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**Year 11 BIOLOGICAL AND PHYSICAL SCIENCE
2022**

**Course Information
for Students**

Welcome to Biological and Physical Science in 2022! We hope that your year will be interesting, valuable, challenging and successful.

Many of the major challenges that confront our world need to be approached from a scientific perspective. By choosing to do this Biological and Physical Science course you will study a broad range of aspects of Chemistry, Physics and Biology.

This year you will

- Learn about the structure and properties of matter and investigate factors that affect chemical reactions;
- Study different chemical reactions;
- Investigate an application of physics;
- Develop an understanding of different biological issues focussing on immunisation, *in vitro* fertilisation (IVF) and the use of 1080 to control possums in New Zealand;
- Explore physics ideas related to mechanics;
- Investigate how different factors affect the rate of chemical reactions;
- Study how micro-organisms can be both helpful and harmful to humans;
- Investigate life processes in humans including digestion, circulation and respiration;
- Do practical investigations that show the relationship between exercise and the respiratory and circulatory systems.
- Explore how genes control the inheritance of characteristics;
- Be able to explain the importance of genetic variation within a changing environment.

LEVEL ONE ACHIEVEMENT STANDARDS IN BIOLOGICAL SCIENCE

Achievement Standard Number	Subject reference	Version number	Topic/Title	Mode of Assessment	Credits	Literacy or Numeracy
90926	1.2	3	Report on a biological issue	Internal	3	L1 Literacy
90925	1.1	3	Carry out a Biology practical investigation	Internal	4	L1 Numeracy
90950	1.11	3	Micro-organisms	Internal	4	
90929	1.5	4	Mammals as a consumer	External	3	L1 Literacy
90948	1.9	4	Genetic Variation	External	4	L1 Literacy

Total 18 credits

LEVEL ONE ACHIEVEMENT STANDARDS IN PHYSICAL SCIENCE

Achievement Standard Number	Subject reference	Version number	Topic/Title	Mode of Assessment	Credits
90936	1.2	3	Demonstrate understanding of a physics application	Internal	2
90940	1.1	3	Demonstrate understanding of aspects of mechanics	External	4
90930	1.1	3	Carry out a practical chemistry investigation with direction	Internal	4
90944	1.5	4	Acids and bases	External	4
90934	1.3	4	Chemical reactions	External	4

Total 18 credits

Literacy and Numeracy

The standards offered may allow you to gain credits in either Literacy or Numeracy as shown in the table above.

ASSESSMENT

10 Achievement Standards will be offered with a total of 36 credits.

5 Achievement Standards will be assessed by an **external** examination (19 credits).

Tests and task sheets will be given regularly throughout the year to give you practice in answering questions related to the topics being studied. After the learning for each externally assessed topic has been completed, you will sit an examination to obtain a derived grade which will be used if you cannot sit the NCEA examination at the end of the year.

Don't panic about the number of externals. You sit the examinations for the science, chemistry, physics and biology standards at different times, not all in the same examination.

5 Achievement Standards will be assessed **internally** during the year. (15 credits)

<i>Sci 1.11</i>	<i>Micro-organisms</i>	<i>Week 7</i>	<i>Term 1</i>	<i>4 credits</i>
<i>Bio 1.1</i>	<i>Practical investigation</i>	<i>Week 2</i>	<i>Term 2</i>	<i>4 credits</i>
<i>Chem 1.1</i>	<i>Chemistry investigation</i>	<i>Week 2</i>	<i>Term 2</i>	<i>4 credits</i>
<i>Bio 1.2</i>	<i>Biological Issues</i>	<i>Week 3</i>	<i>Term 3</i>	<i>3 credits</i>
<i>Phys 1.2</i>	<i>Physics application</i>	<i>Week 3</i>	<i>Term 3</i>	<i>4 credits</i>

All Achievement Standard tasks will have a checklist of what is required to attain an Achieved, Achieved with Merit or Achieved with Excellence.

Workbooks

No textbook will be issued for this course. For the external achievement standards, you will be given write-on workbooks to be used in class and for homework.

Important Information for Internal Assessments

- **Absences** – It is important that you do not miss any assessments (Internal or External) except for genuine reasons of sickness, accident or other extreme emergency. Providing a Medical Certificate from your Doctor must cover absence during an assessment. On your return to school you will be given the opportunity to do the task for the particular Achievement Standard. This will NOT be possible if you choose to go on a family holiday, or similar non-school related event, at the time of assessment.
- **Assessment Policies** – Information regarding the school policy on assessment, authenticity and appeal procedures is found on www.rangilife.school.nz (Student links/Curriculum support/NCEA). Ensure you read these thoroughly and follow all guidelines. Know your rights and responsibilities.
- **Filing** – When an Internal assessment task has been marked you will be asked to **verify the sighting and acceptance of the grade awarded by signing the cover sheet**. All assessed work will then be filed at school for security and for moderation by NZQA, if required.
- **Assessment** – If a ‘**Not Achieved**’ grade is awarded for an **internally** assessed Achievement Standard, there will be no further assessment opportunities in that Achievement Standard.
- You **may be** offered the opportunity of a **resubmission** if your work requires a minor corrections or change that you may have overlooked and should be able to identify within a few minutes. Your teacher will approach you prior to the task being handed back to the class as a whole if this is relevant for you. You will be required to identify and make any changes immediately. Your teacher is **not** able to tell you of the specific change required; you must be able to identify the required change yourself.

Skill development

This course offers many opportunities to increase your skills. An understanding of Science concepts will enable you to critically evaluate information and arguments that you are presented with in the real world. There is a lot of “fake Science” presented in the media and on various social platforms. As global citizens it is important that you can tell the difference between fact and fiction.

If you do not understand a concept or idea, show resilience, keep a positive mind-set and ask for help. Self-management is particularly important if you have missed lessons – it is up to you, and not your teacher, to ensure you catch up.

You will also be challenged with tasks that allow you to work both independently and collaboratively. When working independently, take initiative, make good decisions and complete tasks without needing constant guidance from your teachers. Collaborative tasks will allow you to focus on good communication, so your group reaches a common goal.

Folder Organisation

Throughout the year you will be given worksheets, or you will write notes, either electronically or in OneNote. It is up to you decided which system will work best for you. You can keep your notes together in an A4 folder and use clearly marked dividers/tabs or use an electronic system that allows you to find and access your notes easily. It is really important that you keep your notes up to date, tidy and well organised so that you can quickly and easily find your work.

Divide your folder/tabs into the following main areas:

- Chemistry – acids and bases
- Biological Issues
- Carbon Chemistry
- Physics application
- Biology investigation
- Physics - mechanics
- Chemistry investigation – rates of reaction
- Micro-organisms
- Mammals as a consumer
- Genetics

Topics

All topics will take approximately 6 weeks to cover. There will be time for revision prior to NCEA examinations.