

# PEACE RIVER SCHOOL DIVISION

## VIRTUAL EDUCATION PROGRAM

*"Learning Together - Success for All"*



### **Science 20**

#### Course Outline

2021-2022 | Semester 1

**Teacher: Mr. P. Robinson**

## I. Course Overview

Science 20 is a Grade 11 level course for students who are interested in science and want a general understanding of many subjects. In comparison to other 20-level science courses, the focus will be more conceptual and less technical. Science 10 is the required prerequisite, and after receiving credit for Science 20 students may take Science 30.

Science 20 consists of four units: chemistry, physics, earth sciences, and biology. In the chemistry section, we will study solutions, redox, and hydrocarbons. Kinematics and dynamics will be the focus of the physics section. The earth sciences chapter is a very, very brief history of the planet. Finally, in our study of biology, we will get an overview of biogeochemical cycles, ecology, and evolution.

## II. Key Messages/Expectations

Virtual Education is an exciting opportunity for PRSD students. Regular attendance and productive engagement in course material is an expectation and requirement for success in this course, both during synchronous and asynchronous instruction and learning activities.

Course content is organized into both teacher-directed and student-directed learning activities. Successful students will employ effective time management strategies to complete all activities on time.

Students are expected to demonstrate appropriate online and in-person behaviour in accordance with PRSD Board Policies and Administrative Procedures. By default, teachers will require students to have their cameras on during class time and require students to respond to questions or participate in discussions with their microphone. There will be times when teachers may allow students to turn their cameras off.

In some student contexts, there will be lab work. During labs, students are expected to follow safety procedures and treat their classmates with respect.

### III. Scope and Sequence

#### **Unit A: Chemistry**

1. aqueous solutions, their properties, and how to describe them quantitatively
2. redox reactions and their application to electrochemical cells
3. hydrocarbons, their properties, and their use in Alberta

25% of time  
September  
Text. Ch. A

#### **Unit B: Physics**

1. one-dimensional kinematics
2. impulse, and conservation of momentum in one dimension

25% of time  
October  
Text. Ch. B

#### **Unit C: Earth Science**

1. overview of geology
2. plate tectonics and earth's layers
3. paleontology
4. a history of climate

25% of time  
November  
Text. Ch. C

#### **Unit D: Biology**

1. variability in ecosystems and human impacts
2. nutrient cycling and energy movement in ecosystems
3. ecology and evolution

25% of time  
Dec.-Jan.  
Text. Ch. D

## IV. Instruction and Assessment

A variety of instructional and formative and summative assessment strategies will be used throughout this course, including through the use of both technology and traditional pencil-and-paper. Summative assessments will be used to determine course grades which can be accessed through PowerSchool.

The course will be evaluated over the term as follows:

<b>Total Unit Weight</b>	<b>Gradebook Category</b>	<b>Gradebook Weighting</b>
<b>Unit A</b> <b>25%</b>	Unit A Assignments	7%
	Unit A Quizzes	3.5%
	Unit A Exam	7%
<b>Unit B</b> <b>25%</b>	Unit B Assignments	7%
	Unit B Quizzes	3.5%
	Unit B Exam	7%
<b>Unit C</b> <b>25%</b>	Unit C Assignments	7%
	Unit C Quizzes	3.5%
	Unit C Exam	7%
<b>Unit D</b> <b>25%</b>	Unit D Assignments	7%
	Unit D Quizzes	3.5%
	Unit D Exam	7%
<b>Final Exam</b>	Final Exam	30%

## V. Resources

The required textbook for Science 20 is *Science 20*. A digital version of the textbook will be available. A student-owned scientific or graphing calculator is also required.

Students require access to reliable high speed internet that supports Google Meets. Students require a compatible device, usually a Chromebook, with a working webcam to access and participate in the course. Students require a working headset that includes a microphone and headphones.