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**Rainy River**

**District**

**School Board**

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# **Bridging the Gap**

## **Between Elementary & Secondary**

**A Resource Manual for Intermediate Teachers**

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**Dream**

**Believe**

**Achieve**

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## Table of Contents

### Section One: The Intermediate Learner

Characteristics of the Intermediate Learner.....	3-4
A Comparison of Elementary and Secondary Intermediate Classrooms Venn Diagram.....	5
Assessment of the Intermediate Learner.....	6-7
A Comparison and Contrast of Assessment at the Intermediate Level.....	8-9
Profile of a Student in a Grade 9 Locally Developed Compulsory Course.....	10
Profile of a Student in a Grade 9 Applied Course.....	11
Profile of a Student in a Grade 9 Academic Course.....	12

### Section Two: Literacy Across the Curriculum - The Ontario Secondary School

#### Literacy Test

O.S.S.L.T. Accommodations.....	14
The Writing Component of the Literacy Test.....	15-16
Writing a Summary.....	17
Example of an Acceptable Student Summary.....	18
Writing a Series of Paragraphs Expressing an Opinion.....	19
Example of an Acceptable Student Series of Paragraphs Expressing an Opinion.....	20
Writing a News Report.....	21
Example of an Acceptable Student News Report.....	22
Writing an Information Paragraph.....	23
Example of an Acceptable Student Information Paragraph.....	24
Writing Tips.....	25-26
The Reading Component of the Literacy Test.....	27
Sample Reading Task from the Literacy Test.....	28
Sample Questions and Answers from the Sample Reading Task.....	29-30
Reading Tips.....	31
Question-Answer Relationships.....	32

#### Section Three: Essay/Assignment Format

Basic Forms for Sources in Print.....	33-36
Plagiarism.....	37
Tips for Students to Avoid Plagiarism.....	38

#### Section Four: English/Language Arts.....

#### Section Five: Fine Arts - Music and Visual Art.....

#### Section Six: Geography.....

#### Section Seven: Health and Physical Education.....

#### Section Eight: History.....

#### Section Nine: Mathematics.....

#### Section Ten: Science.....

## Characteristics of the Intermediate Learner

As teachers of adolescent children, we are all aware of the changes and challenges that our students face. In addition to the transition from Grade 8 to Grade 9, adolescents undergo physiological, intellectual, social and emotional changes. A clear understanding of the adjustments students are experiencing will help us guide them in their transition from the elementary system to the secondary system.

### Physiological:

- Some students may experience rapid height and weight gains, while others retain the same size as they had in their junior grades.
- Adolescents frequently sleep longer as they need more sleep “to allow their bodies to conduct the internal work required for such rapid growth” (Huebner, 2000). Melatonin levels rise much later in the day for adolescents, so they cannot get to sleep at night. Studies clearly show that the best rested (8.5 hours or more of sleep each night) get the best grades. Twenty per cent of all adolescents fall asleep in school.
- A trend is appearing that early-maturing boys are at somewhat of a higher risk than later maturing boys, particularly for externalizing problems. Although boys who enter puberty at an earlier age experience certain advantages, such as higher self-esteem, greater popularity, and some advances in cognitive capabilities, these same boys may also be more likely to engage in risk-taking behaviour, possibly because they often socialize with older boys.
- Some studies have found late maturation in girls to be linked with higher school achievement. On the other hand, girls who mature early often have more problems with self-esteem, and are at an elevated risk for anxiety, depression, and eating disorders (Price, 2005).
- Other consequences include increased clumsiness, as the adolescent adapts to his or her new body, and a heightened self-consciousness.

### Cognitive:

- The development of advanced reasoning and abstract thinking skills usually occurs at this time. Students improve their ability to function creatively and gain greater intellectual curiosity.
- Once boys enter puberty with its testosterone surges that change the right hemisphere of the brain, spatial skills surge. As a result, on average the I.Q. of boys rises 1 to 2 points per grade from Grades 7 to 12.
- “Most . . . 10-14 year olds make progress in intellectual development, but the gap between good and poor students widens” (Beck). And, demands for abstract thinking prior to achievement of formal thought may be frustrating for the student.
- Along with this increase in abstract thinking and conceptualization, the student must also have the verbal skills to communicate his/her understanding. Adolescents who have not obtained these skills may appear less competent because of their inability to express themselves meaningfully, thus resulting in feelings of frustration and helplessness.
- Motivation problems in teenagers also can be attributed to an area in the frontal cortex called the nucleus accumbens which directs the seeking of rewards is much less active in teens than in adults.

- The brain of an adolescent does not fully mature until the person is in his/her early 20's. For example, the prefrontal cortex, which plays a vital role in guiding an individual's ability to act in a self-directed, appropriate, purposeful manner, is less mature in young adolescents than in adults (Price, 2005).

### Social & Emotional:

- The intermediate student is seeking to establish his or her own value system. In early adolescence, the student often feels a need to be "just like everyone else," adjusting his behaviour and responses to what he assumes is acceptable to his peers. As the student moves toward his peer group, his relationship with his family may be affected.
- Also, the student's rapid growth and maturation focuses his attention on his physical self and his growing sexual awareness.
- In addition to these concerns, the focus on his future now becomes important, resulting in experimentation with multiple hobbies, interests, clubs, and relationships.

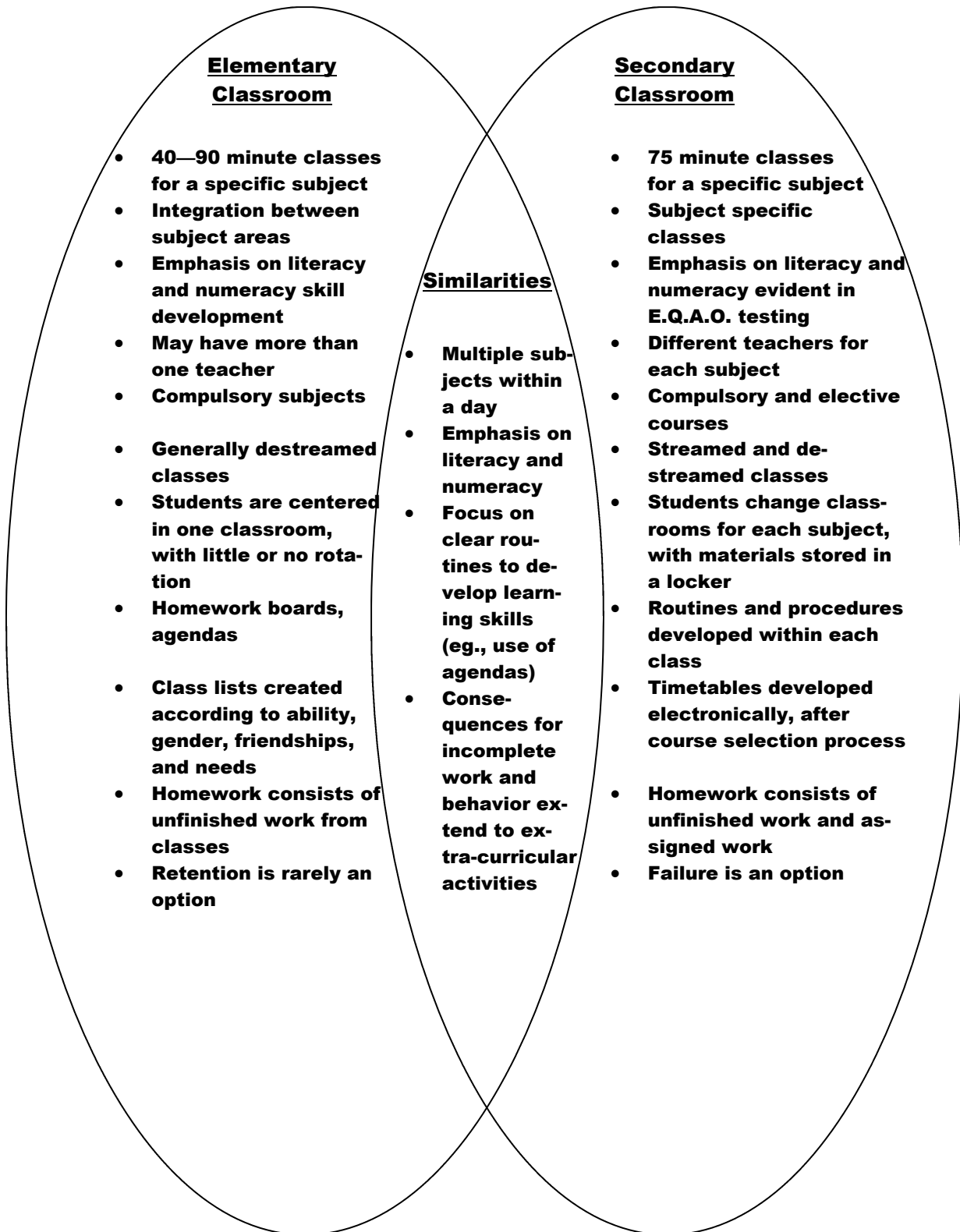
It is also important for teachers to recognize that puberty is not the same for all teens. And, up to 80 percent of adolescents have few or no major problems during this period (Dahl, 2004).

Yet, the need for structure in the teenager's environment is paramount as to provide stability in this time of flux. A clear understanding of the changes experienced with the onset of adolescence allows teachers to employ appropriate teaching and discipline strategies and to engage in meaningful communications concerning expectations and abilities. As teachers of intermediate students, we are the guides to help them prepare one of the most challenging transitions they will face. Our knowledge and expertise will ensure our students are ready to meet their future with confidence.

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# A Comparison of Elementary and Secondary Intermediate Classrooms



## **Assessment of the Intermediate Learner**

**Assessment Strategies** are the structures through which student knowledge and skills are assessed. For example, teachers may assess students' oral skills by having them make presentations to their classmates. We may assess students' problem-solving and technology skills by having them design and build a working model. A presentation, a test, and a demonstration are examples of assessment strategies.

**Recording Devices** (or scoring tools) provide various means of organizing the recording of information about student achievement. Teachers can choose or develop recording devices which suit the students and the activity and/or learning being assessed.

### **An Overview of Varied Assessment Methods:**

There are three:

- paper and pencil
- performance
- personal communication

As there is a wide variety of assessment strategies available, teachers must exercise their professional judgement to determine their assessment purpose, to select appropriate assessment methods and strategies for the type(s) of learning expectations being assessed and to choose the appropriate tools for recording or scoring.

### **Performance Standards**

Student learning is measured according to the performance standards listed in the Achievement Chart of each curriculum policy document. The standards describe student performance at four levels of achievement and are organized into four Achievement Categories:

- "Knowledge & Understanding" or "Reasoning"
- "Communication"
- "Thinking & Inquiry" or "Organization" or "Problem-Solving"
- "Application" or "Making Connections"

Students are expected to demonstrate knowledge and skills in all four categories. Teachers employ a wide variety of teaching and assessment strategies so that students can demonstrate their learning in all four categories, as noted in the chart on the following pages. The categories are weighed for each course, according to the number and types of expectations found in the subject's curriculum policy document.

## **Final Evaluation**

In determining a final percentage mark, the teacher considers the highest, most consistent level of student performance, based on the four levels described on the Achievement Chart. Special emphasis may be given to more recent performance by the student, based on the professional judgement of the teacher.

The highest, most consistent level of achievement is not necessarily the same as the student's average mark. The most consistent level of achievement is the level at which the student most often performs – the mode, not the average (mean) mark.

Teachers may choose to include a selected number of assessment results from a larger collection of data in determining the final grade or mark. Learning Skills, while assessed, are not evaluated, unless they are written within a specific course's expectations.

## A Comparison and Contrast of Assessment at the Intermediate Level

	<b>Elementary Intermediate</b>	<b>Commonalities</b>	<b>Secondary Intermediate</b>
<b>Achievement Chart Categories</b>	These presently vary according to subject. With the Sustaining Quality Curriculum initiative, the elementary subjects' Achievement Charts will align with their secondary counterparts.	Four basic categories exist for all subject and for both panels.	Four categories exist for each subject area: <ul style="list-style-type: none"> <li>• Knowledge/Understanding</li> <li>• Thinking/Inquiry/Problem-Solving</li> <li>• Communication</li> <li>• Application</li> </ul>
<b>Report Card</b>	Marks and comments are provided in subsections of a subject (e.g., Language Arts provides three marks, one for each strand). Reporting occurs three times a year.	Both levels have standard reporting periods, and both report achievement as a percentage mark.	Marks and comments are provided twice a semester (midterm and final). Teachers only provide one mark per subject area.
	<b>Elementary Intermediate</b>	<b>Commonalities</b>	<b>Secondary Intermediate</b>
<b>Learning Skills</b>	Nine learning skills are assessed and reported on the elementary report card: <ul style="list-style-type: none"> <li>• Independent work</li> <li>• Use of information</li> <li>• Class participation</li> <li>• Initiative</li> <li>• Cooperation with others</li> <li>• Problem solving</li> <li>• Homework completion</li> <li>• Conflict resolution</li> <li>• Goal setting to improve work</li> </ul>	Learning skills are assessed but are not included in the mark (unless otherwise indicated in the subject's expectations).	Five learning skills are assessed and reported on the secondary report card: <ul style="list-style-type: none"> <li>• Works independently</li> <li>• Teamwork</li> <li>• Organization</li> <li>• Work habits</li> <li>• Initiative</li> </ul>

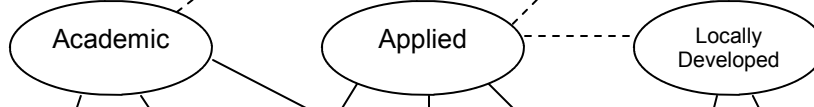


## Secondary School Destination Routes

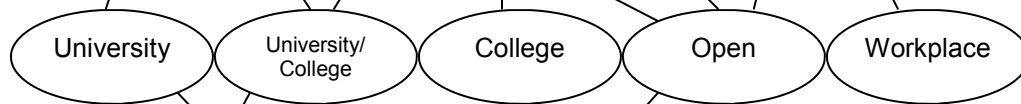
### Grade 9



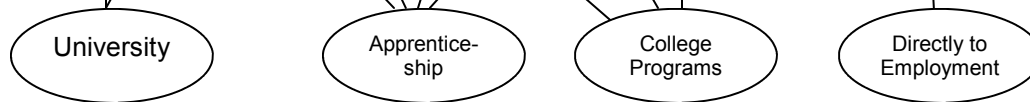
### Grade 10



### Grade 11 & Grade 12



### Destinations



### Description of Courses:

- Academic courses are designed for the student who wishes to continue on to a post-secondary institution. These courses are demanding; students should have superior skills, achievement of at least 75%, and a well-developed work ethic.
- Applied courses are for students who are considering work, college, or apprenticeship after high school.
- Locally Developed and Workplace courses are for students considering entering the work force directly after school or upon completion of an Ontario Secondary School Diploma or an Ontario Secondary Certificate.
- Open courses are appropriate for all students and allow students to broaden students to broaden their knowledge and skills in a particular subject that may or may not be directly related to their postsecondary goals, but that reflects their interests.
- University/College courses include content that is relevant and prepares students for both destinations.

