-date science equipment in a laboratory contributes to conducting group and individual experiments. However, an environment of encouraging "doing science" is more critical.
- Engaging students in original research questions is an important aspect of science education. Everyday tools, simple designs and curiosity about natural phenomena are the best resources for students engaging in problem-finding behaviour.
- To encourage scientific investigation, structure an event to display and evaluate student work, using scientists from the community as participants and critics. Students have an opportunity to meet and perhaps measure themselves against

students who have similar interests and abilities as well as tap into the ideas of practicing scientists.

- Mentorships and internships allow students to appreciate the nature of collaborative work in the sciences. Many gifted and talented students benefit from mentors to support their interest in science. This may also be applicable to a student gifted and talented in the culinary field.
- Exposure to, and usage of, specific technology for experimentation and measurement must be available to gifted and talented students prior to post-secondary. Students must also understand the overarching and recurrent themes and issues that relate to the field of technology as a whole and to specific technologies.

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN SOCIAL STUDIES

How do I recognize if a student in my class is gifted and talented in social studies and how can I support his or her need?

## Identification

Students who are gifted and talented in the area of social studies may show some of the following indicators:

- understands and accepts world cultures and belief systems
- questions and investigates the purpose of life
- displays advanced moral and ethical judgment
- is very interested in developing solutions to social, ethical and environmental problems
- frequently makes connections from past to present or from one culture to another
- attempts to understand other cultural and spiritual views
- is aware of the historical role of religion
- understands cause and effect relationships and realizes that frequently there are many factors that lead to events and actions
- uses historical methods to conduct investigations (trustworthy sources, primary sources)
- recognizes that our global society is multi-cultural and multi-faith
- has a strong understanding of chronological and spatial thinking
- reads extensively about social studies topics; may show a passion for a particular period in history
- shows a passion for the study of countries of the world and their geography and religions
- displays an understanding of how geography, sociology and religion affect economy, culture and lifestyle
- show an understanding of government and interest that is beyond that displayed by peers

## Support

Learners who are gifted and talented in social studies are well served with a curriculum that involves the integration of overarching themes and concepts of:

- reasoning,  inquiry and causal relationships
- varied explorations of multi-perspectives
- early and continued use of primary documents and artifacts for exploration

and integration of social studies with other content areas.

## Points to consider

Curriculum compacting using study guides is often helpful for middle and/or high school students who are excelling in social studies.

Students gifted and talented in the area of social studies also may benefit from participation in activities such as:

- School and Regional Heritage Fairs
- The Great Canadian Geography Challenge

  www.geochallenge.ca/geochallenge/default.asp
- Individual interests and projects which may be explored in varied depths through interactive websites, including:
  - Canadian International Development Agency (www.acdi-cida.gc.ca/home )
  - Canadian Geographic (www.canadiangeographic.ca/ )
  - National Geographic (www.nationalgeographic.com/ )
  - UNICEF's "Voice of Youth" (www.unicef.org/voy/ )
  - Historica Minutes: one-minute movies that portray exciting and important stories from Canada's past.(www.histori.ca/minutes/section.do?className=ca.histori.minutes.entity.ClassicMinute)
- Collecting "folklore" through interviews with community members
- Preparing presentations for special events (e.g., Remembrance Day)
- Advanced Placement courses in History, Geography, Politics, Culture
- Providing leadership in school-based activities related to various religious festivals and observances
- Using journaling to explore their understanding of their place in the world

Also, *The Benchmarks Project* is intended for teacher use and combines the research of historians and educators with the experience and skills of classroom teachers to create practical ways of encouraging promoting and assessing students' historical thinking in classroom settings.

http://www.histori.ca/benchmarks/

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN VISUAL ART

How do I recognize if a student in my class is gifted and talented in visual art and how can I support his or her need?

## Identification

### Characteristics of students who are artistically gifted and talented

Children who are artistically gifted and talented may exhibit predictive behaviours as well as characteristics in their artwork. It is not likely that a child would have all of the characteristics listed below, but a child who possesses special talent in art will probably exhibit many of them.

### Behavioural Traits

*Emergence through drawing* – Drawing is generally a more accessible medium for children. It is easier to perform with a pencil or crayon than with a paintbrush, and drawing can convey detailed information about a subject.

*Rapidity of development* – A child who is gifted and talented in this area will move through the stages of visual development at a faster pace. They show a great deal of imagination. These children have faith in their ideas and don't find the need to copy.

*Extended concentration* - Children who are artistically gifted and talented stay with a project longer than other children. They often see more possibilities in the task than they have selected or have been assigned.

*Self-Directedness* – The child can be very expressive but only if the experience motivating her/him to create is personally meaningful. A child with these gifts and talents rarely responds well to classroom activities where the teacher sets the topic. Artistically gifted and talented children "live" their art. It is part of them. Their work is intensely personal and shows integration of thinking, perceiving and feeling.

*Fluency of idea and expression* – From middle elementary on, visual and conceptual fluency is particularly evident in students who are gifted and talented. They can't get their ideas down fast enough as one idea leads to another.

*Calculating capacity* – The child who is artistically gifted and talented has a superior ability to transfer past information to a new context. For example, a child who has achieved a certain level of mastery in figure drawing can tap that ability to render figures in clay.

**Characteristics of the Artwork**

Art educator Al Hurwitz has judged thousands of high school students' work for competition and screening. His list of assessment criteria for screening high school level portfolios includes:

Verisimilitude (realism)

Children gifted and talented in art develop the desire and the ability to depict people and other subjects from their environment at an earlier age than other children. You may notice their attempts to include many details.

Compositional Control

The design elements and principles contributing to composition, colour, space and movement are handled with greater sensitivity by students who are artistically gifted and talented.

Complexity and Elaboration

Intellectual development is connected to the ability to relate information and observations about objects. Sensitivity to detail and the use of memory are directly related to complexity and elaboration in art production.

Memory and Detail

Even as young children, student with artistic gifts and talents are interested in detail and are more inventive in their drawings and sculpture than other children.

Sensitivity to Art Media

The child who is artistically gifted and talented is more likely to explore and experiment with media and achieve technical control, which often results in a more skillful finished product. This is noticeable from upper elementary level onwards.

Random Improvisation

Doodling and improvising with the effects of the elements and principles of design (see listing in Appendix A) are often appealing to a student who is artistically gifted and talented. The student uses her or his ability to invent, depict and describe meaning.

(Hobbs & Rush, 2006)

## Rating Scales

Identifying gifts and talent through observing performance or behaviours is one good way to screen for exceptional abilities in visual art. School behaviours may include intelligence, work habits, inventiveness (general behaviours), attitude, school record, and studio behaviours (art-related behaviours). See **Individual Portfolio Rating Scale for Identifying Artistic Giftedness (Talent)-classroom teacher** in Appendix A.

Another possible student rating scale which may be used by practising artistic professionals uses six distinct dimensions: realism, visual elements, design principles, technical skill, expression and invention. See **Individual Portfolio Rating Scale for Identifying Artistic Giftedness (Talent) - professional art educator** in Appendix A.

## Support

Curriculum compacting, learning contracts, tiered assignments, independent projects and cluster grouping are all strategies that are well-suited to addressing the needs of artistically gifted and talented students.

There may be other options available for artistically gifted or talented individuals depending upon the district or home community. These options may include special private classes, or Saturday or summer art programs from art galleries, or print shops. Sometimes, following arrangements with the school, community professionals are willing to mentor students with particular talent.

## Guidelines for portfolio development

Sometimes occasions arise which require a submission of a selection of work for consideration regarding admission to a program or for competitive judging. Young artists may be encouraged to compile a well-stocked, widely representative portfolio of their work.

Portfolios should include as wide a variety of media as possible. Two-dimensional portfolios might include media ranging from pencil, crayon, pastel, charcoal, paint, to photographs, prints, or linographs. The subject matter should be varied including still life drawing or painting, landscape, architectural drawing or room interior, self-portrait, animal or person in full-body, or sketch books. Any three-dimensional works such as clay, carvings, mobiles, sculpture, ceramic pots, papier-mâché, etc. can be recorded through collage and photos. Most of the work should be the student's original, independent art. Any work done as part of a class or copied from a photo or other source should be clearly labelled as such. (See Appendix A for a sample portfolio rating scale.)

## Points to Consider

When a teacher is considering a student's ability and talent, he or she can look for consistently superior artwork. This is defined as work that is above what would be normally considered excellent performance by a student of that age. Superior work is consistent if it occurs repeatedly throughout the portfolio.

When observing products, the standard of measurement ought to ideally lie outside of the classroom through comparing the performance of the student to the typical performance of many other students of the same age and education level. Since most teachers are not that experienced, they do the next best and compare the best student's work with that of all the other children of the same age that they have seen. If a child's products and performance are consistently superior to excellent examples of objects and performance by children who are the same age, the student may be considered to have special abilities in art.

The opinion of a practising professional artist using some of the rating scales and criteria from Appendix A will be useful in identifying giftedness in this domain. While a threshold level of IQ (Renzulli (1986) suggests 120) is common in individuals gifted and talented in areas such as art, music, dance, and other bodily kinesthetic endeavours, the demonstrated talent, creativity and task commitment plays a major role. IQ scores may not be as weighted in a determination of giftedness in these domains as in others more tied to academics and which have measures of specific abilities.

Some students are gifted and talented in areas which are not specifically tied to a curricular area. These would include the following sections on Leadership and Technology. While these areas may not require adjustments to school curricula, there are many ways to help students develop and embed their strengths in their learning experiences.

## IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN LEADERSHIP

How do I recognize if a student in my class is gifted and talented in leadership and how can I support his/her need in my classroom?

### Identification

Leadership is the result of an interaction between a number of variables: the personality, status, achievement, and intelligence of the leader; the characteristics of the followers; and the situation (Stogdill, 1974). Leadership links a student's intrapersonal skills, self-knowledge and understanding and the student's interpersonal skills in building and maintaining relationships with others. Since leadership may emerge in various types of situations and is dependent upon a number of variables being present, it is sometimes difficult to identify potential leaders. It may be helpful to note that students who are identified as outstanding leaders commonly exhibit many of the following characteristics:

- recognize the goals of a group
- articulate ideas clearly
- display good social judgment
- speak well in front of others
- organize well
- are self-confident
- are emotionally stable
- are willing to take risks
- adapt to new situations
- recognize skills and abilities possessed by others
- interact with others easily showing social skills
- listen to others with empathy
- motivate others
- understand how people feel and how groups function
- give directions clearly and effectively
- exercise authority reliably and responsibly
- adopt non-leadership roles within a group
- have a significant impact on the mood of a group
- support others in a group when appropriate
- coordinate the work of several individuals
- initiate and implement projects within their community
- provide suggestions for change
- accurately read the feelings of others
- get along with others, including those who may be challenging

- instill trust and confidence in others
- are comfortable with divergent points of view
- see problems from multiple perspectives
- are highly responsible
- are persuasive communicators
- work well in groups
- participate in most social activities
- enjoy being around other people
- are recognized as a leader by peers
- are aware of verbal and nonverbal cues

**Support**

With these skills in mind, many activities can be identified at school, around the home, and in the community that allow a student to practise and refine leadership. These are some suggestions:

- Books, television, and film afford wonderful opportunities for reading about and discussing examples of leaders. By reading about current and past leaders, students are able to look for common traits that contributed to their effectiveness. Also, many fictional characters provide examples of effective and ineffective leadership.

- Volunteer work offers gifted youth the opportunity to observe, model, and practise leadership skills in real-life settings. Volunteering at school, hospitals, child care facilities, hospice centers, places of worship, government agencies, libraries, etc. helps them appreciate how different groups function in the real world.

- Mentoring relationships with community leaders also introduce gifted and talented youth to real-world leadership experiences. Principals, government officials, business leaders and heads of non-profit organizations may be willing to mentor responsible adolescents. Mentoring differs from volunteering by enabling the youth to pursue a project of personal interest under guided supervision.

- Student involvement in decision making and planning of school-based activities (e.g., representation on school council; organizing and leading initiatives/projects/groups) may be another opportunity to develop leadership potential.

- Discussion of current events allows students to reflect, problem solve and evaluate real-life issues. This can aid the development of leadership qualities.

- The skills of collaboration and interacting with others may be developed through group play, clubs, or activity groups both in school and through extracurricular activities.

### Other Considerations

In 2007 the Center for Creative Leadership asked 247 senior executives around the world about leadership trends. This study highlighted the importance of future leaders having more than the traditional written and verbal communication skills. It suggested that the art of virtual leadership will require individuals to also have technological communication skills and be able to embrace new forms of communicating in order to interact effectively with online colleagues around the globe. Making opportunities to responsibly develop these skills in our students is vital. (Criswell & Martin, 2007)

## Infusing Leadership Concepts and Skills into the Curriculum

Leadership development can occur in all academic areas. General strategies for the school to help cultivate leaders include:

- Include biographies and autobiographies of outstanding leaders in curricular resources. Students can be encouraged to analyze and evaluate the motivation, contributions, influences and leadership style of each.
- Broaden the student concept of leadership by helping them understand that authentic leadership has more to do with influence than who holds a certain position, is popular, has the best grades, or the most money.
- Collect and analyze all the leadership resources you can for your school: websites, newsletters, commercially-prepared material, etc.
- Enhance intrapersonal skills and self-reflection through journaling or bibliotherapy.
- Provide opportunities for students to work meaningfully with teams or groups.
- Have students build their ability to see events from the perspective of another. Whenever possible when conflicts arise, guide students as they work through problems themselves rather than settling every dispute for them. Also, reflection on what might have been handled differently or what helped the situation get resolved could be valuable learning.
- Find opportunities for students to demonstrate their responsibility.
- Encourage divergent thinking. Ask students to look for many possibilities rather than to find the one right answer.
- Build courage in students by encouraging them to try new things. Some students may be paralyzed by perfectionism.

- Encourage self-discipline by teaching students about commitments: doing what you said you would, when you said you would do it, whether you now want to or not!
- Promote goal setting and autonomy.
- Expose students to leadership opportunities outside of schools including youth leadership conferences, seminars, weekend and summer programs offered through colleges, universities and other community organizations.

(Bean, 2010)

# IDENTIFYING AND SUPPORTING STUDENTS WHO ARE GIFTED AND TALENTED IN TECHNOLOGY

Students who are gifted and talented in technology have a unique profile of characteristics that may not be necessarily identified by traditional methods. Talent in this area may be evidenced through expertise with programming, with hardware or software or with both.

### Identification

How do I recognize if a student in my class is gifted in technology and how can I support his or her need?

Students who are technologically gifted may exhibit many of the following characteristics:

- more advanced technology skills than other students his or her age
- acquisition of new technology skills more quickly than others; often without any formal training
- strong logical thinking coupled with creative thinking
- enjoyment of problem solving and a strong need to persist in figuring out how things work
- an inordinate amount of time devoted to working on and with technology
- willingness to experiment with new hardware/software and to “invent” using mechanical ability
- ability to transfer what they learn from one technology to another
- eager pursuit of opportunities to use technology and their productive possibilities (i.e., to solve problems in the real world)
- good spatial skills
- strong fine motor manipulation
- enjoyment of taking things apart and putting back together
- enjoyment of tools or lessons which involve active/practical participation

- hands-on experience
- learning through construction and manipulation of objects
- ability to visualize the final product during a design phase

**Support**

Technologies have opened opportunities which were not dreamed of just a few short years ago. Schools may consider implementation of educational technologies including:

- video-conferencing, course management systems (e.g., Moodle)
- Web 2.0 such as blogs, wikis, Facebook and Twitter (consult *Digital Tools for Teaching* by Steven Johnson for further information on Web 2.0 tools)
- Electronic mentorship or some combination of face-to-face and electronic communication between mentor and student,
- Online courses (some students enrol in independent concurrent studies through various Canadian universities, including Memorial)
- Individual interests and projects may be explored in varied depths through interactive websites, including such teacher resources as:
    - Centre for Applied Research in Educational Technologies (UK) www.caret.cam.ac.uk/page/home
- Telecollaboration with an organized use of web resources and collaboration tools holds significant potential for differentiated instruction
    - The GLOBE project supports primary and secondary students, teachers and scientists in 111 countries (in 2010) to collaborate on inquiry-based investigations of the environment and the Earth system (www.globe.gov/ )
- Career development opportunities may be investigated through the Guidance Room portal maintained by the Centre for Distance Learning and Innovation (CDLI ) www.cdli.ca/Guidance/index.php

**Points to Consider**

Despite all its uses and advantages, computer technology also has a “dark side”. Pryt (2003) lists the following issues:

- There is need for a strong insistence on ethics and integrity in utilizing technology. Often the perpetrators of computer crimes have been both young and “gifted”.

- There is much on the Internet that, at worst, is dangerous and, at best, is a waste of time. Most of us have, at one time or another, lost sight of our focus while using the Internet and wasted valuable time!

- Not all valuable or necessary information is on the Internet. Libraries, travel, and personal experiences are still valuable sources of learning. As well, there is an affective dimension of living and learning that requires positive human interaction. Although human communication can be enhanced through electronic communication, it cannot replace the “real thing.”

(New Brunswick Department of Education, 2007)

## Populations for Special Consideration

### GIFTED AND TALENTED YOUNG CHILDREN

Young children are a unique population when considering gifted and talented children. Occasionally students enter KinderStart or Kindergarten exhibiting behaviours that may be atypical for 4 or 5 year olds. Are these children simply precocious? Are they the product of very rich home environments or parents who are pushing their child? Or is he/she a truly gifted little one? It may be difficult for teachers in the early years of school to determine exactly what they see. Because young children develop unevenly, standardized intelligence assessments may give unreliable results. Superior intellectual ability in young children is often suspected because of advanced behaviours or developments but is generally not confirmed until much later. Therefore, some researchers prefer the term “potentially gifted child” when exploring this population.

Early development is often associated with giftedness and talent but it is not always a determining factor. Parents and teachers should look for signs of advanced development and address the specific needs associated with it, but care must be taken not to assume that every child who can read early or who has strong language skills will be identified as a gifted and talented learner. Children who are advanced will undoubtedly have high ability in order to excel in this way, but may not necessarily be gifted and talented. Language and vocabulary in particular are associated with early childhood environments and can be more advanced in children who spend extended time in language-rich environments.

#### Predictive Behaviours

Young children who may be considered potentially gifted and talented often exhibit many of the characteristics which follow. These characteristics should be noticed, nurtured and addressed as required without trying to “hurry” through childhood and the learning provided by play.

- Rapid and/or early movement through developmental stages: early learning to walk, speak, etc.

- Asynchronous development: intellectual abilities may be at a dramatically different level than his or her social or emotional level. The social-emotional, intellectual, and motor development is noticeably uneven particularly in a preschooler. For instance, a gifted and talented preschooler who can strategize in chess strategy well beyond his years may throw a tantrum (age-appropriate!) when he loses a game. This type of uneven development can cause frustration (or lead to avoidance) in a child who can visualize how a task or project is to be completed but who lacks the fine motor development, strength, etc. required to execute it.

- Intensity:  an astounding appetite for learning and unusually long attention spans in areas of interest, require very little sleep, or have an inordinate amount of energy
- Older playmates:  often prefer older playmates or adults whose intellectual ability may be more on par with their own.  It can be difficult for young gifted and talented children to find intellectual peers among their age peers.  Another common characteristic is that the child will develop an imaginary playmate.
- Advanced vocabulary: begin to speak during infancy and may develop mature vocabulary and sentence structure from a very early age
- Mature sense of humour: enjoy using puns and will sometimes display a sense of humour well beyond their years - they "get" sophisticated jokes before other children their age begin to think at this abstract level
- Early understanding of time concepts: an innate sense about time and dates; understand the meaning of *yesterday, tomorrow,* or *next year* well before their age peers.  They may have an early interest in clocks and calendars.
- Draw connections: an early understanding of cause and effect and often make uncanny connections between seemingly unrelated topics.
- Possess wide general knowledge: shows interest in topics not usual for his/her age.
- Is curious:  has a tendency to ask probing and reflective questions.
- Enjoys a challenge: will work on complicated or many piece puzzles or Lego projects.
- Shows perfectionism: not a quest for excellence but unrealistic expectations, fear of failure, and extremely critical self-talk
- Is emotionally more mature than age peers.
- Possesses an exceptional memory:  appears to acquire knowledge effortlessly and can generalize knowledge to new situations

(Hyde, 2008)

The Frances A. Karnes Centre for Gifted Studies at the University of Southern Mississippi conducted a major research project on identifying and serving gifted preschoolers.  The report highlighted information useful for identification which arose from observations of the type of play in which a child engaged. Their findings report that:

> When a gifted preschooler chooses to play alone, his or her pursuits tend to be quite complex and goal directed *…(and that)* young gifted children are often quite physically active in play and more socially advanced in play

> style. Compared to average preschoolers, gifted girls and boys tend to initiate play sessions with other children and to play more cooperatively. In these group play sessions, the gifted child will often coordinate and integrate multiple complementary roles, taking into consideration the actions of other children… more typical of six and seven-year-olds.
>
> (Karnes et al., 2005)

Giftedness and talent in young children is usually identified through teacher and parent observations and rating scales such as the *Renzulli-Smith Early Childhood Checklist* (Renzulli & Smith, 1981) for teachers (see Appendix A) or the compilation of characteristics of young gifted and talented children by the Frances A. Karnes Center for Gifted Studies at the University of Southern Mississippi available at www.usm.edu/karnes-gifted/gifted-preschooler (open the link for the fact sheet.)

Another checklist available for teacher use is the Kingore Observational Inventory (K-3) which was provided in the Fall of 2010 to all schools with a primary population. Pages 17 and 18 contain a two page spread which can be particularly useful if copied and attached to the inside of a file folder. This makes for ready reference and recording of observed characteristics in the class. The descriptors are further explained beginning on page 21 and suggestions for using the inventory begin on page 13. This includes the use of various colour inks to record behaviours over a matter of weeks. Consult pages 34 and 35 for examples of how this might look in practice. Once patterns of the targeted behaviours emerge, teachers may begin to acknowledge and respond to particular strengths in their students. These observations will help guide differentiation and may serve as part of a pre-referral process for further consideration of the gifted and talented exceptionality. Teachers should also note who other children follow or who directs activities, children who exhibit the characteristics mentioned above, or children who are advanced on developmental scales. As with any aspect of the population, multiple criteria are recommended in the identification process.

Early childhood educators working with children who are gifted and talented are often asked, "What is the best program for young children who are gifted and talented?" No one program is best for every child. The best program is one developed to meet a child's individual needs and interests as well as a program that is developmentally appropriate for young children. Heterogeneous grouping is usually recommended since children are not necessarily gifted and talented in all areas and should be with age-mate peers, as well as intellectual peers. This type of grouping also allows for the development of positive self-concepts more than homogeneous grouping does. A second choice is regarding acceleration and/or enrichment. Grade acceleration can be effective for children who are maturationally ready. However, decisions about

acceleration (especially grade acceleration) are best done on a case by case basis and should include the following considerations:

- intellectual precocity
- social and emotional maturity and adjustment: The student should not have serious adjustment difficulties. On the other hand, it is important to differentiate between this and students who may have behavior problems because of an inappropriate grade placement
- reading and math readiness, if acceleration is being considered for young children
- overall health. Frequent ill health is likely to result in missing school which may place too much stress on even a highly-gifted student.

(Davis & Rimm, 2004)

Read more about research surrounding acceleration in the 2004 report *A Nation Deceived* by the Institute for Research and Policy on Acceleration at www.accelerationinstitute.org/nation_deceived/

Enrichment encourages the broadening or deepening of curricular content. It can be a successful way to provide for heterogeneous grouping and, at the same time, meet the particular needs of the student who is gifted and talented. Recommended curricular content for young children who are gifted and talented includes teaching basic skills, building knowledge, developing creative and critical thinking skills, and providing for affective development (Kitano, 1986). More differentiated content includes opportunities for creative productivity based in an area of particular interest to the child.

