

## SCIENCE 10 COURSE OUTLINE SPRING 2019

The Science 10 course is designed to allow students the opportunity to further develop their scientific knowledge and critical thinking abilities. This course is divided into four **BIG IDEAS** :

<b>DNA</b> is the basis for the diversity of living things.	Energy change is required as atoms rearrange in <b>chemical processes</b> .	<b>Energy</b> is conserved, and its transformation can affect living things and the environment.	The formation of the <b>universe</b> can be explained by the Big Bang Theory.
---	---	--	---

### COURSE UNITS:

There are four units covered in the Science 10 curriculum. Weighting for each unit is listed below:

Strand	Topic	Value
Applications of Science	Lab and Process skills	Integrated throughout each unit
Life Science (Biology)	Genetics	<b>30%</b>
Physical Science (Physics)	Energy	<b>20%</b>
Physical Science (Chemistry)	Chemical Reactions	<b>30%</b>
Space Science	Astronomy	<b>20%</b>

**TEXT: BC Science 10 Connections Nelson, 2018**

**NOTE: Students are responsible for the care of their texts. Charges will be issued to any student who has lost or damaged his/her text. Contact the office for replacement cost of this text.**

**WEEKLY SCHEDULE:** Six classes will be held in a normal school week. Students should plan on a **minimum of one to three hours a week outside of class time** for the completion of assignments, Mind Maps, and general review. Homework will be assigned on a **daily basis**. Students should ensure **they know** when assignments are due. Due dates will be posted in the classroom.

**WEEKLY HANDOUTS:** Other reference materials will be provided regularly. **Students** should ensure they collect all handouts which were provided during their absence(s).

**COURSE ASSESSMENT:** Throughout the course, various assignments will be given to the class to check for understanding of course material. Written assignments, quizzes, chapter questions, labs, projects and oral presentations will make up a substantial portion of the total grade for each student.

**LABS:** There will be both formal and completion type labs in this course. Formal labs will be written up in standard scientific format, as outlined in class.

### **TESTS AND EXAMS MUST BE WRITTEN ON THE SCHEDULED DATES**

**Student absence due to Work Experience/Extra-curricular/Curricular activities please take note of the following:**

- 1. You are expected to be in class whenever a test is scheduled. Extracurricular and outside curricular commitments may cause you to miss a test. In cases of a legitimate absence, you will write a retest over lunch on your return.**
- 2. If the activity will cause you to miss a scheduled lab, you must notify the teacher in advance.**

**LAB WRITE-UPS AND WRITTEN ASSIGNMENTS:** Any submitted lab or assignment which is not complete or legible will be returned. You will be asked to complete the assignment or rewrite it.

**STUDENT PROGRESS:** As assignments and tests are completed, marks will be updated and posted in the science room by student number.

**TEST PREPARATION:** Please seek help whenever you require concepts clarified. Also, I am willing to help you refine your test taking strategies which will help better reflect your true understanding of course material. This can be done during class or during my office hours.

**EVALUATION:** Knowledge and understanding of ongoing lecture material will be evaluated by a series of formative unit tests during the course. These tests will be held at the beginning of designated classes. Students will have the opportunity to **rewrite one unit test each term. Students must correct their test, and conference with the teacher, before writing the retest. The student will write the retest when the instructor and student are confident that they can demonstrate their best performance.**

<b>COURSE WEIGHTING:</b>	<b>TERM 1: .....</b>	<b>40%</b>	<b>· Unit/Chapter tests</b>	<b>60 %</b>
			<b>· Performance tasks</b>	<b>30%</b>
			<b>· Mind maps</b>	<b>10%</b>
	<b>TERM 2: .....</b>	<b>40%</b>	<b>· Unit/Chapter tests</b>	<b>60 %</b>
			<b>· Performance tasks</b>	<b>30%</b>
			<b>· Mind maps</b>	<b>10%</b>
	<b>FINAL MARKS:</b>		<b>· Terms 1 and 2</b>	<b>80%</b>
			<b>· Final exam</b>	<b>20%</b>

## **DTSS Science Department Philosophy**

**The Science Department is committed to creating a learning environment that is safe and conducive to learning. We are also committed to ensuring that students have opportunities to demonstrate their best performance. This will look different depending on the course and teacher, but may include retests, opportunities to correct submitted work, and/or resubmission of course work.**

**We also believe that it is crucial for student success to receive timely and relevant feedback. We will make every effort to mark and return students' work to them quickly so that remarks on their assignment/tests have meaning to them. We ask that students respect this process and their peers by doing everything in their power to hand in assignments on their due dates.**

**In addition, students are asked to communicate with their teachers, in advance, if they are unable to meet a specific deadline. These policies are designed to help develop students' responsibility and time management skills, and to foster a positive learning experience in all science classes.**

### **NOTE TO PARENTS/GUARDIANS:**

**Your son or daughter should bring home the Marks Record Sheet whenever a unit has been completed (approximately every two weeks). Please sign and date this sheet and have your child return it to school. This will be one of my primary methods of communicating your child's progress to you. Your child can seek help whenever they require clarification of class material. Students can see me outside of class during my office hours, which will be posted within the first week of classes. Please feel free to e-mail or call me anytime to discuss your child's progress in this course.**

**e-mail [ron.norquay@sd6.bc.ca](mailto:ron.norquay@sd6.bc.ca)**

**Phone: (250) 342-9213, ext. 4533**

# SCIENCE 10 STUDENT MARK RECORD

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

student #: \_\_\_\_\_

<b>BIOLOGY (Genetics)</b>	<b>30%</b>	<b>Retest written Y/N</b>	<b>Parent Signature</b>	<b>Date</b>
<b>TOPICS/OUTCOMES • It is expected that the student will:</b>				
1.1	communicate how the structure of DNA relates to its functions.	_____ %	_____	_____
1.2	outline how hereditary information is passed from generation to generation.	_____ %	_____	_____
1.3	explain how natural and artificial selection influence changes in populations.	_____ %	_____	_____
1.4	outline how and why an organism's genes can be manipulated.	_____ %	_____	_____

