LANGLEY SECONDARY SCHOOL

SCIENCE DEPARTMENT POLICY STATEMENTS

NOTEBOOK SECTION "A"

INTRODUCTION

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THIS INTRODUCTION SECTION CONTAINING SCIENCE DEPARTMENT POLICY HANDOUTS AND SAFETY GUIDELINES IS TO BE KEPT PERMANENTLY AT THE FRONT OF YOUR SCIENCE NOTEBOOK.

I have read and understood the Science Department Policy handouts on Pages A1-A12, and Safety Test Guide and Hazard Labels on Pages A13-A14 listed in the index above:

Date _____ Signed _____

LANGLEY SECONDARY SCHOOL

SCIENCE DEPARTMENT POLICY

MATERIALS:

ALL SCIENCE STUDENTS ARE EXPECTED TO PRESENT THEMSELVES EVERY SCIENCE CLASS WITH ALL NECESSARY MATERIALS:

1. Pen, Pencil, Eraser, Ruler.
2. A 3-ring binder or similar notebook from which papers can be easily removed.
3. An adequate supply of loose leaf paper.
4. A scientific calculator is essential for senior Chemistry and Physics.
5. Plain loose leaf paper and/or graph paper may be required in some science courses.
6. Textbook and/or laboratory Manual.

EXPECTATIONS:

ALL SCIENCE STUDENTS MUST DEMONSTRATE THAT THEY HAVE ATTAINED A SATISFACTORY LEVEL OF COMPETENCE IN EACH OF THE FOLLOWING AREAS:

1. Ability to attend classes regularly, on time, with necessary materials.
2. Ability to exhibit responsible and courteous behaviour toward both the teacher and class peers.
3. Ability to skillfully, respectfully, and safely use all laboratory equipment and materials encountered in each course.
4. Ability to be trusted and to cooperate with and respect the rights of other students in a laboratory environment.
5. Ability to strive to the best of each student's ability to reach a satisfactory level of competence in the skills, processes, concepts, principles, and thinking abilities encountered in each course.
6. Ability to complete assignments on time and to the best of each student's ability to a satisfactory standard.
7. Ability to maintain an organized record of notes, exercises, worksheets, laboratory reports, tests and quizzes, and vocabulary.
8. Ability to communicate in writing to a standard of English grammar and usage expected of the appropriate grade level.
9. Ability to write a formal laboratory report.

ABSENTEEISM:

1. **IT IS YOUR RESPONSIBILITY TO FIND OUT WHAT WORK AND/OR TESTS HAVE BEEN MISSED AND TO CATCH UP!** Depending on the circumstances you may be required to make up lab work on your own time or you may be permitted to obtain results of a lab from your partner and do the written conclusion on your own. All other assignments are to be made up on your own.

2. **ALL SCIENCE STUDENTS ARE EXPECTED TO THOROUGHLY FAMILIARIZE THEMSELVES WITH THE SCIENCE DEPARTMENT EVALUATION POLICY PAGES A4 -A6 REGARDING ABSENTEEISM.**

BEHAVIOUR:

The key words in a Science classroom are **CONSIDERATION** and **RESPONSIBILITY !**
The following **RULES** and **SUGGESTIONS FOR BEHAVIOUR** will help you to get along better with your classmates and teachers and thereby improve your performance in Science.

1. **RAISE YOUR HAND** before speaking and **WAIT** to be acknowledged. Remember that all of your classmates have the right to an equal opportunity to answer questions and to participate in class discussions no matter what their academic ability.

2. Talk to your partner only during lab exercises and then use a soft voice. It is distracting and discourteous to others to talk loudly while other students are attempting to work. **YOU HAVE NO RIGHT TO DISRUPT ANYONE ELSE'S EDUCATION !**

3. You are responsible for how well you do in each Science course. **IT IS YOUR RESPONSIBILITY TO WORK TO THE BEST OF YOUR ABILITY** by completing and handing in all assignments on time, attending class regularly and on time, and bringing all necessary materials to class.

4. **YOU ARE RESPONSIBLE FOR YOUR ACTIONS IN CLASS !** Roughhousing and other inappropriate behavior will not be tolerated. No eating is permitted in class. Coats, hats, and loose sweaters must be removed in class especially during laboratory exercises.