There are some concerns particular to young children who are gifted and talented. They are addressed briefly by the National Research Center on the Gifted and Talented.

1. Early identification of gifts and talents is important in order that the young child will be nurtured to his/her fullest potential and does not become an underachiever.
2. Parents need to value and carefully nurture the whole child, not just the part of the child that achieves academically. Parents must also be careful not to pressure their child and create problems with perfectionism or with affective development.
3. Comparisons with other children should be avoided. Caution must be used when employing the "gifted" label to avoid siblings or peers being made to feel "ungifted" as a result.
4. Parents and teachers must listen to gifted children. They should allow them time to think and to play and provide the opportunities for children to expand to their fullest potential as they indicate their specific interests and abilities.
5. Gifted children need the guidance and wisdom of adults; they may possess a greater degree of ability in a given area, but they do not know everything.

6. Gifted children have the right to an education that meets their special needs; well-informed advocacy is the role of both parents and teachers.

(Story, 1991)

## Support for Young Children who are Gifted and Talented

The needs of the Kindergarten and early primary classroom are many and varied. The following are some suggestions for designing instruction to meet the needs of gifted and talented young children.

- Create a literacy-rich environment - one in which students have many opportunities to listen, read, write and speak.
- Use extended text forms such as poems, books, magazines and newspapers as opposed to the mere reading of letters, words, phrases and single sentences.
- Continue to read-aloud long after students are able to read themselves.
- Give students many sources of reading materials.
- Provide time for independent reading.
- Offer many genres of literature.
- Emphasise comprehension skills as opposed to decoding.
- Provide many opportunities to write both before and after reading.
- Focus on expression and not the standard conventions of writing.
- Provide authentic learning experiences
- Provide choices to engage in learning
- Provide opportunities for inquiry
- Make explicit the language of thinking: teachers use terms such as conclude, believe, speculate, interpret, investigate, reason, theory, predict, hypothesize
- Use creativity as a means to promote critical thinking or discovery.

Appropriate programming for young students with these exceptional abilities is vital to avoid the development of problems such as loss of interest and motivation, boredom, rebellious behaviour and social-emotional concerns.

For further suggestions regarding programming for gifted young children, consult *Teaching Young Gifted Children in the Regular Classroom: Identifying, Nurturing, and Challenging Ages 4-9* by Smutny, Walker and Meckstroth. This resource was provided in the fall of 2010 to all provincial schools with a primary population.

## GIFTED AND TALENTED UNDERACHIEVERS

Although it is difficult to find precise Canadian figures on underachievers who are also gifted and talented, the National Commission on Excellence in Education (1983) in the United States reported that:

- Half of gifted and talented students do not perform to their tested abilities.
- High school dropout studies have found that between 10 and 20 per cent of those who do not complete high school are in the gifted range on cognitive testing.

Underachievement occurs when student's habits, efforts and skills cause them to lose their sense of control over school outcomes. Teachers are less likely to identify them as gifted and talented since their intelligence or creativity may be no longer evident in class. Even parents may begin to doubt their children's abilities. Passing grades become acceptable.

The pressures on gifted and talented students are tremendous:

- Students who are gifted and talented often feel the need to be extraordinarily intelligent, perfect, or smartest.
- Many wish to be extremely creative and unique - this may sometimes translate into nonconformist behaviours.
- Students who are gifted and talented sometimes feel that they must choose between being smart and being accepted by their peers.
- Students who are gifted and talented often receive praise which reinforces their motivation. However, if it is too extreme or frequent, it may cause them to feel that their family and friends demand them to continually accomplish these lofty goals or risk losing this admiration.
- They may feel a pressure to achieve and may develop dependence on the attention directed toward them – making it difficult to function without continuous praise and reinforcement (Deci, 1986; Horn, Gaskill, & Hutchins, 1988 as quoted in Rimm, 2003).

Some school and social circumstances which may negatively effect school achievement include:

- a school atmosphere that sets high priorities for athletics or social status but not for intellectual and academic excellence or preparation for higher levels of education

- an atmosphere that considers programming for the very able to be elitist; instead emphasizing the importance of all students fitting into the same mould
- a classroom environment that requires all students to study identical materials at similar speeds or in similar styles
- teachers who may not see the quality of student's work because of different values, personal power struggles, or cultural or racial prejudice; they cause students to feel unable to find success despite their efforts
- an unidentified learning disability or attention deficit disorder which may mask students' giftedness and prevent children from experiencing the successful outcomes that should be related to appropriate efforts
- school environments where tasks are too easy and do not encourage challenge or sustained effort. Children learn that school is easy, that success is easily attainable, and that learning and study are effortless. They do not learn to equate effort with achievement. This may cause concerns when they later face a challenge. They may not have developed the skills to tackle it. They may refuse to put their reputation on the line by chancing failure. They may doubt their self assessment and decide maybe they aren't so smart after all.
- frequent messages from peers that it is not cool to give much effort to school - Symptoms that arise include procrastination, incomplete assignments, disorganization, inattention and careless work.

The article *What A Child Doesn't' Learn…* by Tracy Inman appears in Appendix C. This addresses many concerns which may arise if a child is not challenged in the first several years of school.

Stanford University psychologist Carol Dweck differentiates between fixed and growth mindsets. In a fixed mindset, people believe that their basic qualities such as intelligence or talents are fixed traits. They spend their time documenting their assets rather than developing them. They equate talent with success.

In a growth mindset, people believe that their basic abilities can be developed through dedication and hard work. Intelligence and talents are starting points to be grown and nurtured. This view leads to a love of learning and a resilience or task commitment that is necessary for great accomplishment. We must be conscious of cultivating a growth mindset in our students. We must help them learn to equate success with effort. Instead of praising a student for how bright or talented he or she is, praise the effort he or she expended to reach this accomplishment. This helps build self esteem and accomplishment.

If students do not encounter appropriate challenges, they never develop the skills and attitudes to tackle them. They think success is easy because they are "smart" – a fixed mindset. When they finally do encounter something that challenges them,

they sometimes doubt their own intelligence since it no longer comes easily. If they need to work at it, then maybe they weren't so smart to start with. Other students will not take the risk of tackling something at which they may not be perfect the first time. Their self image and the view of their peers demands perfection. Rather than risk being less, they avoid. Too easily this leads to a pattern of underachievement. Teaching a growth mindset creates motivation and productivity and thereby lessens the risk of underachievement.

Dr. Sylvia Rimm has done extensive work with gifted underachievers and reports some factors which may contribute to the development of underachievement. These include:

- High risk home environments where
    - Parent(s) are openly opposed to teachers and school policies
    - There is an absence of family organization and consistent and predictable expectations for conduct
    - Child was considered "special" – often either a long-awaited child or where there was early discovery of gifted abilities – which was later withdrawn and the designation of "special" was given to another family member
    - Sibling rivalry with a brother or sister who is "practically perfect"
- Low self esteem – The student acknowledges that he or she is intelligent but does not believe him or herself capable of accomplishing what the family or teachers expect.
- A sense of low personal control over their lives – if they fail, the blame is on lack of ability – if they succeed, it is attributed to luck.
- A student not seeing a relationship between his or her efforts and outcomes, the result may be learned helplessness and he or she may no longer make an effort to achieve.

(Rimm, 2008)

### Reversing the Underachievement

Sylvia Rimm has developed the Trifocal Model which involves the collaboration of school and family in the implementation of six steps:

1. Assessment of skills, abilities and types of underachievement
2. Communication
3. Changing the expectations of important others
4. Role-model identification
5. Correct skill deficits
6. Modifications of reinforcements at home and school.

For further exploration of this model, consult *Why Bright Kids Get Poor Grades and What You Can Do About It* by Sylvia Rimm (2008), Great Potential Press.

## STUDENTS WITH DUAL EXCEPTIONALITIES

Children who are gifted and talented and have another exceptionality are known as *dually exceptional*. Careful assessment and professional evaluation are necessary to make the correct diagnosis and suggest appropriate supports.

Research has indicated that students' abilities are often masked by their disabilities; therefore focus is often put on addressing a student's deficits. Many gifted students have strengths which are used to compensate for their disabilities which may cause the disability to go unnoticed. When a dual diagnosis is made, parents and educators must take care to challenge a student who is gifted and talented in areas in which they excel while also trying to develop strategies to address or remediate areas of need.

Students who are dually exceptional provide a challenge both in identification and programming. These children may exhibit an uneven development of their skills and abilities. Often the areas of deficit or need become the focus, while the talents are overlooked.

There are 3 common patterns that may challenge the identification of a dually exceptional student:

- Giftedness may mask the other exceptionality. The student is able to use his/her giftedness to develop coping strategies that effectively hide other concerns. The true nature of a child's dual exceptionality may not present itself until the coping strategies are unsuccessful.

- A learning or behavioural characteristic may mask the giftedness. The child's true intellectual capacity is hidden by the frustrations associated by the child's disability. Such children are often referred for assessment of emotional/behavioural issues.
- The student's other exceptionality and the giftedness mask each other and the child appears to be of average ability.

There are many possible combinations of exceptionalities but perhaps the most common is gifted and talented and learning disability. Observations reflected in the following chart may suggest that further investigation may be required into a student's learning profile.

Characteristics of Students who are Gifted and Talented and have a Learning Disability

| Positives | Challenges |
|---|---|
| • adept at thinking abstractly<br>• good at problem solving skills<br>• superior in mathematical reasoning ability<br>• easily able to recognize relationships<br>• highly creative<br>• good communication skills<br>• productive and motivated<br>• intellectual curiosity<br>• wide range of interest<br>• ability to work on their own<br>• sophisticated sense of humour<br>• unusual and active imagination<br>• keen visual memory<br>• artistic, mechanical or musical aptitude<br>• grasps metaphors, satire and analogies | • aggressive<br>• careless; forgets when assignments are due, loses papers, does not complete assignments<br>• easily frustrated<br>• learning problems especially in language, spatial conception, memory and sequencing abilities<br>• poor or completely phonetic-based spelling<br>• poor handwriting<br>• is often disruptive<br>• daydreams<br>• doodles instead of listening<br>• complains of head and stomach aches<br>• difficulty with rote memorization<br>• acts first, thinks later<br>• performs poorly on timed tests<br>• has difficulty with computation<br>• does not respond well to auditory instructions/information |

(Johnsen & Kendrick, 2005, p. 7)

Suggestions to support learners who are gifted and learning disabled include:

- Provide students with a wide choice of products through which they may show mastery of the material so that they may select a method that matches their strengths.

- Teach students compensation strategies to address their areas of weakness.
- Explore the use of technology to enhance the student's ability to produce quality work.
- Continue with basic skills instruction as long as gains are being realized.
- Focus attention on the student's areas of strength as well as his or her weaknesses.
- Present directions and information in more than one form. Be sure to include visuals such as getting eye contact with the student before presenting information, using a diagram or picture to accompany a lecture, promoting mnemonic memory devices and using mapping and outlining to connect new material to old.
- Use attention directing techniques
- Concentrate on the student's strengths. Use materials that are of high interest to the child and encourage problem solving and independent research.

(Johnsen & Kendrick, 2005)

Other exceptionalities that frequently co-exist with giftedness include Attention Deficit Hyperactivity Disorder; Asperger's Syndrome; visual impairments; hearing impairments; and physical disabilities. While careful assessment and professional evaluation are necessary to make the correct identification, some of the following characteristics may suggest the need for further investigation.

**Attention Deficit Hyperactivity Disorder and Gifted and Talented**

- poorly sustained attention in almost all situations (children who are gifted and talented without true ADHD may present as having poor attention in only **specific situations**)
- work is often incomplete, despite evidence that student is knowledgeable and capable
- high activity level found across situations
- highly inconsistent in the quality of their performance and the amount of time needed to accomplish tasks

Many children who are gifted and talented will present as having ADHD. It can be difficult to determine if a child is gifted and talented, or has ADHD, or both. It is important to examine the situations in which a child's behaviours are problematic.

**Asperger's and Gifted and Talented**

- high verbal ability
- exceptional memory skills
- experience social isolation
- may have intense/passionate interest in a single subject
- may be very sensitive to certain stimuli

**Vision Loss and Gifted and Talented**

- exceptional memory skills
- superior verbal skills
- ease in learning Braille
- fast rate of learning
- persistent and highly motivated to learn

**Hearing Loss and Gifted and Talented**

- development of speech and reading skills with little or no instruction
- excellent memory skills
- rapid grasp of ideas
- early reading ability
- superior performance in school
- enjoys manipulating environment

**Physical Disability and Gifted and Talented**

- development of compensatory skills
- creativity in finding augmentative ways to communicate and complete tasks
- excellent memory skills
- motivation to achieve
- curiosity and insight
- greater maturity than same-aged peers

For suggestions regarding identification and instructional strategies for dually exceptional students with many combinations of characteristics, please consult the website for the Frances A. Karnes Center for Gifted Studies at the University of Southern Mississippi.
www.usm.edu/gifted/pdfs/handouts.pdf

and their Volume 9, Issue 2 Newsletter available from
www.usm.edu/gifted/newsletter.html

## Students from Families with Lower Incomes

Children from lower income backgrounds may be under-identified as students who are gifted and talented (Clark, 1997). They may have a family background that is not rich in language and reading or family members who have not had positive experiences with school (Baldwin, 1973 as quoted in Johnson, 2004). For these reasons, this group of gifted students is particularly vulnerable to becoming underachievers in school. Many traditional identification methods used for screening for gifted and talented learners tend to select the students who are high achievers at the expense of students with limited experiences who may not achieve as highly, but who have high potential. Standardized tests may not be the best measure of the ability of students in this situation. Other barriers which sometimes exist are negative attitudes toward or low expectations for students from minorities and/or low income backgrounds (Johnsen and Ryser, 1994 as quoted in Johnsen, 2004). If teachers are aware of some of the indicators of possible giftedness, they can help to identify students with high abilities even when content knowledge is not apparent. While attention may be needed with areas where the student is missing knowledge and experience, the strengths of the child may also be nurtured and encouraged.

To assist in identifying children from lower income backgrounds, teachers may watch for the student who:

- has high mathematical abilities
- is curious; has varied interests
- is independent
- has a good imagination
- is fluent in nonverbal communication
- improvises when solving problems
- learns quickly through experience
- retains and uses information well
- shows a desire to learn in daily work
- is original and creative
- uses language rich in imagery
- responds well to visual media; concrete activities
- shows leadership among peers; is responsible
- finds relationships among unrelated ideas
- is entrepreneurial
- has a keen sense of humour

(Johnsen, 2004)

## CULTURALLY DIVERSE STUDENTS WHO ARE GIFTED AND TALENTED

In teaching students who are culturally different or English Language Learners as well as being gifted and talented, teachers must bridge the two fields of Gifted and Talented Education and Multicultural Education. Giftedness and talent may look different in different cultural groups. Cultural differences may lead a child, or his or her parents, to decline to participate in programming for gifted and talented children. Our mainstream culture values cooperation, independence, initiative, problem solving abilities and leadership. Some cultures value humility and conformity while others stress individualism. Some encourage a belief in equality, others believe that personal issues should not be discussed or emotions expressed outside of the family. Even within cultures there is much diversity between first generation immigrant and second generation immigrant students, recently arrived refugees and more established families.

Some children come to Canada as refugees and may have low socio-economic status upon arrival. The standardized assessments commonly used have attempted to remove cultural bias, but both ethnicity and economic status are correlated with differences in test scores at the group level on tests written for use with children. This may be compounded when the student is an English Language Learner. Alternate methods of identifying culturally diverse gifted and talented learners are vital and should include using objective and subjective information from multiple sources.

Behaviour checklists or rating scales are one approach to identification which may downplay unintentional cultural bias in the teacher nomination process. The Department of Education has supplied several of these to schools (see *Brilliant Behaviours* (Kanevsky, 1999, p.17), and *Kingore Observation Inventory*)

Rating scales give a list of characteristics commonly shown by gifted and talented children and teachers identify the students in their class who demonstrate them. However, some of the behaviours listed may not be appropriate or observable in all cultures. Please see the ESL Guidelines available at www.gov.nl.ca/edu/k12/curriculum/guides/esl/esl_k-6/Guidelines_for_Delivery_of_ESL_Services_K-6.pdf. The section on cultural sensitivity on page 4 will influence the teacher's expectations.

Teachers must note that checklist items which relate to use of language may not be as suitable for students whose first language is not English. For example, one can hardly expect a student who is just beginning to use English to exhibit the usage of multisyllabic words, poetic language or to recognize the humour in wordplay. When testing is conducted in English, it is questionable how much of the resulting score reflects English proficiency and how much reflects the actual ability and knowledge the test is attempting to measure.

Sometimes lack of English is unconsciously interpreted as lack of ability. English Language Learners may be given tasks with less challenging content and concepts in an attempt to simplify the level of text. Although it is often necessary to adapt the level of language used, the content and tasks assigned must present a challenge. Challenging concepts can be presented in a way that is accessible to the student. This may include such things as less complex language structures and vocabulary accompanied by visual aids.

Dr. Mary Frasier has authored a great body of respected work on identifying gifted and talented students from diverse backgrounds. She has compiled a list of best practices in this regard:

- The goal should be inclusion, rather than exclusion, of students.
- Data should be gathered from multiple sources; a single criterion of giftedness should be avoided.
- Both objective and subjective data should be collected.
- Professionals and non-professionals who represent various areas of expertise and who are knowledgeable about behavioural characteristics of giftedness should be involved.
- Identification of giftedness should occur as early as possible, should consist of a series of steps, and should be ongoing.
- Special attention should be given to the different ways in which children from different cultures manifest behavioural indicators of giftedness.
- Decision making should be delayed until all relevant data on a student have been reviewed.
- Data collected during the identification process should be used in determining curriculum.

(Matthews, 2006, p. 26)

The Department of Education has provided resources which may prove useful in identifying gifted and talented students who are not native English speakers. These include the Weschler Nonverbal Scale of Ability, Raven's Coloured Progressive Matrices, and Raven's Standard Progressive Matrices. For further information, please consult ESL Students & Students from Diverse Cultures: Guidelines for Comprehensive Assessment (April 2012) available at www.gov.nl.ca/edu/k12/studentsupportservices/publications/index.html .

The Department of Education document Meeting the Needs of Students from Diverse Cultures - Handbook for Administrators available at: www.gov.nl.ca/edu/k12/curriculum/guides/esl/Meeting-the-Needs.pdf is another recommended resource.

## Tools for Identification

The Department of Education has provided schools with several tools to help in the identification of students who are gifted and talented. The binder resource entitled *Teaching Students who are Gifted and Talented* (Alberta Learning 2000) contains a number of charts which address topics such as Intellectual Characteristics of Students who are Gifted and Talented (GT.38), Divergent and Convergent Thinkers (GT.40), Characteristics and Behaviours of Young Students who are Gifted and Talented (GT.45). Checklists are also provided such as Recognizing Giftedness: Identifying Characteristics (GT.219) and Brilliant Behaviours (GT.222).

Another tool which the department has supplied is *Scales for Rating the Behavioural Characteristics of Superior Students* (SRBCSS) by Renzulli and Smith. The teacher may use as many of the subtests as are applicable and record his or her observations. This tool may be used as a universal screener and local norms calculated. However, it is more often used to guide teacher observation before proceeding with further formal assessment. This resource was supplied to all schools in the province (Fall 2010).

*Kingore Observation Inventory (KOI), 2nd ed*. (Bertie Kingore, 2008, Professional Associates Publishing) is suggested for students in Kindergarten through Grade 8. This divides the target population into K-3 and 4-8. Each has several forms which are teacher-friendly allowing the teacher to track the behaviours observed in the classroom over time. This will help identify children who may be exhibiting several characteristics of a gifted and talented student and who may therefore require further investigation. The book also contains programming suggestions. Copies of this resource have been supplied to all primary and elementary schools in the province (Fall 2010) along with suggestions of use.

Every school in Districts 1 to 4 with grades 4 to 12 has also received a copy of *Teaching Gifted Kids in the Regular Classroom* (Susan Winebrenner, 2001, Free Spirit Publishing). Schools with primary-aged students have received *Teaching Young Gifted Children in the Regular Classroom* (Smutny, Walker and Meckstroth, 1997, Free Spirit Publishers).

Schools in District 5 and those in Districts 1 to 4 which offer French Immersion have received, according to their school grade composition, these publications in their French adaptations by Chenelière*: Enseigner aux Enfants Doués en Classe Régulière* and/or *Enseigner aux Jeunes Enfants Doués en Classe Régulière* (2008).

The department has also provided districts with copies of the Ravens Progressive Matrices in two formats, one of which is specifically recommended to identify students with gifts and talents using nonverbal assessment.

See also the Notes to Assessors (Appendix B) which makes specific recommendations for assessment, particularly regarding the use of the Wechsler Intelligence Scale for Children 4 (WISC –IV).

# Programming Suggestions

***A mind once stretched never returns to its original shape.***

***--Oliver Wendell Holmes***

# INSTRUCTIONAL CONSIDERATIONS

## THE LEARNING ENVIRONMENT

The learning environment consists of the physical as well as social and emotional environment that the teacher and students create. In terms of environment, the needs of gifted and talented learners are not significantly different from those of other students.

### Physical, Social, Emotional

The physical environment for all learners may include interest centres, a variety of working spaces, and a full range of learning materials. Interest centres that introduce students to new topics or challenges can be of particular benefit to gifted and talented students.

A social and emotional environment that is accepting and provides a safe and supportive atmosphere is important for all students. An environment that promotes group planning and problem solving can help students move from a teacher-directed atmosphere to one in which students accept responsibility for their own learning. This is particularly important for gifted and talented students so that they are comfortable to make mental leaps and diverse connections without fear of the reactions of classmates and teachers. This accepting and inclusive culture is vital to a student's creativity and sense of well-being.

## SOCIAL – EMOTIONAL DEVELOPMENT IN GIFTED AND TALENTED CHILDREN

Just as students who are gifted and talented exhibit differences in their learning styles, they also differ from their age peers in their social – emotional development.

Often, social – emotional development can be more closely linked with intellectual development than with chronological age.

### Social – Emotional Characteristics:

Even a lot of kids who are gifted can be kids who feel like wimps or nerds.

--**Eric Wilson**

- Gifted and talented children may experience more emotional intensity than other children their age. They may display an unusual ability to empathize with the feelings of others.

- They may exhibit an unusually well developed sense of justice or fairness.

- Gifted and talented children often have a more mature sense of humour than their age-peers.

- Gifted and talented children may show differences in how they develop friendships. They may prefer the companionship of older children and may develop only one or two strong friendships.

- They may also exhibit perfectionist tendencies.

**Forced-Choice Dilemma**

Often academically gifted and talented children may realize that they are different from their classmates and will begin to change their behaviour. If a child chooses to hide his/her gifts and talents in order to gain social acceptance and fit in, it becomes difficult to identify and provide programming for the student. Teachers must be alert to the social-emotional needs of these students as well as to their academic needs.

**Perspective**

A gifted and talented student's perspective on a given situation may lead to emotional conflict. Parents and teachers who understand these perspectives will be better equipped to support a gifted and talented child's emotional development.

- **Fear of Failure** - It may seem odd that gifted and talented children who have experienced a great deal of success may fear failure. However, they may have rarely experienced failure and therefore have not developed the skills necessary to recover and learn from the experience. A child who is afraid to fail may:
    - avoid new activities
    - stop looking for challenges
    - select only safe tasks
- **Fear of Success** - Conversely, a gifted and talented student may feel so pressured to succeed that he or she decides that it is easier not to try and so he or she gives up. For some students, constant success can lead to doubts about the value of their accomplishments.

- **Perfectionism** - Many gifted and talented children accept nothing but the best from themselves. They may set unreasonably high expectations for themselves and become anxious, dissatisfied or discouraged when they don't achieve them.

- **Arrogance** – Students who are gifted and talented can often appear very arrogant. However, what looks like a know-it-all attitude may actually be masking insecurity and self doubts. They are afraid they are not as smart as others may think or they do not feel valued unless they are constantly proving how smart they are.