## **Profile of Grade 9 Student in a Locally Developed Course**

### **English**

The student in Locally Developed English usually:

- experiences difficulty forming sentence and paragraph structures;
- requires the development or further development of foundational literacy skills;
- is more a visual learner than an auditory one;
- requires strategies and activities that are concrete and practical and will prepare him/her for success in his/her daily life, in the workplace, and for future learning;
- does not contribute adequately to group learning.

### **Learning Skills**

The student in all of the Locally Developed courses usually:

- needs reinforcement for and assistance with the skills of time management, studying, organizing notes and assignments, completing homework and projects;
- possesses a limited work ethic and inadequate work habits;
- needs more self-motivation, self-direction and initiative as well as independent-work skills.

### **Mathematics**

The student in Locally Developed Math usually:

- struggles with adding, subtracting, dividing and multiplying integers and fractions, and sometimes whole numbers;
- struggles with problem-solving and applying the learned math to real-world contexts;
- requires strategies and activities that are concrete and practical and will prepare him/her for success in his/her daily life, in the workplace, and for future learning;
- catches on to math theory very slowly.

### **Science**

The student in Locally Developed Science usually:

- requires more problem-solving skills and the ability to make connections from theory to real-world contexts;
- has difficulties with comprehending the text;
- requires strategies and activities that are concrete and practical and will prepare him/her for success in his/her daily life, in the workplace, and for future learning;
- struggles with using formulas.

Overall, the student in Locally Developed courses is working generally two to five grade levels below his/her actual grade level. Many of the students in these courses are exceptional students. These students generally proceed to the world of work.

## **Profile of a Student in a Grade 9 Applied Course**

### **English**

The student in Applied English usually:

- has problems with sentence and paragraph structures;
- has difficulty with reading comprehension skills;
- has some oral language skills;
- is more a visual learner than an auditory one;
- does not always contribute adequately to group learning.

### **French**

The student in Applied French usually:

- struggles with his/her ability and confidence to express him/herself verbally and in written form: lack solid writing skills, especially grammar;
- is accustomed to a slower pace of learning than in an Academic course;
- struggles with memorizing vocabulary, rules, etc.

### **Geography**

The student in Applied Geography usually:

- has difficulty with grasping concepts, especially the abstract;
- has difficulties with comprehending the content in texts;
- participates in hands-on tasks successfully;
- needs more relevance and connections directly indicated to him/her.

### **Learning Skills**

The student in all of the Applied courses usually:

- needs reinforcement for the skills of time management, studying, organizing notes and assignments, completing homework and projects;
- has inconsistent and, at times, inadequate work habits;
- needs more self-motivation, self-direction and initiative as well as independent-work skills.

### **Mathematics**

The student in Applied Math usually:

- is not strong at adding, subtracting, dividing and multiplying integers and fractions, sometimes whole numbers;
- experiences some difficulty with problem-solving and applying the learned math to real-world contexts;
- catches on to math theory slowly.

### **Science**

The student in Applied Science usually:

- requires more problem-solving skills and the ability to make connections from theory to real-world contexts;
- has some difficulty with comprehending the text;
- struggles with using formulas.

## Profile of a Student in a Grade 9 Academic Course

### English

The student in Academic English usually:

- can read and comprehend a variety of literature well;
- can write well in a variety of writing styles;
- can adjust to more demanding writing and more independent reading assignments;
- participates willingly in discussions and shares opinions;
- exhibits creative thinking and accepts challenges to think creatively.

### Geography

The student in Academic Geography usually:

- uses high-level thinking skills e.g. analysis, problem-solving, evaluation;
- can apply the geography learned to other contexts;
- is prepared to write short essays;
- possesses good work habits and organizational skills;
- possesses solid time-management skills.

### French

The student in Academic French usually:

- can read and write French well;
- has a sound knowledge of grammar, especially passé composé;
- possesses good oral skills and has the confidence and fluency to speak whenever called upon.

### Learning Skills

- has a firm foundation in study and organizational skills.

### Mathematics

the student in Academic Math usually:

- has a solid foundation with integers and fractions;
- has a strong foundation with whole numbers and all operations;
- is a good problem solver and abstract thinker in math; uses high-level thinking skills;
- can adjust to a quicker change of pace learning math;
- can **apply** the math learned to practical and real-world contexts.

### Science

The student in Academic Science usually:

- possesses solid problem-solving skills;
- can apply the science learned to practical and real-world contexts;
- comprehends all readings very well;
- communicates ideas well;
- has a good basis in math.

## **The Ontario Secondary School Literacy Test (OSSLT) Literacy Across the Curriculum**

### **The Ontario Secondary School Literacy Test (OSSLT)**

The Ontario Secondary School Literacy Test is a requirement of graduation. Written in the spring of the student's Grade 10 year, the test assesses the cross-curricular reading and writing skills that have been taught from Grades 1 to 9.

In one morning, students complete test booklets that contain both reading and writing activities. As it is a credentialing test, students receive only scripted instructions from teachers. The tests, once assessed, are not returned to students, and teachers are not allowed to read the test.

The following pages outline the permitted accommodations for the test, as well as the four writing tasks and a sample reading task. Acceptable examples of student answers are also provided.

The materials can be used within the intermediate classroom as cross-curricular writing activities to help students prepare for this assessment.

## OSSLT Accommodations

It is important to understand the difference between accommodations and modifications when administering and writing the OSSLT. Accommodations are permitted for students with special needs; modifications are not permitted.

**Accommodation:** supports and services that enable students with special needs to demonstrate their competencies in the skills being measured by the test. Accommodations change only *the way* in which the test is administered or *the way* in which the person tested responds to the components of the test. The content and validity of the test are not affected.

**Modification:** changes to content and to performance criteria. Modifications to the OSSLT are not permitted because they would affect the validity of the test. Clarification of instructions for all students is permitted prior to the test, but clarification of questions is not allowed (e.g., rewording or explaining).

**Special Needs:** any student with an IEP who may or may not be identified as exceptional by an IPRC and who is receiving special education programs and services.

The accommodations

- must be documented in the student's IEP;
- should be well established before the OSSLT takes place;
- be part of the student's regular assessment strategies.

Accommodations are grouped into three categories that apply to both components, the reading component only or the writing component only. Allowable accommodations for the OSSLT include:

- **setting** - individual, small group, preferential seating, adaptive equipment, assistive devices, prompting to remain on task
- **timing** - maximum double the allotted time, periodic supervised breaks
- **presentation format** - sign language, oral interpreter, Braille, coloured overlays, coloured paper version, large print, audio version, assistive devices, technology resources such as text to speech software, augmentative or alternative communication systems
- **response format** - assistive devices and technology resources such as speech synthesizer, Braille, speech to text software, alternative communication systems, verbatim scribing of responses, audiotaping of responses, computer or word processor

\*\*\* this information was taken from the EQAO Guide for Accommodations, Special Provisions, Deferrals and Exemptions OSSLT, October 2003 \*\*\*

## Writing Section on the Literacy Test

A student must demonstrate the following to pass the writing section on the Ontario Secondary School Literacy Test:

- an ability to develop, organize, and connect main ideas with some supporting information;
- an ability to write in a variety of forms such as summary, opinion piece, news report, and information paragraph;
- the use of an appropriate tone for the purpose and the audience;
- a general use of appropriate words and sentence structure;
- a general ability to not make errors in spelling, grammar and punctuation that impede meaning.

There are four types of writing tasks, which represent a range of writing required across the curriculum and in daily life:

- a summary;
- a series of paragraphs expressing an opinion;
- a news report;
- an information paragraph.

These tasks make up the Writing Component of the OSSLT.

There are two steps in the writing marking process: Holistic and Analytic Scoring

**Holistic Scoring:** Looks at the overall quality of the writing, examining the degree to which the student integrates the elements of writing in meeting the specific demands of the writing task.

**Analytic Scoring:** Focuses on specific elements of the writing, examining six characteristics and scoring each as separate demonstrations of writing. The student will be evaluated on the main idea, supporting details, organization, tone, grammar/punctuation, and spelling.

## Assessment

While all writing tasks on the Ontario Secondary School Literacy Test should be taught and assessed throughout the intermediate level, the following is a suggestion for focus:

- **In Grade 7, the emphasis should be on constructing a well-formed paragraph on one aspect of a topic and on creating news reports that follow the inverted pyramid structure.**
- **In Grade 8, the emphasis should be on identifying the main idea of a sample opinion piece and on writing opinion pieces that maintain the argument throughout three or more paragraphs.**
- **In Grade 9, the emphasis should be on all four writing tasks.**

The EQAO publication, *Curriculum Connections*, indicates the relationships between the various reading and writing tasks of the test and the Ontario Curriculum.

Included are the four tasks, their purpose and audience, and the required length. Also included are actual student samples that indicate what is required in each task. The EQAO web site, [www.eqao.com](http://www.eqao.com), is a useful site for preparation.



## Writing A Summary

**Task:** Write a **summary** of the selection printed below. Include the main idea of the original selection and at least two important details that support it.

**Purpose and Audience:** an adult who is interested in finding out how well you understood the selection

**Length:** fewer than 100 words.

Article

### “Get Rid of that T-shirt!”

A recent newspaper article pointed out that Canadians purchased 73.7 million T-shirts last year. The article went on to say that the average North American owns 25 of them. The T-shirt was praised as the favourite garment of the twentieth century, worn by men and women, young and old, and rich and poor. As we begin a new century, I suggest we leave the old T-shirt behind.

The first wearers of an “undershirt” or a “work shirt” in public were making a rebellious statement, but it quickly became the accepted style. Eventually, we all began to wear underwear anywhere and everywhere.

In the 60s, hippies tie-dyed their T-shirts. In the 70s, punk rockers shredded, safety-pinned and spray-painted them. In the 80s, T-shirts became great democratic portable billboards - each shirt an editorial column or personal ad telling others about the places the wearer has been, or the products, bands, and politics the wearer supports or abhors.

The most recent trend seems to be toward slogans or messages that are increasingly meaningless. The best known examples are expensive T-shirts sporting only the name of the manufacturer. I can't think of anything less individualistic or less attractive to wear in public.

The T-shirt is basically a formless, ugly garment. What should happen to the 25 T-shirts each of us is suppose to have? I suggest that we use them as rags for washing our 1.7 cars.

### **An Example of an Acceptable Student Summary**

It is time to retire the T-shirt and use them for rags. The T-shirt is basically a shapeless, hideous garment and they were really only meant to be worn as an undershirt. Through the 60's, 70's, and 80's, the T-shirt has gone through many transitions; from being tie-dyed, to shredded and safety-pinned, to being used as a democratic portable billboard. The most recent craze is T-shirts with slogans and messages are that silly and insignificant. It is time to take the 25 T-shirts that we all own and use them to wash our cars!

- **The student accurately captures the main idea of the original text.**
- **Two details are used to support the main idea.**
- **The student uses language appropriate to the task of writing a summary.**
- **There are no spelling errors.**

## Writing A Series of Paragraphs Expressing An Opinion

**Task:** Write a **series of paragraphs** (a minimum of three) expressing an opinion on the topic below. Develop the main idea with supporting details (proof, facts, examples, etc.).

**Purpose and Audience:** an adult who interested in your opinion

**Length:** The lined space provided for your written work indicates the approximate length of the writing that is expected.

**Sample Topic:** Are today's teenagers as "physically fit" as they should be?

## Example of an Acceptable Series of Paragraphs Expressing An Opinion

### Are today's teenagers as "physically fit" as they should be?

Today's teenagers are quite possibly the least fit of all other generations in this age group. Unlike yesterdays teens, we have a strong desire to stay indoors, be sedentary, and not exercise properly simply because we don't have to.

But why such a strong desire to stay indoors? Surely we have the same sports and games and activities of previous generations, maybe more. The fact is, it's not the outdoor activities that are boring us, it's the indoor activities that are attracting us. We have multitudes of new technologies: video games systems, computers, television shows, and the internet. All of these equal sedentary lifestyles.

Because of these forms of entertainment, there are more and more teenagers using and abusing them. The technologies replace where we used to be out enjoying sports or activities. Now, we can bring all of these forms of physical activity into game systems, computers and TV. Why go outside and play football when I can virtually be the quarter-back for the Miami Dolphins without leaving my chair? You can't get injured that way. More and more teenagers are substituting inactivity and virtual reality for reality.

I think the biggest problem is that we have too much choice. We have so many more options than previous generations. If we don't want to go out and "play", we don't have to. With the click of a mouse we have the entire e-world at our disposal. We don't even have to leave our homes, because everything to entertain us is right there. With so many alternatives to being physically active, today's teens are unable to make the healthy choice.

The lack of physically fit teenagers today is evident to cause a problem in society. A good thing for video game marketers, internet service providers and cable companies, but a serious threat to the health of the World's youth. I think we need to take into consideration the overall health of our juveniles and stop giving them so many substitutions to an active lifestyle. And to the teenagers of today: Take a step back from your Play Station controllers and TV screens, and re-evaluate the paths you're taking and where that road of inactivity is leading you.

- **As well as meeting the requirements for "acceptable" writing, this series of paragraphs demonstrates a thoughtful opinion supported by relevant details and examples.**
- **The writing is well organized.**
- **The paragraphs contain few errors.**

## Writing A News Report

**Task:** Write a news report based on a headline and a picture. You will have to make up the facts and information, answering some or all of the following questions: Who? What? Where? When? Why? How?

**Purpose and Audience:** to report on an event for the readers of a newspaper

**Length:** The lined space provided for your written work indicates the approximate length of the writing expected.

**Sample Topic:** a famous person visiting a local high school.

**Focus:** Report on a visit of a famous person to a local high school.

## Example of an Acceptable News Report

In October, Michael Jordan will be visiting [school name] Secondary School to talk to all the students. The school of 1000 and some what students are very excited that Mr. Jordan has chosen to visit them. He will be talking to the students about school, sports, and many other issues. We met up with Michael last week and this is what he had to say, " I am very happy to be doing this for the students and I hope this makes them stay in school." Our news cameras will be at this meeting and it will be broadcast all around the world. Many students who have never gone to Chicago to see Michael Jordan are getting an opportunity to see Michael Jordan at [school name].

- **The news report focuses on an event and provides supporting details and a quotation that adds realism and an objective reporter's tone.**
- **The errors do not interfere with communication.**

## Writing An Information Paragraph

**Task:** Write a well-constructed **information paragraph** (one paragraph only) on one aspect of the topic below. This aspect will become the main idea of the paragraph. In your paragraph, include a topic sentence, supporting details, and a concluding sentence. You must use information from the list.

From the 18 points below, choose at least 4 as supporting details to develop your main idea.

**Purpose and Audience:** to provide information to an adult on one aspect of the topic

**Length:** The lined space provided for your written work indicates the approximate length of the writing expected.

### Sample Points:

- Nature's fireworks
- nitrogen and oxygen molecules
- have given their name to various Canadian tourism sites
- tourist attraction for northern cities and towns
- high altitude: between 60 km and 1000 km up
- result from storms on the sun's surface
- dance in the sky
- inspiration for many artists
- from white to green, from pink to blue
- "solar wind" collides with atmosphere
- curtains, waves, or arches
- last from 10 to 20 minutes
- fascinating to observers
- visible on a clear night
- solar eruptions
- concentrated near the North Pole
- commonly seen in northern countries
- particles charged with electricity

## **An Example of an Acceptable Student Information Paragraph**

Known as “Nature’s fireworks”, Canada’s Northern Lights are a source of pride for many young Canadians. So much so, that many of Canadian tourism sites have taken the name. These light shows, which last 10 to 20 minutes, are a great tourism attraction for northern cities and towns. Unfortunately, the lights are most concentrated near the North Pole, where there isn’t exactly a great influx of people. Only on clear nights are they visible to the southern reaches of Canada. While fascinating to all observers, the lights are a special source of inspiration for artists from Canada, and other northern countries, and those from abroad. Wherever you’re from, there’s no denying that the Northern Lights are more than just a light show, they are a dance in the sky.