5. **YOU MUST REMAIN IN YOUR DESK OR LAB AREA UNLESS OTHERWISE TOLD !** Garbage must be put directly into waste containers, **NEVER THROWN**. The garbage cans and pencil sharpene are not to be used during a lecture or class discussion period. A paper recycling box is available in a Science classrooms. **VISITING AND WANDERING ARE IMPROPER AND POTENTIALLY DANGEROUS ACTIVITIES IN A SCIENCE CLASSROOM.**

6. If you arrive late **KNOCK** on the door (if closed), **ENTER QUIETLY**, and **GO DIRECTLY TO YOUR SEAT**. **YOUR TARDINESS WILL BE RECORDED! YOU WILL BE GIVEN NO EXTRA TIME IF A QUIZ IS IN PROGRESS OR FINISHED !** Students who are late or repeatedly late may be required to make up the time, be refused admission to class, or be referred to the Administration.

7. **YOU WILL NOT BE PERMITTED TO LEAVE THE CLASSROOM UNLESS YOU HAVE SPECIAL PERMISSION !** Washroom visits should be made before or after class. Students with specific medical problems should inform their teacher at the beginning of the course. Locker visits are not permitted during class time.

8. **DO YOUR OWN WORK !** Copied or shared work may result in all students involved losing marks even if only a portion of the work is copied. **SHARED WORK EQUALS SHARED MARKS !**

9. **STUDENTS UNWILLING TO ADHERE TO THE ABOVE RULES AND SUGGESTIONS FOR BEHAVIOUR MAY BE REQUIRED TO SERVE DETENTIONS, LEAVE THE CLASS, AND/OR BE REFERRED TO THE ADMINISTRATION. PARENTS MAY BE CONSULTED WHENEVER APPROPRIATE !**

PREPARATION:

1. **YOU ARE EXPECTED TO ARRIVE AT EACH SCIENCE CLASS WITH ALL NECESSARY MATERIALS including TEXTBOOKS, PENS, PENCILS, ERASERS, and PAPER !**
2. **YOU SHOULD KEEP A SEPARATE NOTEBOOK FOR SCIENCE ! YOUR NOTEBOOK SHOULD BE A THREE RING BINDER** or of similar style. **PAPERS MUST BE SECURED AND EASILY REMOVABLE! YOU ARE RESPONSIBLE FOR MAINTAINING A NEAT AND ORDERLY NOTEBOOK !** Your notebook may be regularly evaluated by your teacher and in junior grades will count for a considerable portion of your Science mark. Detailed instructions on notebook organizatior can be found on Page A7.
3. **ALL WRITTEN WORK MUST BE DONE IN BLUE OR BLACK INK, BE TYPED, OR BE A COMPUTER PRINTOUT !**
4. **ALL DIAGRAMS, GRAPHS, AND DATA TABLES MUST CONFORM TO THE STANDARDS OUTLINED ON PAGES A8 AND A9 !**
5 **ALL ASSIGNMENTS CONSISTING OF MORE THAN ONE PAGE MUST BE STAPLED OR SECURED IN AN ESSAY FOLDER; NOT TAPED or TORN AND FOLDED. LOOSE PAGES ARE UNACCEPTABLE !**
6. All homework and assignments will be given a due date. **MOST ASSIGNMENTS** are considered to be **ON TIME IF THEY ARE HANDED IN BEFORE THE TEACHER LEAVES THE SCHOOL ON THE DUE DATE.** However students found working on assignments in class on the due date when they are expected to be concentrating on a different task may have the assignment confiscated and receive a **ZERO MARK. SOME ASSIGNMENTS MAY BE DUE AT THE BEGINNING OF A CLASS PERIOD AND MAY NOT BE ACCEPTED LATE!**
7. **LATE ASSIGNMENTS WILL LOSE 10% OF THE MARK PER DAY LATE** (not per class period). Assignments will not be accepted after they have been marked and returned to the rest of the class and may therefore receive a **ZERO MARK !**
8. **ALL WRITTEN WORK MUST BE IN COMPLETE SENTENCES !** It is expected that you will use proper English usage and spelling. Marks may be lost for excessive poor grammar and for spelling errors. You are expected to become familiar with the vocabulary of a Science laboratory. Spelling and English grammar may be considered in the evaluation of assignments, quizzes, and examinations.
9. **ASSIGNMENTS NOT CONFORMING TO THE STANDARDS LISTED IN THESE SCIENCE DEPARTMENT POLICY STATEMENTS MAY BE PENALIZED, RETURNED UNMARKED TO BE RE-DONE (and COUNTED LATE), or RECEIVE A SCORE OF ZERO !**
10. Most junior Science students will change teachers each term or semester and will be required to hand in their notebook to each teacher at the end of the term. However students will hand in only their paper work for that term. **STUDENTS MUST KEEP THEIR BINDER, DIVIDERS, AND THIS INTRODUCTION SECTION (PAGES A1-A14) THROUGHOUT THE YEAR !** When handing in notebooks at the end of a term, students should secure their work with string, twist ties, or an essay folder. All notebooks can be picked up from the appropriate teachers after the final exams in June. Notebooks not picked up may be destroyed by the teacher.
11. **YOUR TEXTBOOK AND/OR LAB MANUAL IS YOUR RESPONSIBILITY!** Your first term teache will issue your textbook for the year. Be sure that you correctly identify your textbook by name and identification number on your textbook card. Be sure that your name is in your textbook and that your teacher has initialled your name sticker. **YOUR TEXTBOOK IS TO BE RETURNED IN JUNE ONLY TO THE TEACHER THAT ORIGINALLY INITIALLED IT!**
12. Students unable to comply with any of the above guidelines for economic or other reasons should consult with their teacher at the beginning of the course.