### Social Skills

Some students who are gifted and talented have trouble with social interactions because their age peers do not share their interests. Often these children find it easier to relate to adults or older children closer to their social-emotional development than age peers. It is important to provide gifted and talented students opportunities to work and socialize with others who are like them. Forcing gifted and talented children to conform to age-appropriate social norms may decrease rather than increase their social skills.

On the other hand, many students who are gifted and talented may exhibit strong leadership skills. They are perceptive to the skills and abilities of others and may often be looked to for ideas and suggestions both in and out of class. See the section on Leadership, page 60.

Social-emotional strategies which may benefit gifted and talented learners are largely the same as for all students. Once a comfortable classroom climate has been established, students are more willing to share their insights and take the risk of expressing their ideas. This is particularly important for children who are divergent thinking and who may have ideas that are "out there." They need to feel that the classroom is a safe place to express their thinking. One way to approach this is the cooperative development of class parameters regarding behaviours. Character education through modelling and tied to school codes of conduct is vital. Also, whenever possible, these traits may be integrated into the daily content and character themes highlighted in all areas of the curriculum. Being knowledgeable about students' learning styles and interests will help teachers in planning and designing their teaching and will help maintain an inviting and comfortable classroom climate. Bibliotherapy and/or cinematherapy can also be powerful tools to examine specific social-emotional issues with either a full class or selected individuals. See further information regarding bibliotherapy on pages 97 and 106.

In order to reach their potential, students who are gifted and talented need to understand themselves and their abilities – both strengths and relative weaknesses. Questionnaires and inventories may be ways to promote such discussion to develop reflective and metacognitive behaviours. Students may benefit from identifying coping strategies in these areas and in their interactions with others. Also, many students who are gifted and talented have heightened emotional sensitivity to societal and social problems. One way that students may address their concerns in this area is to "do

something" about a cause which is of particular concern to them (i.e., pollution, endangered species, homelessness). The extent and type of involvement would obviously vary in relation to the maturity of the student.

Although the classroom will address many of the learning, social and emotional needs of all students, there may also be instances when issues arise which will also involve the guidance counsellor or other professionals. Areas such as perfectionism, underachievement, and self esteem may arise in students who are gifted and talented.

## TACTILE-KINESTHETIC LEARNERS

Many students who are gifted and talented are primarily tactile-kinesthetic learners. Teachers must be cognizant of this particular learning style within the gifted and talented population because their behaviour and need for movement may be misinterpreted as inattention or inability to focus. These students may be overlooked as gifted and talented learners since they don't always complete assigned work. This may cause teachers to question the need for additional challenges.

### Points to Consider

Research has found that kinesthetic learners compose fifteen percent of the student population yet many curriculum and instructional approaches are structured toward auditory and/or visual learners (Barbe and Milone, 1980, p. 45). Research has documented that when students are taught through approaches that match their strengths, they achieve at higher levels and demonstrate better on-task behaviour.

- The tactile-kinesthetic learner must DO things to have the best chance of learning. The use of the whole body often facilitates learning to a greater extent than just hands-on experiences.
- The tactile-kinesthetic learner remembers best the things he or she physically experiences.

(Additional activity suggestions may be found at www.pesdirect.com/lsitactile.html#teach )

**Activity Suggestions for the Tactile-Kinesthetic Learner**

| Kinesthetic Activities | Tactile Activities |
|---|---|
| SMART Board or similar | Modeling |
| Surveys | Scrapbooks |
| Demonstrations | Colouring books |

| | |
|---|---|
| Dance | Artistic creations |
| Body games | Dioramas |
| Rocking and reading | Needlework |
| Make a video show | Posters |
| Field trips | Task cards |
| Dress as characters | Tablet |
| Role-play/interviews | Blackboard/whiteboard activities |
| Charades | Sandpaper/felt letters |
| Pantomimes | Games |
| Plays | Calculators |
| Projects | Puzzles |
| Walking and reading | Collections |
| Puppet shows | Workbooks |
| Musical performances | Sculptures/Collages |
| Science labs | Mobiles |
| Cut-and-paste tasks | Displays |

## GENDER ISSUES

> *Gender roles have changed throughout the world, creating one of the most profound transformations in human society. As these new roles evolve, the ways in which we guide and mentor gifted girls and boys are changing as well.*
>
> (Kerr & Foley Nicpon, 2003)

> *By the time gifted males and females have reached adulthood, the development of their talent has been profoundly shaped by their gender. For different reasons, they have often compromised away the promise of their giftedness. Except for boys and girls who have the courage and support to challenge gender roles, most gifted boys and girls do succumb to society's image of what achievement constitutes.*
>
> *(Kerr, 2000)*

The research of Silverman (2009) and others indicate that gifted girls begin to attempt to blend in with their peers at an early age, even if it means hiding their abilities. Barbara Kerr's work on gifted boys finds that boys may be denied gifted services as a result of their underachievement. Highly able boys who become bored in the classroom are more likely to react by acting out. Both genders may undergo conflicts with identity and achievement motivation. Colangelo and Kerr (1990) suggest that gifted young people of either gender are at risk of not completing the education necessary to achieve their career goals. Gifted girls and boys need to learn to cope with their giftedness while carefully following prescribed gender roles if they want to avoid the rejection of their communities.

Since the advent of the women's movement, schools and society have consciously tried to help girls raise their career aspirations by encouraging them to enroll in courses once dominated by their male classmates. Girls are enrolled in coursework which demands greater academic rigor, and more girls are claiming leadership positions in our schools and society. However, as gifted girls and women become increasingly active in domains which were historically almost exclusively male, they also find the accompanying problems: substance abuse, violence, and self destructiveness (Philips, 1998 as quoted in Kerr & Foley Nicpon, 2003). Many of these females struggle to meet the near impossible expectations for body and beauty demanded by society's image of the perfect woman. Young professional women frequently find that their goals and ambitions are not supported by their partners. Many gifted and talented women lower their own personal expectations and compromise in order to attempt to create a lifestyle that will work for all members of the family (Tomlinson-Keasey, 1999 as quoted in Kerr & Foley Nipcon, 2003).

The revolution in gender roles has also affected gifted males. Many strive to show that they are regular guys despite their intelligence. Most boys who are gifted and talented learn that it is okay to be bright if they are athletic. Those who cannot shine in sports may develop a machismo based on their technical abilities in technology such as computers. Males who do not develop this masculine persona may receive a derogatory moniker such as nerd or brain.

**Behavioural Traits**

| **Female** | **Male** |
|---|---|
| Gifted girls/women are likely to: | Gifted boys/men are likely to: |
| ° speak, read and write earlier than their peers, both male and female | ° underachieve |
| ° have (had) a childhood full of active exploration, adventure, voracious reading, and delight in thinking | ° be held to rigid stereotypes of masculinity |
| ° have (had) childhood interests which align with activities usually associated with boys | ° be directed to careers by strong economic and achievement motivations-they tend to have high salaries and high status positions |
| ° be confident in their opinions and willing to argue their point of view | ° be red-shirted (held back from academic entrance in order to make him more athletically competitive) |
| ° attribute success to effort or external factors such as the luck of “being in the right place at the right time” | ° attribute successes to their own capabilities |
| ° see failures as the result of internal faults or inadequate abilities | ° attribute failures to external factors |
| ° be perfectionists | ° put success ahead of happiness |
| ° need encouragement to take challenging courses in math and science | ° disengage from activities seen as female dominated |
| ° seek to obtain status through relationships with high- prestige males | ° seek the “achievement” of perfect girlfriend/partner: slender, beautiful, pleasing and not too much of an achiever in her own right |
| ° need encouragement to become risk-takers | |
| ° struggle to achieve a balance between satisfying intellectual needs and developing social relationships | |

- intentionally underestimate or hide their abilities to avoid being seen as physically unattractive or lacking in social confidence
- choose less demanding careers because they perceive an "either-or" choice between career and family plans A gifted and talented female may often:
    - follow her boyfriend or husband for his job rather than have him follow her
    - give up full-time work for part-time work
    - give up leadership positions
- be socially isolated during adolescence

**Sexuality**

It is often said that children who are highly gifted and talented are more androgynous than their age peers. Strict gender identities may be rejected, perhaps because they don't wish to be limited in explorations of the world or in interactions with others. Since high intelligence is often considered by society to be a masculine trait, girls who are highly gifted and talented may feel less feminine than other girls. Similarly, since empathy and sensitivity are considered feminine, sensitive highly gifted and talented boys may feel less masculine. Sometimes this broad range of diverse non-traditional interests and sensitivities may lead preteen or teen aged boys and girls to be perceived as gay or lesbian. The way students handle this situation depends on the individual. Some students may become exaggeratedly feminine or intensely macho, trying to establish themselves firmly in their biological gender. Some may choose the other extreme and take on traits of the opposite gender. Some may try to lose their confusion in sexual experimentation or escape it by rejecting sexuality altogether.

It is often estimated that ten percent of the general population is lesbian, gay or bisexual (LGB). It stands to reason that ten per cent of the highly gifted and talented population is LGB as well. With few positive role models and difficulty finding partners compatible both in sexual identity and in intellectual capacity, the LGB adolescent who is highly gifted and talented becomes even more isolated than he or she has been through childhood. The National Association for Gifted Children has a task force which provides information on and for gay, lesbian, bisexual and transgendered (LGBT) gifted and talented youth. For further information, visit www.nagc.org and search the Resource Directory for LGBT. Another useful resource may be

*Gifted Gay, Lesbian, Bisexual, and Transgender Annotated Bibliography: A Resource for Educators of Gifted Secondary GLBT Students* by Alena R. Treat and Becky Whittenburg available at www.indiana.edu/~glbt/pdf%20files/annotatedbiblio.pdf

## Points to Consider:

### Gifted and talented females:

### Socialization

- Teachers often emphasize a fast response rate, but that emphasis often teaches reflective, thoughtful girls that boys are more able (Reis, 2002).
- Gifted and talented girls, especially, accept the prevalent double messages, hide their gifts, and often become someone other than their authentic selves (Pipher, 1994).
- Women who do persist in being high achievers are often personally comfortable being different from the majority.
- Those girls who have the talent and the potential to succeed in any career – including non-traditional careers – need more than encouragement, they need hands-on, experiential opportunities to explore.

### Self Esteem

- Many females who are gifted and talented have wavering emotions about their high abilities.
- Achievement – especially in the Sciences and Math – is often not reflected in girls' self-efficacy; while girls often achieve on a par with their male classmates, they too often rate their abilities lower and report lower confidence.
- While girls begin school with comparable skills and ambition to boys, the time of greatest decline in female self-esteem coincides with middle school, when physical appearance is deemed most important by peers and the popular media so girls begin to hide their intelligence and downplay their abilities. (AAUW, 1992)
- Popular media often deflates or even attacks the self-esteem of girls by marginalizing and stereotyping their roles. Girls are told that looks and sex appeal are all-important. A powerful peer system supports a culture of romance, which rewards a young woman's romantic "achievements" while disregarding her intellectual successes.

- Perfectionism often becomes more pronounced in high school as gifted and talented girls endorse higher standards for themselves, but often feel they have fallen short of both self-imposed standards and media standards.
- The negative combination of lowered self-esteem, need for regaining control, and the perfectionism so often found in gifted and talented girls, places them at higher risk for eating disorders such as anorexia nervosa and bulimia. The high degree of sensitivity, extreme introversion and feelings of inadequacy or inferiority may also combine to increase the risk of suicide among gifted and talented girls (Ryan, 2005; Kline & Short, 1991; Gust-Brey, 1999).

**Gifted and Talented Males:**

**Underachievement**

- An American national study of achievement test scores found nine times more male than female underachievers (Colangelo and Davis, 2003, p. 493).

- Between the third and fifth grades, gifted and talented boys often begin to underachieve when they learn that it isn't cool with their male peers to be the best student in the class (Wolfe, 1991 in Colangelo & Davis 2003, p. 497.)

- Gifted and talented boys are often held to rigid stereotypes of masculinity (Kerr & Cohn, 2001 in Colangelo & Davis,2003). In contexts where achievement is associated with "nerdness" and weakness, underachievement may be a way for gifted and talented boys to establish their independence, strength and masculinity.

- Underachieving may make the boy less of a target for mocking and teasing.

- These boys are usually friendly and mild-mannered with no evident reason to underachieve. Teachers like them and are astounded when a boy who has previously been excelling stops performing. This behaviour has been labelled Bartleby Syndrome after a character in a short story by Herman Melville (*Bartleby, the Scrivener*) who refuses to carry out assigned duties with "I prefer not to." There may be several explanations for this syndrome.

    - It is an attempt to demonstrate masculine identity by resisting his teacher's wishes – particularly if the teacher is female.
    - He would rather frustrate his parent and teachers than antagonize a bully.

- The boy is bored. He has not been challenged and has not experienced a real sense of accomplishment from a job well done, an obstacle overcome.

- In a society that honours males breaking barriers, and pushing the limits, the young boy who feels he may never have the opportunity to prove his worth simply gives up.

**Disengagement**

Another issue is that with the growth in female leadership in high school, more and more males are choosing to disengage rather than face the stigma of being involved in female led and dominated activities. They choose not to do the "girl thing". This is another movement to maintain their masculinity yet distance themselves from leadership opportunities.

**Fear of Feminization**

Many young men who are gifted and talented are sensitive, nurturing and caring but are often socially restricted to "boys'" activities for fear of appearing too feminine (Pollack, 1998). Many boys learn that it is acceptable to be gifted and talented if they are also athletic. Boys who are gay and gifted and talented will struggle perhaps trying to hide both attributes. Others boys who are gifted and talented but not gay may fear that their sensitivity, unusual interests and cultural concerns may be signs to others that they are gay. Either group may experience disengagement, alienation, or be led to compromise career choices and relationships in order to prove masculinity.

**Supporting gifted and talented students regarding gender pressures**

> *"When you dream, do not be realistic and fit your dream to what exists and is possible. Fit your dream to what should exist, and should be possible."*
>
> *--June Callwood*

Teachers can help address Bartleby Syndrome by talking honestly with boys about underachievement at the beginning of the school year. It is helpful to get to know the learners and uncover topics and areas of interest that appeal to the boy's sense of excitement about learning and achieving – to have education that is stimulating, appropriate and flexible to embrace the interests, skills and modalities of the students. Thomas Hébert is a researcher who is very concerned with social-emotional and related guidance issues for gifted and talented students. He has suggestions for parents of young gifted and talented males which include encouraging non-competitive sports or

suggesting that the young man become involved in sports in a creative way such as becoming the sports writer for the school newspaper. He recommends that the choice of sport belongs to the child. It need not be a team sport. The solitude of long distance running may appeal to some boys. Other sports such as golf, tennis, or skiing are a little more social while not requiring a team. (Hébert, 1991)

Mentors and advanced training can be very important in leading gifted talented boys to explore and excel in their chosen fields. Mentors can be either male or female.

Providing high-achieving role models of both sexes and upholding high expectations for gifted and talented students are key. It may be helpful to showcase success stories of gifted and talented people who have chosen occupations contrary to traditional gender roles.

The guided reading of biographies is a versatile teaching tool. While it can be used effectively with either gender, it is particularly important that girls have strong and successful female role models who have embraced their own determination, commitment, assertiveness and proficiency.

Reading biographies can help girls feel confident challenging conventional ideas, questioning authority, and voicing their concerns and ideas for change. In socially traditional families, these characteristics may conflict with parental perceptions of appropriate behaviour for young women (Reis, 1999). A single carefully selected biography may even provide pivotal insights into the life of a critical role model. Such insights and shared life lessons may be just what are needed by a young woman who is struggling to accept her unique gifts and potentials. Some suggested resources include:

- *Celebrating Women's Achievements* resource by Library and Archives Canada (www.collectionscanada.gc.ca/women/002026-309-e.html )

- Hébert , T. P., Long, L. A., & Speirs Neumeister, K. L. (2005). Using biography to counsel gifted young women. In Johnsen, S. K., & Kendrick, J. (Eds.), *Teaching and Counseling Gifted Girls: Gifted Child Today Reader* (pp. 89-118). Waco, Texas: Prufrock Press.

- Reis, S. M., & Dobyns, S M. (1991). An annotated bibliography of non-fictional books and curricular materials to encourage gifted females. *Roeper Review*, Apr 91, Vol. 13 Issue 3, p. 129-133.

Bibliotherapy is also very effective for males particularly in addressing affective needs. Hébert (1991) includes 30 possible titles. Visit Tamara Fisher's blog for further lists of titles and resources applicable for both gifted males and females.

http://blogs.edweek.org/teachers/unwrapping_the_gifted/2009/03/using_bibliotherapy_with_gifted_children.html

Another useful source is Some of My Best Friends are Books (3rd edition): Guiding Gifted Readers from Preschool to High School: A Guide for Parents, Teachers, Librarians, and Counselors by Judith Wynn Halsted. (Great Potential Press, 2009). Although this book is intended to suggest appropriate general reading for gifted and talented readers, *Chapter 4: Emotional Development through Books* contains a section on bibliotherapy and may be a starting point for how to use literature to enhance the emotional development of students who are different from the norm by manner of gifts and talents or intense interest in a particular area.

*Guiding the Gifted Reader*, an article by the same author is available at the Davidson Institute for Talent Development website at www.davidsongifted.org/db/Articles_id_10350.aspx

Other instructional suggestions to address the learning styles of gifted and talented males include:

- Use speaking and listening in teaching reading.
- Bring more creativity and variety to reading and writing curricula.
- Use more technology.
- Provide for a greater amount of physical activity in lessons.
- Use less lecture and more spatial and diagrammatic lessons.
- Include books high on action.
- Increase the pace of learning in areas of interest.
- Create opportunities for students to move periodically throughout the day.
- Make a variety of co-curricular activities available to interest students who are not athletes.
- Encourage students of both genders to explore a variety of career and occupation options.
- Match students with mentors who can support them in goal setting.
- Provide gifted and talented boys with male role models who have intellectual depth.

(Tolan, n.d.)

In the classroom, gender equity should be practiced and taught. Teachers must consciously call upon males and females for responses and ensure that the levels of questions addressed to both are equal. Those who do not volunteer readily should not be left out but included respectfully in classroom discourse. Criticism should be equitable. Avoid the assumption that females are having difficulty with content and males are having difficulty paying attention. Value the planning and reflection time taken before entering into a task rather than stressing the rapidness of completion.

Females take more time with consideration and preplanning and may fare worse on timed tasks than males (Robinson, Shore & Enersen, 2007). This does not reflect any less facility or understanding of the material.

In order for gifted and talented students to thrive, they need assistance in planning futures that consider academics, careers, and relationships. These steps will help prevent gifted and talented males and females from compromising their own education and life plans in order to fit into the gender roles prescribed for them by society.

**INSTRUCTIONAL/DIFFERENTIATION STRATEGIES FOR MEETING THE NEEDS OF STUDENTS WHO ARE GIFTED AND TALENTED**

There is a continuum of supports for students who excel in areas of the curriculum or in other areas of endeavour. Many of the strategies described here are appropriate for any student who demonstrates high ability and/or achievement. There are, however, several programming options which are only accessible by students who have been identified according to the exceptionality Gifted and Talented. These include accommodations, modified prescribed courses, alternate programs and courses. These are clearly indicated and described beginning on page 112.

## Grouping for Instruction

Grouping for instruction is often very effective in addressing the needs of gifted and talented learners. Individual situations and circumstances may be approached with a variety of grouping options. The selection of method will vary according to the school and class profiles.

### Full Time Ability Grouping

This type of grouping places students meeting a set criterion (such as a cut-off IQ score) in the same self-contained classroom for the majority of the school day. The classroom teacher would differentiate every curriculum area to meet the needs of the students in the class. However, because of the typically smaller size of schools in Newfoundland and Labrador which would not support the population of full time gifted classes and the policy of inclusive education, the Department of Education does not support this model of student grouping. Such permanent ability groupings are not advocated by the Newfoundland and Labrador Department of Education although this may happen naturally to some degree as a result of course selection at the high school level. For example, students who choose to take particular courses (Advanced Math, AP or IB designations, etc.) are generally all high ability students.

## Flexible Grouping

One main tenet of differentiated instruction is flexible grouping. Many types of grouping are used to address teaching strategies, learning styles and student readiness. As a part of this flexibility, it is important to remember the importance in sometimes grouping high ability students together. Research clearly indicates that gifted and talented students benefit when grouped with students of similar ability; their intellectual peers. Occasional use of grouping by ability provides opportunities for several high-ability students to be placed in the same group in order to challenge them. Students work with their true intellectual peers in order to delve deeper or aim higher in their area of strength and passion. In such a group, the students with special abilities may be challenged – and sometimes humbled - especially when they come from a situation where they have always been ahead of their classmates. Ability groups may be occasional or may last for a particular unit or topic. There are many structures where these opportunities may be provided.

## Regrouping for Specific Instruction

Students may be regrouped within their class for specific instruction. This may be for a particular topic or unit on which a student or a small group has considerable prior knowledge, ability, or ability to process new information quickly. The groupings may be as a result of preassessment or similar demonstration of readiness. Students may be groups in a particular subject area such as using guided reading or literature circles in language arts instruction. In schools where there are several classes of the same grade, this may also occur between classes.

Students of several classes at a grade level may be grouped by their achievement or performance level for a particular topic or activity. This could accommodate a more in-depth project or allow a literature circle on an advanced piece of literature, while other students pursue similar activities at a tier or level suited to their zones of proximal development. The pace of learning can also be addressed in this setting as highly able learners have little need for repetition for mastery.

## Like-Performing Grouping

This option would allow several like-performing students to work together on a topic or task. It may involve several students working together to create an electrical or robotic system out of a set of materials while others follow a more prescribed task with the same materials.

### Cross-Grades/Multi-Aged Classrooms

When several grades are grouped in one classroom either permanently or for part of a day, students may be moved to a grouping which is suited to the level at which they are currently functioning. This may provide an opportunity for a student to do a subject acceleration where he or she may pursue one subject in which he or she has particular strengths at a higher level without the need for grade skipping. This might be a useful option when a student has one strength area rather than being exceptionally strong across all domains or when there are social concerns about a full grade acceleration. It has sometimes also been successfully used in order to prepare for an upcoming grade acceleration by ensuring no gaps in learning occur in a particular subject area.

### Performance-Based Pull-Together Enrichment

This option would see students with identified gifts and talents selected to participate in a short term pull-together program designed to develop talent in that specified area. The clusters may occur on or off site. This would be similar in concept to the mini-courses or conventions some NL school districts offer to small groups of intermediate students. This might see a small group of gifted and talented student painters work with a professional for several days or allow students with gifts and talents in science to work in a university laboratory setting for a period of time to design experiments to answer question about a scientific phenomenon. There has been little data collected on the academic effects of this option.

### Independent Work/Study

This is another option of flexible grouping where a very able learner may choose to work independently on a topic or project either to pursue a classroom idea in greater depth or faster pace, or to explore an area of personal interest. This may be combined with curriculum compacting and/or a learning contract. There is also an option outlined in the High School Certification Manual where a student can complete a high school course as an independent study providing he or she follows the procedures detailed regarding supervision by a teacher and the consequent evaluation procedure.

### Enrichment Clusters

Enrichment clusters allow students and adults who share a common interest and purpose to come together for given periods of time. Students who share common interests are given the opportunity to meet in non-graded groups to pursue their interests during specially designated time blocks with a product or a service as a focused outcome. This may happen once a week, once a cycle or at any other time the school decides is best. Usually, though, clusters are offered during an extended block

of time from one hour to one-half day per week for as long as interest remains high. Clusters such as this offer schoolwide enrichment.