- **As well as meeting the requirements for “acceptable” writing, this piece of writing states a main idea in the topic sentence that is supported with details that are effectively linked with transitional phrases.**
- **The paragraph focuses on only one aspect of the topic.**
- **Spelling and grammar are acceptable.**




## Writing Tips: Building Paragraphs Successfully

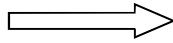
Paragraphs can be successfully written, as long as there are main components included in them. They are :


- a topic sentence which identifies the subject of the writing,
- the body of the paragraph where information is provided to understand the subject and opinions are supported with evidence from a novel, for instance,
- and the closing sentence which wraps up the writing by reminding readers of the subject.

In the case of a formal essay, the introductory paragraph should include a thesis - a statement that gives the main idea or focus of the essay. Each successive paragraph would include a topic sentence, the body (to support the thesis), and a transition sentence. The transition sentence at the end of each paragraph links the ideas between paragraphs.

### Example:

*Topic Sentence*  **Many outdoor enthusiasts are looking for more adventure in their sports.** Why else would a sane person jump out of an airplane, do some acrobatic tricks on a skyboard, and then parachute to the ground? Other airborne adventure sports include skydiving and hang gliding. By water, people navigate the same rivers and shoot the same rapids that early Native people, fur traders, and explorers did. They travel by canoe, kayak, or raft. On land adventurers backpack and camp in the wilderness, in areas where they might meet bear, moose, and mountain lions.

*Body*  After climbing mountains, they ski, snowboard, or even bike down to the bottom. **Today, there seems to be an adventure sport for just about everyone, with more being invented all the time.**

*Closing Sentence* 

## Writing the Paragraph

For a . . .	You'll need . . .
Descriptive Paragraph	Details about how things look, sound, smell, taste, and feel.
Narrative Paragraph	Details about an experience you want to share: how it began, what problems occurred, how it ended.
Persuasive Paragraph	Facts, figures, and examples to back up your opinion.
Expository Paragraph	Facts to explain the thing or process you're writing about.

*(Adapted from: Write Source 2000, A Guide to Writing, Thinking, and Learning and Writer's Express: A Handbook for Young Writers, Thinkers, and Learners)*

## Reading Section of the Literacy Test

A student must demonstrate the following to pass the reading section on the Ontario Literacy Test:

- an understanding of directly stated ideas and information
- an understanding of indirectly stated ideas and information
- the ability to make connections between personal experiences and ideas and information in a selection
- the ability to use knowledge or context to understand familiar, unfamiliar, and technical vocabulary and imaginative uses of language
- the ability to use grammatical structures and punctuation to understand meaning
- the knowledge of overall structural and organizational elements to understand meaning and purpose
- the knowledge of visual features to understand meaning and purpose

There are three types of texts in the reading section:

**Informational** – an article, an explanation, an opinion piece

**Graphical** -- a graph, a schedule, instructions, a map

**Narrative** – a story, a play

These three types of texts make up the Reading Component of the OSSLT.

All questions in the reading section are marked using a well-defined scoring instrument. **Multiple-choice** items are scored separately. **Written answers** are scored using an Answer Key for each question. Spelling and grammar are not assessed in the reading section of the OSSLT. Students do not have the use of dictionaries or other resources during the test.

## Sample Reading Task from the Ontario Secondary School Literacy Test

### **“Get Rid of that T-shirt!”**

A recent newspaper article pointed out that Canadians purchased 73.7 million T-shirts last year. The article went on to say that the average North American owns 25 of them. The T-shirt was praised as the favourite garment of the twentieth century, worn by men and women, young and old, and rich and poor. As we begin a new century, I suggest we leave the old T-shirt behind.

The first wearers of an “undershirt” or a “work shirt” in public were making a rebellious statement, but it quickly became the accepted style. Eventually, we all began to wear underwear anywhere and everywhere.

In the 60s, hippies tie-dyed their T-shirts. In the 70s, punk rockers shredded, safety-pinned and spray-painted them. In the 80s, T-shirts became great democratic portable billboards - each shirt an editorial column or personal ad telling others about the places the wearer has been, or the products, bands, and politics the wearer supports or abhors.

The most recent trend seems to be toward slogans or messages that are increasingly meaningless. The best known examples are expensive T-shirts sporting only the name of the manufacturer. I can't think of anything less individualistic or less attractive to wear in public.

The T-shirt is basically a formless, ugly garment. What should happen to the 25 T-shirts each of us is suppose to have? I suggest that we use them as rags for washing our 1.7 cars.

## Sample Questions and Answers to the Reading Task

### Multiple Choice

- In this section, the T-shirt is compared to
  - a slogan.
  - a product.
  - a garment.
  - a billboard. (Correct)
- From the following sentences, choose the best one to end with an exclamation mark.
  - “In the 60s, hippies tie-dyed their T-shirts.”
  - “Eventually, we all began to wear underwear anywhere and every where.” (Correct)
  - “The best known examples are expensive T-shirts sporting only the name of the manufacturer.”
  - “The most recent trend seems to be toward slogans or messages that are increasingly meaningless.”
- Which of the following is the best way to describe the purpose of this selection?
  - to state an opinion (Correct)
  - to describe an object
  - to present information
  - to provide instructions

### Written Answers

- Give one reason why the first T-shirt wearers were considered to be “making a rebellious statement.” (paragraph 2)

Student response: *“Undershirts were used a clothing under a work suit or coat, without anything covering their undershirts it seemed to be rebellious.”* (Correct)

- What is the meaning of the phrase “broadcasting their support of a shirt manufacturer” as used in paragraph 4?

Student response: *“This means that lots of shirts have labels on them showing who made the shirt so people would buy them.”* (Correct)

- Explain the purpose of the question in paragraph 5.

Student response: *“To ask what you need so many shirts for. And to prove that you don’t need so many.”* (Correct)

7. Do you think T-shirts will continue to be popular? Use one piece of information from this selection to support your answer.

Student response: *“Yes, because they were popular in the 60's, 70's, 80's and today.”* (Correct)

## Reading Tips

The following reading tips are provided to help students whenever they encounter difficulty when reading and/or when answering questions:

- Be sure to read **all instructions** carefully.
- Use a highlighter to help you remember the instructed tasks.
- Ask yourself, “What is the author’s thesis or opinion?” after you have finished the selection.

## Illustrations, Diagrams, and Charts

- Look at the title. It will tell you what kind of information is in the illustration.
- Pay close attention to labels, captions, or subheadings.
- Look at any special key or legend. This will explain any special symbols.
- Predict the purpose of the illustration. Is it a time line to show history (dates), a map to show the weather, a diagram to show more clearly how something works, or a comparison of two things?
- Ask yourself, how does the text connect the picture, chart, graph, or diagram?
- When answering the questions, read one question at a time. Then, find the information in the text that helps you answer the question.

## Multiple Choice Questions

- Read the question and try to decide what type of question it is. Is the question asking you to find explicit information, infer (draw a conclusion), predict, or interpret details?
- Decide what you think the answer might be **before** you read the possible answers. Then, read all of the options before deciding on an answer.
- Eliminate any options that are obviously incorrect.
- Don’t try to guess! Reread to find the correct information.
- If more than one answer appears to be correct, go back to the selection. Multiple-choice questions almost always have only one correct answer.

## Question-Answer Relationships

The following outlines for students the necessary actions when answering questions on any assignment or test:

### Retell (Knowledge/Comprehension)

- The information is ON THE LINES, in the text or “right there”; you can put your finger on the answer.
- This involves telling about .... using your own words.
- **Actions:** explaining, listing, reciting, naming, identifying, illustrating, summarizing, paraphrasing

### Reflect (Synthesis/Evaluation/Interpretation)

- The information is BETWEEN THE LINES. You must use the text and think about the answer or “think and search.”
- This involves wondering about, asking questions, sharing ideas and insights.
- **Actions:** questioning, wondering, predicting, inferring, evaluating, making insights, thinking about other possibilities or extensions

### Relate (Application/Analysis)

- The information involves RELATING BEYOND THE LINES. You must use your knowledge and text “on your own.”
- This involves remembering memories about the topic, making connections, telling personal stories.
- **Actions:** remembering, making connections to stories, characters, own experiences, and feelings, comparing and contrasting



## Essay/Assignment Format

**The following is a combination of both MLA style and APA style.** In high school, students will learn the specific features of each style, and students are expected to be familiar with both styles. However, for the purposes of introducing proper format and citation procedures at the early intermediate level, the styles have been combined.

### All formal assignments/essays should:

- be typewritten, with size 12 font, either Arial or Times New Roman or if not typewritten, handwritten neatly in blue or black ink
- not include:
  - abbreviations (abbrev.)
  - contractions (don't)
  - cliches (few and far between)
  - colloquialisms (guys, stuff, a lot)
  - personal pronouns (I, me, my, we, our, you, your)

### General Format

- Your assignment/essay should be typed on standard-sized paper (8.5 x 11 inches) with margins of one inch (2.54 cm) around (computer default).
- The spacing of the assignment/essay should be double spaced with the exception of the bibliography which should be single spaced.
- If it is required, put a title page on a separate page and include the school's name, title, teacher's name, student's name, subject, grade, and date - all centred except the subject, grade and date
- The pages of the assignment/essay should be numbered consecutively (1,2,3,...) in the upper right hand corner of each page.

Keep in mind that underlining and *italics* are the same or equivalent; you should select one or the other to use throughout your essay.

## Quotations

The author's last name and the year of the publication for the source should appear in the text, and a complete reference should appear in the reference list or bibliography.

### Examples

Smith (1970) compared reaction times.

In a recent study of reaction time (Smith, 1970), ...

In 1970, Smith compared reaction times ...

## Short Quotations

To indicate short quotations (fewer than 40 words) in your text, enclose the quotation within double quotation marks. Provide the author, year, and specific page citation in the text, and include a complete reference in the reference list.

### Examples

Freud (1970) states that "a dream is the fulfilment of a wish" (154).

She stated, "The effect disappeared when behaviours were studied in this manner" (Miel 1993 276), but she did not state what behaviours were studied.

## Reference List

Your reference list should appear at the end of your assignment/essay. It provides the information necessary for a reader to locate and retrieve any source you cite in the essay/assignment. Each source you cite must appear in your reference list; likewise, each entry in the reference list must be cited in your essay/assignment.

## Reference - Basic Rules

- An author's names are inverted (last name first); give last name and initials for all authors of a particular work.
- Your reference list should be alphabetized by authors' last names.
- If you have more than one work by a particular author, order them by publication date, oldest to newest.
- If no author is given for a particular source, alphabetize by the title of the piece.
- Use "&" instead of "and" when listing multiple authors of a single work.
- The second line of each entry in your reference list should be indented one TAB space from the margin, while all lines before should line up with the margin.
- Capitalize only the first word of a title or subtitle of an article, book.
- Underline the titles of books and journals.

### In General:

Author Last Name, Initial of First Name. (Copyright Date in parentheses). Title. City where the book is published: Publisher.

## **Basic Forms for Sources in Print**

### **A Book**

Cox, R.H. (1994). Sports psychology: conceptions and applications.  
Brown & Benchmark: Dubuque, Iowa.

### **A Book by Two or More Authors**

Adams, W., Hottinger, W., & McCristal, K. (1965). Foundations of physical activity.  
Stipes and Co.: Champaign, Illinois.

### **A Part of a Book (such as a book chapter or an article in a collection)**

Halliwell, W. (1978). The effect of cognitive development on children's perceptions of intrinsically and extrinsically motivated behaviour. In D. Landers & R. Christina (Eds.), Psychology of motor behaviour and sport. Champaign, Illinois; Human Kinetics Press.

### **Encyclopaedia or Dictionary**

Bergmann, P.G. (1993). Relativity. In The New Encyclopaedia Britannica (Vol.26, pp. 501-508). Chicago: Encyclopaedia Britannica.

### **Article (newspaper or magazine)**

Rutherford, W.J., Corbin, C.B., Chase, L.A. (1992). Factors influencing intrinsic motivation towards physical activity. Health Values, 16, 5, 19-24.

### **No Author**

Experimental psychology. (1983). New York: Holt.

### **Advertisement**

Acura. Advertisement. Rolling Stone. (1996, May 16).

### **Web Page**

Daley, B. (1997). Writing argumentative essays □ Online □ Available:  
<http://www.eslplante.com/teachertools/argueweb/frntpage.htm>. (May 12, 1998).

### **CD-ROM**

Federal Bureau of Investigation (1998, March). Encryption: Impact on law enforcement. Location: Publisher. Retrieved from SIRS database (SIRS Government Report, CD-ROM, Fall 1998 release).

### **Television or Radio**

"The Blessing Way." The X-Files. (1998, July 19). Fox. WXIA. Atlanta.

## Plagiarism

When a student submits an assignment/essay as part of the requirements of a course, it is assumed that the essay represents the student's own work. Plagiarism is an inexcusable offence in the academic world, but some students seem uncertain about what, in fact, plagiarism is.

Complete originality can hardly be expected. It is not easy to present a fresh theory about the causes for World War II. However, the student can submit an assignment/essay on any subject that legitimately reflects his or her own thoughts and work.

What students must **not** do is find a book or article containing some relevant passages on the topic, copy them out word for word or restate the information in their own words and offer them as their own work.

Copying the work of another student and submitting it as your own is also plagiarism. Likewise, downloading information from the Internet and failing to document the source is also plagiarism.

The rules governing quotations and all reference sources are very simple. If the student discovers a passage which is particularly apt for the chosen topic, it is perfectly proper to reproduce it in an essay so long as it is copied accurately word for word, is enclosed in quotation marks, and referenced.

**Note:** It is recommended that each school develop a policy for dealing with plagiarised work.

## Tips for Students to Avoid Plagiarism

You will find that the research process-work will be more enjoyable, and you will have more confidence in writing the final draft if you follow these tips:

1. Use a jot-note organizer.

Rather than printing information off the Internet or photocopying information from other sources, simply use a jot-note organizer. Write jot notes or key words while you read through the information. This way it is easier to put the information into your own words - summarize.

2. When in doubt, put quotations around cited material.

Be sure to put quotation marks around anything copied word for word. Remember to identify the source clearly and in as much detail as possible to avoid any confusion for yourself. Ask yourself, "Did I know this before I began my research?" If the answer is "no," you should reference the information.

3. Learn to understand and summarize what you read.

If possible, limit the amount of references that you copy word for word. While you should include quoted references, learn to interpret text and write research notes in your own words.

4. Give yourself plenty of time.

Try to have the "first draft" of your final product completed at least two days before the due date. This will give you time to proofread, add, delete, correct, rearrange, and rewrite your assignment/essay. You should never hand in the "first draft."