EVALUATION POLICY

GENERAL:

1. Students are graded according to their achievement on practical laboratory skills, laboratory reports worksheets, projects, notebook, quizzes, major examinations, and a final examination. At the discretion of each individual teacher, students may be required to correct and/or rewrite some or all assignments and/or examinations in a given unit or course until a predetermined minimum standard is achieved as related to specified intended learning outcomes.
2. The grades of regular academic and enriched Science courses with the exception of Provincially Examinable Subjects (Biology 12, Chemistry 12, Geology 12, and Physics 12) are calculated on the following basis:

   Year's Work ----- 70 - 75%
   Final Exam ------ 25 - 30%

   The Year's Work is generally evaluated on the following basis:

   Laboratory reports, worksheets, projects, and notebooks --- 20 - 30%
   Quizzes and Examinations ---------- 70 - 80%

3. The grades of **Provincially Examinable Subjects** are calculated from the teacher's **SCHOOL MARK** and the **PROVINCIAL EXAMINATION** . The percentage weighting of each component is determined by the Ministry of Education.
4. The grades of all **Adapted Program Courses** including Sc 8AD, Sc 9AD, Sc 10AD, and Science and Technology 11 are generally calculated on the following basis:

   Preparation, participation, drills, laboratory reports, worksheets, projects, and notebook ---------- 50 - 75%
   Quizzes, Examinations, and Final Examination ---------- 25 - 50%

5. Cross grade final examinations are given in all Science courses. All students must write a final examination. There are no recommendations except where a grade 12 student enrolled in a grade 11 Science course is writing a minimum of **THREE** other **PROVINCIAL EXAMINATIONS** and has at least a **C+** average (67 %) in the Science course. Any such recommendations are at the sole discretion of the teacher. A student receiving a recommendation may still write the final examinatior to improve their grade.
6. All examinations are to be written in **BLUE OR BLACK INK** unless otherwise specified. Errors made in marking tests done in pencil may not be reconsidered.
7. All assignments that are to be handed in for grading must be submitted in **BLUE OR BLACK INK, BE TYPED, OR BE A COMPUTER PRINTOUT** ; and must be in complete statements to an acceptable standard of English grammar and usage.
8. Individual teachers may determine appropriate aids that may be used by students during Quizzes and Examinations.
9. Assignments submitted in pencil and/or to an unacceptable standard of organization and/or English grammar and usage may be returned to students unmarked for correction or rewriting and may subsequently be counted late.
10. Letter grades and anecdotal comments related to behavioural objectives are based upon Ministry of Education guidelines and are in accord with the Langley Secondary School's evaluation policy:

    A = 86-100% , B = 73-85% , C+ = 67-72% , C = 60-66% ,
    C- = 50-59% , F = 0-49% , I = INCOMPLETE

ASSIGNMENTS:

1. All students are to be given a due date and time which is clearly indicated to students in advance.
2. Most assignments will be considered on time if they are submitted to the appropriate teacher before that teacher leaves the school on the due date.
3. Individual teachers may require that some assignments be submitted at the start of a class period.
4. **ALL LATE ASSIGNMENTS WILL BE PENALIZED A MINIMUM OF 10% OF THE POSSIBLE SCORE PER SCHOOL DAY** that the assignment is late.
5. Assignments submitted after marked assignments have been returned to the rest of the class may be corrected but also may receive a score of zero at the discretion of the individual teacher.

ABSENTEEISM:

A. ASSIGNMENTS:

1. It is the student's responsibility to indicate **IN WRITING** on the assignment that it is late due to absence.
2. Assignments late due to absence because of illness or compassionate reasons will not be penalized.
3. Individual teachers may adjust assignment due dates for students unable to attend school on the scheduled due date because of extended school sponsored field trips or work experience **PROVIDED THE TEACHER IS CONSULTED IN ADVANCE!**
4. Individual teachers may require a note, phone call, or memorandum from a parent, guardian, or sponsor teacher to verify the nature of an absence resulting in the late submission of assignment.

