



**CARSON GRAHAM  
SECONDARY**

## **COURSE OUTLINE – DP BIOLOGY 11/12**

---

### **Course Description:**

IB Biology is a two-year course of study designed to provide students with an understanding of the important underlying biological themes through a focus on acquiring a body of factual knowledge. Four basic biological concepts run through this body of knowledge: the theme of unity and diversity; the relationship between form and function, the occurrence of interaction and interdependence; and, the theories of continuity and change. The course aims to develop understandings that connect factual, procedural, and metacognitive knowledge and recognizes the importance of connecting learning with conceptual understanding.

---

### **Assessment Objectives:**

The assessment objectives for biology, chemistry and physics reflect those parts of the aims that will be formally assessed either internally or externally. These assessments will centre upon the nature of science. It is the intention of these courses that students are able to fulfill the following assessment objectives:

1. Demonstrate knowledge and understanding of:
  - a. facts, concepts, and terminology
  - b. methodologies and techniques
  - c. communicating scientific information.
  
2. Apply:
  - a. facts, concepts, and terminology
  - b. methodologies and techniques
  - c. methods of communicating scientific information.
  
3. Formulate, analyse and evaluate:
  - a. hypotheses, research questions and predictions
  - b. methodologies and techniques
  - c. primary and secondary data
  - d. scientific explanations.
  
4. Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

**Course Syllabus:** The DP biology curriculum is built on four broad organizing themes, each comprising two concepts, together with four levels of organization.

---

A: Unity and diversity  
B: Form and function  
C: Interaction and interdependence  
D: Continuity and change

**Levels of organization within the four units are: Molecules, Cells, Organisms and Ecosystems**

---





## CARSON GRAHAM SECONDARY

### Assessment Overview & Timeline:

Practical Lab work

Collaborative Science Project

One Personal Investigation (10 hours)

2 Papers/External Assessment (DP EXAM)

- Paper 1A includes multiple-choice questions on the syllabus and paper
- Paper 1B includes data-based questions that are syllabus related, addressing all themes.
- Paper 2A includes data-based questions from unfamiliar contexts and short-answer questions.
- Paper 2B includes extended-response questions that focus on holistic knowledge and understanding of a wide range of concepts and understandings.

### BC Ministry Requirements:

In line with the philosophy of the IB Diploma Programme, students will be assessed against the course objectives at their current level of achievement on the 7-point scale throughout the course. As required by the Ministry of Education, students will also be given a percentage converted from the IB level that reflects their achievement in relation to the corresponding BC Curriculum course.

---

### IB Concepts and Considerations

- **THEORY OF KNOWLEDGE (TOK):** Students will reflect on the nature of knowledge in Biology, and on how we know what we claim to know throughout the course.
- **CREATIVITY, ACTIVITY, SERVICE (CAS):** Students will be encouraged to consider ways they can take meaningful action in their CAS activities connected to topics learned in Biology throughout the course.
- **APPROACHES TO LEARNING (ATL):** **Thinking, Social, Communication, Research, and Self-Management** skills will be developed and encouraged throughout the course.
- **LEARNER PROFILE ATTRIBUTES (LP):** Connections will be made to the IB Learner Profile Attributes (**Inquirer, Knowledgeable, Thinker, Communicator, Principled, Open-minded, Caring, Risk-taker, Balanced, and Reflective**) throughout the course. Students are encouraged to embody these traits as IB learners.

### Academic Honesty and Personal Integrity

The faculty at Carson Graham expects our students to complete academic and nonacademic work that is authentic and respectful of intellectual property. As diploma candidates, you are expected to adhere to the school's Policy for Academic Integrity, and also to the principles and practices set out in the IB document, Diploma Programme: Academic Honesty, 2011. Ignorance of the standards related to academic honesty and student integrity is not an excuse for dishonesty, plagiarism and malpractice. You are expected to familiarize yourself with the policy.

In accordance with this policy, students can use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Dall-E 2) on assignments in this course if instructor permission is obtained in advance. Unless permission is given to use the aforementioned tools, each student is expected to complete each assignment without substantive assistance from others, including automated tools.