5. Keep/submit all process and rough work.

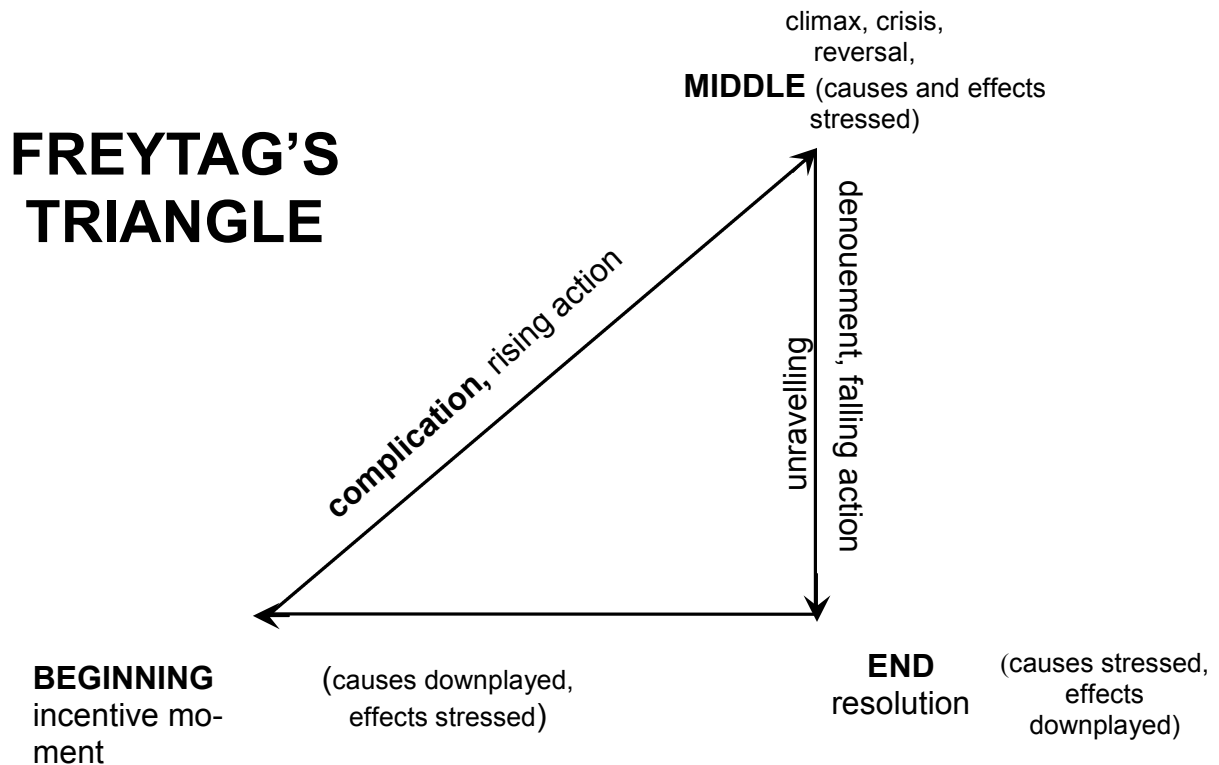
If the teacher asks - he/she usually does - you will be prepared.

6. Consult the format guide and/or the teacher.

## English/Language Arts

### Knowledge/Understanding

This category involves the knowledge of forms of texts, the understanding of information, ideas, concepts, and themes and their relationships as derived from texts read, and the understanding of the uses and effects of aesthetic elements. Specifically, the students should be familiar with the following dramatic structure of a fictional text, its elements, and how the elements function in relation to each other:



### Plot with Unity of Action

#### Exposition - Unstable Situation

- author explains the nature of the conflict and
- introduces the characters, describes the setting, and provides historical background

#### Point of View

- the author's relationship to his or her fictional world
- the position from which the story is told

### **I. Omniscient Third Person Point of View**

- uses third-person pronouns - he, she, they
- can relay other characters' thoughts and feelings
- narrator who stands outside of the story tells the story

### **II. Limited Third Person Point of View**

- narrator who stands outside of the story relays the story
- uses third-person pronouns - he, she, they
- unlike omniscient third person point of view, this narrator cannot relay other characters' thoughts and feelings, therefore providing an objective perspective

### **III. First Person Point of View**

- narrator who participates in the story
- one of the characters is telling the story
- uses the third-person pronouns and first-person - "I"

## **Conflict**

- a problem
- direct opposition or disagreement
  
- a prolonged struggle
- several types of conflict:
  - I. Person vs. Person
  - II. Person vs. Society
  - III. Person vs. Nature
  - IV. Person vs. Him/Herself
  - V. Person vs. Supernatural or Fate

## **Characterization**

- author's presentation and development of characters
- main characters have roles, usually protagonist and antagonist

### **I. Protagonist**

- someone who is fighting for something
- usually the main character(s)
- the good person in the narrative

### **II. Antagonist**

- the opponent of the protagonist
- can relay other characters' thoughts and feelings



- tendency to be evil and self-destructive and therefore, unsympathetic
- uses third-person pronouns—he, she, they

### **Rising Action**

- author introduces a series of events, related by cause
- one event may cause another event and so on
- or several events may be linked to the same cause
- sometimes referred to as plot, or what happens in the narrative

### **Climax**

- whatever the causal relationship between the events, each intensifies the conflict so that the plot rises towards a climax
- the climax is the most intense event in the narrative

### **Falling Action**

- after the climax, makes up the rest of the story
- usually brief and contains events which are much less intense than the climax and lead towards resolution

### **Resolution - Stable Situation**

- the conflict is resolved and therefore, the story is over

As well, students should recognize the term, Genre, as a type of kind of text, for example, mystery, science fiction, or adventure. Students should know and identify the differences between Fiction and Non-fiction.

Students should also be able to recognize the following stylistic devices: **Simile, Metaphor, and Personification.**

### **Thinking/Inquiry**

This category involves the use of critical and creative thinking skills, such as reflecting, analysing, hypothesizing, and explaining, and inquiry skills.

In addition to knowing the elements of various types of fiction and non-fiction, students should be able to:

- identify the author's main idea and explain how the details support the main idea;
- question and evaluate the ideas found within the materials read;
- make judgements and draw conclusions about ideas in written materials on the basis of evidence.

## **Communication**

This category involves the communication of information and ideas for different audiences and purposes, using various forms, both oral and written. Students should have the following skills and knowledge to be successful in Grade 9 English:

- recognize and use formal and informal styles of writing, as determined by the intended audience and purpose for the piece. Formal writing does not use slang, jargon, dialect, or colloquialism, personal pronouns (I, you, we) or contractions.
- recognize and use various forms of communication, with emphasis on the paragraph, the essay, and the newspaper article
- organize information to develop a central idea, using well-linked and well-developed paragraphs
- recognize and understand the features and design elements of texts, such as index, headings and subheadings, charts, glossary, footnotes, hypertext, colour, pictures, bold and italic print, and explain their functions

## **Application**

This category involves the application of language conventions, oral communication and media conventions and techniques, reading strategies, the writing process, and technology. Also, of importance, students should begin to make connections between their experiences and the texts, between English and other subjects, and between English and the world outside the school.

As well, students should be able to:

- recognize the various parts of speech: noun, pronoun, verb, adjective, adverb, conjunction, preposition, interjection
- follow the writing process
- use technology to edit and/or enhance their written and oral communication
- employ various reading strategies such as skimming and scanning, to help them locate key ideas and information

## **French as a Second Language**

### **Students should know:**

- How to conjugate regular verbs in the present tense.
- How to conjugate irregular verbs; avoir, être, aller, faire.
- The use of regular adjectives such as big, small, pretty, good, bad.
- The numbers to 100.
- The names of colours in French.
- Vocabulary related to school: activities, furnishings, classroom behaviour etc.
- Dates, weather, personal descriptors.
- Perhaps 'futur simple' but not expected.

### **Students should be able to:**

- Read a short article and respond to questions of content and comprehension.
- Write simple sentences in French. Sense of singular and plural.
- Understand simple spoken instructions in French.
- Be careful and precise with pronunciation.
- Recognize and use correctly interrogative words such as ou, quand, pourquoi, avec qui, qui/ que, q'est-ce que, comment, etc.
- Use a French-English dictionary correctly and accurately.

### **As well, students should:**

- Be used to much oral repetition and substitution of subject or object to produce sentence variety.

## Similarities and Differences within the Intermediate French Classroom

Elementary		Secondary
Focus on meaning rather than on correcting students for all of their mistakes	<b>Similarities</b>	Focus on meaning rather than on correcting students for all of their mistakes
French Exemptions		Streamed classes as well as French exemptions
Focus on French culture		Focus on French culture
Class size: 25-30 students		Class size: 25-30 students
Use of technology within the curriculum (e.g., for published work, Internet activities, presentations, e-pals)		Use of technology within the curriculum, although there is more opportunity for integrating technology into the curriculum
Language of instruction is in both English and French	<b>Differences</b>	Language of instruction is in both English and French, with mainly French instruction in the Academic Level
Communicative/oral approach		Written work is now emphasized; students are found to be less willing to speak at this level
Expected to read passages with up to 250 words		Expected to read 4 pages
Class time ranges from 30 to 40 min. per day, throughout the year		Class time is 75 min. for one semester

## **Fine Arts: Music & Visual Arts**

### **Music**

Before entering Grade 9, intermediate students, whether in an instrumental or non-instrumental program, should be able to

- identify the names and notes of the clefs (treble and bass)
- demonstrate the ability to produce the same pitch as others, vocally or instrumentally
- identify the note values (e.g., quarter note, half note, dotted half note, etc.)
- identify the rest values in pieces (e.g., 4/4 time, 2/4 time)
- sing or play pieces expressively
- describe, through listening, some characteristics of the Romantic period
- describe the history, construction, and use of an instrument
- communicate their thoughts and feelings about the music they hear, using language and a variety of art forms and media
- describe their response to a musical performance in their community

## **Visual Art**

**When looking at a work of art, students might be asked to:**

### **Describe it.**

- What kinds of things do you see in this painting? What else do you see?
- What words would you use to describe this painting? What other words might we use?
- How would you describe the lines in this picture? The shapes? The colors? What does this painting show?
- Look at this painting for a moment. What observations can you make about it?
- How would you describe this painting to a person who could not see it?
- How would you describe the people in this picture? Are they like you or different?
- How would you describe (the place depicted in) this painting?

### **Relate it.**

- What does this painting remind you of?
- What things do you recognize in this painting? What things seem new to you?
- How is this painting like the one we just saw? What are some important differences?
- What do these two paintings have in common?
- How is this picture different from real life?
- What interests you most about this work of art?

### **Analyze it.**

- Which objects seems closer to you? Further away?
- What can you tell me about the colors in this painting?
- What color is used the most in this painting?
- What makes this painting look crowded?
- What can you tell me about the person in this painting?
- What can you tell me about how this person lived? How did you arrive at that idea?
- What do you think is the most important part of this picture?
- How do you think the artist made this work?
- What questions would you ask the artist about this work, if s/he were here?

**Interpret it.**

- What title would you give to this painting? What made you decide on that title?
- What other titles could we give it?
- What do you think is happening in this painting? What else could be happening?
- What sounds would this painting make (if it could)?
- What do you think is going on in this picture? How did you arrive at that idea?
- What do you think this painting is about? How did you come up that idea?
- Pretend you are inside this painting. What does it feel like?
- What do you think this (object) was used for? How did you arrive at that idea?
- Why do you suppose the artist made this painting? What makes you think that?
- What do you think it would be like to live in this painting? What makes you think that?

**Evaluate it.**

- What do you think is good about this painting? What is not so good?
- Do you think the person who painted this do a good or bad job? What makes you think so?
- Why do you think other people should see this work of art?
- What do you think other people would say about this work? Why do you think that?
- What grade would you give the artist for this work? How did you arrive at that grade?
- What would you do with this work if you owned it?
- What do you think is worth remembering about this painting?

## Visual Art Terminology Recommended for Grade 9

### Elements of Design:

- **Color** - Color is the particular hue that is seen when light is reflected off an object.
- **Line** - A line may be defined as the visual path left by a moving point.
- **Texture** - Texture is the feel or appearance of an object or material.
- **Shape** - Geometric shape is based on geometric figures (e.g., square, circle, triangle); organic shape are non-geometric or free-flowing, and are based on natural objects.
- **Form** - Form is sculptural or three-dimensional shape (e.g., cube, pyramid, sphere).
- **Space** - Space is the area around, within, or between images or elements. Space can be created on a two-dimensional surface by using such techniques as overlapping objects, varying of object size or placement, varying of color intensity and value, and use of detail and diagonal lines.

### Principles of Design:

- **Balance** - A feeling of balance results when the elements of design are arranged to create the impression of equality in weight or importance.
- **Emphasis** - Emphasis may be defined as the special attention or importance given to one part or element in an art work. Emphasis can be achieved through placement, contrast, size, etc.
- **Movement** - Movement is the way in which the elements of design are organized so that the viewer's eye is led through the work of art in a systematic way.
- **Proportion** - Proportion may be described as the relationship between objects with respect to size, number, etc.
- **Rhythm** - Rhythm involves the repetition of elements to create the illusion of movement.
- **Unity** - Unity is the coherence of a work that gives the viewer the feeling that all the parts of the piece are working together.
- **Variety** - Achieving variety involves the use of differences or contrasts.



## Sample Art Response



The elements of art - colour, value, line, texture and space - work together in a composition. However, some elements may be more obvious than others, depending on the choices the artist makes.

The first thing I notice about this self-portrait of Vincent van Gogh is the face. My eyes were immediately drawn to the face. The dominant elements working in this composition are value, colour and line.

Value is the contrast between light and dark. The contrast between the face and background in this piece, creates the focal point, the face. From the face, the eye continues to travel down the white shirt to the palette of paint van Gogh is holding. Since van Gogh was an artist this is an important part of the painting.

Colour, intensity and hue, work with value to draw attention to the face. The face is painted a warm yellowish colour with light green highlights. The dark eyes, in contrast to the light coloured face, link with the cool dark background colours.

Lines are thick and spontaneous - broken or uneven. This gives the composition a sense of movement. This use of line also creates texture - heavy eyebrows, wispy beard, messy hair, realistic globs of paint on the palette.

Space, positive and negative, are relatively balanced. The artist may give the illusion of imbalance because the background and coat blend - again creating the main focal point - the artist's face.

## Geography

Students in Grade 7 are introduced to the study of geography as a separate discipline with a discrete set of skills and knowledge. Central to the study of geography is the use of the five themes: location/place, environment, region, interaction, and movement. Students apply these concepts to first study patterns of world Physical Geography in Grade 7, followed by studies in Human Geography in Grade 8. In Grade 9, students take a mandatory Geography of Canada course, which is offered at the Applied and Academic levels. The content of the Applied and Academic courses is essentially the same; the difference lies in the level of detail and analysis in each course.

**Application:** “The use of knowledge and skills in familiar contexts and the transfer-ence of knowledge and skills to new contexts.”