B. EXAMINATIONS AND QUIZZES:

1. It is the student's responsibility to verify the nature of the absence resulting in a quiz or examination being missed.
2. Quizzes and examinations missed due to absence because of illness or compassionate reasons will nc be penalized **PROVIDED THE INDIVIDUAL TEACHER IS CONSULTED ON OR BEFORE THE DAY THAT STUDENT RETURNS TO SCHOOL!**
3. Quizzes and examinations missed due to school sponsored field trips, work experience, or appointments will not be penalized **PROVIDED THE INDIVIDUAL TEACHER IS CONSULTED IN ADVANCE!**
4. Individual teachers may require a note, phone call, or memorandum from a parent, guardian, or sponsor teacher to verify the nature of an absence resulting in a missed examination or quiz. One single note may be shown to and initialled by all teachers requesting a note, then subsequently turned into the main administrative office.
5. **CONTACT BY NOTE OR PHONE CALL FROM THE PARENT, GUARDIAN, OR SPONSOR TEACHER MUST ACKNOWLEDGE THE FACT THAT THEY ARE AWARE THE STUDENT HAS MISSED AN EXAMINATION OR QUIZ!**

    a. Teachers do not have time to check phone calls made to a secretary in the Administration Office However a phone call or message directed specifically to the appropriate teacher is acceptable **The Science Department phone number is 534-4171, Local 25.**

    b Phone calls, Notes, and Memorandums **MUST MENTION THE WORD "TEST" OR "QUIZ"!**

6. Students absent from an examination or quiz may be required to make up the examination or quiz **ON THE DAY THEY RETURN TO SCHOOL** unless an alternate arrangement is agreed to by consultation with the individual teacher.
7 Students unable to make up a quiz or examination on the day they return to school may be required to verify their reason by note, phone call, or memorandum from a parent, guardian, or other teacher.
8. Students absent for an extended time and/or students who return to school after a quiz or examination has been marked and returned to the rest of the class may be required to write a different make up quiz or examination or may have their mark pro-rated at the discretion of the individual teacher.
9. Students who fail to consult with the individual teacher on or before the day they return to school, fail to make up the quiz or examination, at the agreed time, and/or fail to write a make-up quiz or examination at the agreed time **MAY BE PENALIZED A MINIMUM OF 25% OF THE POSSIBLE SCORE PER SCHOOL DAY** that they fail to meet any of these obligations.
10. Students who fail to consult with the individual teacher concerning a missed quiz or examination, fail to make up the quiz or examination, and/or fail to write a make-up quiz or examination when directed to do so **WILL RECEIVE A SCORE OF ZERO !**

HOLIDAYS:

1. Students must consult individual teachers **IN ADVANCE** to determine which assignments can be made up and/or submitted late.
2. Individual teachers may determine that some assignments cannot be made up or submitted late. These assignments will be evaluated under the same conditions as if the student were present at school and b subjected to the appropriate penalties.
3. Students must consult individual teachers both **IN ADVANCE** and on **THE DAY THEY RETURN TO SCHOOL** to determine which quizzes and/or examinations may be made up or written late.
4. **INDIVIDUAL TEACHERS MAY DETERMINE THAT SOME OR ALL EXAMINATIONS AND QUIZZES CANNOT BE MADE UP AND FURTHER MAY DETERMINE THAT THE STUDENT MAY RECEIVE A SCORE OF ZERO !**
5. Students absent due to holidays should not expect individual teachers to provide tutorial time other than consultation regarding a listing of assignments, quizzes and/or examinations missed complete to the best of the ability of the individual teacher at the time of the consultation.
6. **STUDENTS ABSENT DUE TO HOLIDAYS MAY THEREFORE HAVE THEIR COURSE MARK NEGATIVELY AFFECTED BY THEIR ABSENCE.**

ACCOUNTABILITY :

1. **ALL SCIENCE STUDENTS WILL BE REQUIRED TO SIGN A STATEMENT THAT THEY HAVE READ AND UNDERSTOOD THE SCIENCE DEPARTMENT EXPECTATIONS, EVALUATION POLICY, RULES FOR NOTEBOOK ORGANIZATION, RULES AND PROCEDURES FOR SCIENTIFIC GRAPHS AND DIAGRAMS, RULES AND PROCEDURES FOR SCIENTIFIC DATA TABLES, RULES AND PROCEDURES FOR WRITING A FORMAL LABORATORY REPORT, AND SAFETY AND LABORATORY TECHNIQUES FOUND ON PAGES A1-A12.**