<http://www.sd44.ca/school/carson/Documents/Carson%20Graham%20Policy%20for%20Academic%20Honesty%20June%202015.pdf>





## CARSON GRAHAM SECONDARY

### Grade Descriptors:

#### Grade 7

Displays comprehensive knowledge of factual information in the syllabus and a thorough command of concepts and principles. Selects and applies relevant information, concepts and principles in a wide variety of contexts. Analyses and evaluates quantitative and/or qualitative data thoroughly. Constructs detailed explanations of complex phenomena and makes appropriate predictions. Solves most quantitative and/or qualitative problems proficiently. Communicates logically and concisely using appropriate terminology and conventions. Shows insight or originality.

Demonstrates personal skills, perseverance and responsibility in a wide variety of investigative activities in a very consistent manner. Works very well within a team and approaches investigations in an ethical manner, paying full attention to environmental impact. Displays competence in a wide range of investigative techniques, pays considerable attention to safety, and is fully capable of working independently.

#### Grade 6

Displays very broad knowledge of factual information in the syllabus and a thorough understanding of concepts and principles. Selects and applies relevant information, concepts and principles in most contexts. Analyses and evaluates quantitative and/or qualitative data with a high level of competence. Constructs explanations of complex phenomena and makes appropriate predictions. Solves basic or familiar problems and most new or difficult quantitative and/or qualitative problems. Communicates effectively using appropriate terminology and conventions. Shows occasional insight or originality.

Demonstrates personal skills, perseverance and responsibility in a wide variety of investigative activities in a very consistent manner. Works well within a team and approaches investigations in an ethical manner, paying due attention to environmental impact. Displays competence in a wide range of investigative techniques, pays due attention to safety and is generally capable of working independently.

#### Grade 5

Displays broad knowledge of factual information in the syllabus. Shows sound understanding of most concepts and principles and applies them in some contexts. Analyses and evaluates quantitative and/or qualitative data competently. Constructs explanations of simple phenomena. Solves most basic or familiar problems and some new or difficult quantitative and/or qualitative problems. Communicates clearly with little or no irrelevant material.

Demonstrates personal skills, perseverance and responsibility in a variety of investigative activities in a fairly consistent manner. Generally works well within a team and approaches investigations in an ethical manner, paying attention to environmental impact. Displays competence in a range of investigative techniques, pays attention to safety and is sometimes capable of working independently.

#### Grade 4

Displays reasonable knowledge of factual information in the syllabus, though possibly with some gaps. Shows adequate comprehension of most basic concepts and principles but with limited ability to apply them. Demonstrates some analysis or evaluation of quantitative or qualitative data. Solves some basic or routine problems but shows limited ability to deal with new or difficult situations. Communicates adequately although responses may lack clarity and include some repetitive or irrelevant material.

Demonstrates personal skills, perseverance and responsibility in a variety of investigative activities, although displays some inconsistency. Works within a team and generally approaches investigations in an ethical manner, with some attention to environmental impact. Displays competence in a range of investigative techniques, pays some attention to safety although requires some close supervision.

#### Grade 3

Displays limited knowledge of factual information in the syllabus. Shows a partial comprehension of basic concepts and principles and a weak ability to apply them. Shows some ability to manipulate data and solve basic or routine problems. Communicates with a possible lack of clarity and uses some repetitive or irrelevant material.

Demonstrates personal skills, perseverance and responsibility in some investigative activities in an inconsistent manner. Works within a team and sometimes approaches investigations in an ethical manner, with some attention to environmental impact. Displays competence in some investigative techniques, occasionally pays attention to safety, and requires close supervision.

#### Grade 2

Displays little recall of factual information in the syllabus. Shows weak comprehension of basic concepts and principles with little evidence of application. Exhibits minimal ability to manipulate data and little or no ability to solve problems. Offers responses which are often incomplete or irrelevant.

Rarely demonstrates personal skills, perseverance or responsibility in investigative activities. Works within a team occasionally but makes little or no contribution. Occasionally approaches investigations in an ethical manner, but shows very little awareness of the environmental impact. Displays competence in a very limited range of investigative techniques, showing little awareness of safety factors and needing continual and close supervision.

#### Grade 1

Recalls fragments of factual information in the syllabus and shows very little understanding of any concepts or principles. Rarely demonstrates personal skills, perseverance or responsibility in investigative activities. Does not work within a team. Rarely approaches investigations in an ethical manner, or shows an awareness of the environmental impact. Displays very little competence in investigative techniques, generally pays no attention to safety and requires constant supervision.