Application in geography generally includes the use of geographic skills. These skills can include:

- applying the elements of a well-constructed map:
- accuracy of features mapped
- title-identifies area shown, and topic, purpose, or focus
- legend which explains the meaning of symbols and colours
- scale
- date-indicating how recent the information is
- direction-represented by a north arrow, lines of latitude or longitude, or a compass rose
- borders-these set the map apart from other information, and should be drawn with a ruler around the whole map, inset maps or images, and legends.
- applying the use of grid systems, including latitude and longitude, to describe loca-tion
- measuring distances accurately on a map using scale
- using an atlas effectively- locating places using the gazetteer, using the table of contents.

Graphs/ Charts:

- selecting and constructing the appropriate type of graph for the information to be shown: bar, circle, line, proportional circle
- interpreting information from graphs, charts, and diagrams
- constructing and using graphic organizers to visualize, clarify, and interpret geo-graphic information (e.g. webs, flowcharts, timelines, KWL charts, Venn diagrams)

Many texts and atlases have skills sections that address geographic skills in detail. Whenever possible, students should be given the opportunity to use geographic tech-nology (e.g. mapping software and spreadsheets for graphing.) There also is benefit in having students hand-produce maps, graphs, and charts as it helps reinforce the prin-ciples of good mapping and graphing before the ‘nuts and bolts’ of the technology take

precedence. One skill that is necessary for Grade 9 is producing scatter graphs and population pyramids.

**Communication:** “Conveying ideas and information through various forms of communication.”

Geography lends itself to the use of a variety of communication forms, and students will find the material more engaging if they are enabled to communicate the results of their learning through these various forms. Some of the communication forms that are used regularly include.

Written:

- Reports, formal essays, opinion essays, journal responses, notes

Visual:

- Maps, charts, graphs, diagrams, models, slide shows, media works

Oral:

- Presentations, debates, small group discussions, class discussion

The resource, *Think Literacy*, contains some excellent strategies, such as the “Think/Pair/Share” method, for getting students to communicate effectively in a variety of ways.

Guidelines for effective communication are likely the same for geography as any other subject. Some guidelines that may be emphasized include:

- awareness of intended audience- self, peer(s), teacher, public figure, general public
- use of appropriate geographic terminology
- effective use of visuals-students are encouraged to use visuals in written reports, as it is often the best way to convey geographic information. Having students examine any page of any textbook will quickly show them the value of this.

To avoid the impression of merely being “tacked on” to dress up a report, visuals in reports must:

- have captions where appropriate;
- have the source cited, usually in the caption
- be relevant to the topic
- be referred to in the text of the report, so that it is clear that the visual is being used to convey information.
- neatness and accuracy are essential to effective communication, so all the rules of written, visual, and oral communication must be followed as in any other subject.

**Thinking/Inquiry:** “The use of a set of identifiable skills in the context of a critical/creative thinking process.”

Throughout the geography program students will be conducting inquiries into geographic topics and issues. Skills key to the inquiry process include:

- formulating questions to identify issues
- identifying and defining topics of study
- locating and recording relevant information from a variety of primary and secondary sources (e.g. interviews, field studies, maps, illustrations, diagrams, print materials, videos, CD-ROM, Internet)
- analysing, synthesizing, and evaluating information
- determining the relevance, objectiveness, and usefulness of information
- using information effectively to support an opinion or argument
- communicating the results of an inquiry for a specific purpose and audience.

Students will need direction and feedback through all steps of the inquiry process, and they will also need to provide evidence of completing all steps required. Use checklists, conferences, and organizers to have students produce evidence of their progress, and to keep track of their progress.

**Knowledge & Understanding:** “The construction of meaning based on subject content.”

The study of geography requires knowledge and understanding of key facts, terms, and concepts that are built on and are reinforced from year to year.

While geography is not studied as a separate discipline until Grade 7, the broad strand entitled “Canada and World Connections” in the Grades 1-6 curriculum provides the foundation for the Grade 9 program and its five strands. Key concepts that provide this background include:

- the natures of various types of communities (e.g. urban/rural)
- human-environment interactions
- representation of the world at various scales with maps
- features of river systems
- locating provinces, territories, and capitals of Canada
- physical regions of Ontario and Canada - locations and characteristics
- natural resources in Ontario and Canada- what they are, where they are, how they are used
- use of number-letter grids, and latitude/longitude to describe location
- Canada’s trading partners
- Canada’s major imports and exports
- Canada’s relationship with the United States
- Canada’s global connections- e.g. membership in organizations, foreign aid, peace-keeping

## **Key Concepts from the Grade 7 and 8 Geography Curriculum**

- the five themes of geography -these can be illustrated and reinforced through the study of the other two topics in Grade 7 Geography (Physical Patterns, and Natural Resources).

### **Grade 7 - Physical Patterns**

- patterns of: world landforms, climate, vegetation, and how they interconnect
- major world river systems
- agriculture
  - relation of agriculture to physical patterns
  - 3 types of agriculture - subsistence, commercial, specialized
  - 6 factors which influence commercial agriculture

### **Grade 7 - Natural Resources**

- patterns in the distribution and use throughout the world;
- sustainability in the use of resources
- locations of Canada's natural resources

### **Grade 8 - Patterns in Human Geography**

- patterns of population distribution and density
- how site and situation affect settlement
- the types of land use
- factors affecting major social and economic trends - e.g. urbanization, industrialization
- characteristics of developed and developing countries

### **Grade 8 - Economic Systems**

- elements of an economic system
- types of basic economic systems
- how economic resources influence a region's economic success
- the three major types of industries - primary, secondary, and tertiary
- manufacturing systems

### **Grade 8 - Migration**

- push / pull factors that cause migration
- barriers to migration
- world distribution patterns of various cultures
- effects of migration on Canada

## Grade 9 Geography

Geography of Canada, Grade 9, Applied and Academic, builds on the skills and concepts developed in the earlier grades. As some of these concepts were first introduced to students in the junior grades, it may be necessary to review some (e.g. landform regions of Canada) and ensure that some are reinforced regularly (e.g. mapping skills, use of latitude and longitude). Expectations in this course, as well as all high school geography courses, are divided into five general groupings or strands. Note that these strands do not correspond directly to the five themes of geography, and in fact, the five themes of geography are not directly addressed in the document. Also, these strands are not necessarily discrete units of study; rather, the usual practice is to develop units that incorporate expectations from some or all of the strands. Listed below are the five strands, with concepts addressed in each.

### **Geographic Foundations: Space and Systems**

- understanding of various types of regions (e.g. bioregion, ecozone, transition zone, ecumene)
- characteristics of natural systems in Canada - landforms, climate, soils, vegetation, wildlife
- characteristics of human systems in Canada - transportation, population, communication, energy networks, urban and rural environments]
- factors that affect locations of various human systems
- migration patterns
- location patterns of recent Native land claims
- distribution of various peoples across Canada

### **Human-Environment Interactions**

- concept of ecological footprint
- how human activities affect the environment
- how natural systems influence cultural and economic activities
- distribution and importance of Canada's energy sources

### **Global Connections**

- global distribution and mandates of major international agreements and organizations in which Canada participates
- Canada's significant world contributions (e.g. peacekeeping, technology)
- interdependence of Canadian and world economies
- how Canada's natural systems form part of global natural systems (e.g. landform, vegetation regions)
- Canada's approach to environmental concerns compared to other countries
- Canada's resource base, and resource consumption, compared to other countries

### **Understanding and Managing Change**

- understanding how natural and human systems change over time
- impact of new human developments on natural systems
- similarities among cultures, and the need to respect cultural differences
- factors influencing demographics and migration in Canada

### **Methods of Geographic Inquiry and Communication**

- understanding of methods used to collect, organize, manipulate, and interpret geographic data
- understanding of technologies used in geographic inquiry (e.g. Geographic Information Systems (GIS), remote sensing)
- use of different types of maps for different purposes
- difference among opinion, argument, and fact in sources of information
- knowledge of cartographic conventions



## Grade 9 Health and Physical Education

### Sample Requirements:

#### Student Uniform

- Phys. Ed. Uniform must be worn in order to participate in physical education class (to be sold by Phys. Ed. Dept.).
- Phys. Ed. Uniform must be worn as sold - no altering of clothing is allowed, shorts must be around the waist (not below), and sleeves are to be down.
- Inside and outside shoes are needed - sandals are not acceptable.

\* If students forget to bring their Phys. Ed. Uniform to class, the teacher can provide them with a “lost and found” version (free of charge) for that day’s activities - don’t make it a habit.

### Sample Course Outline:

**Formative Evaluation** **70%**

**Knowledge/Understanding & Thinking/Inquiry** **15%**

#### Health: Unit 1

- Decision Making and Goal-Setting
- Conflict Resolution
- Personal Safety and Injury Prevention

#### Health: Unit 2

- Healthy Growth and Sexuality

Students will be evaluated with written tests, notebooks, assignments, and presentations. Portions of student written tests (e.g., badminton/volleyball) may also be used in K/U.

**Application** **50%**

#### Active Participation/Safe Practices (30%)

- Participate actively
- Demonstrate positive personal and social behaviour
- Apply appropriate guidelines and procedures (safety)

#### Physical Fitness (10%)

- demonstrate improvement in personal health-related physical fitness

**Movement Skills (10%)**

- Demonstrate development of movement skills in a variety of physical activities
- Apply movement principles to refine movement

**Communication** **5%**

**Physical Activity and Active Living**

- Written tests during Phys. Ed. units

**Summative Evaluation** **30%**

**Application** **15%**

- Movement skills (6%)
- Sports game strategies (4%)
- Fitness - worksheets, appraisals (5%)

**Communication** **5%**

- Movement skills (2%)
- Health concepts/living skills - decision scenarios (3%)

**Thinking/Inquiry** **10%**

- Fitness - reflection assignment

**Classroom Procedures - Rules & Expectations**

- You are late if you are not in your squads when the second bell rings - Absolutely no exceptions.
- Listen to the teacher and follow instructions.
- Use proper language.
- Respect the equipment and facility.
- Respect the rights of others (be supportive).
- Consider your safety and the safety of others.
- Only bottled water in the gym.
- NO GUM !!!
- Leave your valuables in your locker.
- Help out with equipment.
- Meet the class in designated location after you have changed/showered.
- The teacher dismisses you.
- All school rules apply when class is "off site."
- The class takes the bus to "off site" activities (no vehicles).
- Ask permission to leave the class/gym.
- The equipment room is out of bounds.
- Enter the change room through the hallway.
- Good behaviour is expected in the change rooms.
- **HAVE FUN !!!**

## Sample Assessment & Evaluation Rubric for Grade 9 Physical Education

<b>Participation Expectation:</b> AL.V.01 Participate regularly in a balanced instructional program that includes a wide variety of enjoyable physical activities that encourage lifelong participation.				
Category	Level One	Level Two	Level Three	Level Four
<b>Readiness to Participate</b>	Rarely comes to class prepared to participate	Sometimes comes to class prepared to participate	Usually comes to class prepared to participate	Consistently comes to class prepared to participate
<b>Physical Preparation</b>	Rarely participates in a variety of physical activities	Sometimes participates in a variety of physical activities	Usually participates in a variety of physical activities	Consistently participates in a variety of physical activities
<b>Initiative</b>	Relies on others to set up equipment & begin physical activities	Sometimes sets up equipment & begins physical activities	Frequently sets up equipment & begins physical activities	Consistently sets up equipment & begins physical activities & encourages others to do the same
<b>Effort</b>	Rarely stays on task & puts full effort into activities	Sometimes stays on task & puts full effort into activities	Regularly stays on task & puts full effort into activities	Consistently stays on task & puts full effort into activities
<b>Social Skills Expectations:</b> LSV.03 Demonstrate the social skills required to work effectively in groups & develop positive relationships with their peers. AL1.05 Demonstrate positive, responsible personal & social behavior in physical activity settings.				
<b>Response to Others</b>	Rarely listens to others & follows instructions	Sometimes listens to others & follows instructions	Usually listens to others & follows instructions	Consistently listens to others & follows instructions
<b>Respect</b>	Rarely shows patience with others of different abilities	Sometimes shows patience with others of different abilities	Usually shows patience with others of different abilities	Consistently shows patience with others of different abilities
<b>Fair Play &amp; Etiquette</b>	Rarely follows the rules of fair play in games & activities	Sometimes follows the rules of fair play in games & activities	Usually follows the rules of fair play in games & activities	Consistently follows the rules of fair play in games & activities
<b>Group Interaction</b>	Rarely works well with others	Sometimes works well with others	Usually works well with others	Consistently works well with others
<b>Safety Expectations:</b> ALV.03 Demonstrates responsibility for their personal safety & the safety of others AL3.02 Apply appropriate guidelines & procedures for safe participation in physical activity (using appropriate equipment and facilities, etc.) AL3.02 Demonstrate behavior that minimizes risks to self & others (doing warm-ups, etc.)				
<b>Activity</b>	Rarely applies safety rules & procedures	Sometimes applies safety rules & procedures	Usually applies safety rules & procedures	Consistently applies safety rules & procedures
<b>Equipment</b>	Rarely assumes responsibility for self & others	Sometimes assumes responsibility for self & others	Usually assumes responsibility for self & others	Consistently assumes responsibility for self & others
<b>Facility</b>	Rarely recognizes environments unsafe for playing	Sometimes recognizes environments unsafe for playing	Usually recognizes environments unsafe for playing	Consistently recognizes environments unsafe for playing

## Sample Assessment continued . . .

<b>Movement Skills Expectations:</b>				
PAV.01 Demonstrate personal competence in applying movement skills and principles				
PAI.01 Demonstrate the development of movement skills in a variety of physical activities (e.g., performing such skills as an overhead serve in volleyball)				
<b>Category</b>	<b>Level One</b>	<b>Level Two</b>	<b>Level Three</b>	<b>Level Four</b>
<b>Shooting</b>	Performs movement skills with limited competence	Performs movement skills with moderate competence	Performs movement skills with considerable competence	Performs movement skills with a high degree of competence
<b>Passing</b>	Performs movement skills with limited competence	Performs movement skills with moderate competence	Performs movement skills with considerable competence	Performs movement skills with a high degree of competence
<b>Trapping</b>	Performs movement skills with limited competence	Performs movement skills with moderate competence	Performs movement skills with considerable competence	Performs movement skills with a high degree of competence
<b>Dribbling</b>	Performs movement skills with limited competence	Performs movement skills with moderate competence	Performs movement skills with considerable competence	Performs movement skills with a high degree of competence
<b>Games Knowledge &amp; Strategy Expectations:</b>				
PAV.01 Demonstrate personal competence in applying movement skills and principles.				
PAV.02 Apply their knowledge of guidelines & strategies that can enhance their participation in recreational & sports activities				
PA2.01 Apply the specific rules & guidelines for participation in recreational & sporting activities				
PA2.03 Use ethical strategies & tactics to enhance their performance in specific situations & conditions (e.g., high serve in beach volleyball)				
<b>Knowledge of Facts &amp; Terms</b>	Demonstrates limited knowledge of facts & terms	Demonstrates some knowledge of facts & terms	Demonstrates considerable knowledge of facts & terms	Demonstrates thorough knowledge of facts & terms
<b>Understanding of concepts, principles, requirements, guidelines, &amp; strategies</b>	Demonstrates limited understanding of concepts, principles, requirements, guidelines & strategies	Demonstrates some understanding of concepts, principles, requirements, guidelines & strategies	Demonstrates considerable understanding of concepts, principles, requirements, guidelines & strategies	Demonstrates thorough understanding of concepts, principles, requirements, guidelines & strategies
<b>Use strategy or concept of your choosing</b>	Demonstrates limited understanding of concepts, principles, requirements, guidelines & strategies	Demonstrates some understanding of concepts, principles, requirements, guidelines & strategies	Demonstrates considerable understanding of concepts, principles, requirements, guidelines & strategies	Demonstrates thorough understanding of concepts, principles, requirements, guidelines & strategies

## History

The History program during the transition years basically follows a chronological approach. In Grade 7, the students examine Canadian History from the 17<sup>th</sup> and 18<sup>th</sup> centuries, with a focus on New France, British North America, and the Rebellions in Upper and Lower Canada. Grade 8 addresses Confederation to the beginning of the First World War in 1914. Grade 10 is Canadian History since World War I when the impact of many of the social movements are studied.