### Pull Together Program

In a school-based pull-together program, students leave their classrooms for a limited time to receive small group instruction in a specific area. This has been a popular model in the past as schools can point to a separate and recognizable program as an example of what they are doing to address the needs of their brightest students - perhaps more clearly than to initiatives which may be embedded in classrooms. However, when students are pulled from a variety of classrooms and/or grades, the differences in student motivation, persistence, readiness and interests are often quite varied which may mean that this is often less of a like-ability group than may be expected. Since it is often only a few hours a cycle, it is difficult to ensure consistent follow-though among students or follow-up with the many classroom teachers with whom these students spend the majority of their time. On occasion, the classroom teacher may feel that the pull-out situation is “looking after” the needs of the very able students when, in reality, differentiation is still required in the classroom since the student spends 80% or more of his or her time there. If this model were to be used, it would need to be in conjunction with differentiation of instruction within the regular classrooms to which the students return. It should not be a “one shot inoculation” approach but part of a plan to address the learning needs of our learners who are gifted and talented.

### Cooperative Learning

Cooperative grouping is common in many classrooms. It is felt that working in teams makes a strong contribution to life skills such as listening, arriving at consensus, and problem solving. However, this is the only group for which the research on cooperative learning is not entirely positive (Slavin, 2010). Numerous research studies have found that high-ability students do not fare well in traditionally-formed cooperative learning settings (one high-, one low-and two middle-ability students). Coleman, Gallagher and Nelson (1993) as quoted in Rogers (2006) reported that educators associated with gifted and talented education felt that traditional cooperative learning groups were not challenging enough for gifted and talented students and that when these students work in mixed ability groups, they tend to do the bulk of the work or assume the role of junior teacher. If gifted and talented students are consistently teaching or explaining material to other students, they are not pursuing their own learning needs. They report feeling bored, frustrated and anxious (Coleman and Gallagher, 1995).

Teachers might consider occasionally allowing students who are highly able to form their own cooperative learning groups. They will still build the interpersonal skills advanced by such teamwork but also extend their own learning.

The National Association for Gifted Children has released a Position Statement on Cooperative Learning for Gifted Students. It is available in Appendix I or at www.nagc.org/index.aspx?id=386

## Classroom- Based Strategies for Teaching and Learning: Teaching Strategies Suitable for all Students

Curriculum differentiation is a process teachers use to enhance learning to improve the match between the learner's unique characteristics and various curriculum components. Differentiation involves making changes in the depth or breadth of student learning and is enhanced with the use of appropriate classroom management, varied pedagogy, pretesting, flexible small groups, access to support personnel, and the availability of appropriate resources. Programming may be differentiated in content, product, process and/or learning environment.

The strategies discussed here may be useful for many highly able learners. Some of these teaching strategies, such as independent projects or learning centres, would be recommended for many, if not all, students in a heterogeneous classroom. Teachers may choose a strategy for the entire class, a smaller group, or a targeted individual. However, for students who are gifted and talented, combinations of these approaches are crucial to addressing their learning needs. The importance of an inclusive climate cannot be stressed enough to make the classroom a safe place for different students to be doing different things according to their interests and abilities - and for that to be acceptable and expected by the students in that class.

**Curriculum compacting** is a teaching strategy designed to adapt the prescribed curriculum to meet the needs of above-average learners by assessing students' skills and knowledge about a topic prior to instruction, and then eliminating work which has been previously mastered, or streamlining work for students who are capable of mastering it at a faster pace. Compacting creates a more challenging learning environment, helps guarantee proficiency in basic curriculum, and provides time for more appropriate enrichment or acceleration activities. This may benefit not only the students who are gifted and talented, but also the student who is a high achiever in one or more curriculum areas. Depending on the strengths and interests of the child, the time "bought" in this manner may be used to provide enrichment or an increased pace of learning in a particular subject.

*Teaching Gifted Kids in the Regular Classroom* by Susan Winebrenner contains many examples of learning contracts, conditions for independent work, study guides and forms for recording prior mastery of outcomes, replacement materials, and independent learning arrangements which may be helpful in organizing curriculum compacting. This

was provided in Fall 2010 to all schools with a student population including any of Grade 4 to Level III. See also *The Compactor* in Appendix D which may be useful in documenting the manner in which specific outcomes may be addressed by individual students.

There are three main steps in curriculum compacting.

*Name It*

Identify the area of strength which is being considered for compacting.

*Prove It*

Find or develop a means of preassessing students on one or more of the outcomes in the area identified and document the students' mastery level of those outcomes.

*Replace It*

Eliminate practice, drill, or instructional time for students who have demonstrated prior mastery of these objectives. Streamline instruction of those objectives students have not yet mastered but are capable of mastering them more quickly than their classmates. Offer enrichment or acceleration options for students whose curriculum has been compacted. Keep records of this process and the instructional options available to "compacted" students.

Course or unit grading is still based on the achievement of the prescribed curriculum outcomes. Feedback should be provided to the student on extensions or more complex work undertaken but any evaluation of the extension work should be anecdotal. Students should be encouraged to take the risk of attempting more challenging activities without concern that their grades might be negatively affected. This teaching strategy is not modifying the prescribed curriculum. The measuring stick by which the students are evaluated has not been changed.

Curriculum compacting in content areas may involve allowing students to cover material at a pace more rapid than the other students in the class. A study guide may outline the topic and big ideas which are to be addressed during the unit and detail stages and times where assessments, tests, or projects will be required. Students may also have a learning contract recording how the material will be processed and how learning will be demonstrated.

Please see Appendix H for examples of this strategy in several subject areas.

**Telescoping** is reducing the amount of time allotted for a student to master learning outcomes. Students who are gifted and talented may not require as much time as other

learners to meet the same outcomes. For example, a student may complete the outcomes for both grade 5 and 6 mathematics in the same year. Telescoping is sometimes considered a type of subject acceleration and generally lines up the outcomes of both programs, extends instruction to cover both simultaneously when they involve an extension of an idea from one grade to the next, and treats others as required for linear sequence.

**Learning contracts** are recorded agreements between the student and the teacher about the nature and amount of class work to be done. They are usually written and more structured than compacting, applying to ongoing situations such as progressing through a book or a set of lessons. Students may work with the class from time to time depending on the terms of the contract. It is recommended that grades be based on regular class work and not on the enrichment activities. This allows for more willingness to experiment and risk-take rather than being concerned about the resulting grade. Sample contracts are included in Appendix H.

**Independent projects** involve major projects or assignments extended over longer periods of time. Most work within the guidelines of a contract which helps to clarify expectations. It may be a long-range project relating to a personal passion if the student is self-motivated. Such projects are valuable in allowing the student to experience both the frustration and rewards of sustained effort.

**Independent study** is an opportunity for students to pursue areas of personal interest or to individually investigate course topics. Components of an independent study program 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
- evaluating the process and product
- sharing the product with an intended audience beyond the classroom
- keeping a portfolio of results

Some writers speak of orbitals as a component of differentiated instruction. These would be very brief independent projects which extend the topic being considered by the class. It would be an exploration to a greater depth or additional examples than that undertaken by the majority of class members. It often provides a starting point for more formal undertakings with independent study.

For both independent projects and independent study, do not assume that ability automatically translates into skills. For example, while a learner may have a great aptitude for performing at a high level and producing complex projects, he or she may not have the requisite skills for completing a project independently. He or she may need to learn to develop framing questions, select a representative sample, or utilize surveying techniques, data analysis, or selected computer programs. It is advisable to start with a more structured situation employing shorter time frames and higher levels of teacher input and monitoring. Responsibilities are gradually transferred as students become more skilled at working independently and thinking critically.

Independent studies help move student learning from being teacher-directed to self-directed. With teacher support and coaching, the student learns how to decide on a focus, how to develop a plan of action and follow it through, and how to monitor the process. Students take part in developing criteria for evaluation and begin to work with the teacher as a partner. It is often advisable to combine independent study with a learning contract to ensure clear expectations, timelines and frequent monitoring. Many examples are available in Susan Winebrenner's *Teaching Gifted Kids in the Regular Classroom* which was provided to schools in Fall 2010.

See also the outline of recommended steps for pursuing independent study contained in Appendix H.

**Tiered assignments** are designed to meet the needs of a group of learners functioning at a range of levels. Students work on the same content, but are asked different questions and are provided with different activities which are assigned according to ability. Highly able students may take on more challenging levels or in-depth consideration of the topic at hand or be assigned more complex projects or products. Tiering may occur with the construction of the lesson or assignment, the resources used, specifications of the product required, the independence required, the amount of teacher involvement or the process by which the learning occurs. To better address student readiness, teachers are advised to start by designing the "just right" task for the grade level and then "bump it up" for highly able learners and "bump it down" for those who struggle. Tiering should change the lesson or assignment by complexity or challenge. The differences in the tiers should be in the type or level of thinking required – not just in the amount of work (i.e., not 5 problems for those who struggle and 15 for those who are highly able). Schools have received the book *Differentiating by Readiness: Strategies and Lesson Plans for Tiered Instruction Grades K-8* by Joni Turville, Linda Allen and LeAnn Nickelsen which provides further details on this process. See also several samples provided in Appendix H.

**Bibliotherapy** - Students study the behaviour of characters in a story to explore how they think, feel and respond in a variety of situations. By asking students to place themselves in the positions of characters in the story, they can discuss motivations and outcomes, see different points of view and practice problem solving. Bibliotherapy is

especially valuable for students who may be working through their own set of problems. Thinking about how others deal with a problem provides students opportunities to play with possible scenarios. This can extend their own repertoire of ways to work through problems. It may also be a valuable tool in addressing issues regarding gender roles through studies of biography. This strategy may be used as individual pursuit or embedded in the curriculum through selected titles for literature circles, historical resources, etc. See the section on bibliotherapy, page 97, for suggested titles.

A **webquest** is an inquiry-oriented lesson format in which most or all the information that learners work with comes from the Internet. It can be a valuable tool for differentiating instruction since teachers are able to provide students with multiple websites to use for information, thereby allowing the students to use the resource that works best for their level of understanding and ability. Students who are gifted and talented are able to research a topic deeply, while other students may explore the same topics on different websites. A webquest may also differentiate by providing a choice of final product to demonstrate learning. Webquests also encourage accountability. Specific task guidelines and/or rubrics are provided from the beginning of the project, so that all students are aware of exactly what is expected of them. See Appendix H for further information on this instructional format.

**Study of famous people** - Some students who are gifted and talented go through periods of feeling isolated because they think differently from many of their classmates. One approach which may help them feel less isolated is to study the lives of other gifted and talented people. They can learn about the personalities, backgrounds, motivations, difficulties, as well as successes of the famous people. Such a study can lead to understanding of self. Gifted and talented adults have three traits contributing to their giftedness: above average intelligence, creativity and task commitment (Renzulli, 1986). Students can study the interaction of these traits and discover how they contributed to the success of notable individuals. The study of leaders in various fields may also be beneficial to the development of leadership potential in youth. Such a study may allow a focus on the influences on and by the individual as well as a consideration of his or her personal attributes and leadership style.

**Learning centres** are physical stations where students are engaged in activities designed to extend their understanding and thinking about a topic. Activities may include working on an individual or small group investigation, watching a DVD, listening to a CD or working on a computer activity. Sometimes there are games to reinforce a concept or problems to solve. For the teacher, learning centres provide a way to work with small groups while the rest of the class is engaged in other assignments or centre work.

Learning centres can be used to reinforce and extend the regular program or to identify and extend the interests of students. In the latter case, they may not be directly related to curricular content, but may introduce the students to new possibilities for study. As a

class rotates through centres, there may be opportunity to provide centres which contain higher level or more complex learning. Students who require such a challenge may be discretely directed here to replace a centre offering learning which they have already mastered. Or, the materials in a centre may be changed, perhaps in reading level or abstractness, so that it better aligns with the needs of the group using it during that particular period. Today, in response to the needs of the group assigned there, the centre on erosion may contain a reference article taken from a magazine below the reading level expected for the grade. Tomorrow the centre may have an excerpt from a college level text dealing with the same topic at a different level better matched to the students who will be at that centre. Similarly, the website which is book marked at that centre for today's group may not be the same one to which another group is directed tomorrow. The questions or task related to the topic may be changed according to the group. One group may be tasked to find out about the process of erosion. A second group may be asked to compare erosion rates of different parts of coastlines or certain types of rocks. The topic is consistent but the resources or product may be adjusted.

**Thematic learning** - A theme is an idea or subject that recurs. Therefore thematic-based curriculum is not a curriculum in and of itself, but rather a way of incorporating regular curriculum under a large umbrella in order that students see interrelatedness between and among disciplines, topics, and information. A thematic curriculum allows open-endedness and makes information relevant. It encourages thinking in wholes as well as parts, and encourages a general "big picture" view of learning while highlighting interrelationships in and among disciplines. A thematic curriculum is highly appropriate for gifted and talented students as a hallmark of their learning style is the ability to draws parallels between seemingly disparate ideas.

**Thinking skills instruction** is important for all students but may be especially appropriate for students who are gifted and talented. These skills would include critical thinking skills of conceptualizing, applying, analyzing, synthesizing, and/or evaluating information as well as creative thinking skills such as fluency, flexibility, originality and elaboration. See Appendix J for information regarding thinking skills programs and resources.

# School-Wide, District and Further a Field

## Outside the Classroom Enrichment Options for Highly Able Students at All Grade Levels – NOT FOR CREDIT

**Co-curricular options** are offered outside the regularly scheduled day and provide students an opportunity to pursue interests and develop talents. These options complement and support curriculum outcomes while allowing a student's interests to provide the incentive for in-depth study.

**Minicourses** are intended to introduce students to topics of personal interest. Courses may range in time from a few hours to several weeks. Time may be built into the school day or take place outside the day, depending on how the school wishes to operate them and on the availability of resource persons. Instructors can be drawn from universities, technical schools, the business community and the community at large. This is generally accomplished by excusing students from their regular classes for a period of one or two weeks and allowing them to attend one of these courses instead. Because of the time missed, these are usually reserved for high achieving students with the work ethic to allow them to miss this time from regular classes. In the past, successful minicourses have been organized at the district level to coincide with the spring break at post secondary institutions. This takes advantage of the corresponding availability of space and instructors from these facilities.

**Scheduled short courses** may be offered for a month, a term, or a school year. Courses are usually based on the available expertise within the school's staff. They may include areas of interest, expertise or hobbies such as painting, photography, fly-tying, guitar, journalism/creative writing, folklore, map and compass, electronics, computer programming and software applications. The list is only as exhaustive as the knowledge, expertise, and willingness to participate of staff members. Students select one course to pursue during a particular time period. This is generally a format used for schoolwide enrichment for all students. See also the section on Enrichment Clusters on page 101.

## Other Opportunities – Not For School Credit

There are a multitude of other methods/programs that provide enriching opportunities for gifted and talented students. Many of these may be offered by outside agencies and may appropriate for different age/grade levels. Some involve fees which may be the responsibility of the student.

**French bursaries** –The Government of Newfoundland and Labrador provides bursaries for French language study for students in Grades 9 and 10, in the context of a federal-provincial agreement. Bursaries are also available for students in Grades 11 and 12 through a national bursary program funded by the Government of Canada and administered in this province through the Department of Education.

For details, please visit www.gov.nl.ca/edu/k12/french/bursaries.html

**Mentorship and internships** -Teachers, counsellors, librarians, other students, parents and community resource people can become mentors for highly able students. The relationship with a mentor can help the student move to a new level of understanding of a discipline. It is a unique opportunity for students to learn how experts in their field of interest go about their work. Internships can help the student experience the reality of

work in a specific field. Mentors can provide stimulation to highly able students as well as support beyond the classroom. They allow the student to move ahead in an area of passion while working with peers at other times.

**Future Problem Solving** is a year-long enrichment activity which stimulates critical and creative thinking skills and encourages students to develop a vision for the future. Student teams register in one of three grade divisions: juniors (grades 4-6), intermediate (7-0) or seniors (10-12). The teams receive three practice problems which they solve using a model based on Creative Problem Solving.

**Destination Imagination** is an extra curricular program involving teams of 2 to 7 students. Students solve problems in a variety of areas, from building mechanical devices such as spring-driven vehicles to giving their own interpretation of literary classics. Through solving problems, students learn lifelong skills such as working with others as a team, evaluating ideas, making decisions, and creating solutions while also developing self-confidence from their experiences.

**Philosophy for Kids Program** allows students to wonder at and puzzle over ideas and to make sense of the world around them. It provides a framework in which ideas can be explored. Students quite naturally extend and reshape topics raised in discussions to their own lives and experiences, thus they are better equipped to deal with problems and issues that confront them such as the use of drugs, violence and abuse, health, the environment, etc.

**The Education Program for Gifted Youth** (EPGY) - at Stanford University in California there is a continuing project dedicated to developing and offering multimedia computer-based distance-learning courses. Combining technical and instructional expertise, EPGY provides gifted and talented learners of all ages with an individualized educational experience, optimized in both pace and content. Through EPGY, students have access to courses in a variety of subjects at levels ranging from kindergarten through university undergraduate.

**Junior Great Books** – The aim of this program is make reading and discussing literature a lifelong pursuit. Junior Great Books combines age-appropriate literature with the shared inquiry method of discussion.

Junior Great Books helps students develop the skills of reading carefully, thinking critically, listening intently, and speaking and writing persuasively. The program is most often led by teachers in classrooms with students of mixed abilities as part of the regular language arts curriculum. However, it is sometimes used to focus on the needs of students who are English language learners, gifted and talented, or as an after-school program led by parents, volunteers, or librarians.

## Advanced Programming Options for Highly Able Students in High School – FOR CREDIT

**Distance Education** is instruction offered through Internet resources. The Centre for Distance Learning and Innovation (CDLI) offers many high school courses through this method. High achieving students may also sometimes avail of high school courses while in intermediate grades. Some high school students may access university level coursework through distance education (See also concurrent enrolment).

**Advanced Placement (AP) courses** are organized by the College Board. These courses have international curriculum standards and allow high school students to pursue college level studies. Success in a levelled exam may enable them to receive university credit in a specific content area. These courses will also receive credit from High School Certification toward Newfoundland and Labrador graduation status. They received a 4000 designation in the course numbering system. Credits earned in this program undergo a levelling process which will weight the grade to an equivalent to the prescribed curriculum in order to determine scholarship ranking.

**Independent Study (High School courses for credit)** was formerly known as Challenge for Credit. This has been replaced in the High School Certification manual with the option for Independent Study. This manual outlines the requirements for high school students to study a course independently with teacher supervision. This option may also be appropriate for intermediate students who require additional challenge in a particular area; it may provide a vehicle for subject acceleration. Please consult the current High School Certification manual. Visit www.gov.nl.ca/edu/k12/highschool/ and choose *High School Graduation Requirements* for the most up-to-date version.

**International Baccalaureate** Organization offers a pre-university program of studies designed for highly motivated secondary school students. Students may choose the two-year curriculum or selected stand-alone courses. The program involves standard examinations which may entitle successful students to advanced standing or course credit at participating post secondary institutions. In Newfoundland and Labrador, this program is currently offered at Holy Heart High School in St. John's. There are scholarships available to defray travel costs for a student from outside the St. John's metro area who successfully applies to undertake this program. For further information regarding this program, please visit www.hhm.k12.nf.ca and follow the links regarding IB. Credits earned in this program undergo a levelling process which will weight the grade to an equivalent to the prescribed curriculum in order to determine scholarship ranking.

**External courses (programming taken outside school)** are Department of Education approved courses developed and/or offered outside the Newfoundland and Labrador School System which can be used to obtain high school credits. These courses are of a senior high school standard, and may have outcomes other than those of a Department authorized/approved senior secondary course but which contribute to Essential Graduation Learnings. These require the approval of High School Certification and include selected courses from such programs as Royal Life Saving Society, Royal Conservatory of Music, Conservatory Canada, Cadet Training, Duke of Edinburgh Awards and French language programs. Consult the High School Certification Handbook. Visit www.gov.nl.ca/edu/k12/highschool/ and choose *High School Graduation Requirements* for the most up-to-date version.

## For Students with the Exceptionality of Gifted and Talented: All Grade Levels – FOR CREDIT

*N.B. The following strategies, Modified Prescribed Courses and Alternate Courses and Programs, require that a student have an identified exceptionality as a gifted and talented learner. Neither teams nor teachers are to take students off of the prescribed provincial curriculum unless this formal identification is in place.*

**Modified prescribed courses** for students who are gifted and talented involve the addition or extension of outcomes of existing prescribed curriculum courses. Modified prescribed courses increase challenge, authenticity, and active learning to improve learning and achievement. Curriculum may be modified by eliminating outcomes which have been previously met, and adding outcomes beyond the scope of the course of the original course under consideration. Upon application to High School Certification, prescribed high school courses modified by extending depth of treatment and/or adding curriculum outcomes may receive a specially designated course number with an 8 as the third digit.

Bear in mind that the service delivery model for students with exceptionalities specifies that for modified prescribed courses, not more than 50% of the outcomes can be changed, and that no strand can be completely eliminated. Also, such curriculum modification is permitted only for students who have been identified as gifted and talented. If no identification is in place, another strategy might be more appropriate. If this type of modification does not result in a course which provides sufficient challenge, an alternate course may be warranted.

**Alternate courses and programs** – When the learning needs of a gifted and talented student cannot be met through instructional strategies or a modified prescribed course, a curricular alternate course may be appropriate. This would entail an individually tailored course to replace a course or an entire curricular area. For example, a Grade 2

student who is ready for pre-Algebra would require a significantly different math course than his or her grade level peers. His or her curricular alternate math course would constitute his or her math programming; replacing the grade level curriculum in math. Whenever possible, this alternate course would occur at the same time that the grade 2 class is pursuing their math learning. Consult the Service Delivery Model for Students with Exceptionalities for details. Visit www.cdli.ca/sdm

It is vital that classroom/subject teachers consult with a curriculum area specialist regarding the scope and sequence of the discipline in the development of such a course to ensure that no gaps in learning occur. As with any student, gifted and talented students may also require an alternate program. These may address social-emotional issues such as perfectionism, self-image, dealing with others, underachievement, etc.

## PROGRAMMING CONSIDERATIONS

Even when they are involved in some specialized programming, students who are gifted and talented spend a majority of time in the regular classroom and require a flexible approach to programming.