<b>PHYSICS (Energy)</b>	<b>20%</b>			
<b>CHAPTERS/OUTCOMES • It is expected that the student will</b>				
3.1	understand the properties of energy.			
3.2	outline how energy is transformed.	_____ %	_____	_____
3.3	explain how energy transformations affect global systems.			
3.4	outline and explain how energy transformations affect humans.	_____ %	_____	_____

<b>CHEMISTRY (Physical Science)</b>	<b>30%</b>			
<b>CHAPTERS/OUTCOMES • It is expected that the student will</b>				
2.1	explain how chemical processes are part of our lives.			
2.2	outline what happens to atoms in a chemical reaction.	_____ %	_____	_____
2.3	outline how energy is involved in chemical processes.			
2.4	explain how atoms rearrange in various types of chemical reactions.	_____ %	_____	_____

<b>SPACE SCIENCE (Astronomy)</b>	<b>20%</b>			
<b>CHAPTERS/OUTCOMES • It is expected that the student will</b>				
4.1	describe what the universe is and some characteristics about it.			
4.2	describe some of the parts of the universe we can see with our eyes.	_____ %	_____	_____
4.3	outline how technology has increased our knowledge of the universe.			
4.4	outline how the Big Bang Theory has helped us to better understand the universe.	_____ %	_____	_____

Have read and understand the material covered in this course outline.

Student: \_\_\_\_\_

Parent: \_\_\_\_\_

## SCIENCE 10 TENTATIVE COURSE SCHEDULE SPRING 2019

Week	Date	Topics	Pages	Topic Title	Main Topics Covered
<b>INTRODUCTORY UNIT:</b>					
22.	Jan. 28 - Feb. 1		xiv - xxxii	Introduction to Science 10	Safety in the lab/Process Skills /WHMIS symbols
<b>BIOLOGY UNIT:</b>					
23.	Feb. 4 - 8	1.1	6 - 23	Understanding DNA	Variations in living things/Structure and functions of DNA/ Genes make up chromosomes/Central idea of biology/ Biodiversity
24.	Feb. 11 - 15*	1.2	24 - 43	How is heredity passed from one generation to the next?	Inherited traits/Dominant & recessive traits/Punnett squares Allele expression/Sex-linked traits.
25.	Feb. 18 - 22*	1.3	44 - 69	How can natural and artificial selection influence pop. ?	DNA mutations/Natural selection and new species/ Environmental factors/Artificial selection.
26.	Feb. 25 - Mar. 1	1.4	70 - 87	How and why are genes of Organisms manipulated?	Recombinant DNA/Uses of DNA technology
<b>PHYSICS UNIT:</b>					
27.	Mar. 4 - 8	3.1	199 - 219	Energy properties	Changes caused by energy/Forms of energy/ Energy transformations/Kinetic & Potential energy
28.	Mar. 11 - 15	3.2	220 - 241	Energy transformations	Chemical reactions/ Nuclear reactions/Energy transformations with light energy and matter.
29/30	Mar. 18 - 29	<b>SPRING BREAK</b>			
31.	Apr. 1 - 5	3.3	242 - 263	Energy transformations affect global systems.	Earth is an energy system/Earth's atmosphere/Earth's temperaturer/Harm to ecosystems.
32.	Apr. 8 - 12*	3.4	264 - 275	Energy transformations impact humans	Benefits of energy transformations/new technologies/ reducing harmful impacts on Earth.
<b>CHEMISTRY UNIT:</b>					
33.	Apr. 15 - 19*	2.1	102 - 117	Applications of chemistry/ Safe handling of chemicals	Chemistry in our daily lives/safe handling of chemicals
33.	Apr. 19	<b>TERM 3 ENDS</b>			
34.	Apr. 22 - 26*	2.2	118 - 137	What happens to atoms in chemical reaction?	Ionic & covalent compounds/chemical bonds and energy/ Conservation of mass.
35.	Apr. 29 - May 3	2.2	118 - 137		Writing and balancing chemical equations.
36.	May 6 - 10	2.3	137 - 153	How is energy involved in chemical processes.?	Endo and Exothermic reactions/energy transformations
37.	May 13 - 17	2.4	154 - 183	How do atoms rearrange in chemical reactions rxns?	Six types of chemical reactions.
38.	May 20	<b>VICTORIA DAY</b>			
38.	May 20 - 24*	2.4	154 - 183	The pH scale	pH scale/acids & bases/neutralization reactions.
<b>ASTRONOMY UNIT:</b>					
39.	May 27 - 31	4.1	292 - 299	What is the universe?	Understanding and making sense of the universe
		4.2	300 - 319	Understanding the universe With our eyes/	Objects in the sky/Celestial sphere/
40.	June. 3 - 7	4.3	320 - 351	Using technology to expand knowledge of the universe.	New telescopes/Galaxies/Astronomical units/Life cycles of stars.
41.	June 10 - 14	4.4	352 - 375	The Big Bang Theory	Redshift & cosmic radiation/Components of the universe/ much about the universe is still unknown.
42.	June 17 - 21	<b>COURSE REVIEW/TERM 4 ENDS</b>			
43.	June 24 - 27	<b>SCHOOL BASED EXAMS</b>			

\* week with one or more non-instructional day(s)