This section will focus on some resources that may be useful and some basic guidelines that will be helpful when considering what the students will need to be exposed during the transition years. The framework used is the four Achievement Categories from the History and Geography, Grades 7 and 8, and Canadian and World Studies, Grades 9 to 12 curriculum policy documents (2004).

### Application:

- The students should have worked with both secondary and primary sources of history. This will allow them to not only study the theories and research of historians, but also to study the raw data and material on which the history is written. Many textbooks provide solid examples that are useful and will help the students recognize bias in documents. A good example of primary material can be found in the *Canadiana Scrapbook* series found in many libraries.

### Communication:

- The information in this manual regarding writing and reading is an excellent resource for History and Geography, especially the basic rules of essay writing, organization and grammar. Rules of footnoting style and research are very important and must be covered throughout the transition years.

### Thinking/Inquiry:

- Students should be efficient readers and be able to deal effectively with a variety of texts. Many of the strategies presented in the *Think Literacy* publication may be useful here.
- Also, students should have some sense of common themes in history like change and continuity, structures and human factors to name a few.

### Knowledge/Understanding:

- Similar terms and ideas tend to be reoccurring in history, regardless what period studied. For example markets, ideologies and religion affect many events in all of the eras and situations in Canadian History.
- The students must be able to draw connections and understand that history is a continuous line that doesn't end when one course is finished.

## Mathematics

### General Knowledge:

- Students must be familiar with taking board notes and including examples.
- All work **must** be shown for full marks.
- Only **one equal sign** should be written per line of work.
- Students should be working **down the page**, not across.
- There is a preference that all fractional answers always have the **negative sign in the numerator**.
- Students must know their **multiplication tables** thoroughly from 1 to 12.
- All students must have a good **scientific calculator** or, for Grade 9, a **graphing calculator**.
- Students should have **experience** with the writing of **many math tests**.
- Class work should always be done in pencil.
- Students should have an awareness of the different representations for numbers and the different meanings of each of these representations.
- Students should always include appropriate units on any and all relevant information.

### Division:

- Students must use both  $12 \div 2 = 6$  and  $\frac{12}{2} = 6$  interchangeably, and it is preferred that the latter is used in high school.
- Students must be aware of all division rules and applications, including  $\frac{12}{0}$  is undefined.

### Integers:

- Students **must** be able to add, subtract, multiply, and divide integers.
- Students must be able to handle integers without using a calculator.
- Any two signs **must** be replaced with only one sign using the rules for multiplication.
- Teachers might use either money or temperature analogies.
- Students must be aware that  $\frac{-2}{5} = \frac{2}{-5} = -\frac{2}{5}$
- Students must do several repetitions to master this skill.

Name : \_\_\_\_\_

**MPM 1D - Diagnostic Test - Part 1** (New– February 2009)

**Marking Scheme:**

Knowledge 26 marks	
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**Total ( / 96)** \_\_\_\_\_

**NO CALCULATORS ALLOWED!!!**

**Directions:** Read each section carefully. Do all work in the spaces provided. **For full marks, show all work!!!**

1. **Basic Operations**

**Rewrite each question in the space provided and perform the operation indicated, THEN round each answer to the place given. (8 marks)**

a)  $237.82 + 10.174 + 0.6 =$  (tenths)      b)  $406.04 - 331.87 =$  (ones)

c)  $41.23 \times 3.14 =$  (tenths)      d)  $107.01 \div 6.3 =$  (tenths)

2. Working with Fractions

Perform the indicated operation. Answers must be in lowest terms. Decimal answers will not be accepted. (8 marks)

a)  $2\frac{2}{3} + 2\frac{2}{5} =$

b)  $3\frac{1}{2} - 2\frac{3}{4} =$

c)  $4\frac{2}{3} \times \frac{6}{7} =$

d)  $4\frac{2}{3} \div 1\frac{3}{4} =$

3. Working with Integers

Evaluate. (10 marks)

a)  $-8 + 3 =$

b)  $-2 - 5 =$

c)  $-5 - (-3) =$

d)  $-4 + (-5) =$

e)  $-4(-3) =$

f)  $\frac{-24}{12} =$

g)  $\frac{0}{3} =$

h)  $0(-5) =$

i)  $\frac{21}{0} =$

j)  $-3(3) =$



Name : \_\_\_\_\_

**MPM 1D - Diagnostic Test - Part 2**  
**\*you may now use your calculator!**

**Marking Scheme:**

<b>Knowledge 70 marks</b>	
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**4. Basic Operations: Percents and Decimals**

**Write each of the following as a percent. (4 marks)**

a)  $0.375 =$

b)  $1.8 =$

c)  $\frac{7}{8} =$

d)  $\frac{5}{4} =$

**Write the following as a decimal. (4 marks)**

a)  $65\% =$

b)  $1\frac{2}{5} =$

c)  $\frac{2}{5}\% =$

d)  $\frac{6}{5}\% =$

**Write the following as a fraction in lowest terms. (4 marks)**

a)  $0.85 =$

b)  $\frac{4}{5}\% =$

c)  $1.2 =$

d)  $30\% =$

5. Exponents

Write the **meaning and the value** for each of the following. **Decimal answers will not be accepted. Show your work for full marks (8 marks)**

a)  $3^5 =$

b)  $-2^4 =$

c)  $(-4)^3 =$

d)  $\left(\frac{2}{3}\right)^4 =$

6. Pre-Algebra Skills

**Evaluate. Show all work for full marks. (8 marks)**

a)  $-3(2)^3 =$

b)  $-2^5(-3)^2 =$

c)  $2^2(-3)^2 =$

d)  $3(-2)^3 (-4) =$

**Evaluate. Show your work for full marks. (4 marks)**

a)  $(-2)^3 \div 2^2 =$

b)  $4^0 - 2^2 + 3^3 =$

7. Using Formulas

Use the given formulas to find the area and perimeter of each of the following using  $\pi = 3.14$  Don't forget units!!! (12 marks)

Rectangles:  $A = lw$

$$P = 2l + 2w$$

Circles:

$$A = \pi r^2$$

$$P = 2\pi r$$

Triangles:

$$A = \frac{bh}{2}$$

$$P = \text{side} + \text{side} + \text{side}$$

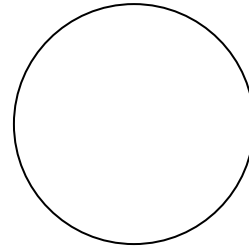
a)



Area :

Perimeter :

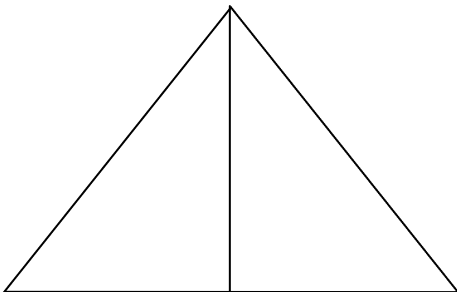
b)



Area :

Perimeter :

c)



Area :

Perimeter:

**Order of Operations**

**Evaluate the following using order of operations. Show all work for full marks. Do not use decimals! All answers must be in lowest terms. (12 marks)**

a)  $(5-7)^3 \div 4 - 12 =$

b)  $\frac{3^2 + (5-9)^2}{9 - 2^2} =$

c)  $-3[19 - (2^2 + 3^2)]^2 =$

d)  $\left(\frac{5 - 2^2}{9 \div 3^2}\right)^5 =$

9. Introduction to Algebra

Rewrite each expression given  $a = 3$  and  $b = -2$  then find the value.  
Show your work. (8 marks)

a)  $a + 2b =$

b)  $3a - b =$

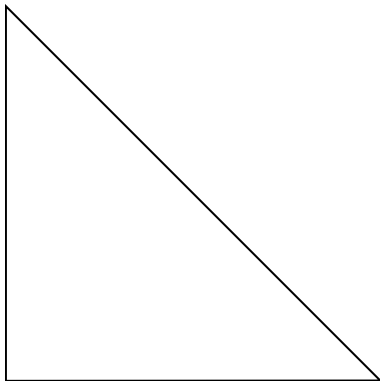
c)  $\frac{4a}{b} =$

d)  $2ab^2 =$

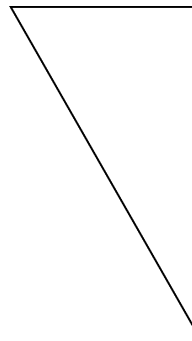
10. Pythagorean Theorem

Find the value of the unknown quantity. Show all necessary steps. Decimal answers will be accepted provided they are rounded correctly to the nearest tenth. (6 marks)

a)



b)



**Examples:**

$$2 + (-3) = 2 - 3$$

Use your math: replace the double signs.

Thought process: You have two dollars and owe three dollars.

$$= -1$$

Answer: You still owe one dollar.

or if you prefer the temperature analogy:

$$2 + (-3) = 2 - 3$$

Use your math: replace the double signs.

Thought process: It is two degrees and the temperature drops three degrees.

$$= -1$$

Answer: It is one degree below.

## Fractions:

- Students **must** be able to add, subtract, multiply and divide fractions.
- It is preferred that the students know how to simplify before multiplying any fractions.
- Students **should not** work with a calculator that does fractions for them.
- Students must work with mixed numbers and improper fractions.
- Students must do several repetitions in order to master this skill.

## Examples:

$$\begin{aligned} \text{a)} \quad \frac{3}{4} + \frac{4}{5} &= \frac{3 \times 5}{4 \times 5} + \frac{4 \times 4}{5 \times 4} \\ &= \frac{15}{20} + \frac{16}{20} \\ &= \frac{31}{20} \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \frac{2}{3} - \frac{3}{8} &= \frac{2 \times 8}{3 \times 8} - \frac{3 \times 3}{8 \times 3} \\ &= \frac{16}{24} - \frac{9}{24} \\ &= \frac{7}{24} \end{aligned}$$

$$\begin{aligned} \text{c)} \quad \frac{2}{5} - \frac{6}{7} &= \frac{2 \times 7}{5 \times 7} - \frac{6 \times 5}{7 \times 5} \\ &= \frac{14}{35} - \frac{30}{35} \\ &= \frac{-16}{35} \end{aligned}$$

$$\begin{aligned} \text{d)} \quad \frac{-2}{3} + \frac{-5}{6} &= \frac{-2 \times 2}{3 \times 2} - \frac{5}{6} \\ &= \frac{-4}{6} - \frac{5}{6} \\ &= -\frac{9}{6} \\ &= \frac{-3}{2} \end{aligned}$$

$$\begin{aligned} \text{e)} \quad \frac{2}{3} \times \frac{3}{4} &= \frac{2^1}{1^1} \times \frac{3^1}{4^2} \\ &= \frac{1}{1} \times \frac{1}{2} \\ &= \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{f)} \quad 1\frac{2}{3} \div \frac{1}{2} &= \frac{5}{3} \times \frac{2}{1} \\ &= \frac{10}{3} \end{aligned}$$

$$\begin{aligned} \text{g)} \quad \frac{-4}{5} \times \frac{15}{20} &= \frac{-4^1}{5^1} \times \frac{15^3}{20^5} \\ &= \frac{-3}{5} \end{aligned}$$

$$\begin{aligned} \text{h)} \quad 2\frac{1}{2} + 1\frac{3}{4} &= 2\frac{2}{4} + 1\frac{3}{4} \\ &= 3\frac{5}{4} \\ &= 4\frac{1}{4} \end{aligned}$$

$$\begin{aligned} \text{i)} \quad 6\frac{2}{3} \times 6\frac{3}{4} &= \frac{20^5}{3^1} \times \frac{27^9}{4^1} \\ &= 5 \times 9 \\ &= 45 \end{aligned}$$

$$\begin{aligned} \text{j)} \quad 8\frac{2}{3} - 5\frac{3}{4} &= 8\frac{8}{12} - 5\frac{9}{12} \\ &= 7\frac{20}{12} - 5\frac{9}{12} \\ &= 2\frac{11}{12} \end{aligned}$$

Order of Operations:

- Students must be able to work with complicated questions involving order of operations which include fractions and integers.
- The order of operations is always according to BEDMAS (brackets, exponents, division and multiplication in order from left to right, and finally, addition and subtraction in order from left to right).
- Students must **show all work** involved in a question using order of operations.

**Examples:**

$$\begin{aligned} \text{a)} \quad [3 - 2(1 - 5)]^2 &= [3 - 2(-4)]^2 \\ &= [3 - (-8)]^2 \\ &= [3 + 8]^2 \\ &= (11)^2 \\ &= 121 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \left[\frac{3}{5} - 2\right]^3 &= \left[\frac{3}{5} - \frac{10}{5}\right]^3 \\ &= \left(\frac{-7}{5}\right)^3 \\ &= \frac{-343}{125} \end{aligned}$$

$$\begin{aligned} \text{c)} \quad -2^2 + \frac{3-9}{-3} - 7 &= -4 + \frac{-6}{-3} - 7 \\ &= -4 + 2 - 7 \\ &= -2 - 7 \\ &= -9 \end{aligned}$$

$$\begin{aligned} \text{d)} \quad (3-5)^2 + (5-8)^2 - 12^0 &= (-2)^2 + (-3)^2 - 1 \\ &= 4 + 9 - 1 \\ &= 13 - 1 \\ &= 12 \end{aligned}$$



### Exponents:

- Students must realize that the exponent affects only what it is directly next to.
- An integer sign is only affected by an exponent if it is within the brackets.

### Examples:

$$\begin{aligned} \text{a)} \quad (-3)^2 &= (-3)(-3) \\ &= 9 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad -3^2 &= -(3)(3) \\ &= -9 \end{aligned}$$

$$\begin{aligned} \text{c)} \quad \left(\frac{3}{5}\right)^3 &= \left(\frac{3}{5}\right)\left(\frac{3}{5}\right)\left(\frac{3}{5}\right) \\ &= \frac{27}{125} \end{aligned}$$

### Substitution:

- Students must be able to substitute values for any given variables.
- Students must show any and all substitution(s).
- Students must show all necessary work involved in evaluating that expression.

### Examples:

Given that  $a = -2$  and  $b = 5$  evaluate each of the following:

$$\begin{aligned} \text{a)} \quad 3a + b &= 3(-2) + 5 \\ &= -6 + 5 \\ &= -1 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \frac{-3}{4}a + \frac{1}{2}b &= \frac{-3}{4}(-2) + \frac{1}{2}(5) \\ &= \frac{6}{4} + \frac{5}{2} \\ &= \frac{8}{2} \\ &= 4 \end{aligned}$$

### Pythagorean Theorem:

- Students must be proficient with the use of this theorem.
- Students must know how to solve for both the hypotenuse and either of the two sides of a right angled triangle.
- Students should know how to apply the theorem regardless of the letter names for the three sides.
- The theorem should be memorized as the “the square of the hypotenuse equals the sum of the squares of the other two sides.”