Here are questions to consider when programming for gifted and talented learners:

### Are there opportunities for the student to be actively involved in the planning and assessment of learning outcomes?

Consider involving the student in:

- development of independent studies or investigations based on curriculum and student interest
- formulation of a learning contract
- choice of method for recording learning (e.g., journal, learning log)
- creation of criteria (e.g. rubrics) for assessing outcomes
- orbitals

Work with the student to highlight:

- positive aspects of the project
- things to improve in subsequent work

**Are there opportunities for the student to work with content that deals with complex issues/ abstractions?**

Consider organizing content through the use of:

- broad- based themes that promote interdisciplinary connections
- realistic or real problems (local, provincial, national, global)
- cases built around authentic situations

Consider incorporating:

- reading levels reflective of student abilities
- variety of websites and other resources according to complexity
- more in-depth treatment of ideas
- curriculum compacting to allow student to extend learning in other areas

**Are there opportunities for the student to work with processes that require higher order thinking?**

Consider processes and tasks that involve the student in:

- critical thinking
- creative thinking
- problem solving
- affective thinking
- discussions that promote exploration of meaning
- his or her area of strength, interest or preferred modality

Encourage research activities using:

- primary sources of information - interviews, surveys
- secondary sources of information - books, videos, websites

**Are there opportunities for the student to communicate his or her learning in many different ways?**

Consider allowing students to choose products such as:

- multimedia presentations
- displays
- dramatizations, dance, music, visual art
- games
- web design
- book
- photo essay

**Are there opportunities for the student to communicate results of studies to real audiences?**

Consider products such as:

- letters to the editor and articles in the local newspaper
- webpages
- wikis
- podcasts
- displays in public places - malls, banks, shop windows, parks
- presentations to local groups such as city council, historical society, naturalist society
- artistic performances for the public or senior citizens
- story-telling in a library, bookstore or preschool
- creation of oral history recordings for a library
- invention convention for other students
- contribution of artwork, puzzles or articles to children's magazines
- panel discussion of a community problem
- student business plans reviewed by business community
- dramatization of an issue for the community

**Will the student's program provide thinking and learning challenges? Is the learning environment optimal for the student's learning?**

Consider grouping options:

- in class
- within the school
- pull together programs
- in the community

Consider programming types:

- advanced placement
- distance learning
- mentor (student, teacher, other)
- dual enrollment

**Does the classroom program include the teaching of skills or knowledge that the student already knows or can learn faster than other students?**

Consider:

- curriculum compacting to buy time for the student to extend learning in other areas
- providing higher level materials such as reference books and websites which give a more in-depth treatment or make further connections

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# Appendix A

## Observation Guides and Characteristics Checklists

- Checklist for Early Childhood
- Gifted and Talented Behavioural Observation Record: General Areas
- Visual and Performing Arts Observation Form
- Guidelines for Trained Individuals Assessing Performance
- Checklist for Music Performance Evaluation
- Checklist for Drama/Theatre Performance Evaluation
- Rating Scales for Visual Art:  Elements and Principles of Design
- Individual Portfolio Rating Scale for Identifying Artistic Giftedness (Talent) – Professional art educator
- Individual Portfolio Rating Scale for Identifying Artistic Giftedness (Talent) – Classroom Teacher
- Sample Rating Scale for Teacher and Student Self-Assessment of Progress

## Checklist for Early Childhood

**Child's Name: _____ Date: _____**

Please read each of the following items and consider the degree to which you have accurately observed the presence or absence of each characteristic or behaviour. Place an X in the appropriate place according to the following scale of values:

1 - Seldom 2 - Rarely 3 - Sometimes 4 - Almost Always

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **Adapted from Renzulli-Smith Early Childhood Checklist** | | | | |
| 1. Has ideas which are often original in one or more areas (i.e., block play, free activities, sharing, art, rhythms) | | | | |
| 2. Expresses a wide range of interests and is curious about almost everything that goes on around him or her | | | | |
| 3. Asks many "intelligent questions" about a topic in which young children do not ordinarily have an interest | | | | |
| 4. Has keen observation and retention of information about things he or she has observed | | | | |
| 5. Demonstrates the ability to attend or concentrate for a longer period of time than other children his or her age | | | | |
| 6. Shows an interest in clocks and calendars, and an ability to understand their function | | | | |
| 7. Understands the meaning of and use for maps, diagrams or graphs better than other children his or her age | | | | |
| 8. Knows the relationship among and between various coin denominations (e.g., 4 quarters = 1 dollar) | | | | |
| 9. Understands the meaning of number concepts beyond the numbers from 1 to 10 | | | | |
| 10. Uses a large vocabulary | | | | |
| 11. Has the ability to tell or reproduce stories and events with great detail | | | | |
| 12. Carries on "intelligent conversations" with older children and adults | | | | |

| | | | | |
|---|---|---|---|---|
| 13. Learned to read early, with little or no formal teaching | | | | |
| 14. Can write short stories, poems or letters | | | | |
| 15. Is a leader - is able to influence others to work toward desirable goals | | | | |
| 16. Gets along well with peers and adults | | | | |
| 17. Offers solutions to problems discussed in class | | | | |
| 18. Is often sensitive or compassionate to the needs of others | | | | |
| 19. Adapts to a change in routine or situation easily | | | | |

Children who demonstrate mainly high range scores are exhibiting characteristics of children who are gifted and talented.

Signature of adult completing this form: _____

Date: _____

**Adapted from Renzulli-Smith Early Childhood Checklist**
Retrieved from www.challengeschool.info/documents/applicationk.pdf

**Gifted and Talented**
**Behavioural**
**Observation Record**

Student: _____ School: _____

Grade: _____ Homeroom: _____

Teacher Recording Observations: _____

Please check all characteristics that apply.

## Superior Cognitive

- advanced vocabulary, fluent verbal facility
- learns easily
- reads intensively
- long attention span
- self-motivated
- retains a quantity of information

## Specific Academic

### *Reading*

- reads far above grade level
- self-taught reader
- reads intensively
- decodes easily
- advanced comprehension
- other_____

### *Language Arts*

- advanced sentence and paragraph structure in writing
- understands spelling rules and uses them correctly
- writing is creative
- advanced vocabulary
- other_____

### *Math*

- learns concepts easily
- is accurate in computation
- is anxious to learn more or go into depth
- shows an understanding far above grade level
- other_____

### *Science*

- reads and talks about science topics often
- learns science concepts easily
- shows an interest in going deeper and farther into new science concepts
- other_____

### *Social Studies*

- shows a great interest in maps, globes and other cultures
- reads and talks about social studies topics often
- shows an interest in going deeper and farther into new social studies concepts
- other_____

## Visual and Performing Arts

### *Music*

- is consistently able to replicate complex rhythmic patterns
- can replicate a new melodic phrase without assistance
- improvises spontaneously and effectively
- responds with sensitivity to music
- performs with an unusual amount of energy, focus, intensity and conviction
- technique is advanced
- performance is superior
- other_____

### *Art*

- shows inventiveness, imagination and originality in art work
- has a deliberate or intuitive understanding of composition
- is clearly advanced when compared with children of the same age
- shows complexity and elaboration in details
- shows technical skills and craftsmanship
- experiments with various media
- can critically analyze or self-reflect about own artwork
- other_____

## *Drama*

- works well with others, contributes suggestions and participates as a partner
- invents dramatic situations
- creates effective and innovative improvisations
- characters are clear, well-developed and believable
- performs with energy, intensity, focus and commitment
- shows superior technique
- effectively communicates meaning through use of voice, expression and gesture
- gives a superior performance when compared with students of the same age
- other_____

## *Dance*

- shows superior body awareness and control
- shows coordination and agility
- shows spatial awareness
- shows awareness of time and rhythm
- demonstrates unusual dynamics and energy
- performance is superior when compared with age peers
- other_____

## Creative Thinking

- is a divergent thinker
- has unconventional responses to conventional tasks
- elaborates on ideas
- displays original ideas
- fluent in idea generation and development
- experiments with ideas and hunches
- outstanding sense of humour
- brilliant thinker, but absentminded about details
- has a variety of interests
- works independently
- individualistic
- alert and observant
- other_____

_____ __
Signature of person observing

_____
Position or relationship to child

Adapted from Delaware City Schools Referral Form
www.dcs.k12.oh.us
Used by permission

# Visual and Performing Arts Observation Form

Student Name: _____ Date of Observation: _____

Instructions: Circle the bold print title of the area (or areas) of the visual and performing arts in which you believe the student exhibits extraordinary giftedness or talent. Then place a checkmark in the box next to each behaviour or attribute you have observed in the student. Write additional observations you think may be relevant on the back of this form or attach additional pages.

**VISUAL ART**

- □ elaborates on other people's ideas and uses them as a jumping off point as opposed to copying from others
- □ shows unique selection of art media for individual activity or classroom projects
- □ has unusual and richly imaginative ideas
- □ composes with unusual detail and skill
- □ displays compulsive artistic pursuit

**MUSIC**

- □ matches pitches accurately
- □ is able to duplicate complex rhythms correctly
- □ demonstrates unusual ability on an instrument including voice
- □ has a high degree of aural memory/musical memory
- □ displays compulsive musical pursuit

**DRAMA/THEATRE**

- □ readily shifts into the role of characters, animals or objects
- □ communicates feelings by means of facial expression, gestures and bodily movements
- □ uses voice expressively to convey or enhance meaning
- □ easily tells a story or gives a vivid account of some experience
- □ regularly seeks performance opportunities

**DANCE**

- □ demonstrates exceptional physical balance
- □ performs sequences of movement easily and well
- □ communicates meaning and feeling with movement
- □ uses his/her body as an instrument of expression
- □ volunteers to participate in movement activities and dances

Name of Person Observing: _____

Relationship to Student: □ Parent □ Teacher □ Peer □ Self

Adapted from: Identification Of Children Who Are Gifted In Theatre/Drama Implementation Handbook For Educators, Ohio Department of Education, Columbus, Ohio, August, 2004 Retrieved from: www.oagc.com/files/Drama.Id.Handbook.pdf

## *Guidelines for Trained Individuals Assessing Performance*

Identification of students who are gifted and talented in performance domains such as visual and performing arts or bodily kinesthetic areas should involve the professional opinions of respected practitioners in the particular field. These professionals should hold accreditation or credentials recognized in the domain which he or she is representing.

Trained individuals should be instructed to consider students in comparison to other students of similar age, training and environment. Therefore, it is recommended that the trained individual(s) evaluating a performance be provided with relevant background information about the student's age, training and environment.

It may be helpful to instruct trained individuals evaluating performances/auditions to consider the following questions:

- Am I objective about assessing the natural ability of this student, regardless of my past knowledge of, or relationship with, the student?
- Am I assessing the audition/performance in comparison to others performed by students of a comparable age?
- Am I assessing the audition/performance in comparison to others performed by students of comparable experience?
- Am I assessing the audition/performance in comparison to others performed by students of comparable environments?
- Have I had adequate experience observing student performers similar to those that I am assessing to allow me to make valid comparisons?
- Are my ratings as objective as possible and based on the criteria on the assessment instrument?
- Are my written comments legible, clear, and understandable?
- Are my comments professional in tone and word choice?
- Are my comments and criticisms specific and constructive?

Adapted from:

Ohio Department of Education (2004), *Identification of children who are gifted in theatre/drama implementation*

Ohio Department of Education (2009), *Identification of children who are gifted in music implementation*

## Checklist for Drama/Theatre Performance Evaluation

The checklist on the following page may be used when the student has an opportunity to give a prepared or rehearsed performance, either solo or in a small group or ensemble. The elements of the checklist should be shared with the student beforehand. The situation should be one which allows the observer to see a student performing to the best of his or her ability on each area considered.

Performances may be solo or involve small groups, provided the student (or students) being observed has a significant role that provides adequate opportunities to observe the abilities of the student.

Appropriate activities to be observed may include (but are not limited to):

- solo (monologue) or small group performances in formal or informal settings
- improvised scenes
- improvisation games
- structured audition activities
- workshop activities
- small group activities

Using recorded performances should be avoided whenever possible to prevent the quality of videography from becoming a factor in the evaluation.

## Checklist for Drama/Theatre Performance Evaluation

Student: _____ Grade: _____
Training: _____ Age: _____

| CRITERIA | EMERGING (0 Points) | TYPICAL (1 Point each) | ABOVE AVERAGE (2 points each) | SUPERIOR (3 points each) |
|---|---|---|---|---|
| Physical Performance | ☐ Uses limited physical movement in performance. Voice sometimes difficult to hear or understand. | ☐ Vocal performance is audible and clear. Occasionally uses body and movement to enhance character. | ☐ Uses whole body and voice in performance, consistently uses voice and body to enhance character. | ☐ Consistently commits voice and whole body to create a detailed and realistic performance, shows advanced physical coordination and vocal control. |
| Imagination | ☐ Only with considerable assistance invents dramatic situations, original ideas, and unusual solutions. | ☐ With moderate assistance invents dramatic situations, original ideas, and unusual solutions. | ☐ With minimal assistance invents dramatic situations, original ideas, and unusual solutions. | ☐ Without assistance, independently invents dramatic situations, original ideas, and unusual solutions. |
| Improvisation | ☐ Spontaneously creates an ineffective improvisation as compared to those students of the same age or experience. | ☐ Spontaneously creates an improvisation that is typical of students of the same age or experience. | ☐ Spontaneously creates an improvisation that is advanced for students of the same age or experience. | ☐ Spontaneously creates a highly effective improvisation that is extremely advanced for students of the same age or experience. |
| Characterization | ☐ The character lacks clarity, is underdeveloped, and/or not very believable. | ☐ The character has some clarity, is partially developed, and/or somewhat believable. | ☐ The character is generally clear, developed and believable. | ☐ The character is exceptionally clear, well-developed, and believable. |
| Engagement | ☐ Performs with little energy, focus and/or commitment. | ☐ Performs with some energy, focus and/or commitment. | ☐ Performs with energy, focus and commitment. | ☐ Performs with unusual energy, intensity, focus and commitment. |

| | | | | |
|---|---|---|---|---|
| Technique | ☐ Technique is typical of students of a younger age or less training. | ☐ Technique is typical of students of the same age or training. | ☐ Technique is advanced compared to students of the same age or training. | ☐ Technique is superior compared to students of the same age or training. |
| Communication of Meaning | ☐ Rarely uses voice, facial expression, gesture, and body movement effectively to communicate meaning. | ☐ Sometimes uses voice, facial expression, gesture, and body movement effectively to communicate meaning. | ☐ Generally uses voice, facial expression, gesture, and body movement effectively to communicate meaning. | ☐ Consistently uses voice, facial expression, gesture, and body movement effectively to communicate meaning. |
| Over-All Performance | ☐ Performance is typical of students of a younger age or students with less training. | ☐ Performance is typical when compared with students of the same age or training. | ☐ Performance is advanced when compared with students of the same age and training. | ☐ Performance is superior when compared with students of the same age and training. |
| | **Emerging**<br>Total Points _____ | **Typical**<br>Total Points _____ | **Above Average**<br>Total Points _____ | **Superior**<br>Total Points _____ |

Observer's Comments:

Observer's Signature: _____

Source: *Identification of Children Who are Gifted in Theatre/Drama Implementation Handbook For Educators*, Ohio Department of Education, Columbus, Ohio, August, 2004
Retrieved from: www.oagc.com/files/Drama.Id.Handbook.pdf

## Checklist for Music Performance Evaluation
## *Definitions of Checklist Criteria*

***Expressiveness***: the degree of sensitive response displayed to the requirements of music

***Engagement*:** the degree of involvement displayed by the student during the performance as indicated by energy, focus and confidence

***Technique***: the degree of technical skill displayed considering the student's age and training

***Overall Performance***: the degree of effectiveness of a prepared piece when compared to children of the same age and training

***Rhythm***: the degree of ability displayed to maintain a steady beat and replicate complex rhythmic patterns

***Melody***: the degree of ability displayed to replicate new melodic phrases at graduated levels of assistance

***Improvisation***: the degree of effectiveness of a rhythmic and/or melodic improvisation when compared to children of similar age, training, and environment

This checklist may be used when the student has an opportunity to give a prepared or rehearsed performance, either solo or in a small group or ensemble. The elements of the checklist should be shared with the student beforehand. The situation should be one which allows the observer to see a student performing to the best of his or her ability on each area considered.

Appropriate activities to be observed may include (but are not limited to):

- solo or small group performances (in formal or informal settings)
- free improvisation
- structured audition activities (e.g., asking a student to listen to a few measures of music and then replicate the rhythm or improvise a few measures)
- workshop activities
- small group activities

## Checklist for Scoring Music Performance Evaluation

Student: _____ Grade: _____
Training: _____ Age: _____

| CRITERIA | EMERGING (0 Points) | TYPICAL (1 Point each) | ABOVE AVERAGE (2 points each) | SUPERIOR (3 points each) |
|---|---|---|---|---|
| Rhythm | ☐ Infrequently able to replicate complex rhythm patterns while sustaining a steady beat | ☐ Occasionally able to replicate complex rhythmic patterns while sustaining a steady beat | ☐ Generally able to replicate complex rhythmic patterns while sustaining a steady beat | ☐ Consistently able to replicate complex rhythmic patterns while sustaining a steady beat |
| Melody | ☐ Only with considerable assistance can independently replicate a new melodic phrase | ☐ With repeated hearing and moderate assistance can independently replicate a new melodic phrase | ☐ With minimal assistance can independently replicate a new melodic phrase | ☐ Without assistance can independently replicate a new melodic phrase |
| Improvisation | ☐ Spontaneously creates an ineffective improvisation as compared to those students of the same age or experience | ☐ Spontaneously creates an acceptable improvisation that is typical of students of the same age or experience | ☐ Spontaneously creates an effective improvisation that is advanced for students of the same age or experience | ☐ Spontaneously creates a highly effective and innovative improvisation that is extremely advanced for students of the same age or experience |
| Expressiveness | ☐ Occasionally responds to the requirements of the music, but not with sensitivity | ☐ Responds to the requirements of the music, but not with sensitivity | ☐ Generally responds with sensitivity to the requirements of the music | ☐ Consistently responds with nuances and sensitivity to the requirements of the music |
| Engagement | ☐ Performs with little energy, focus and/or confidence | ☐ Performs with some energy, focus and/or confidence | ☐ Performs with a great deal of energy, focus and confidence | ☐ Performs with an unusual amount of energy, focus, intensity, and confidence |

| | | | | |
|---|---|---|---|---|
| Technique | ☐ Technique is typical of students of a younger age or less training. | ☐ Technique is typical of students of the same age or training. | ☐ Technique is advanced compared to students of the same age or training. | ☐ Technique is superior compared to students of the same age or training. |
| Over-All Performance | ☐ Performance is typical of students of a younger age or students with less training. | ☐ Performance is typical when compared with students of the same age or training. | ☐ Performance is advanced when compared with students of the same age or training. | ☐ Performance is superior when compared with students of the same age or training. |
| | **Emerging** Total Points _____ | **Typical** Total Points _____ | **Above Average** Total Points _____ | **Superior** Total Points _____ |

Observer's Comments:

Observer's Signature: _____

Source: *Identification of Children Who are Gifted in Music Implementation Handbook For Educators*, Ohio Department of Education, Columbus, Ohio, August, 2004
Retrieved from: http://bit.ly/15xULdw

# Rating Scales for Visual Art

# Elements and Principles of Design

## Elements of Design

The elements of design are the visual tools artists use to create certain effects in their artwork. The elements are:

| | |
|---|---|
| **Line** | A mark with length and direction; can be implied by the edges of shapes and forms |
| **Colour** | Has three attributes: hue, intensity, and value. Depends on a source of light to be defined |
| **Value** | Qualities or variation of lightness or darkness of a colour |
| **Texture** | Quality of a surface; its effects can be visual (simulated) or real/tactile (actual) |
| **Shape** | Two-dimensional that encloses an area; can be organic or geometric |
| **Form** | Three-dimensional; encloses volume |
| **Space** | Area around or within objects; it can be two or three dimensional |

## Principles of Design

The principles of design are the ways in which artists organize the elements of design in their artwork. They are as follows:

| | |
|---|---|
| **Balance** | Arrangement of one or more elements of design; can be symmetrical or asymmetrical |
| **Rhythm** | A type of visual movement in an artwork, usually created by the arrangement of line, shape, and colour |
| **Movement** | Direction of the visual path taken by the eye through an artwork; created by the arrangement of line, shape, and colour |
| **Repetition & Pattern** | One or more elements are repeated in an artwork to create rhythm and pattern |
| **Contrast** | Use of several elements (e.g., large and small shapes, light and dark colours) to engage the viewer's attention |
| **Emphasis** | An outstanding or interesting area of an artwork created by the use of contrasting elements (e.g., strong colour, dark shape, distinct texture) |
| **Unity** | Feeling of harmony between all parts of an artwork |

**Individual Portfolio Rating Scale for Identifying Artistic Giftedness (Talent)**

A rating scale that may be used by a practising *professional art educator*.

| | Superior | Excellent | Very Good | Satisfactory | Poor | Not Observed |
|---|---|---|---|---|---|---|
| Realism | | | | | | |
| Visual Elements | | | | | | |
| Design Principles | | | | | | |
| Technical Skill | | | | | | |
| Expressiveness | | | | | | |
| Inventiveness | | | | | | |

**Realism**: Consider the student's ability to represent figures and indicate spatial relationships.

- Does the figure have accurate proportion?
- Does a landscape contain an illusion of pictorial space?
- Can a sculpture be considered complete from all sides?
- Is there linear and aerial perspective, foreshortening, and perhaps contrast between light and dark?

**Design Properties**: Look for aesthetic principles and elements within the composition. (See list on previous page)

- How well did the child make use of the entire page and still have a centre of interest?
- Do the figures and shapes fit comfortably within the edges?
- Can you identify positive and negative shapes?
- Does it have unity?
- How is balance achieved?

**Technical Skill:** Look to see how successfully the student handled the media.

- How many media are represented?
- At what level of technical expertise?

**Expressiveness:** Look for the effectiveness of the work's communication.

- Does it have an impact not just from the design but from the idea as well?
- Does it make a statement?
- Does it arouse an emotion or convey an idea?

**Inventiveness:** Remember that inventiveness or originality is a relative thing. What is inventive for a six-year-old may be a cliché for a ten-year-old. Inventiveness can be divided into subsets:

- originality of subject matter (narrative)
- originality in use of visual elements and design principles
- originality of technique
- originality of expression
- originality of media

These dimensions may be given varying weights when considering different kinds of art projects. For example, when rating a drawing, greater weight might be given to realism, line quality, expressiveness and inventiveness. When considering a ceramic jar, greater emphasis might be given to clay technique, visual elements (especially shape and texture) and no weight at all to realism.

Austega Pty. Ltd. (1999). Characteristics checklist for gifted children. Retrieved from http://austega.com/gifted/characteristics.htm#visual_and_performing_arts

**Individual Performance Rating Scale for Identifying Artistic Giftedness (Talent)**
A rating scale that may be used by a *classroom teacher*

| | | Compelling | Highly Evident | Evident | Occasionally Evident | Seldom Evident | Not Evident |
|---|---|---|---|---|---|---|---|
| General Behaviours | Intelligence | | | | | | |
| | Work Habits | | | | | | |
| | Inventiveness | | | | | | |
| Art-Related Behaviours | Attitude | | | | | | |
| | School Record | | | | | | |
| | Studio Behaviours | | | | | | |

***General behaviours***

- **Intelligence:** Outstanding artistic gifts or talents are not always identified by formalized testing such as IQ. It is generally accepted that there exists a threshold level of intelligence (usually average range) required for outstanding development in any area, but the processes measured by a general intelligence test may have little value in predicting artistic abilities.
- **Work habits:** It is a myth that students who do well in art do poorly in academic subjects. Talented students may sometimes become obsessed with art to the point of neglecting other subjects, but talented students generally do better than average work in most subjects.
- **Inventiveness:** Looks for signs of invention in children's work. Is the student an independent thinker? Does he or she have a rapid turnover of ideas or generate more ideas than average?

***Art-related behaviours***

- **Attitude:** Does the student have a passion to make art? Is the student a self-starter? Does he or she show a desire to improve without prompting? Does the student identify him or herself as an artist or show interest in an art career?
- **School record:** Biographical information about a particular student may be helpful. Is there any record of interest in art at an early age? Has the student received excellent grades in other subjects? Have earlier teachers taken special note of this student's artwork? Has the student received formal instruction outside of school?
- **In-progress art studio behaviours**
    - Does the student work at an advanced level for his or her age? Does he or she have a strong preference for a particular medium? Does she or he deal successfully with the challenges of representing or composing?

- Does the student have a preferred style? Some gifted students who have invested a great deal of themselves in mastering a certain idiom may be reluctant to experiment in new areas.

Austega Pty. Ltd. (1999). Characteristics checklist for gifted children. Retrieved from http://austega.com/gifted/characteristics.htm#visual_and_performing_arts

## Sample RATING SCALE FOR TEACHER *and* STUDENT SELF-ASSESSMENT OF PROGRESS

*for use in assessing individual work during portfolio preparation*

This rating scale can be used by teachers and students to do a preliminary evaluation of work.
It can help students determine whether they are achieving the higher levels of each trait described.