2. **ALL SCIENCE STUDENTS MUST ANNUALLY ACHIEVE A SCORE OF 100 % ON THE SCIENCE SAFETY EXAMINATION AND ALSO HAND IN A SAFETY CONTRACT SIGNED BY THEMSELVES AND A PARENT OR GUARDIAN. STUDENTS FAILING TO COMPLY WITH THIS REQUIREMENT WILL BE REFUSED PERMISSION TO PARTICIPATE IN OR BE EVALUATED ON ANY SCIENCE LABORATORY ACTIVITIES !**

SCIENCE NOTEBOOK ORGANIZATION

1. **IT IS REQUIRED THAT ALL JUNIOR STUDENTS (Science 8, 9, 10) SET UP THEIR NOTEBOOKS IN A THREE RING BINDER OR SIMILAR STYLE IN THE FORMAT OUTLINED BELOW!** Regular notebook inspections will be made and a considerable portion of the mark will be allotted for notebook organization.
2. It is highly recommended and may be required that students in senior courses also follow this format. However it is expected that senior students accept complete responsibility for the organization of their notebooks. No inspections will be made, nor will marks be allotted unless specified by the individual teachers.
3 **YOUR PERFORMANCE ON EXAMINATIONS AND QUIZZES WILL GREATLY DEPEND ON HOW WELL YOUR NOTEBOOK IS ORGANIZED !**
4. Your notebook should be organized into the following **SEVEN SECTIONS**, each separated by a **DIVIDER**, and each preceded by an **INDEX PAGE**. Index Pages are available on **PINK** paper from any Science teacher. The pages within each section should be clearly numbered consecutively:

   A. **INTRODUCTION:**
   Science Department Policy handouts Pages A1-A12 and Safety Test guide Pages A13-A14. These are to be retained by students **ALL YEAR !**

   B. **NOTES AND HANDOUTS:**
   Class notes; notes made from textbooks; diagrams, graphs, and tables handed out in class to supplement notes; Pages B1, B2,---

   C. **DRILLS AND EXERCISES:**
   Practise drills, class exercises, homework questions or exercises, any other assigned work that is not counted for marks; Pages C1, C2, ---

   D. **WORKSHEETS:**
   Handout worksheets counted for marks **WITH ALL ERRORS CORRECTED !** Pages D1, D2,---

   E. **LABORATORY REPORTS:**
   Formal laboratory reports **WITH ALL ERRORS CORRECTED !** Pages E1. E2, ---

   F. **TESTS AND QUIZZES:**
   WITH ALL ERRORS CORRECTED ! Pages F1, F2, ---

   G. **VOCABULARY LIST:**
   Brief definitions of key terms from class notes, laboratory reports, and/or textbook with page reference back to appropriate source. Pages G1, G2, ---

5. **INDEX PAGES SHOULD BE SET UP AS FOLLOWS** (MARK column needed for Sections D, E, and F only):

DATE	TITLE	MARK	PAGE

RULES AND PROCEDURES FOR SCIENTIFIC DIAGRAMS AND GRAPHS

ALL DRAWINGS MUST :

1. Be done on **CLEAR BLANK UNLINED PAPER** unless otherwise specified.
2. Be done in **PENCIL** or **COMPUTER PRINTOUT** , never in ink.
3. Have your **FULL NAME** , **BLOCK**, and **DATE**:

   DATE: **TOP LEFT** corner
   BLOCK: **TOP LEFT** corner immediately beneath the date
   NAME: **TOP RIGHT** corner

4. Have a **TITLE** and a **NUMBER CENTERED** at the **TOP OF THE PAGE** .

   NUMBER: in **ROMAN NUMERALS** .
   TITLE: clearly indicating the content of the diagram.

5. Occupy at least **TWO-THIRDS OF THE PAGE** .
6. Have **LABELS PRINTED** in a **STRAIGHT COLUMN** down the **RIGHT SIDE** of the diagram unless otherwise specified.
7. Have **STRAIGHT HORIZONTAL LINES** between labels and the object to which the label refers. Labe lines **MUST TOUCH** the appropriate object and must **NOT CROSS** other label lines.
8. Not be coloured or shaded except where specifically instructed to do so.

ALL GRAPHS MUST :

1 Be done on **GRAPH PAPER** or **COMPUTER PRINTOUT** unless otherwise specified.
2. Be done in pencil, ink, computer printout, or combination at the discretion of each individual teacher
3. Have your **FULL NAME** , **BLOCK**, and **DATE**:

   DATE: **TOP LEFT** corner
   BLOCK: **TOP LEFT** corner immediately beneath the date
   NAME: **TOP RIGHT** corner

4. Have a **TITLE** and a **NUMBER CENTERED** at the **TOP OF THE PAGE** .

   NUMBER: in **ROMAN NUMERALS** .
   TITLE: in the form **"DEPENDENT VARIABLE vs. INDEPENDENT VARIABLE".**

5. Occupy the **MAXIMUM POSSIBLE SPACE AVAILABLE** taking the scale and particular data to be plotted into account.
6. Have a **LABEL** and **UNITS** printed along each axis.
7. Have plotted curves labelled along the curve in preference to using a legend or key unless otherwise specified.

