Langley Secondary School
Course Outline

Course Title/Teacher

Science 08 Accelerated / G. Disney

Course overview or summary

Science 08 Accelerated provides the student with a general overview of Science but at an accelerated pace. Students are provided with opportunities to develop positive attitudes toward science and to develop the skills and processes of science. Many opportunities will also be provided for in depth study beyond the prescribed learning outcomes. In order to accommodate acceleration in mathematics students will study for approximately two months Geometry 08/09. Consequently some of the prescribed learning outcomes for Science 08 must be met of time necessity through student projects completed outside of class time.

Prescribed Learning Outcomes

It is expected that students will meet the following prescribed learning outcomes:

A. Applications of Science

- Identify dangers in particular procedures and equipment, taking responsibility for their safe and accurate use.
- Plan appropriate procedures to test hypotheses and predictions.
- Identify variables responsible for changes in systems.
- Use models to demonstrate how systems operate.
- Use graphs and simple statistics to analyze data.
- Use information and conclusions as a basis for further comparison, investigations, or analyses.
- Critique information presented in a variety of media.
- Analyze the costs and benefits of making alternative choices that impact on a global problem.
- Describe how scientific principles are applied to technology.

B. Life Sciences

- Compare the roles and interrelationships of the senses in interpreting the environment.
- Describe the environmental conditions in the major biomes.
- Compare and contrast how various organisms have adapted to the conditions in each biome and how these organisms interact with each other.
- Assess different impacts of using renewable and non-renewable natural resources.
- Compare and contrast the practical, ethical, and economic dimensions of population growth and polluted environments.
- Relate the extraction and harvest of earth's resources to sustainability and reduction of waste.
- Evaluate how major natural events and human activity can affect local and global environments and climate change.
- Critique the hypothesis that the earth is a living organism.

C. Physical Sciences

- Use the kinetic particle model to describe the structure and properties of various states of matter.
- Categorize a selection of materials as elements, compounds, or mixtures.
- Assess the properties of materials in terms of their effectiveness for particular uses.
- Relate the derivation of symbols to the names of the elements.
- Give examples to show that the elements are grouped on the Periodic Table according to similar properties.
- Distinguish among the various forms of energy.
- Demonstrate and explain various forms of energy transfer and relate them to daily life.
- Demonstrate and explain how basic concepts relating to heat and light are used in common applications.
- Distinguish among reflection, absorption, radiation, and transmission.
- Compare and contrast reflection and refraction.
- Demonstrate and explain how colour is perceived in different environments.

D. Earth and Space Science

- Demonstrate how properties can be used to distinguish among minerals.
- Describe the major processes by which rocks are formed and classified.
- Compare and contrast weathering, erosion, and deposition.

Outline of course content and skills

Topics:		**Time allotment**
	SCIENCE SECTION	
UNIT I:	INTRODUCTION A. Science Lab Safety B. Scientific Method and Controlled Experiments C. Measurement and Graphing D. Application of Scientific Principles to Technology	8 weeks
UNIT II:	CHEMISTRY & PHYSICS (INVESTIGATING MATTER) A. Properties of Matter and Energy B. Kinetic Molecular Theory of Matter C. Classification of Matter (elements, compounds, mixtures) D. Physical Separation of Mixtures E. Classification of Elements and the Periodic Table	8 weeks
UNIT III:	BIOLOGY (LIFE FUNCTIONS) A. Responses of Animals to their Environment B. The Senses (sight, hearing, taste, touch, smell) C. The Nervous System and the Brain D. The Animal Kingdom (especially Annelid worms)	10 weeks
UNIT IV:	BIOLOGY (ECOLOGY) A. Major Earth Biomes B. Adaptations of Organisms to their Environment C. Renewable and Non-renewable Resources D. Population Growth and Pollution	4 weeks (project based)
	GEOMETRY SECTION	
UNIT V:	GEOMETRY 08/09 A. Properties of Angles and Parallel Lines B. Triangles, Quadrilaterals, and Polygons C. Geometric Constructions D. Geometric Proofs E. Congruent and Similar Triangles F. Properties of Polygons	8 weeks

Procedures for Assessment and Evaluation

A detailed set of Science Department Policy Statements is required to be kept in the front of each student's notebook for all Science courses. These policies include specific expectations and obligations for students and parents in regard to absenteeism due to illness, appointments, school sponsored field trips and athletic activities, as well as parent approved unscheduled holidays. They also detail specific safety expectations.
All students enrolled in all Science courses are required by September 30 of each school year to pass a Safety Examination with a score of 100 % and to return to their Science teacher a Safety Contract read and signed by both the student and parent. Students unable to fulfil this obligation are prohibited from participation in any laboratory activities until these requirements are met. An "LSS SCIENCE SAFETY" stamp in COLOURED INK on the front index page of the student's notebook is annual certification that these safety requirements are complete.

Students are required to sign the front page of this set of policy statements indicating that they have been read and understood ! Parents and students are strongly encouraged to review these policies together.

Students are graded according to achievement in the following, each indicating growth in the areas of knowledge, skills, processes, and attitudes of or about science:

Safety in the science laboratory and practical laboratory skills
Formal laboratory reports
Assignments, worksheets, projects, and notebook organization
Quizzes, major examinations, and a final examination

The grades of all regular academic and enriched Science courses with the exception of Provincially Examinable courses are typically calculated on the following basis:

Class work	25-30 %
Quizzes and Exams	70-75 %

All students in all Science courses are required to write a final examination !

Important information specific to this course

Science 08 Accelerated covers the prescribed learning outcomes at a considerably faster pace and in greater depth than the regular course. Consequently high motivation and good work habits are essential. Students and parents may access my Chemistry Information Web Site located at http://www.geocities.com/gwdisney/CHEMINFOHOMEPAGE.html

Using a modified mastery learning approach students will be denied permission to attempt any test or quiz for which they have not completed all preparatory assignments.

Students are permitted to rewrite <u>one quiz</u> during each term.
Students are permitted to rewrite <u>one major examination</u> during the year.

Students choosing to repeat an examination or quiz must turn in prior to rewriting a complete set of. The repeat version of the quiz or examination is not the same as the original version but examines the same concepts. It must be written outside of regular class time.

For further information please contact me at telephone # 604-534-4171 local 250 or by email at gdisney@sd35.bc.ca