1 - minimally/rarely 2 – occasionally 3 – frequently 4 - consistently

| ***Degree to which the following traits are observed in artwork:*** | | | | |
|---|---|---|---|---|
| **COMPOSITION** (organization of artwork using art elements and design principles) | | | | |
| • Size, placement and/or contrast of image(s) create variety and interest | 1 | 2 | 3 | 4 |
| • Line, colour, shape, texture, space, value and/or form are effectively used to elaborate and/or unify the composition | 1 | 2 | 3 | 4 |
| • The picture plane is fully considered (even if the canvas is large and the work purposely small) | 1 | 2 | 3 | 4 |
| **RENDERING FROM OBSERVATION** (skill and accuracy in depicting three-dimensional objects on a two-dimensional plane) | | | | |
| • Contours, shapes, sizes are carefully observed | 1 | 2 | 3 | 4 |
| • Proportions are carefully observed and show accuracy | 1 | 2 | 3 | 4 |
| • Spatial relationships are carefully observed | 1 | 2 | 3 | 4 |
| **TECHNIQUES USING MEDIA** (effective use of media, materials, tools) | | | | |
| • Line quality or line technique is effectively varied | 1 | 2 | 3 | 4 |
| • Shading is varied – range in tonal values: blacks, greys, whites | 1 | 2 | 3 | 4 |
| • Craftsmanship and technical skill with media are evident | 1 | 2 | 3 | 4 |
| *If colour and/or colour value media is submitted:* | | | | |
| • Colour and/or colour value is effectively applied | 1 | 2 | 3 | 4 |
| ***Degree to which the following traits are observed in the artwork:*** | | | | |
| **CREATIVITY and CONCEPT DEVELOPMENT** | | | | |
| • Ideas or images are unique and/or original with strong visual impact | 1 | 2 | 3 | 4 |
| • Ideas are well developed | 1 | 2 | 3 | 4 |
| **SKETCHING** | | | | |
| • Ideas are generated by observing from life, imagination, experimenting with materials, exploring images through sketching, note-taking | 1 | 2 | 3 | 4 |

# Appendix B

# Notes to Assessors Regarding Potentially Gifted and Talented Students

## Notes to Assessors Regarding Potentially Gifted and Talented Students

There are many domains in which students may exhibit gifted and talented behaviours. Some of these behaviours will require evidence through portfolios or other demonstrations of ability rather than traditional forms of speaking and writing. In many cases, a comprehensive assessment using standardized tools may be informative.

The WISC-IV is a standardized and commonly used method of assessing cognitive levels. When using the WISC-IV to assess a child for cognitive ability, there are several points to keep in mind.

First of all, the full scale IQ score may not always be the best measure of intelligence. Of the four subtests (Perceptual Reasoning Index, Verbal Comprehension, Working Memory, Processing Speed) the Perceptual Reasoning Index or the Verbal-Comprehension index may be independently appropriate for identification of gifted and talented students. This may be particularly important for students coming from culturally diverse backgrounds, those who are bilingual, twice exceptional, or visual-spatial learners.

The General Ability Index (GAI) may also be a more appropriate method of identification. This is a composite score which excludes working memory or processing speed scores. Gifted and Talented students do not often score very high on processing speed therefore, by eliminating these indices; the GAI may provide a truer picture of their ability.

The WISC-IV technical report #4 (Harcourt Assessment, 2005) provides a good overview of the GAI and how it may be calculated. Dawn Flanagan and Alan Kaufman (2004), *Essentials of WISC-IV Assessment* is another recommended resource. Flanagan and Kaufman (2004) suggest using the General Ability Index (GAI) instead, which, like the DWI-1 of Dumont and Willis, utilizes only the Verbal Comprehension and Perceptual Reasoning scores.

Another concern about solely using the WISC-IV for identification of gifted and talented students has been the low ceiling to differentiate degrees of giftedness; Harcourt Assessment has released a technical report which allows assessors to analyze scores to be standardized with a higher ceiling up to 200.

Some researchers report that Arithmetic is a much stronger measure of giftedness than Letter-Number Sequencing or Digit Span, the two required subtests for deriving the Working Memory Index. While Letter-Number Sequencing has a higher rank than Digit Span in loading on general intelligence, Digit Span produces more predictable and interpretable responses from students. Letter-Number Sequencing involves listening to a

random list of letters and numbers, separating them and manipulating them in a prescribed way.

You may also substitute Arithmetic for Letter-Number Sequencing in assessment of potentially gifted or talented students. If a child appears to be math phobic, do not do the substitution. Two substitutions are allowable to derive a Full Scale IQ score, as long as they reflect an a priori judgment before the test is administered (or unless a subtest becomes spoiled in administration).

WPPSI

If you suspect a younger child may be gifted or talented, the WPPSI-III may not be the best tool to use to assess him or her because of the low ceiling. The Woodcock Johnson Test of Cognition or the Stanford Binet 5 may be better choices.

# Appendix C

## *What a Child Doesn't Learn*

by Tracy Inman
Associate Director
The Center for Gifted Studies at Western Kentucky University

Originally published in *The Challenge*, *no.* 78, *Winter 2007, pp.* 77-79.

Western Kentucky University

# WHAT A CHILD DOESN'T LEARN...

*BY TRACY INMAN*

*Originally published in* The Challenge, *no.* 78, *Winter 2007, pp.* 77-79.

If during the first five or six years of school, a child earns good grades and high praise without having to make much effort, what are all the things he doesn't learn that most children learn by third grade?

Take a moment to answer this question yourself. Or have your child's educators and administrators answer it. What isn't learned? As you skim over your answers, you may be surprised at the sheer volume. But on closer look, you may be astounded by the depth and weight of those answers - and the impact they make on your child's life.

WHAT ISN'T LEARNED?

**Work Ethic**

*The World is Flat* and *China, Inc.* remind us how readily Asians are bypassing us technologically, educationally, and economically. One main reason for this lies in their work ethic. They aspire to the middle class lifestyle. They know that education and sacrifice are the paths for getting that. They look at education as a privilege - and it is. In America (and aren't we proud!), everyone has the right to an education. Sometimes it seems, though, that our young people would argue that everyone has the right to a Nintendo DS with unlimited playing time, a cell phone by 5th grade and a car by 16. They may also argue they are entitled to an allowance and that days off from school are for relaxation and play and not chores. Experts argue that this will be the first generation whose standard of living will not surpass (or even match) their parents' socio-economic level. This is an entitled generation – or so they think.

Ben Franklin once said, "Genius without education is like silver in the mine." We could alter that a bit for the 21st century American young person: "Genius without work ethic is like silver in the mine." No matter how bright, our children will not succeed personally or professionally without a strong work ethic. Working hard at intellectually stimulating tasks early in their lives helps to develop that ethic.

**Responsibility**

Responsibility is conscience driven. We make the choices we do because it is the right thing to do. Dishes must be washed in order to be ready for the next meal. The research paper must be done well and on time if we want that top grade. Punctuality helps us keep our jobs, so even though we choose to stay up until 3:00 am to finish a novel, when the alarm sounds a very short two hours later, we're up. Each day's responsibilities must be met to be a productive family member, employee, and citizen.

Early in life, we should learn the orchestrating role responsibility plays in our lives. And we also should realistically learn the outcomes when

responsibilities are not met. It's all about cause and effect. If children do not live up to their responsibilities and if natural consequences are not enforced; we are not equipping children with this vital virtue.

**Coping with Disappointment**

Often our greatest lessons in life stem from falling flat on our faces! Through disappointment or failure, we learn how to pick ourselves up and continue. We learn perseverance and resilience. We learn that we're not always right and that we don't need to be - that we may discover more through our failures than we ever imagined we could through our accomplishments!

When we face obstacles early on, we discover how to separate our identities from the task itself - that means the failure of meeting the goal or accomplishing the task does not equal failure of us as people. Young people, especially those who are gifted and talented, must learn to take academic risks. They must learn to celebrate the outcome and be able to learn from the failure!

**Self-Worth Stemming from the Accomplishment of a Challenging Task**

We have all faced obstacles that seemed overwhelming, tasks that appeared too challenging. Giving up was never an option, so we worked and struggled and toiled until finally we overcame that obstacle or completed the task. The intrinsic rewards far outweighed the praise or even the pay earned at the end. We felt good about ourselves, our work ethic, our management skills, our persistence, and our ability. And even if the tangible outcome wasn't the promotion or "A" we wanted, that was secondary to the inner sense of accomplishment and pride we felt. When students never work hard at challenging tasks, they can't experience those intrinsic rewards. Naturally, then, they focus on the extrinsic rewards. By giving them good grades for little effort, we're depriving them of this life-driving tool.

**Time-Management Skills**

Adults constantly juggle roles: parent, spouse, child, person, employee/employer, volunteer, neighbor, friend, etc. With each role come demands on our time and energy. Often these demands conflict with each other requiring us to budget our time very carefully. Through experience, we have gained time-management skills by keeping track of the responsibilities of each role, estimating the time needed to meet that responsibility, and then following through. We adjust and readjust based on our experiences.

We know how difficult we make our lives when we procrastinate; likewise, we know the sweetness of free time that comes from managing our time well. Young people who don't have to put effort into their work to earn high grades won't understand the time needed in order to do a job that would be acceptable in the work environment. Instead of gradually learning these lessons in schools, they may very well have crash (and burn) courses in the real world.

**Study Skills**

Self-discipline, time-management, goal setting - all of these are embedded in study skills. When children don't need to study (because they already know the information or they have the ability to absorb it as they listen in class), they never learn vital study skills. So when they are presented with challenging material, whether that be in their first honors class or, even worse, in college, they simply don't know how to study! How do you attack a lengthy reading assignment? How do you take notes in an organized fashion? How do you prepare for an exam that covers the entire semester's material? Yes, study skills can be learned, but like most things in life, the earlier we acquire those skills, the better.

**Goal setting**

We can't reach goals if we never set them nor can we reach goals if they are unrealistic. We also can't reach goals if we don't have a strategy in place that incrementally encourages us to meet that end goal. Students must have practice in goal setting and goal achievement. Those skills will impact their personal lives, their professional lives, their social lives, and even their spiritual lives!

**Decision-Making and Problem-Solving Skills**

Weighing pros and cons. Predicting outcomes of possible choices. Systematically breaking down issues as to importance. Ranking possibilities and importance of criteria. All of these skills come into play when making a decision. All of these skills come into play when problem-solving. If children don't ever have experience with this early on in their learning, then when it is time to make decisions about learning and life, when it is time to solve professional and personal problems, they are ill equipped to do so.

**Sacrifice**

Yes, I would rather curl up with a wonderful read than dig into my taxes. But if my taxes aren't complete by April 15, I am in trouble. Period. I would rather catch the latest Academy Award winning film than bulldoze the dirty clothes into the laundry room and lose myself for the rest of the day. But wrinkled, dirty clothes don't go very well with a professional image nor do they encourage lunch mates. As responsible adults, we well understand sacrifice. Sometimes we sacrifice our free time for our responsibilities. Sometimes we sacrifice what we want to do because others wish to do something else. We fully understand that we must "pay our dues" in life.

But if young people procrastinate on assignments because they really want to finish the Xbox game or IM their friends while their shoddy work earns A's, they're not learning about real life. Excellence requires sacrifice. The IRS won't care that the reason your taxes were late (and incorrect in just a couple of places) was because you'd rather spend time reading a novel. Your potential employer doesn't even want to hear the excuse of choosing to watch a movie over the preparation of your clothing for the interview. Life's not always about fun or about what you want and when you want it: It's about sacrifice and work ethic. It's about working your hardest at challenging tasks.

*This list is only partial, and yours may well include values that this one didn't. What's particularly frightening with this one is that these are the ingredients for a successful life. What does a child not learn? He doesn't learn the values and skills needed in order to be a productive and caring person who contributes to our world.*

*Sobering, isn't it?*

By permission of the author

# Appendix D

# The Compactor

Record Keeping for Curriculum Compacting

# The Compactor – Record Keeping for Curriculum Compacting

Student Name: _____ Course: _____

Teacher: _____ Date: _____

| Curriculum Areas to be Considered for Compacting | Procedures for Compacting Basic Material | Acceleration and/or Enrichment |
|---|---|---|
| **Name It.** | **Prove It.** | **Change It.** |
| *What material needs to be covered?* | *Exactly what material is to be excluded?* | *What enrichment and/or acceleration activities will be included?* |
| *What evidence shows a need for compacting?* | *How will mastery be demonstrated?* | • *independent study*<br>• *acceleration*<br>• *mini-courses*<br>• *mentorships*<br>• *small group investigations*<br>• *other* |

Based on the work of Joseph S. Renzulli and Linda M. Smith (1986)

# Appendix E

# Getting to Know Your Learners

This section contains a number of inventories to help teachers get to better know their students.

There are examples useful for many grade levels and addressing facets such as interests, multiple intelligences and learning styles.

# Secondary Interest-A-Lyzer

This is an informal interest inventory which will serve as a foundation for developing your specific areas of interest throughout the school year. The information you provide is completely confidential. As a result of the survey, we hope to provide you with meaningful educational experiences that will further develop your interests, nurture your talents, and challenge your learning potential.

Read each question carefully and provide as much detailed information as possible so that we may obtain a clear understanding of your interests.

Name: _____

Grade: _____ Date: _____

Adapted from Secondary Interest-A-Lyzer by:

*Thomas P. Hebert*
*The University of Alabama*

*Michele F. Sorensen*
*Farmington, Connecticut Public Schools*

*Joseph S. Renzulli*
*The University of Connecticut*

1. You are fed up with course offerings at your high school. Your principal has asked you to design the perfect course for people with your same interests.

   What would the course be called? _____

   What would be taught?

   _____

2. Rather than provide money for a class trip, the school district has decided to give money to each individual student for a trip of his or her choice! Where would you go? List 3 places you would visit and explain what you would do while visiting there.

| | Place | What you would do there? |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

3. You have written your first book which you are ready to submit for publication. What is the title?

   _____

   What is the book about?

   _____
   _____
   _____

4. You have been asked to plan a concert for your high school. You have an unlimited budget! List 3 choices of musical performances you would schedule for that evening's program.

| | Musical Performances |
|---|---|
| 1 | |
| 2 | |
| 3 | |

5. The science teachers at your high school are planning a Speakers' Bureau for their department based on a variety of special topics. They are inviting experts to talk about each of the following topics. Sign up for the 1st, 2nd and 3rd choices of presentations you would be interested in attending from the topics listed below. (Number them 1 to 3)

___ toxic waste
___ health issues for teenagers
___ genetic engineering
___ endangered species
___ weather mapping
___ forensic medicine
___ robotics
___ insecticide applications in our environment
___ entomology
___ scientific research and methods
___ nuclear energy issues
___ green house effect
___ environmental issues
___ volcanic erosion
___ meteorology
___ rain forests
___ astronomy
___ ecology
___ medicine and medical issues
___ other: _____

6. In connection with a Law Day celebration, a conservative and a liberal attorney in your community have been invited to your high school to debate a topic. What are your 3 preferred choices for possible debate topics? Why are they important issues?

| | Debate Topics | Why important? |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

7. You are a photographer and you have one picture left to take on your digital card. What will it be of?

_____

Why?

_____

_____

8. Teenagers in your community have been asked to prepare individual time capsules for future generations. You are allowed to include 10 personal possessions that are representative of you. What would you include in your capsule?

| | Personal Possessions |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |

9. You have had a dream in which you have been transported back in time and have become an active participant in that historical time period. To which period has this dream taken you?

   _____

   Who did you meet while you were there? _____
   _____
   _____
   _____

10. You have the opportunity to work with an editor of your choice on the local newspaper staff. Which department would you work for? Rank order your choices 1 through 3 and feel free to prioritize beyond your third choice.

___ national events
___ culinary arts and nutrition
___ political cartoons
___ local history
___ stock market advice
___ fashions
___ personal advice
___ humour and cartoons
___ celebrity column
___ children's page
___ travel
___ economics
___ local events
___ legal issues
___ international events
___ household management and improvement
___ movie reviews
___ crossword puzzles
___ horoscopes
___ music
___ consumer reports
___ business
___ editorials
___ math puzzles
___ book reviews
___ sports
___ political commentary
___ Other: _____

11. If you could conduct an interview with a woman you admire, past or present, who would it be?

_____

What 3 questions would you ask her?

| | Questions |
|---|---|
| 1 | |
| 2 | |
| 3 | |

12. If you could conduct an interview with a man you admire, past or present, who would it be?

_____

What 3 questions would you ask him?

| | Questions |
|---|---|
| 1 | |
| 2 | |
| 3 | |

13. If you could be an exchange student in any other country for half a school year, in what country would you like to be as a student?

_____

Why?

_____
_____
_____

14. You have the opportunity to learn other languages from native speakers. What 3 languages would you want to learn? Why?

| | Language | Why? |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

15. An after school group has been planned to meet and discuss important issues facing young people. Select the 1st, 2nd and 3rd choices of seminars you would be interested in attending.

___ contemporary moral issues
___ national security
___ career opportunities & choices
___ gender issues
___ death and dying
___ peer relationships
___ world peace
___ family structure
___ issues in ethnicity
___ other: _____

16. The school district is sponsoring a school-wide Olympiad. Any and all physical related activities will be featured. If you were to participate, what 3 events would you like to compete in? Specify if your preference for being judged would be based on individual or group performance.

| | Event | Individual or Group? (Circle one for each event) |
|---|---|---|
| 1 | | Ind. Group |
| 2 | | Ind. Group |
| 3 | | Ind. Group |

17. Have you ever designed a computer program? Yes No

If you have, describe your program._____
_____
_____
_____

If you could design a computer program, what would it be?
_____
_____
_____
_____

18. A mentorship program is being arranged to allow you to work with a person in the community involved in a profession/occupation which interests you. List 3 occupations that you would like to explore in a mentorship.

| | Occupation |
|---|---|
| 1 | |
| 2 | |
| 3 | |

19. List the titles and authors of your 3 favourite books. State the type of book (science fiction, poetry, non-fiction, etc.) and briefly explain what it is about.

| | Title | Author | Type | Description |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

20. Do you collect anything? Yes No

If so, briefly describe your collection(s). _____
_____
_____
_____
_____

What would you collect if you had the time and money?
_____
_____

21. You have been asked to participate in producing the film of your choice. What type of film will this be? Number your top 3 choices.

___ documentary
___ musical
___ biographical
___ travelogue
___ fantasy
___ general drama
___ mystery
___ horror
___ science fiction
___ classic
___ foreign
___ comedy
___ a popular release for teenage audiences
___ adventure

22. You have been asked to be a member of a social action committee in your town. Your task will be to work with elected officials to work on issues of importance. What 3 issues do you think need to be discussed? Why?

| | Issue | Why Important |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

**Interest Inventory**

**Student Name:** _____

Respond to the following questions by checking (✓) all of the responses that might apply.

## Would you enjoy…

| | Yes, I would do this. | No, I would not do this. | I might be interested in doing this. | I have had experience with this activity. |
|---|---|---|---|---|
| submitting one of your original writings for publication? | | | | |
| repairing a car, stereo or household appliance? | | | | |
| conducting a scientific experiment? | | | | |
| establishing a school newspaper? | | | | |
| being a photographer for a magazine? | | | | |
| starting an astronomer's night-time observation group? | | | | |
| studying the stock market? | | | | |
| organizing a new school club or team? | | | | |
| starting a musical group/band? | | | | |

| | Yes, I would do this | No, I would not do this. | I might be interested in doing this. | I have had experience with this activity. |
|---|---|---|---|---|
| acting in a theatrical production? | | | | |
| starting your own business? | | | | |
| creating your own comic strip? | | | | |
| painting or sketching people, objects and landscapes? | | | | |
| working on a political campaign? | | | | |
| learning a handicraft such as jewellery making, pottery, or silk screening? | | | | |
| designing costumes, clothing or furniture? | | | | |
| designing a building? | | | | |
| designing your own invention? | | | | |
| having your own photo lab? | | | | |
| visiting a museum or historical site? | | | | |
| keeping a personal journal or diary? | | | | |
| organic gardening? | | | | |

| | Yes, I would do this | No, I would not do this. | I might be interested in doing this. | I have had experience with this activity. |
|---|---|---|---|---|
| being involved in a neighbourhood project? | | | | |
| belonging to a social action group like the Sierra Club? | | | | |
| developing & maintaining a computer bulletin board? | | | | |
| volunteering your time to a charitable organization? | | | | |

## Getting to Know Your Learners

## Intermediate Interest Inventory

Name: _____

Please complete the following sentences with information about yourself. Only your teacher will read your answers. This is all about you so no answer can be wrong!

1. Outside of school, my favourite activity is_____

_____

2. The sport I like to watch best is _____

3. The sport I like to play best is _____

4. After high school I plan to _____

_____

5. The job I want to be doing as an adult is _____

_____

6. In school, my favourite subject is _____

_____

7. The subject in which I get the best grade is _____

_____

8. I would like to learn more about _____

_____

9. My main hobby or leisure time activity is _____

_____

10. For pleasure, I read _____

_____

11. The best book I have ever read is _____

_____

12. The book I am reading now is _____

13. My favourite magazine is _____

14. The part of the world that interests me most is _____

_____

15. When I am finished with school, I hope to live in _____

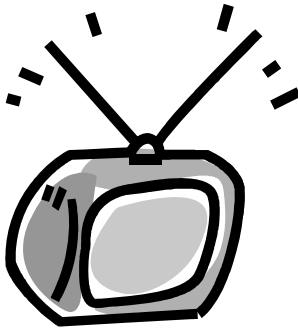
_____

16. The kinds of books or stories I like to read are _____

_____

17. My favourite TV show is _____

18. What makes me mad is _____



## Getting to Know Your Learners
## Elementary Interest Inventory

Name: _____

Directions: Please complete the following sentences with information about yourself. Remember, no answer is a wrong answer on this sheet! Only your teacher will read your answers.

1. What I like most about school is _____

_____

2. What I like least about school is _____

_____

3. I wish the teacher would let me choose _____

_____

4. I am really good at _____

_____

5. I need some extra help with _____

_____

6. In the classroom, I wish I could sit _____

_____

7. In the classroom I behave _____

_____because_____

_____

8. My favourite book is_____

because_____

9. Three words to describe myself are _____

_____

10. I like to participate in the following activities with my friends: _____

_____

_____

11. I like to participate in the following activities by myself: _____

_____

12. When I watch TV, I usually like to watch

_____

_____

13. If I were surprised with a gift of $1,000 cash, I would use it to_____

_____

_____

14. The one thing I really want my teacher to know about me is_____

_____

_____

## Getting to Know Your Learners
## Primary Interest Inventory

Name: _____

1. In school, the thing I like to do best is _____
2. Outside of school, the thing I like to best is _____
3. If I had a million dollars, I would _____
4. When I grow up I will _____
5. I really don't like _____
6. My favourite animal is _____
7. The best sport is _____
8. When nobody is around, I like to _____
9. The person I like best is _____
10. Next summer, I hope to _____
11. I like to collect _____
12. My favourite place to be is _____
13. The things I like to make are _____
14. The best book I ever read was _____
15. The best TV show is _____
16. What I think is funny is _____
17. What I really want my teacher to know about me is _____

## Getting to Know Your Learners - Interest Inventory for Young Students

Name: _____

Teacher may list the topics in the centre column before distributing. As the teacher reads through the list, each student will colour the face which reflects his or her opinion.

| | How do you feel about… | |
|---|---|---|
|  | |  |
|  | |  |
|  | |  |
|  | |  |
|  | |  |
|  | |  |

# Appendix F

# Literature circle sample

Courtesy of Maggie Heneghan, Holy Heart of Mary, St. John's NL

There are eight sections.  Students are instructed to choose any 6.


With as much or as little technology as you have, create a Facebook-style profile page of one of the key (pivotal, not necessarily main) characters from the current chapters you have read. Use your imagination; include other characters; post events that are occurring at this point in the plot; list music, movies, etc., you think this character likes; provide relationship status – you get the drift. HAVE FUN!

Selection (pages/chapters):_____

Read for next class (pages):_____

Role for next class:_____

Facilitator Date:

Your role is that of **facilitator** - you lead the day's discussion and ensure that members of your group stay on topic. The best way to do this is to be prepared to discuss the larger issues of the book - what strikes you as the major themes within the work.

Sample Questions: What is the most significant episode/event in this selection?
What do you like/dislike about this selection?
What do you think will happen next? Why?
How does this reading tie into the novel as a whole?
What thoughts occurred to you as you read?