RULES AND PROCEDURES FOR SCIENTIFIC DATA TABLES

ALL DATA TABLES MUST :

1. Be done in **BLUE OR BLACK INK** , be **TYPED** , or be a **COMPUTER PRINTOUT** .

2. Be **BOXED** both vertically and horizontally with **STRAIGHT LINES** .

3. Have numbers entered in **STRAIGHT VERTICAL COLUMNS** .

4. Have a **TITLE** and a **NUMBER CENTERED** at the **TOP OF THE TABLE** .

   NUMBER: in **ROMAN NUMERALS** .
   TITLE: clearly indicating what information is contained in the table.

5. Have the **INDEPENDENT VARIABLE(S) IN THE LEFT COLUMN(S)** and the **DEPENDENT VARIABLE(S) IN THE RIGHT COLUMN(S)** whenever appropriate.

6. Have a **LABEL** at the **TOP OF EACH COLUMN !**

7. Have a **UNIT WRITTEN ONCE AND ONLY ONCE AT THE TOP OF EACH COLUMN !**
   Units are **NOT TO BE REPEATED** after each number in a column.

8. Have all numbers conform to the number of significant figures justified by the instruments or measuring device used to obtain the data. When not otherwise specified by the manufacturer all instruments and measuring devices should be read to a precision of **ONE HALF OF THE SMALLEST DIVISION** shown on the instrument.

Metric Ruler	± 0.5 mm	(one decimal)
Thermometer	± 0.2 °C	(one decimal)
Triple Beam Balance	± 0.1 g	(one decimal)
Centogram Balance	± 0.01 g	(two decimals)
10 mL graduated cylinder	± 0.1 mL	(one decimal)
25 mL graduated cylinder	± 0.3 mL	(one decimal)
100 mL graduated cylinder	± 0.5 mL	(one decimal)
Buret	± 0.05 mL	(two decimals)
Wall Clock	± 0.5 sec	(one decimal)

9. Not begin on one page of a laboratory report and finish on the next except in those cases where the length of the table makes this impossible to avoid.

RULES AND PROCEDURES FOR WRITING A FORMAL LABORATORY REPORT

1. All written statements must be in **COMPLETE SENTENCES** to an acceptable standard of English grammar and usage.
2. All formal laboratory reports must be written in **BLUE OR BLACK INK** , be **TYPED** , or be a **COMPUTER PRINTOUT** .
3. All quantitative and where possible qualitative results should be organized into tables. All data tables must conform to the "Rules and Procedures for Scientific Data Tables" Page A9.
4. All diagrams and graphs must conform to the "Rules and Procedures for Scientific Diagrams and Graphs" Page A8.
5. Each section of the laboratory report must have at least **ONE SPACE** above and below its title.
6. **THE EXPERIMENT NUMBER, TITLE, SECTION TITLES, GRAPH NUMBERS AND TITLES, TABLE NUMBERS AND TITLES, AND DIAGRAM NUMBERS AND TITLES MUST BE NEATLY UNDERLINED !**
7. **ALL FORMAL LABORATORY REPORTS MUST FOLLOW THE FORMAT OUTLINED BELOW:** Individual teachers may choose to require that particular titles be used for each section and/or may choose to eliminate some sections for some or all laboratory reports to meet the needs of each particular experiment.

DATE: top left corner

BLOCK: top left corner beneath date

EXPERIMENT NUMBER
top center of page

TITLE
top center of page and at least one space below number

FULL NAME: top right corner

PARTNER(S) FULL NAME(S): top right corner beneath name

OBJECT, OBJECTIVE, PROBLEM, PURPOSE or INTRODUCTION:
A brief statement of the problem to be investigated.

HYPOTHESIS:
an educated prediction of the results of the experiment.

APPARATUS/MATERIALS/PROCEDURE:
A page reference to the laboratory manual or to a handout direction sheet plus a listing of any changes unless otherwise specified. A diagram of the apparatus and materials may also be required for some experiments.

OBSERVATIONS: QUALITATIVE descriptions in point form and/or organized where possible onto table unless orherwise specified.

DATA: QUANTITATIVE results organized where possible into tables.

