

BIOLOGY INVESTIGATION (4 weeks)**BIOLOGY 1.1 90925 V3 Internal Assessment 4 Credits integrated with PE**

Assumed prior knowledge: Be able to carry out a scientific investigation.

Curriculum Links: Curriculum Level Six:

Living World: Life processes

- Relate key structural features and functions to the life processes of animals and investigate environmental factors that affect these processes.

Nature of science

Investigating in science

- Develop and carry out more complex investigations, including using models
- Show an increasing awareness of the complexity of working scientifically, including recognition of multiple variables
- Begin to evaluate the suitability of the investigative methods chosen.

Key competencies:

1. Language, symbols and texts:

1.3 Interpreting: Is able to make meaning of text, diagrams and tables and can accurately re-communicate this meaning using own terms.

1.4 Communicating: Shows understanding of the language, knowledge and skills of specific Learning Areas by correctly referring to and linking these elements and conveying their meaning using a range of communicative strategies and tools.

2. Thinking: **2.2 Logical thinking:** Shows an ability to sequence material in an ordered and organised manner. Is able to hypothesise based on rational evidence or reasonable argument. Can draw conclusions based on observation of evidence

Assessment task: Biology internal investigation task

Achieved: Carry out a practical investigation in a biological context, with direction.

Merit: Carry out an in-depth practical investigation in a biological context, with direction.

Excellence: Carry out a comprehensive practical investigation in a biological context, with direction.

General resources	<ul style="list-style-type: none"> • All worksheets in. L1 Science/3. Bio investigation Bio 1.1 90925' and in 'L1 Bio Investigation' file in L1 Science hard drive. • Class book = ESA Study learning workbook Level 1 Science by Glennis Moriarty. Published by ESA Publications (NZ) Ltd Pg 55 - 86 • Resource books = • Patterns of Life for NCEA Level 2 by Meg Bayley Chapters 18-19 pgs 205-236 • Year 12 Study Guide, NCEA Level 2 Biology by Alan Bailey & Terry Bunn chapters 16 & 17 pgs 155-175. Published by ESA Publications (NZ) Ltd
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Carry out a practical investigation in a biological context, with direction

Biology 1.1 90925 V1 Internal Assessment 4 Credits: Lessons outline

Lessons	Learning Outcomes (Students will be able to)	Topics/Particular teaching strategies used.	Resources
Circulatory system	<ul style="list-style-type: none"> Label the parts of the circulatory system Explain how blood moves through the heart Explain how the circulatory system works 	<ul style="list-style-type: none"> Biology Investigation PowerPoint including ‘The Cost of Obesity’ movie Circulatory system PowerPoint – Give students a copy to work through What is the circulatory system worksheet Photocopy of pgs 202-209 of L2 Bio study guide all qu’s for Activity 20 and qu’s 4, 6 & 7 of 16C Starter: http://www.purposegames.com/game/913 Heart parts online game. Harder and more detailed version: http://www.purposegames.com/game/label-the-heart-quiz 	<ul style="list-style-type: none"> Achievement standard 90925 Biology Investigation PowerPoint The Cost of Obesity movie Circulatory system PowerPoint and song / video
Respiratory System	<ul style="list-style-type: none"> Label the parts of the respiratory system Explain how oxygen moves to the body through the heart Explain how the cardiovascular system works 	<ul style="list-style-type: none"> The Respiratory System Wordfind Respiratory System PowerPoint and Respiratory System movies – Students to complete notes along with the PowerPoint. Students to glue the ‘Lung diagram’ into their books Photocopy of pgs 172-175 of L2 Bio study guide for 17B qu’s 1, 3, & 4 http://www.purposegames.com/game/lungs-and-stuff-quiz Resp rate comparison activity Homework: Respiratory system crossword & Respiratory system cloze 	<ul style="list-style-type: none"> Respiratory System PowerPoint Photocopy of pgs 172-175 of L2 Bio study guide Lung diagram – GLUE! Resp rate comparison activity sheet
Effect of Exercise	<ul style="list-style-type: none"> Explain how exercise affects the heart and respiratory rates 	<ul style="list-style-type: none"> Exercise & HR & Resp rate PowerPoint 	<ul style="list-style-type: none"> Exercise & HR & Resp rate PowerPoint
Practical applications	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Go through the homework Heart rate and body position investigation 	<ul style="list-style-type: none">
Practice run		<ul style="list-style-type: none"> Practice assessment heart rate 	<ul style="list-style-type: none">
Assessment		Students to sit assessment over 4 lessons	<ul style="list-style-type: none"> Investigation task and marking schedule Stopwatches

Review effectiveness of the unit

- Online structures quiz extremely effective – would be better if they could do it individually, in competition, on laptops
- Circulatory system took a week and we did not get on to the L2 Bio study guide work. Needed to go through the system clearly. Perhaps repeat the video next time.

Recommendations for change(s) to unit	<ul style="list-style-type: none">• Do two practice assessments – go through the first one step by step with the students
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