Selection (pages/chapters):_____

Write your discussion questions **AND** your responses to them in the following space:

Read for next class (pages):_____

Role for next class:_____

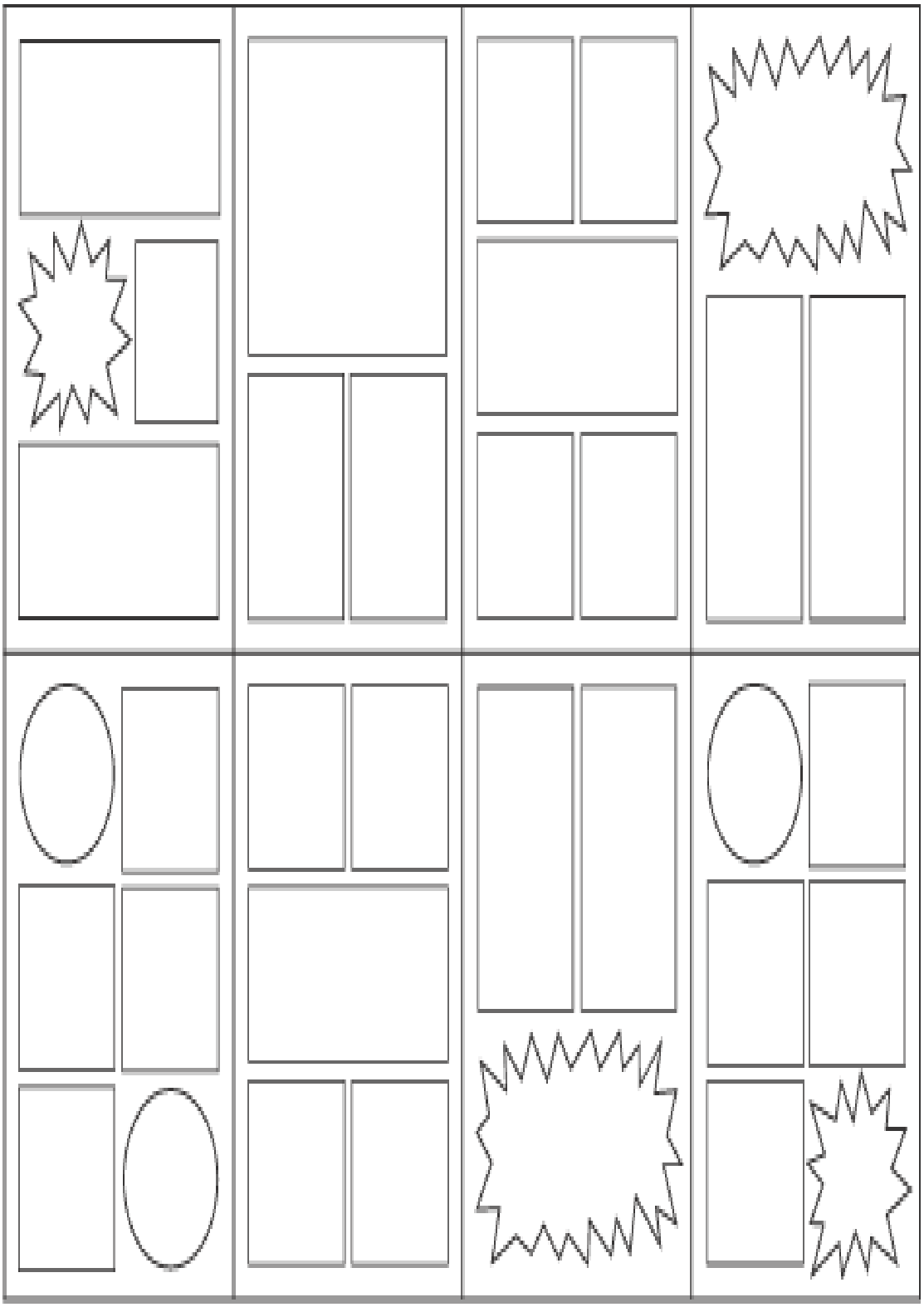
GRAPHIC ARTIST Date:

Given the rise in the popularity of graphic novels and comic books, your role is to depict a key scene from your reading by way of a cartoon/comic strip. You can employ all or some of the methods of graphic illustration – speech balloons, color, comic frames, penciling and shading, perspective, etc. Attached is a sheet with a variety of comic frames; you can use these or create your own; you can decide whether your strip is standard (3-4 frame) or a variety of frames (large and small). What must be evident is a clear link to the chapters you have read.

Selection (pages/chapters):_____

Read for next class (pages):_____

Role for next class:_____



Maestro Date:

Your role is that of **dee jay;** imagine you are at the controls of the music list and select at least one song - from today or from decades past - that relates to today's reading. Find the lyrics and bring to class - actual music would be even better (ipod; Youtube; we can make it happen) Consider how the music fits the scene, helps create tone, or lyrically relates to the chapters you have been given, and prepare a brief synopsis below that explains this choice to the reader and the group.

Sample Explanation:

I selected this music because it reminds me...
This music characterizes...
The overall connection between this music and these chapters is...
The tone best suits because...

Selection (pages/chapters):_____

Read for next class (pages):_____

Role for next class:_____

Personal Reviewer Date:

What do you think? Not only of what might happen next, but of what you have read so far? This role is the opportunity to express freely, but eloquently – your opinion about the book, the writing style, the character development, what appeals to you, what is less interesting, This is your thoughtful consideration (hence, reflection) about this work; thus, there is no wrong answer; however, the more detailed and analytic your thoughts, the more you will leave me to think about.

Selection (pages/chapters):_____

Read for next class (pages):_____

Role for next class:_____

Scene Stealer Date:

Your role is that of **channeller** - you become the identity of a key character or, better yet, item, object, element from these chapters. Write a journal entry from the point of view of this said individual or object. In this entry, be sure to embody the characteristics, traits, significance of this chosen entity - remember it is your choice! Explain in a brief note at either beginning or end, why you chose the one you did. Have fun with this - the power to bring to life is yours, albeit temporarily.

Selection (pages/chapters):_____

Read for next class (pages):_____

Role for next class:_____

Show and Tell(er) Date:

Think back to the early days of school when a special item came with you to school. Your task is somewhat the same here. Bring an item (or an image of an item) that SYMBOLIZES either one of the key characters or a significant event that occurs within the current chapters. **Show** this to your group and in a brief write-up below, **tell** how this represents your chosen character/episode.

Selection (pages/chapters):_____

Read for next class (pages):_____

Role for next class:_____

Quiz Master Date:

Your role is that of **ALEX TREBEK.** You are the ultimate quiz master. See how sharply your fellow readers know the material. In the space below create ten questions that relate to the readings (note: no question can have just YES or NO for its response; also – be sure to cover the entire section). Now there is no need to be really tricky, but tally their scores and we will see at the end of the whole process who best knows their material!

Selection (pages/chapters):_____

Read for next class (pages):_____

Role for next class:_____

Scores:

1._____

2._____

3._____

4._____

5._____

EXTRA PAGE (if needed)

ROLE of _____

**Continue** your discussion questions **AND** your responses to them in the following space:

ROLE of _____

**Continue** your discussion questions **AND** your responses to them in the following space:

# Appendix G

# Resources for Schools

## Resources provided to Newfoundland and Labrador schools

## 2009-2012


Alberta Learning Special Education Branch. (2000).*Teaching students who are gifted and talented*. Edmonton AB: Alberta Learning.

Kanevsky, L. (1999). *Tool kit for curriculum differentiation.* Burnaby BC: Faculty of Education, Simon Fraser University.

Kingore, B. (2008). *Kingore Observation Inventory* ( 2nd ed). Austin TX: Professional Associates Publishing.- provided to primary only

Matthews, D.J. & Foster, J.F. (2009). *Being smart about gifted education: A guidebook for educators and parents*. Scottsdale AZ: Great Potential Press, Inc

Origo Education: Enrichment Think Tanks: Math Resources for Upper Primary and Elementary Grades

Renzulli, J.S., Smith, L.H., White, A.J., Callahan, C.M., Hartman, R. K., Westberg, K.L., Gavin, M.K., Reis, S.M., Siegle, D., & Reed, R.E. S. (2010). *The scales for rating the behavioral characteristics of superior students: Technical and administration manual* (3rd ed.). Mansfield Centre CT: Creative Learning Press.

Smutny, J.F., Walker, S.Y., & Meckstroth, E.A. (1997). *Teaching young gifted children in the regular classroom: Identifying, nurturing and challenging ages 4-9*. Minneapolis MN: Free Spirit Publishing Inc. – provided to primary only

Turville, J.,Allen, L. & Nickelsen, L. (2010) *Differentiating by readiness: Strategies and lesson plans for tiered instruction Grades K-8.* Larchmont NY: Eye on Education, Inc. – provided for K-8 only

Winebrenner, S. (2001).*Teaching gifted kids in the regular classroom*. Minneapolis MN: Free Spirit Publishing Inc.


**Suggested Links and Additional Resources:**

Hoagies Gifted Education Page
www.hoagiesgifted.org/

A Different Place
www.adifferentplace.org/

National Research Council-Gifted and Talented (NRC-GT)
www.gifted.uconn.edu/

Australia Gifted Education Professional Development Package
www.dest.gov.au/sectors/school_education/publications_resources/profiles/Gifted_Education_Professional_Development_Package.htm

# Appendix H

# Curriculum Examples of Differentiated Instruction Strategies for Gifted and Talented Learners

- Curriculum Compacting
- Learning Contracts
- Independent Study
- Tiered Assignments
- WebQuests

## Curriculum Compacting

## Name it, Prove It, Change It

Teachers require a mechanism to preassess their students on their current knowledge and skill levels with regard to the curriculum to be presented. In some instances this may be a pencil and paper pretest. In another area it might be asking students to perform a particular skill. In other situations it may be a matter of observing student traits during a regular day. In this way, the teacher gathers evidence that a student has mastered particular outcomes about to be taught – or is advanced in the area so that the upcoming material or skills may be mastered in a fraction of the time required by most of his or her classmates.

### What does it look like?

It might be the student who has been taking music lessons since preschool and has demonstrated that he or she knows all of the absolute note names in both treble and bass clef before the music teacher presents this to the class. It might be the math student who has shown particular facility in making the switch from repeated addition to multiplication before it is presented. It may be the student who is history buff and who has visited many of the battlefields of WWII and is able to converse knowledgeably about the main figures and events of the time period.

These students have demonstrated that they may not require the introductory material in particular areas. It is vital that teachers document the evidence to support students' mastery on an outcome by outcome basis. It is not necessary that a student receive 100% accuracy in a preassessment. Care must be taken to not require perfection. With gifted and talented students, there are sometimes issues around expecting perfection of oneself. A teaching strategy to support gifted and talented learners must take care not to demand perfection. It is human to make minor slips from time to time. This is not indicative of a lack of understanding, but a valuable opportunity to point out that it is acceptable to slip up sometimes. In a preassessment situation, 85% accuracy is generally regarded as the required level to indicate mastery of the individual outcome. That is not the same as giving the test before the unit is started and demanding an overall score of 85%. Preasssessment for curriculum compacting ought to be done on an outcome by outcome basis to get a clear indication of the student's current knowledge and skill level.

Once the mastered outcome or skill has been **Named** and **Proven** (and documented), the adjustment is to replace the class work on outcomes which are unnecessary for this student with more appropriate and meaningful material. This is not about giving very able students more of the same. It is not compacting the curriculum when a student who has completed the problems assigned for today is told to do the extra set in the back of the book for extra practice. These students are bright! It does not take them long to learn that if the reward for doing work efficiently is more work, they would be better off to slow down and make it last.

The intent of curriculum compacting is to replace tasks which are redundant for a learner with more challenging, different material which appeals to the student's interests. Consider it time that the student has "bought" with his or her previous learning and that he or she ought to be able to "spend" in an area of interest. This is not the time for remediation in an area where that student may be weak. This is a time to enrich that student's learning experience in an area where he or she wants to go.

The student has demonstrated mastery on one (or more) prescribed curriculum outcomes. He or she should receive a grade reflecting that mastery whether it was evident before or after instruction occurred. The learning activities which replace the work linked to the mastery of the outcome(s) should not change that grade or credit. If students feel that accepting additional challenge might jeopardize the grade they will receive in a particular course, they may be reticent to try something with more challenge. Students should certainly receive feedback on their additional work and anecdotal assessment but this need not be reflected in the grade for the course. The measuring stick has not been moved for these students – they are still answerable on the prescribed outcomes. Only if the course has been modified upward should the new or extended outcomes affect the student's grade.

The replacement activities can take many forms. This would be affected by the number of outcomes mastered prior to instruction and the amount of time tied to class work related to this outcome. If the student has been excused from a very minor outcome which entails only a class period, it might be appropriate to offer a challenging game related to the subject or an opportunity to read further to extend a topic under consideration. If, however, the material to be replaced constitutes a more sizable period of time, it might be advisable to allow the student to pursue a topic of interest through an independent study monitored by a learning contract.

Whatever the decision or agreement between student and teacher, this should be recorded with clear conditions. One possible format is the compactor found in Appendix D.

In some instances, it may not be feasible to eliminate all of the work related to a particular outcome. It might be better suited to streamline tasks using a study guide which outlines the material required to be covered along with a plan for assessment, and let the student pursue the learning on his or her faster paced timeline. The student may be required to write class-based quizzes at specific times or to submit particular assignments by given due dates, yet be encouraged to pursue the topics covered in class in more depth or using other resources such as more advanced web sites, primary historical resources, or hands-on experimentation.

The replacement materials may be negotiated between teacher and student-particularly in higher grades where independent in-depth study may be possible. For example, a student may be able to cover the material in social studies class very

rapidly using a study guide in order to “buy time” to accommodate his or her passion for quantum physics.

Susan Winebrenner and Sandra Berger (2004) provide the following guidelines for compacting pretestable subject areas where students move between an instructional group and extension activities.

1. At the beginning of a unit, provide opportunities for interested students to demonstrate mastery in some way. The same activity may be used for post assessment.
2. Students who achieve a specified criterion or grade attend class only on the days when instruction includes concepts they have not mastered. On those occasions, they become part of the regular class and participate in assigned activities.
3. For each student who achieves a specified level on the preassessment activity, prepare a contract listing required concepts, enrichment options, and specified working conditions. Include a list of the topics which the student has not mastered so he or she knows when to join the larger group for instruction on these topics.

The examples provided in this appendix are, of necessity, quite brief. The replacement activities are suggested based on the interests and profile of a hypothetical student. These are not meant to provide a template for compacting but merely examples of what it might look like at various levels and curriculum areas.

## Sample Curriculum Compacting

### Michelle and her Math

See the example below of how one teacher used a pretest and list of outcomes to plan Michelle's fraction unit.

This pretest can be administered a week or two in advance of beginning the instruction on the topics covered here. This will allow the teacher time to analyse the results and plan for upcoming grouping, resources, etc. A teacher may choose to give this opportunity to the entire class, a small group or a single student to allow opportunities not only for curriculum compacting, but to be better informed as to the strengths, prior knowledge and needs of the students in the class.

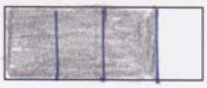
Please note that this is a brief example for demonstration only. It is not meant to directly reflect a unit from the NL curriculum. Generally, the method used to measure skill or knowledge at the end of instruction would be equally valid for use before instruction occurs. Tools could be varied and may include such things as a paper and pencil pretest, a checklist, or a copy of a journal entry to record demonstrated skills.

Note that the items circled in this pretest indicate areas where there are errors. This is where there needs to be a check on Michelle's understanding or skill proficiency.

Unit Test

Student: Michelle Pascal

Write the fraction represented by each figure. (pp. 100-102)

1.  $\frac{3}{4}$

2.  $\frac{5}{6}$

3.  $\frac{2}{4}$

4.  $\frac{3}{8}$

Write the answer. (pp. 103-106)

5. $\frac{1}{4}$ of 12 3

6. $\frac{1}{7}$ of 21 3

7. $\frac{5}{6}$ of 18 15

8. $\frac{4}{5}$ of 45 36

Write in lowest terms. (pp. 107-110)

9. $\frac{2}{6}$ $\frac{1}{3}$

10. $\frac{9}{15}$ $\frac{3}{5}$

11. $\frac{10}{16}$ $\frac{5}{8}$

12. $\frac{12}{18}$ $\frac{2}{3}$

13. $\frac{25}{35}$ $\frac{5}{7}$

14. $\frac{6}{8}$ $\frac{3}{4}$

Write <, > or = for each set of fractions. (pp. 111-115)

15. $\frac{2}{3} = \frac{10}{15}$

16. $\frac{10}{21} < \frac{5}{7}$

17. $\frac{3}{8} < \frac{7}{16}$

18. $\frac{5}{6} > \frac{13}{18}$

Write as a mixed numeral or whole number. (pp. 116-121)

19. $\frac{9}{4}$ $2\frac{1}{4}$

20. $\frac{11}{6}$ $1\frac{5}{6}$

21. $\frac{24}{8}$ 3

22. $\frac{14}{6}$ $2\frac{1}{3}$

23. $\frac{21}{9}$ $2\frac{1}{3}$

24. $\frac{35}{7}$ 5

Write as a decimal. (pp. 122-125)

25. $\frac{8}{10}$ 0.08

26. $\frac{27}{100}$ 0.027

27. $\frac{5}{100}$ 0.005

28. $\frac{97}{1000}$ 0.0097

Mathematics 5

Student's Name: Michelle Pascal
Course Name: Mathematics Grade 5

| **Strand:** Number | **General Outcome:** Develop number sense | | |
|---|---|---|---|
| **Specific Outcomes** ***It is expected that students will:*** | | Mastered? | *Comments* |
| **5N7 Demonstrate an understanding of fractions using pictorial representations** | Q 1-4 100% | Yes | Excuse Michelle from instruction and practice on this outcome. (pp. 100 -102) |
| **5N8 Compute a fraction of a whole number when the solution is a whole number** | Q 5-8 100% | Yes | Excuse Michelle from instruction and practice (pp. 103 -106) on this outcome. |
| **5N9 Express fractions in lowest terms.** | Q 9-14 100% | Yes | Excuse Michelle from instruction and practice (pp. 107 -110) on this outcome. |
| **5N10 Compare proper fractions** | Q 15-18 100% | Yes | Excuse Michelle from instruction and practice (pp. 111 -115) on this outcome. |
| **5N11 Convert improper fractions to mixed numerals (including lowest terms expression of fractional components)** | Q 19-24 100% | * Check | This pretest has only two examples requiring reduction to lowest terms- have Michelle do more examples to check this skill.<br><br>*Michelle to join class for instruction but assign numbers 28, 32, 36 - 42 on page 120 to recheck for mastery of conversion to mixed numerals and reducing to lowest terms. |
| **5N12 Relate fractions to decimals (to thousandths)** | Q 25-28 | No | Consistently using one extra decimal place –address this with mini-lesson and give reduced practice from pp. 122-125 to check for understanding |

The Compactor – Record Keeping for Curriculum Compacting

Student Name: Michelle Pascal  Course: Math Grade 5: Fractions – Unit 7

Teacher: Mr. Euclid  Date: March 2015

| **Curriculum Areas to be Considered for Compacting: Provide a brief description of basic material to be covered and the assessment information or evidence that suggests the need for compacting.** | **Procedures for Compacting Basic Material: Describe activities that will be used to guarantee proficiency in basic curricular areas.** | **Acceleration and/or Enrichment Activities: Describe activities that will be used to provide advanced level learning experiences in each areas of the regular curriculum** |
|---|---|---|
| **Name It.** | **Prove It.** | **Change It.** |
| See the outcomes template attached for Unit 7: Fractions in Grade 5 Mathematics<br><br>**5N11** | Michelle will join class for instruction on Outcome 5N11 and then be assigned selected problems on page 135 to recheck for mastery of conversion to mixed numerals and reducing to lowest terms. | While her classmates are involved in practice activities involving the outcomes which Michelle has mastered, she will be given a mini-lesson re outcome 5N12. She will then choose from the selection of math activities provided in the blue folders in the math centre. These include Crossmatics number puzzles, biographies of famous mathematicians, and classic mathematic puzzles (Konigsberg Bridge, daily doubling of rice, etc.). The instructions for independent work are to be followed and the daily log will be completed by Michelle. |
| **5N12** | This outcome will be addressed with a mini-lesson while the other students are involved in practice related to 5N9. She will then be given selected practice questions from pp. 136-7 to check for understanding. | |

Or to use the Sample Learning Contract suggested earlier:

For: Math 5 Fractions Unit
Student's Name: Michelle Pascal

| √ | Page/Concept | √ | Page/Concept |
|---|---|---|---|
| | 100-102 | | 111-115 |
| | 103-106 | √ | 116-121 |
| | 107-110 | √ | 122-125 |

Please join the large group when instruction is happening on the topics ticked above.

Extension Options:

| √ choice | Options |
|---|---|
| | Crossmatics puzzles |
| | Mathematician biography activities |
| | Classic Math problems |
| | Own Idea (detail below) |

Your Idea: _____

Working Conditions:

- Don't talk to the teacher while he is teaching.
- When you need help and Mr. Euclid is busy, ask someone else who is working on the alternate activities
- If no one else can help you, keep trying the activity yourself until Mr. Euclid is available or move on to another activity until he is free.
- Use the coloured cup system to indicate to Mr. Euclid that you need assistance when he is free.
- Use small group voices when talking to other students about alternate activities.
- Never brag about your opportunities to work on alternate activities.

*I agree to these conditions. I understand that if I don't follow them, I may lose the opportunity to continue working on alternate activities and may have to rejoin the class.*

Student's Signature: _____

Teacher's Signature: _____

***Contract sample based on the work of Susan Winebrenner, (2001) Teaching Gifted Kids in the Regular Classroom, Free Spirit Publishing Inc.***

## Study Guide Used for Curriculum Compacting

The pretesting option for curriculum compacting samples above works well for students who have a great deal of prior knowledge or particular skills – those who have previously learned aspects of the curriculum. Other compacting methods are needed for situations where the curriculum is new, but students who are highly able or gifted and talented can learn it much more quickly than many of their age peers.

To allow these students to work at a pace commensurate with their abilities, the study guide method may be appropriate. Students can move through the curriculum at a faster pace and sometimes develop expertise on related topics. It is not immediately offered to all students as the previous math example may have been, but to those students who have displayed prior knowledge of the subject area or those who have demonstrated an ability to learn at a pace considerably faster that many of the students in the class.

With the study guide method, students are held accountable for demonstrating mastery of the topic in a time frame determined by the teacher. The alternate work that they do has a more flexible format and allows for faster pacing which appeals to many very able students.

The study guide will specify the material which will be covered and the dates for class assessments. This may be combined with a list of possible extensions which include topics related to what the whole class is learning. The student who is independently completing the unit of study may choose a topic from the extensions list – or propose one of his or her own for teacher approval – pursue it in depth, and report his or her learning to the class or another suitable audience. It is important for the study guide to describe possible extensions but allow students to choose how to present their learning. Extensions should concentrate on the upper levels of thinking (i.e., application, analysis, evaluation and synthesis).

Examples of study guides, extension menus, independent working conditions, etc. are provided in Chapter 4 of *Teaching Gifted Kids in the Regular Classroom* by Susan Winebrenner. This was provided to all schools in Districts 1 to 4 with school populations including any of Grades 4 to 12. Those schools with primary students have a similar resource entitled *Teaching Young Gifted Children in the Regular Classroom* by Smutney, Walker and Meckstroth. See Chapter 3 in this resource for examples applicable to primary grades. French first language schools and those with French Immersion classes would also have received the French versions of these resources**:** *Enseigner aux Jeunes Enfants Doués en Classe Régulière* (see Chapter 3) and *Enseigner aux Enfants Doués en Classe Régulière* (see Chapter 4).

**Subject Based Samples- Compacting with Study Guide**

## World War II Study Guide

Be prepared to:

1. Discuss the political, social and economic causes of the war.

2. Explain the economic situation in Europe in the 1930s which contributed to the political situation.

### Quiz for 1 and 2 on April 19

3. Know the meanings of all designated (bolded) vocabulary words listed on pages 236, 243, 251, and 253.

4. Complete a map of the countries in 1945 to show which were allied together. (blank map available on the class shared computer drive)

5. Name the political leaders who were influential at the outbreak of war and throughout the course of conflict. Give a brief (150 words) summary of the contribution of each.