DISCUSSION and/or CONCLUSION :
1. Graphs, Diagrams, and/or Tables that interpret the recorded data.
2. Answers to questions and/or problems assigned from the textbook, laboratory manual, handout, or other source.
3. A **CONCLUSION** statement pertaining to the orginal problem and hypothesis that describes **WHAT HAS BEEN LEARNED** from the observations and/or data collected.

SOURCES OF ERROR :
A listing of instrumental uncertainties and other problems which may affect the results of the experiment but which are **NOT CORRECTABLE** within the limitations of the apparatus, materials, and procedure available.

LABORATORY TECHNIQUE

1. **NEVER PERFORM UNAUTHORIZED EXPERIMENTS. NO LABORATORY WORK MAY BE CARRIED ON WITHOUT THE TEACHER'S EXPRESSED PERMISSION !**
2. Behave quietly in laboratory classes. Be prepared to stop quickly. Be prepared to listen. Never rush! Horse-play will not be tolerated.
3. Avoid carrying hot equipment or dangerous chemicals through a group of students. Avoid crowding at your work location.
4. The most common injury to students is a burn caused by touching objects that have been heated. Determine whether an object is hot by bringing the back of your hand close to it.
5. Learn to light a bunsen burner correctly. The burner should be lit with the air vent almost shut off. A hotter flame can then be obtained by opening the air vent once the burner has been lit. Keep your head back from the burner during this process, especially if your hair is long. Be careful with loose clothing, bead neklaces, and similar jewellery.
6. Never leave an almost colourless bunsen flame unattended. If the burner must be kept lit, shut off th air vent, decrease the gas supply to make the flame look like a candle flame, and move the burner away from the edge of the bench.
7. Hold hot crucibles with crucible tongs. Place hot crucibles or other hot apparatus on a hot pad or on the base of a ring stand. **NEVER PLACE HOT OBJECTS DIRECTLY ON TABLE OR COUNTER SURFACES !**
8. Place broken glassware in the "Broken Glassware Container" provided. Be especially careful not to leave broken glassware on benches or in sinks.
9. Read the label on a container before using any chemicals for an experiment. If a bottle is not labeled, don't use it, or ask your teacher about it.
10. Never return unused solutions to stock containers or reagent bottles unless specifically instructed to do so by your teacher.
11. Mop up any spills immediately. Wash out your beakers and test tubes after an experiment. Return the equipment to its proper place or as instructed by your teacher.
12. Generally, soluble chemisclas may be disposd of after an experiment by pouring them down the sink with water running. Your teacher will direct that certain toxic chemicals (lead solutions) must be poured into a special container. Place solids (litmus paper, wood splints, metals) in the waste basket, not in the sink.
13. Always waft odours toward your nose with your hand. Never breathe them directly from the bottle, beaker, or test tube.
14. Nylon and other synthetic clothing is an especially dangerous fire hazard and should not be worn during experiments involving flammable chemicals or use of a bunsen burner.
15. Mercury vapours are highly toxic. Never handle mercury with your hands. Mercury will dissolve and ruin gold jewellery on contact!
16. When diluting concentrated acids carefully add, in a series of small portions, the **ACID TO THE WATER**. Always wear full face and body protection when diluting concentrated acids.
17. **SAFETY GOGGLES MUST BE WORN AT ALL TIMES DURING LABORATORY EXPERIMENTS** unless your teacher has determined that it is safe to perform the experiment without face protection. Laboratory coats and/or gloves must be worn whenever you are directed to do so by your teacher.
18. No chemicals, apparatus, or other supplies will be lent, given, or sold to any students under any circumstances!