#### Examples:

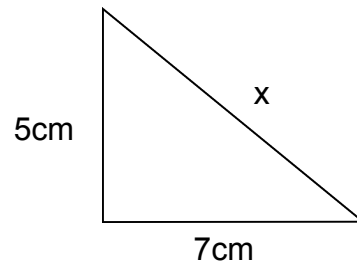
Find the unknown side.

$$x^2 = 5^2 + 7^2$$

$$x^2 = 25 + 49$$

$$x^2 = 74$$

$$x = \sqrt{74}$$



$x \approx 8.6cm$  (use “approximately equal” to sign whenever something is rounded)

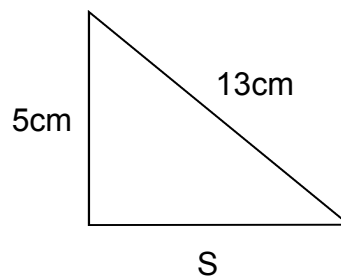
$$13^2 = 5^2 + S^2$$

$$169 = 25 + S^2$$

$$169 - 24 = S^2$$

$$\sqrt{144} = S$$

$$S = 12cm$$



#### Simple Equations:

- Students must know how to solve simple equations.
- Students must be able to show the steps involved in the solving of simple equations.
- Students must understand that **an equation is like a balance** – if we add to one side, we must add to the other; if we subtract from one side, we must subtract from the other – in order to maintain the balance.
- Students must isolate the variable by simplifying the equation first, then working opposite to any order of operations.

**Example:**

Solve.

a)  $3x + 6 = -18$

$$3x + 6 - 6 = -18 - 6$$

$$3x = -24$$

$$\frac{3x}{3} = \frac{-24}{3}$$

$$x = -8$$

**Step 1:** Isolate the variable by first subtracting 6 from both sides and simplify.**Step 2:** Divide both sides by 3 and simplify.

b)  $-2x - 8 = 21$

$$-2x - 8 + 8 = 21 + 8$$

$$-2x = 29$$

$$\frac{-2x}{-2} = \frac{29}{-2}$$

$$x = \frac{-29}{2}$$

**Step 1:** Work to isolate the variable by first adding 8 to both sides and simplify.**Step 2:** Divide both sides by (-2) and simplify

c)  $\frac{1}{2}a - \frac{2}{3} = -4$

$$\frac{1}{2}a - \frac{2}{3} + \frac{2}{3} = -4 + \frac{2}{3}$$

$$\frac{1}{2}a = \frac{-10}{3}$$

$$(2)\frac{1}{2}a = (2)\frac{-10}{3}$$

$$a = \frac{-20}{3}$$

**Step 1:** Add  $\frac{2}{3}$  to each side and simplify.**Step 2:** Multiply each side by 2 and simplify

## MPM 1D - Diagnostic Test - Part 1

### Marking Scheme:

**Knowledge            30 marks**

**Total ( / 94)**

**NO CALCULATORS ALLOWED!!!**

Directions: Read each section carefully. Do all work in the spaces provided. For full marks, show all work!!!

### 1. Basic Operations

Rewrite each question in the space provided and perform the operation indicated, then round each answer to the place given. (12 marks)

a)  $172.09 + 52317 + 9.3 + 101.002 =$   
(ones)

b)  $2003.07 - 1020.032 =$   
(tens)

c)  $281.853 \div 7.02 =$   
(tens)

d)  $21.02 \times 9.51$   
(hundreds)

2. Working with Fractions

Perform the indicated operation. Answers must be in lowest terms. Decimal answers will not be accepted. (8 marks)

a)  $\frac{4}{7} + 2\frac{1}{2} =$

b)  $\frac{9}{11} - \frac{2}{3} =$

c)  $1\frac{2}{5} \times \frac{15}{16} =$

d)  $4\frac{1}{3} \div 1\frac{7}{9} =$

3. Working with Integers

Evaluate. (10 marks)

a)  $-7 + (-2) =$

b)  $-9 + 17 =$

c)  $-6 - (-5) =$

d)  $-12 + (-12) =$

e)  $-2(-11) =$

f)  $(-5)(0) =$

g)  $-7(-2) =$

h)  $\frac{-25}{5} =$

i)  $-\frac{121}{11} =$

j)  $\frac{-8}{0} =$

MPM 1D - Diagnostic Test - Part 2  
\*you may now use your calculator!

**Marking Scheme:**

**Knowledge 64 marks**

4. Basic Operations: Percents and Decimals

Write each the following as a percent. (4 marks)

a)  $0.67 =$

b)  $1.009 =$

c)  $\frac{2}{5} =$

d)  $\frac{7}{5} =$

Write the following as a decimal. (4 marks)

a)  $138\% =$

b)  $\frac{5}{8}\% =$

c)  $\frac{25}{28} =$

d)  $\frac{9}{5} =$

Write the following as a fraction in lowest terms. (4 marks)

a)  $23\%$

b)  $\frac{4}{5}\% =$

c)  $1.24 =$

d)  $0.125$

5. Exponents

Write the meaning and the value for each of the following. Decimal answers will not be accepted. Show your work for full marks (8 marks)

a)  $(-5)^3 =$

b)  $-2^4 =$

c)  $-\left(\frac{2}{3}\right)^2 =$

d)  $\left(\frac{2}{5}\right)^3 =$

6. Pre-Algebra Skills

Evaluate. Show all work for full marks. (8 marks)

a)  $-2(-2)^2 =$

b)  $3^2 \times 2^3 =$

c)  $(-1)(-2)^2(-3) =$

d)  $-3^2 \times (-3)^2 =$

Evaluate. Show your work for full marks. (4 marks)

a)  $4^2 \div 2^3 =$

b)  $3^0 + \left(\frac{2}{3}\right)^2 =$

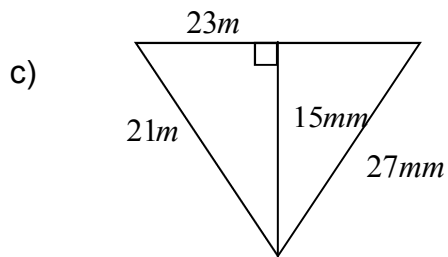
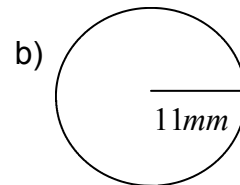
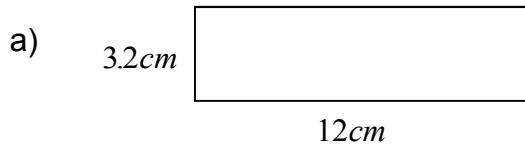
- Using Formulas

Use the given formulas to find the area and perimeter of each of the following using  $\pi = 3.14$ . Don't forget units!!! (12 marks)

Rectangles  $p = 2l + 2w$   
 $A = lw$

Circles  $p = 2\pi r$   
 $A = \pi r^2$

Triangles  $A = \frac{1}{2}bh$





• Order of Operations

Evaluate the following using order of operations. Show all work for full marks. Do not use decimals! All answers must be in lowest terms. (12 marks)

a)  $12 \div (-2 - 4) + 24 =$

b)  $(-2 + 5)^2 - (12 - 4) \div (-2) =$

c)  $2^5 - \left(\frac{39}{-13}\right) \div 13 =$

d)  $[-3(2^3 - 6)]^2 \div 9 =$

• Introduction to Algebra

Rewrite each expression given  $a = 5$  and  $b = -3$  and then find the value. Show your work. (8 marks)

a)  $-2b - a =$

b)  $\frac{3a}{b} =$

c)  $4a - b =$

d)  $b^2 - a =$

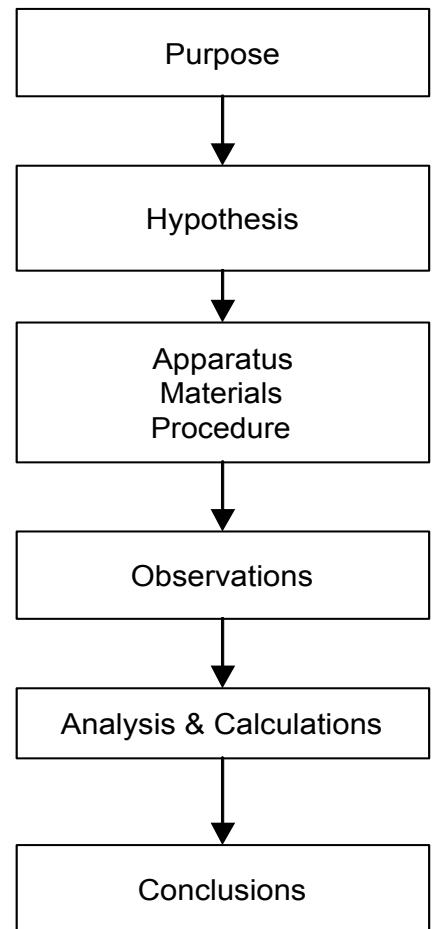
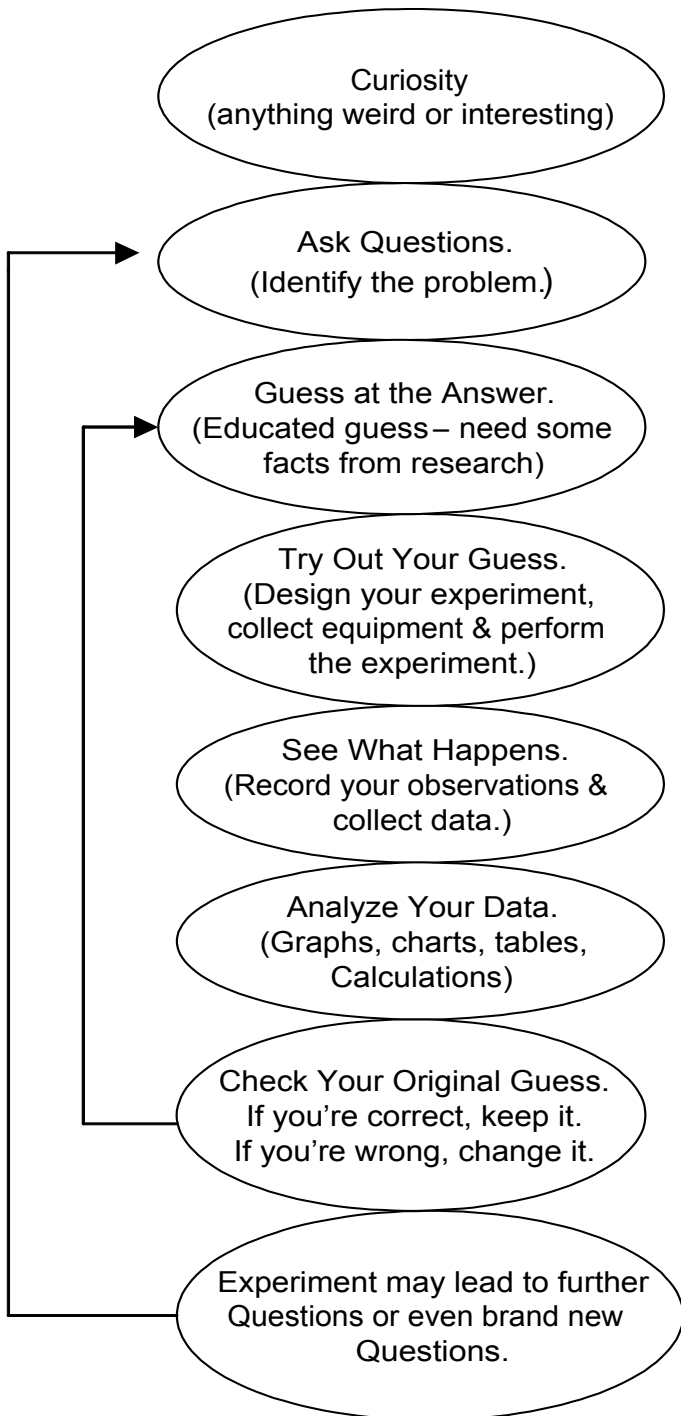
## Science

The basic skills and knowledge needed for success in Grade 9 Science include the following:

Math Skills	Knowledge of Equipment	Procedural Knowledge
<b>Students should know/ understand</b>	<b>Students should know/ understand</b>	<b>Students should be prepared to</b>
<ul style="list-style-type: none"> <li>mathematical calculations with all steps shown in order to receive full marks</li> </ul>	<ul style="list-style-type: none"> <li>the great importance that <b><i>must</i></b> be placed on safety in the science classroom</li> </ul>	<ul style="list-style-type: none"> <li>bring a scientific calculator, binder, looseleaf paper, pencil, ruler and pen for every class</li> </ul>
<ul style="list-style-type: none"> <li>that units must be included with any measured or calculated number in order to receive full marks ex. 4<b><u>g</u></b>, 35.5 <b><u>mL</u></b>, 6.85 <b><u>cm<sup>2</sup></u></b></li> </ul>	<ul style="list-style-type: none"> <li>that proper scientific terminology must be used for all equipment (see Figure 1)</li> </ul>	<ul style="list-style-type: none"> <li>to write 1 hour tests (see Example C for examples of question types)</li> </ul>
<ul style="list-style-type: none"> <li>how to convert measurements using metric prefixes ex/ 2.4 m = 240 cm</li> </ul>	<ul style="list-style-type: none"> <li>how to read a mass measurement from a triple beam balance (see Example A)</li> </ul>	<ul style="list-style-type: none"> <li>to collect precise data and make complete and extensive observations during labs (see Example D)</li> </ul>
<ul style="list-style-type: none"> <li>a basic knowledge of line graphs (graphing with Cartesian coordinates) (see Figure 5)</li> </ul>	<ul style="list-style-type: none"> <li>how to read liquid volume using a graduated cylinder - this must include knowing how to read the meniscus (see Example B)</li> </ul>	<ul style="list-style-type: none"> <li>to complete most written communications in full sentences, unless told otherwise</li> </ul>
<ul style="list-style-type: none"> <li>the basic interpretation of line graphs (see Figure 6)</li> </ul>	<ul style="list-style-type: none"> <li>how to use some science equipment (microscopes, slides, balances, and glassware are the most commonly used)</li> </ul>	<ul style="list-style-type: none"> <li>to use the scientific process (see Figure 2) and be able to apply the process to scientific problems they are asked to solve (see Figures 3 and 4)</li> </ul>
<ul style="list-style-type: none"> <li>that all graphing should be done in pencil</li> </ul>	<ul style="list-style-type: none"> <li>cellular parts and functions</li> </ul>	<ul style="list-style-type: none"> <li>to see a variety of laboratory reports</li> </ul>
<ul style="list-style-type: none"> <li>that all tables and graphs should be titled and a ruler should be used</li> </ul>	<ul style="list-style-type: none"> <li>that all equipment must be handled gently and with great care and respect</li> </ul>	<ul style="list-style-type: none"> <li>to underline all titles and/or headings in lab reports with a ruler</li> </ul>

**\* Time management is of vital importance, especially for lab work.\***

## The Scientific Process



## Sample of an Experimental Write-Up

The following is a list of the component parts that constitute an experimental write-up of any experiment performed in Grade 9. Start each experiment on a new page.