### Quiz on 1- 4 on April 28

6. Describe typical battle conditions which a soldier would be likely to encounter. Include information about commonly used battle tactics.

7. Compare and contrast the technological level of warfare in WWII with that of WWI.

8. Create a news report of a non-battlefield event related to the war.

9. Describe the ending of WWII including the ensuing effects on the countries of both the Allies and the Axis Powers. Why was there no treaty signed as was the case in most previous conflicts?

10. Summarize the implications of this war in modern day. Hypothesize how history would have turned out differently if the other side had won. Make predictions for the decade following the war as well as for the present time.

### Test for 1-10 on May 6

* this sample adapted from Winebrenner (2001), page 71.

## Extension Menu – Possible Student Choices

- Design battle strategies that you think would have led to more victories and fewer casualties. Be sure to use only technology available during the time period.

- Investigate other types of wars: between families, clans, children in school, mythical creatures, etc. Include a comparison of elements found in a traditional war between countries or regions.

- Create a biographical account of a key player in the war. Include evidence of the person's influence during the war period.

- Investigate the role of codes in communication during WWII.

- Compare and contract the patriotic music used by both sides in the war. How does it differ from patriotic music from other wars? Consider how music influences patriotism in civilians and members of the armed forces.

- Ernst Hemingway wrote *For Whom the Bell Tolls* and Pablo Picasso painted *Guernica* as tributes to those who suffered in the Spanish Civil War. Alfred Lord Tennyson wrote *The Charge of the Light Brigade* to commemorate a battle of the Crimean War. To whom should a tribute be created for a recent war or conflict? What format would it take?

- Investigate the political cartoons of WWII. How did these affect the course of the war?

- Propose a topic of your choosing to your teacher for approval.

* Some of these suggestions have been adapted from Winebrenner (2001), page 72.

## Learning Contracts

Learning contracts are a method of individualizing instruction while developing student responsibility. They may allow for variety in pacing to account for the rate at which a student is able to master new material. Learning contracts can allow students to function at an academic level best suited to them while working with resources and concepts which are matched to their experiences and abilities. These may be of several types.

The first time students use a learning contract, they may require very specific directions regarding resources, products, and timelines. As students become more comfortable with this style of learning and develop more independence, they will become more involved with setting learning objectives, selecting resources, determining areas for concentration, and choosing methods for showing and sharing their learning. This is very much a case where gradual release of responsibility is key.

Learning contracts will be very useful in conjunction with other strategies suggested in this document for gifted and talented learners. For example, learning contracts would be very useful in helping to manage areas with extensive curriculum compacting or independent projects or study.

Learning contracts help to encourage self-directed learning and allow for shared responsibility for the planning and learning experience. Students are able to be active participants in the learning process from start to finish. The learning goals become the student's personal goals. Learning contracts allow teachers to provide flexibility for individual student needs and interests as they allow students to work at varying levels. Students are not required to complete tasks which are not necessary for their learning but instead tailor their work to what they need to learn. This leads to increased motivation as the student has helped to identify what will be necessary for, and meaningful to, him or her.

Some samples follow. Teachers are encouraged to combine or edit as best fits the situation at hand.

**Independent Project**
**Learning Contract**

Student's Name: _____
Topic for Project: _____
Product at end of Project: _____
How it will be Presented: _____
Audience for Product: _____

**My Plan to Complete My Project:**
This should list the steps that you need to complete in order to create an exceptional product.

1._____
2._____
3._____
4._____
5._____
6._____
7._____

**How My Product will be Evaluated:**
These are the criteria on which your teacher and you have agreed. These are the things that will make your product exceptional.

1._____
2._____
3._____
4._____

**Project Due Date:** _____

**Other Check in dates:** _____

**Comments**:_____
_____

**Signatures:**

I agree to stay on task while working on this project and to put forth my best effort toward completing it successfully.

Student's Signature: _____ Date: _____

I agree to offer help and feedback throughout the completion of this project.

Teacher's Signature:_____ Date: _____

## Project Planner

Put a check mark in the appropriate box as you complete each task.

□ Due date for choosing topic and research questions: _____

**My topic:** _____

**Questions I will explore:**

a) _____
b) _____
c) _____
d) _____
e) _____
f) _____

**Due dates for:**

- □ notes: _____
- □ visuals: _____
- □ self-evaluation: _____
- □ final project: _____
- □ teacher conference(s): _____

**Format:**

What is the audience for your project? _____

How will you share your information?/ What type of product will result from your work?
_____

**Self Evaluation**

□ My information is accurate
□ My information includes key ideas about my topic
□ I have used at least three different sources including different types of resources (books, websites, interviews, videos, original research, etc.)

The titles and types of my sources are:

1._____ Type: _____
2._____ Type: _____
3._____ Type: _____

□ I have used visuals, diagrams or props in order to help share my learning.

*Adapted from Long-Term Project Planner in **Differentiation in Action** by Judith Dodge, Scholastic Teaching Resources 2006, p.74*

# Project Planner

Student: _____

1. The topic I will investigate is _____

The questions I will investigate (who/what/where/when/how – be specific)

_____
_____
_____

2. The resources I will use (at least three types):

- ☐ Print (books, magazines, journals)
  - names: _____
- ☐ Web sites
  - url _____
- ☐ Other (interviews, software, videos, exhibits)
  - _____
  - _____

3. What type of product will you have at the end of your project?_____

4. Who is the audience for this product? _____

5. Evaluation and feedback checklist:
   The checklist should be completed by both you and a classmate who will give feedback on your project before you are to submit it. ***Note: This checklist would vary by assignment. It is not included in this sample.***

6. The due date for my project is: _____

7. Complete the following Self-Reflection section:

List four new things you learned by doing your project.

(i) _____
(ii) _____
(iii) _____
(iv) _____

What are two things about your project of which you are particularly proud?

(i) _____
(ii) _____

Describe something you would improve or do differently if you had an opportunity to change something about your project.

_____
_____

What was the most difficult part of this project?

_____
_____

What was the most enjoyable part?

_____
_____

On a scale of 1 to 4 (4 being the highest), how would you rate your project?

1 2 3 4

Why did you give it that rating?

_____
_____

*Adapted from Differentiating Instruction in the Regular Classroom: How to Reach and Teach All Learners, Grades 3-12 by Diane Heacox, Free Spirit Publishing Inc. 2002.*

## Independent Study

Other forms which may be useful in planning for independent study/projects and their subsequent assessment are referenced here.

**Management Plan for Individual and Small Group Investigations** – This is a template for organizing and managing independent studies. The language and layout makes it more appropriate for students in upper elementary and higher. It may be found at
www.gifted.uconn.edu/siegle/CurriculumCompacting/SEC-IMAG/manplan.pdf

### Steps in Independent Study

Depending on the student's previous experience with research or self directed work, the teacher may need to guide students through their independent study. These steps are suggested by Stephens and Johnsen (2005):

1. Introducing the independent study

Provide a plan describing the steps to be used
Delineate any dates when checkpoints will occur
Identify the audience for the work

2. Selecting a topic

Is student interest sustainable?
Is information available at a level accessible to the student?
Does it need to be narrowed to an approach scope?

Subject example:

An independent study on a student's interest in space is too huge an area. The student may need to do some preliminary reading in order to narrow the topic to a particular aspect such as:

- evolution in the design of spacecraft used in space exploration
- redefinition of what constitutes a planet and the impact that will have
- effects of economic downturn on space exploration
- comparison of varying models or theories related to particular space phenomena.

3. Organizing the study

The study may be organized around or through:

Description - brainstorm categories for consideration

Comparison – looking at changes over time or location may suggest particular questions and begin to lead to other organizational structures

Cause and effect – If an attitude or factor changes/changed, what results/resulted from that shift?

Problem and solution – such changes may then present a problem to be investigated and solved

Subject Example

If a student wanted to explore ecclesiastical gothic architecture, he or she might have to describe the aspects of construction that constitute this type of building. Description would be required regarding cruciform design, flying buttresses, foundation methods, the role of stained glass, and the principles of balance and ornamentation.

A comparison might occur between the design of master builders in the regions which are now modern-day England, France and Germany. Comparison might also be made with previous styles such as Romanesque or Norman ecclesiastical architecture.

This could easily take into account the changes in beliefs, economic status, social order and the effects these changes had on the rise of cities, noblemen, monasteries and the move to gothic ideals for their cathedrals. What advances in building techniques and materials had the effect of changing the leading styles of church building? Similarly, what changes in these areas lead to the decline of gothic church construction?

These changes may have introduced problems which needed to be solved with regard to procuring tradesmen, materials and funding for the grandiose building projects. Perhaps there were technical problems with construction which required a move away from certain aspects of gothic style. Other problems which might be considered is the inordinate cost of present day upkeep of these massive structures, the impact of pollution such as acid rain on the stone used in construction during medieval times. Another problem might be finding labourers in the 21$^{st}$ century with the required skills to undertake the maintenance and recreation of artworks in stone, wood and glass.

These ways of examining a topic will help to shape the organization of this study but also lead to the next steps – asking questions.

## 4. Asking questions

Students must consider the complexity of a question. It must not be answered by a simple yes or no after consulting a reference book. This might provide an opportunity to discuss levels of questioning such as Bloom's taxonomy. Other considerations

might be whether the student has the time and resources to study the question or whether the question is useful and beneficial to others.

Subject example

A student might have a particular interest in caribou. An independent study may examine descriptive questions such as:

- What is a caribou's physical appearance?
- What is their range?
- When during the year is the typical breeding time?
- What is the usual family unit composition?

Comparison questions might ask:

- How are caribou, moose and deer similar and different in appearance?
- How are the habitats of caribou different from moose?
- How does the decline of the caribou in Newfoundland and Labrador compare to the live cycle of similar species such as moose?
- Does the pattern in Newfoundland and Labrador parallel or differ from the condition of caribou in other parts of the world?

5. Choosing a study method

- descriptive
- historical
- correlational
- developmental
- ethnographic
- action
- experimental

This will lead to a consideration of the research methods related to various types of questions so that the students will use authentic approaches that are used by practicing experts in the field under consideration.

Subject example:

If a student wished to investigate the people for whom particular government buildings in their province were named, he or she would use historical study methods. He or she might contact primary sources such as officials connected with each building or those who were there when the building was opened and named. Secondary sources such as period newspaper resources might be helpful, interviews of individuals involved in the field of endeavour might be another source of information (e.g., ask a senior judge about the person for whom the court house was named. Ask a musician about the person for whom the main recital hall is named).

These methods would be different that those undertaken by a student who wishes to study the aggressive nature of male and female beta fish. This study may require some research into previous work in the field, but it may also involve the planning and execution of a controlled experiment to make observations regarding fish behaviour when fish tanks are placed alongside a fish of the same species, the opposite species, a fish with more brilliant colouring, a fish with more drab colouring, etc.

The authentic method of study is generally that commonly used by the practising professional in the field of endeavour. Using experts as mentors can be invaluable with this aspect of independent study.

6. Getting information

There are many ways of gathering information. The selection of means for gathering information is largely connected to the research methodology suggested by the nature of the question to be investigated. Some possibilities include:

- note taking
- writing letters
- surveying
- interviewing
- observing
- reading
- listening to focus groups
- going on field trips
- conducting controlled experiments
- researching on Internet

7. Developing the product

Information may be presented in many forms

- written report
- book
- game
- video
- computer program
- diagram
- graph
- model
- debate
- dramatic presentation
- newspaper
- speech
- audio recording

8. Sharing information

Students may need to be lead to see the importance of sharing their product: to learn from each other, to improve the product through feedback and evaluation, to gather support for the findings or recommendations. Such sharing usually occurs through methods such as oral presentation or in a display but may also use such venues as publication, short video, or documentary. Some instruction may be required in regard to this step. For example, a student may need to learn and practice the key points of public speaking in order to effectively present his or her findings in an oral report.

9. Evaluating the study

Students will examine their progress and performance against criteria - perhaps created in conjunction with the teacher. This might include such things as variety in resource use, efficiency of time management, organization, effective presentation, or the degree to which the research question was addressed. Similar criteria may be developed for other evaluators such as teacher, peers or others. Checklists of rubrics may be designed with specific criteria for different types of projects. Evaluations in independent studies are intended to focus on what the student has learned and what he or she might do to improve the next project. Many evaluation tools are available to promote this aim. One which is commonly used is the Student Product Assessment Form (Renzulli and Reis, 1997) which is referenced below.

**Student Product Assessment Form** - This may be helpful in providing feedback about the process a student has followed in undertaking an independent study. It may also be useful to provide to the student as he or she begins the independent study so that he or she is aware of the many areas which require consideration.

This link provides a very comprehensive form as well as a summary sheet. Teachers may select the version most suited for the purpose at hand.
www.gifted.uconn.edu/sem/pdf/spaf.pdf

See also:
University of Wisconsin: Stout
Research Process Rubrics
at www.uwstout.edu/soe/profdev/rubrics.cfm#reports

## Tiered Instruction

Tiered instruction is a means of teaching one concept and meeting the different learning needs in a group. It allows students with different learning needs to work with the same essential ideas and use the same key skills but at different levels of complexity, abstractness and open–endedness. The different tiers may be based on student readiness or ability, interest in the topic, or learning style preference. Tiered instruction is often touted as a best practice since it ensures that each student is

appropriately challenged, it puts the focus on the concept rather than student learning differences, and it maximizes learning.

This approach may be especially useful for students who are gifted and talented as they provide opportunities for these students to generate ideas, reflect on their cognitive needs, work in areas of particular interest, and develop higher order thinking skills.

Tiering can be used in a lesson, an assignment, or a strategy.

General guidelines for use include:

- Be sure the task is focused on a key concept of the study/topic.
- Use a variety of resource material to provide necessary levels of complexity, reading levels, and learning modalities.
- Adjust the task by complexity, abstractness, number of steps, and independence to provide appropriate challenge.
- Be sure there are clear criteria for quality and success.

Subject Examples:

Tiering can be as simple as determining a theme for a Language Arts unit – such as Survival – and assigning a variety of novels to the students. In a Grade 6 class these might range from *Abel's Island*, to *Hatchet*, *Julie of the Wolves*, *The Cay*, to *Lord of the Flies*. Students would use a resource appropriate to their reading and comprehension level to investigate the theme, or literary concepts such as setting, conflict, characterization, etc.

Particular assignments or tasks may also be tiered. If the topic under study is how organisms react to environmental change, students may explore the topic using varying provided story books, stories on tape, videos or web sites. The associated task may then be for the student to choose two characters from the story experienced and describe in pictures, writing or dramatics how the changes in environment affected the basic needs of each. Students are working on the same essential learnings by exploring story yet are accessing the information using a resource or format best suited to their abilities or preferences. The students will also benefit from the breadth of the variety of resources when they have opportunity to share what they have learned and substantiate their points using examples from their individual sources. The class can expand their learning by looking for similarities and differences across the various environments.

Another example of tiering involves using data to create a bar graph and reading and analyzing a bar graph.

The “just right”, grade level tier might provide a frequency table of the types of Hallowe’en treats (bars, candy, toys, chips and cheezies) collected by the students in the class. The instructions for this tier would require a scale numbered by twos (0,2,4,6…), a title and labels, and would ask the students to answer supplied questions about the graph in order to reach particular conclusions such as the most common treat, the total number of treats collected, etc. This would be working on the analysis level of Bloom’s taxonomy.

The tier for students who struggle with this topic might be more teacher-directed and begin with a review of the provided frequency table. Students may be asked to copy the provided graph structure (axes, etc.) on to graph paper including title, labels, and numbers on the scale. Students would then be instructed and supported by the teacher to make the length of each bar equal to the number of that type of treat collected. Students would then complete a cloze passage to draw particular conclusions. This might look something like:

The type of treat which our class collected the most of was _____.

The type of treat our class collected the least of was _____.

For students who have already mastered the grade level expectations and who are ready to extend their learning, the activity may reach toward a synthesis level. Students may be asked to think of an idea for using a bar graph to represent some aspect of the data about Hallowe’en treats. They may take a survey or collect data that interests them about this. Then they will make a bar graph including titles and labels and list at least two conclusions that may be drawn from this data. Some students may choose to break down categories and examine what proportions of specific chocolate bars were collected or compare the types of treats collected to surveyed student preferences for treats – this may lead to a double bar graph. This is a much more open-ended assignment giving these able students permission to go further with their learning, exert their independence, and give them power – albeit limited at this level! – to influence and guide their own learning.

Tiers may also be formed around learning styles or preferred presentation modes. After a study of diamante poems, students may be given the option of choosing the group with which they want to work based on the topic on which to base their own poem: sports, plants, or capital cities.

Tiering may also group students by learning style as in this assignment to depict our solar system. One tier might include students who are verbal-linguistic learners who write the information cards about the individual planets, moons, etc. They may be given specifications regarding what is required such as size, colour, atmosphere, temperature, etc. Another tier might be logical-mathematic learners who are

responsible for researching the size of the various bodies working with scale, and making a chart including the name of the planet, its moons, actual size and scale size required. The third tier might be the visual-spatial learners who consult with the logical-mathematical group regarding the size and consult with the verbal linguistic group regarding the characteristics of colour, rings, spots, etc. This group would then design, create and hang the models of each planet and moon.

For more examples of tiered lessons and units, consult *Differentiation by Readiness: Strategies and Lesson Plans for Tiered Instruction Grades K-8* by Turville, Allen and Nickelsen supplied to all schools with K-8 in 2010. Other sources include *Differentiation Instruction: A Practical Guide to Tiered Lessons in the Elementary Grades* by Cheryll M. Adams and Rebecca L. Pierce and *Differentiation in Action* by Judith Dodge.

## WebQuests

A WebQuest is an inquiry-oriented online tool for learning. It is a classroom-based lesson in which most or all of the information that students explore and evaluate comes from the World Wide Web. They can be as short as a single class period or as long as a unit. Webquests usually involve group work, with students taking on specific roles or perspectives and are built around resources that are preselected by the teacher. Students spend their time using information, not looking for it.

WebQuests are useful in obtaining multiple points of view, weighing reliability of data sources, and critical-thinking and analysis skills. When tiered by sending students to different websites or resources according to ability, readiness or interest, they respond to student learning preferences and needs.

**WebQuests usually have six components:**

**Introduction:**
The introduction section provides background information and motivational scenarios like giving students roles to play: "You are a marine biologist working with dolphins," or "You are an astronaut planning a trip to the International space station." It also provides students with an overview of the learning goals.

**Task:**
The task is a description of what students will have accomplished by the end of the WebQuest.

Once the teacher finds web resources for a particular topic, he or she creates an activity for the students incorporating the information from the various sites.

Students can be asked to publish their findings on a web site, collaborate in an online initiative with another site or institution, or create a multimedia presentation on a

particular aspect of their research. The task should be visually and aesthetically appealing, relevant and fun.

**Process:**
This describes the steps learners should go through in accomplishing the task, with web links included in each step.

**Resources:**
This section of the WebQuest consists of a list of the resources (bookmarked Websites, print resources, etc.) that students will need to complete their task.

In older WebQuests, the resources are listed in a section of their own. More recent WebQuests have the resources included in the Process section, to be accessed at the appropriate time.

**Evaluation:**
Each WebQuest needs a clear, consistent **rubric** for evaluating students' work. It must be specific to the tasks set.

**Conclusion:**
This step allows for student reflection and summation by the teacher. During the concluding section of a WebQuest, students are usually encouraged to suggest ways of doing things differently in order to improve the lesson. They may also discuss possible extensions and applications.

Most Webquests require some reading ability and so care must be taken in designing a Webquest for students in Grade 2 or lower or for students who have challenges in reading. Paired readers or highly visual websites may help in these situations.

For help in developing Webquests and samples of existing Webquests visit:

**A WebQuest About WebQuests**
www.webquest.org/index-resources.php
Choose the icon *A Webquest about Webquests* and select your interest area in order to experience the format.

**San Diego City Schools**
http://projects.edtech.sandi.net/
The Triton Project features examples of teacher designed WebQuests.

# Appendix I

# National Association for Gifted Children

# Position Paper

# Cooperative Learning for Gifted Students


# POSITION PAPER

## COOPERATIVE LEARNING FOR GIFTED STUDENTS

The National Association for Gifted Children (NAGC) periodically issues policy statements that deal with issues, policies, and practices that have an impact on the education of gifted and talented students. Policy statements represent the official conviction of the organization.

All policy statements approved by the NAGC Board of Directors are consistent with the organization's belief that education in a democracy must respect the uniqueness of all individuals, the broad range of cultural diversity present in our society, and the similarities and differences in learning characteristics that can be found within any group of students. NAGC is fully committed to national goals that advocate both excellence and equity for all students, and we believe that the best way to achieve these goals is through *differentiated* educational opportunities, resources, and encouragement for all students.

Cooperative Learning (CL) encompasses a variety of classroom practices which include the following attributes: group interdependence built around common goals, a focus on social skills or group dynamics, and individual accountability for material learned. Cooperative learning experiences can provide valuable opportunities to share ideas, practice critical thinking, and gain social skills.

When heterogeneous CL groups are the primary strategy in the classroom, gifted students' needs may not be met. Cooperative learning advocates often stress forming CL groups with students intentionally clustered by mixed abilities. When gifted students are included in these CL groups, special care must be taken to differentiate the tasks appropriately. Cooperative learning is more likely to be effective for gifted learners when group tasks and goals:

- take into account differences in students' readiness levels, interests, and learning modes;
- focus on high level tasks that require students to manipulate, apply, and extend meaningful ideas;
- ensure appropriate and balanced work responsibilities for all participants;
- ensure balanced opportunities for learners to work with peers of similar as well as mixed readiness
- levels; and

- are balanced with opportunities for students to work independently and with the class as a whole.

When differentiation does not happen, gifted students may feel overburdened and responsible for the entire “workload.”

Teachers who use CL with heterogeneous groups need additional support and preparation in how to structure the learning tasks to ensure that the instructional activities meet the cognitive and social needs of the most able students in the group. NAGC believes that cooperative learning should be viewed within a range of instructional strategies that may enhance some learning objectives for some gifted students some of the time but should not be used as a panacea to replace differentiated services addressing the educational needs of gifted students. When used in conjunction with an array of services to differentiate the education of gifted students, CL can be an appropriate strategy.

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# Appendix J

# Thinking Skills Programs and Resources

# Sample Thinking Skills Programs and Resources

## *Barry Beyer:*

*Improving student thinking: A comprehensive approach* (1997) Allyn and Bacon

*Teaching thinking skills: A handbook for secondary school teachers* (1991) Allyn and Bacon

*Teaching thinking skills: A handbook for elementary school teachers* (1991) Allyn and Bacon

## *Creative Education Foundation:*

Creative Problem Solving Process (based on the work of Alex Osborn and Sidney Parnes) www.creativeeducationfoundation.org/our-process/what-is-cps

## *Edward DeBono:*

*6 Thinking Hats* (1999) Back Bay Books

*Lateral Thinking: Creativity Step by Step* (1973) Harper Colophon

*CoRT Thinking* (2002) Hawker Brownlow Education Pty Ltd.

## *Bob Eberle:*

*Scamper On: More Creative Games and Activities for Imagination Development* (1996) Prufrock Press Inc.

## *Future Problem Solving Program International, Inc.*

www.fpspi.org/

## *Joseph S. Renzulli:*

*New Directions in Creativity* by Joseph S. Renzulli, Carolyn M. Callahan, Linda H. Smith, Mary Jo Renzulli, and Barbara Gay Ford

Creative Learning Press

- *Mark A* (2000) Grades K-1
- *Mark B* (2000) Grades 2-3

- *Mark 1* (2000) Grades 3-5
- *Mark 2* (2000) Grades 4-6
- *Mark 3* (2000) Grade 5-8