SAFETY TECHINQUES

1. Never taste chemicals or drink from a beaker in the laboratory.
2. Beware of what appears to be drops of water on laboratory benches. They may be corrosive liquids.
3. Treat a test tube when you are heating it as a loaded gun. Never point it in anyone's direction. Hold it at an angle and heat it from the top down. Never have it more than half full while you are heating it. Keep the test tube moving in the flame.
4. When you are removing an electrical plug from its socket, pull the plug and not the cord. Bare electrical wires are extremely dangerous.
5. Report sharp edges on mirrors, prisms, glass plates, metal plates, etc. to the teacher so that they may be removed. Do not use glass tubing that has jagged edges, or edges that have not been fire polished.
6. Keep equipment away from the edge of the table. When leaving equipment push it away from the edge of the work bench.
7. Wild animals may carry harmful organisms or parasites that produce disease. Be very careful when handling specimens, either alive or dead. Report any bites immediately to your teacher.
8. Students will not be permitted in the Science laboratory without appropriate footwear.
9. Be aware of the location and operation of the fire extinguisher, eye wash station, fire blanket, and fume chamber, and first aid kit. Use these only when your teacher is not able to attend an emergency in the laboratory quickly. Also be aware of the designated escape route and meeting area in which your class is to assemble in the event that evacuation of your Science classroom is required.
10. Wear goggles when instructed to do so by your teacher during experiments.
11. Wash your hands after handling chemicals.
12. If an acid or some caustic material touches your skin, rinse the area with lots of water. If it touches your eye, run water from the eye wash or tap over your eye without interruption for ten minutes.
13. If you spill any acid on your skin or clothing wash it off immediately with plenty of water, then inform your teacher.
14. Know the location of the closest fire alarm and do not hesitate to use it if you see a fire or poisonous vapour threatening (such as bromine). The first concern must be to get students out of the building. When the fire alrm rings, shut off all burners. The last person out of the room should close the door and report to the teacher that he/she was the last one out.
15. Report all injuries to the teacher immediately regardless of how minor they may appear to be.
16. Do not eat in the laboratory except in the areas designated by your teacher.
17. Do not sit on benches, tables, or counters used for experiments.
18. Never enter a storeroom unless your teacher has given you permission.
19. The Explosives Act of Canada makes the manufacture of explosives unlawful except under proper licence.

LANGLEY SECONDARY SCHOOL

SCIENCE DEPARTMENT

SAFETY TEST GUIDE

NOTE: The inability to achieve a score of 100 % on this test is an indication that you are insufficiently familiar with the rules and procedures for safe laboratory conduct. You will consequently be denied permission to participate in any further laboratory activity until you rewrite this test and achieve a score of 100 % .

STUDENTS ARE EXPECTED TO BE ABLE TO FIND ON A MAP OF THEIR SCIENCE CLASSROOM THE EXACT LOCATION OF EACH OF THE FOLLOWING SAFETY ITEMS:

1. The fire extinguisher.
2. The eye wash station.
3. The fire blanket.
4. The broken glass container.
5. The sand bucket.

STUDENTS ARE EXPECTED TO BE ABLE TO FIND ON A MAP OF LANGLEY SECONDARY SCHOOL THE EXACT LOCATION OF:

6. The fire alarm that your instructor has told you is nearest to your Science classroom.
7. The position where your class has been instructed to meet in case of a fire drill or fire.
8. The first aid kit that your instructor has told you is nearest to your Science classroom.

STUDENTS ARE EXPECTED TO BE ABLE TO STATE THE CORRECT PROCEDURE FOR DEALING WITH EACH OF THE FOLLOWING SITUATIONS:

9. Heating a chemical in a test tube.
10. Testing to see whether an object is hot.
11. A spill of a corrosive or caustic chemical on your skin.
12. Return of extra unused chemicals to your instructor.
13. Broken glassware.
14. A mercury spill.
15 Lighting a bunsen burner.
16. Eating after working in a Science laboratory.
17. A minor skin burn.
18. A corrosive or caustic chemical entering your eye.
19. A person's clothing catching on fire.
20. Handling and mixing chemicals.
21. Mixing an acid with water.
22. A hot object that must be left unattended.
23. A reaction involving poisonous or corrosive gases.
24. A person being electrocuted.

STUDENTS ARE EXPECTED TO BE ABLE TO STATE:

25. The proper rules of conduct in a Science classroom.
26. The nature of the most common injury in a Science classroom.
27. The nature of safety hazard associated with Hazard Labels.

HAZARD LABELS

HAZARD LABELS

CLASS A : COMPRESSED GAS

Contents under high pressure. Cylinder may explode or burst when heated, dropped, or damaged.

CLASS B : FLAMMABLE AND COMBUSTIBLE

May catch fire when exposed to heat, spark, or flame. May burst into flames.

CLASS C : OXIDIZING MATERIAL

May cause fire or explosion when in contact with wood, fuels, or other combustible material.

CLASS D1 : POISONOUS AND INFECTIOUS

IMMEDIATE SERIOUS TOXIC EFFECTS

Poisonous substance. A single exposure may be fatal or cause serious or permanent damage to health.

CLASS D2 : POISONOUS AND INFECTIOUS

OTHER TOXIC EFFECTS

Poisonous substance. May cause irritation. Repeated exposure may cause permanent damage.

CLASS D3 : POISONOUS AND INFECTIOUS

BIOHAZARDOUS INFECTIOUS MATERIALS

May cause disease or serious illness. Drastic exposure may result in death.

CLASS E : CORROSIVE OR CAUSTIC MATERIAL

Can cause burns to eyes, skin, or respiratory system.

CLASS F : DANGEROUSLY REACTIVE MATERIAL

May react violently causing explosion, fire, or release toxic gases, when exposed to light, heat, vibration, or extreme temperatures.