Title	
Done by student or teacher <u>before</u> starting the experiment	<p><b><u>Purpose:</u></b> What are we trying to find out by doing the experiment?</p>
	<p><b><u>Apparatus:</u></b> List of materials and chemicals being used. (A labelled diagram is a good alternative.)</p>
	<p><b><u>Method:</u></b> In point form, list the exact steps or procedure (in order) that you will be doing, during the experiment.</p>
Recorded <u>while doing</u> the experiment.	<p><b><u>Observations:</u></b> Record everything you observed (heard, saw, smelled, felt – <b>never taste anything!</b>) while doing the experiment. Record exactly what happened and not what you think happened – this will be recorded in the conclusion. Charts of recorded results may also appear.</p>
Done by <u>student</u> as <u>homework</u> after the experiment has finished.	<p><b><u>Conclusion:</u></b> What did you conclude by doing the experiment? You should answer the question posed in the <u>Purpose</u> by referring to your <u>Observations</u>.</p>

### Note:

Do not use scraps of paper to record observations during an experiment. (They soon become bits of garbage and you will have to redo the experiment.)

## Specific Example of a Lab Grade 9 Lab

### Recognition of a Problem

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Purpose:** To recognize what happens when bluestone ( $\text{CuSO}_4 \cdot 5 \text{H}_2\text{O}$ ) crystals are heated. **CAUTION: BLUESTONE IS TOXIC!!!**

**Hypothesis:** What do you think will happen?

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### Apparatus and Materials:

- Bluestone
- test tube
- test tube clamp
- retort stand
- Bunsen burner
- Matches
- eye dropper
- GOGGLES!!

### Method or Procedure:

#### Part A:

1. Place enough bluestone in a test tube to cover the round bottom.
2. Describe the colour of the crystals.
3. Feel the crystals and describe. **WASH YOUR HANDS IMMEDIATELY.**
4. Clamp the test tube in a vertical position on the stand.
5. Light the burner and heat the crystals gently. **Record your observations.**
6. Heat the crystals until your teacher tells you to stop.

#### Part B:

1. Allow the test tube to cool.
2. Pour out the bluestone onto a piece of paper and divide it into 2 piles.
3. Describe the bluestone.
4. Feel the bluestone. Describe it. **WASH YOUR HANDS IMMEDIATELY.**
5. Add one drop of water to one of the piles of bluestone. Record your observations.
6. Make your finger wet with water and press it down onto the other pile of bluestone. Record your observations. **WASH YOUR HANDS IMMEDIATELY.**

**WASH OUT THE TEST TUBE AND RETURN ALL EQUIPMENT TO ITS ORIGINAL PLACE.**

**Observations:**

1. Describe the original bluestone.
2. What did you see happening while you were heating it?
3. Describe the bluestone after you had heated it.
4. What happened when you added water to the first pile of bluestone? What did you see happen?
5. What happened when you put your wet finger onto the second pile of bluestone?

**Conclusions:**

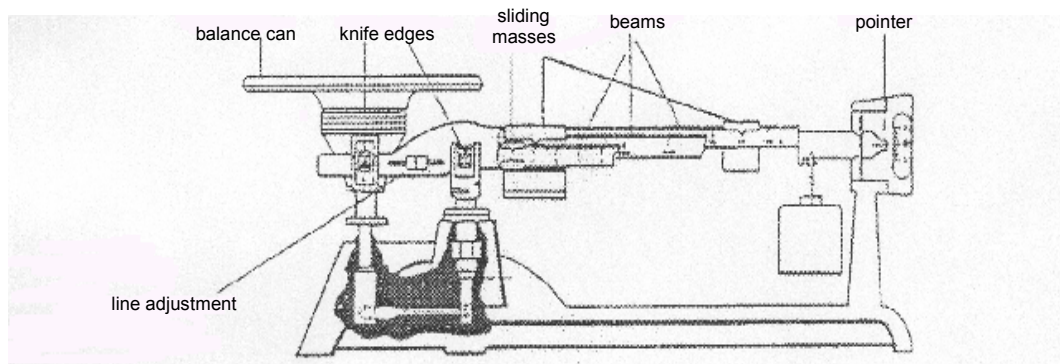
1. Did anything escape from the bluestone during heating?
2. What happened to the colour of the bluestone after heating?
3. (a) What happened when you added water back to the heated bluestone?  
(b) Based on your answers for #1, #2, and #3, what do you think was being released by the bluestone when it was heated?
4. What makes bluestone blue?
5. Can you think of some way that you could use the information that you observed during this experiment in a practical way? (Hint: Think "Canadian winters").

## How To Use The Triple-Beam Balance

1. Set the balance on a level surface.
2. Set all three of the sliding masses to the zero point at the far left of the beam. The two larger masses fit exactly into notches on the beams. Make sure that these are set accurately into the notches.
3. Note the number of divisions the pointer on the end of the beam swings above and below the zero point. Record the average of these swings as the resting place of your balance.
4. If the pointer at the right-hand end of the beam does not come to rest opposite any part of the scale, consult with your teacher before making any adjustments.
5. To find the mass of an object, place it as close to the centre of the balance pan as possible.
6. Start with the largest sliding mass. Move it along the beam until it just overbalances the mass of the object. Then place it one notch to the left so that it underbalances the object.
7. Repeat this procedure with the second largest sliding mass.
8. Make sure that the large masses are securely set into the notches of their beams. Slide the smallest mass until it exactly balances the object. The pointer at the right-hand end of the beam should then point to the resting point recorded earlier.
9. The mass of the object is the sum of the readings shown by the positions of three sliding masses.
10. Carefully record the mass. Then slide the masses back exactly to their zero marks.

Remember: Most errors in the use of the triple-beam balance occur because the two larger masses have not been settled exactly into notches on their beams.

Never place chemicals directly on the balance pan. Powdered or crystalline chemicals can be placed on a piece of filter paper or in a watch glass resting on the pan of the balance. Liquids should be contained in a beaker or flask.

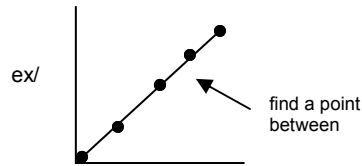


*The triple-beam is the standard balance used in most schools.*

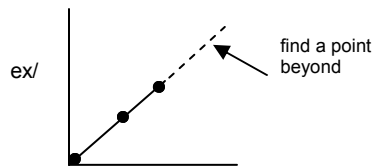
## Notes on Graph Interpretation Given to Students in Grade 9

Words such as extrapolation, interpolation, rise, run and slope are often used on graphs once the measured points and the “line of best fit” are drawn.

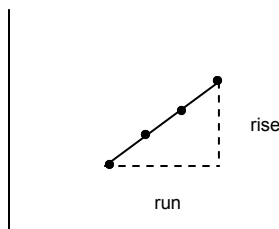
Interpolation is finding a point between two measured points on the graph.



Extrapolation is finding a point that's outside all measured points (usually a dotted line extended from best-fit line is used).



To find the **rise, run and slope** of the best-fit line, simply bring a horizontal line over from the 1st dot and a vertical line down from the last dot until they meet.



Run is the length of the horizontal line.

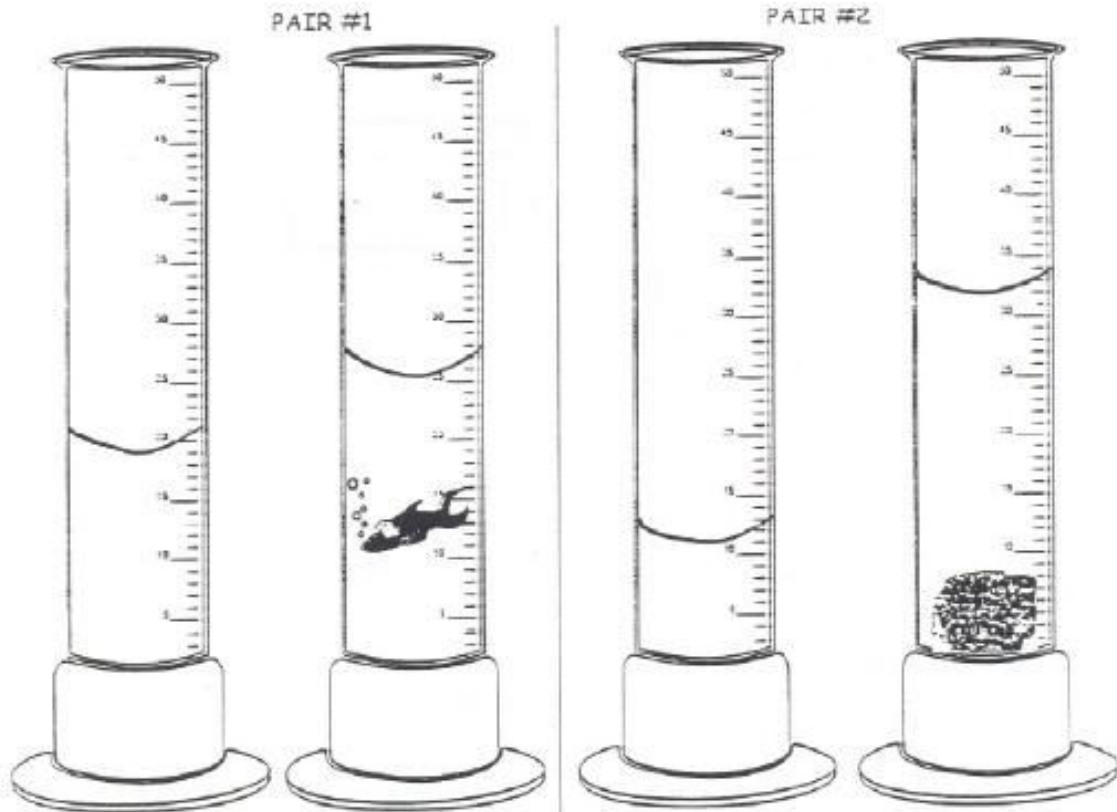
Rise is the length of the vertical line.

Slope is the steepness of the line and is defined as  $slope = \frac{rise}{run}$



## Interpreting Graduated Cylinders and Finding Volume

Below are diagrams of graduated cylinders. Each pair shows the water level before and after an object has been placed in the cylinder. Find the volume of each object.



VOLUME OF OBJECT = 6.5ml

SHOW YOUR WORK

/3

$$\begin{aligned} V &= 25.5\text{ml} - 19\text{ml} \\ &= 6.5\text{ml} \end{aligned}$$

VOLUME OF OBJECT = 21ml

SHOW YOUR WORK

/3

$$\begin{aligned} V &= 32\text{ml} - 11\text{ml} \\ &= 21\text{ml} \end{aligned}$$

## Sample Types of Test Questions

### 1. True or False: (3 marks)

- \_\_\_\_\_ Science theories are always correct and will never change.  
\_\_\_\_\_ A snow machine is an example of science used to create technology.  
\_\_\_\_\_ A prediction or educated guess is called an apparatus.

### 2. Matching: (5 marks) Select letter from column A

- |               |       |  |
|---------------|-------|--|
| a) variable   | _____ | A mental picture or description.   |
| b) conclusion | _____ | An educated guess.   |
| c) model      | _____ | A scientific discovery that has been tested many times and probably will not change. |
| d) law        | _____ | A generalization based on some observations.   |
| e) hypothesis | _____ | Something that can change in an experiment.  |

### 3. Short Answer:

Explain the difference between science and technology. Use examples to help explain. (2 marks for examples + 2 marks for the explanation = 4 marks)

### 4. Long Answer / Application-type questions:

Make up an experiment that answers this question: Is brand A paper towel as good as brand B in soaking up orange juice? Include the following in your plan:

- a hypothesis (1 mark)
- a list of materials you would use (2 marks)
- the procedure you would follow (3 marks)

### 5. Completion: (3 marks)

- Adding \_\_\_\_\_ to water will increase the boiling point.
- Whenever the speed of the particles increases, the temperature \_\_\_\_\_.
- If evaporation occurs quickly with lots of heat added, it is called \_\_\_\_\_.

### 6. Multiple Choice: (2 marks)

- The "brain" of the cell that contains the DNA is called the:
  - cell wall
  - nucleus
  - mitochondria
  - chromosome
- Which of the following is **not** a solution?
  - salt and water
  - Coca-Cola
  - sand and water
  - Kool-Aid crystals and water

## Sample Lab Activity Involving Precise Data and Complete Observations

### Observing a Candle

- Give each group of two students a ruler, an unused safety candle, a dish to set the candle in, and matches (or you can light the candle for them when the time comes).
- Each group is to come up with at least 10 observations for the unlit candle and at least 10 observations for the lit candle.
- The observations can be qualitative or quantitative and they must be precise and complete.
- Groups can come up with more than 20 observations total - there can be a prize for the group with the most observations, provided that they are all different and they are appropriate.

Sample observations for the unlit candle:

- The candle is 5.25 cm high.
- The candle has a diameter of 1.50 cm.
- The bottom of the candle has a surface area of  $1.77 \text{ cm}^2$ .
- The wick is 0.75 cm high.
- The candle is made of solid white wax.
- The wick is made of string that is off-white in colour.
- The candle feels smooth.
- The candle feels slightly sticky.
- There is a nick in the side of the candle 2 cm from the bottom.
- The candle is roughly cylinder-shaped.
- The candle comes to a tapering point at the top where the wick comes out.
- The candle smells slightly like gasoline but sweeter-smelling.

Sample observations for the lit candle:

- The wick has turned black in colour.
- The tapered point of the candle has begun to change shape and melt.
- The wax underneath the flame is changing from a solid to a liquid.
- The flame is clear blue near the bottom, orange-blue in the middle and yellow on the outside.
- The flame is 1.80 cm tall.
- The flame is 0.35 cm wide in the middle.
- The flame moves and flickers with the air movements.
- The candle is melting at the rate of 1 mm every 3 minutes.
- The flame is hot.
- The melting wax is running down the sides of the candle.
- The wax changes from white as a solid to clear as a liquid.

The most important part of this exercise is that the observations are very precise and very complete. Students must take their time and create an accurate written description of the candle so that someone reading the description could visualize that exact candle.

## Conclusion

The process to create this manual involved not only the team, but many reviewers in both secondary and elementary. Thank you to all who assisted in providing valuable feedback:



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Peg Keffer, Crossroads School  
Brian Love, Crossroads School  
Val Martindale, Fort Frances High School  
Teryl McFarland, Program Support  
Tracy Roen, Fort Frances High School  
Connie Schwartz, Fort Frances High School  
David Shuh, Fort Frances High School  
Greg Ste. Croix, Fort Frances High School  
Kerri Tolen, Sturgeon Creek Alternative School

### Northwest Catholic District School Board

David Black, St. Francis School  
Kevin Knutsen, St. Francis School

### Mine Centre District School Authority

Ruth Maki, Mine Centre School

***“Wherever there are beginners and experts, old and young,  
there is some kind of learning going on, and some sort of teaching.  
We are all pupils and we are all teachers.”  
Gilbert Highet***