



PLANT AND ANIMAL RESPONSES

BIOLOGY

LEVEL 3

Strategy Guide

The key to this external topic isn't just to memorise a whole bunch of facts or definitions. It's about being able to link these ideas to natural selection and thinking "what advantages and disadvantages will this have for the organism". Ultimately, biology is centred around evolution and so you need to think about how everything affects the organism's chances of reproduction and survival. It is very important that you get comfortable with the context-based questions in the external, this can only be done by writing practice essays - be confident in your use of the correct terminology and don't forget to mark your answers at the end!

OVERVIEW OF THE STANDARD/STRUCTURE OF THE EXAM

This standard is broken into three key parts:

1. Rhythms
2. Orientation responses
3. Relationships

The exam is likely to have around 3 questions - with concepts from each of the sections integrated into each. Each question will likely be broken down into bullet points, with different aspects for you to answer in each.

CONCEPTS AND SKILLS TO FOCUS ON

Although every aspect of the exam is equally important, here are some key concepts to focus your study on:

Interpreting and discussing actograms:

Actograms are the bane of every level 3 Biology student. Because they have so much information on them, students can often get overwhelmed, and avoid studying them. However, once you get the hang of them, actograms become very repetitive - and often show you the same information. Therefore, practicing them can give you a good boost in your exam if an actogram question comes up!

Discussing the advantages and disadvantages of different behaviours:

Lots of students focus on learning the characteristics of different behaviours - and the different species' who perform them. However, NCEA will often ask you to respond more critically - and answer why a species performs a certain behaviour. A good way to practice this, is by studying the advantages and disadvantages of different behaviours - and linking these to the overall context you are given.





The different types of orientation responses:

This standard focuses on the directional and non-directional responses of plants and animals. It is important that you can easily establish which is which - and quickly identify the type of response occurring when given a set of information. Practice this by drawing a chart of the different orientation responses in plants and animals, and test yourself with orientation questions from past exams.

COMMON MISTAKES:

From the NCEA gods themselves:

Not answering all of the bullet points:

This standard gives you a helping hand by laying out exactly what you need to talk about - in bullet point form! Even though NCEA provides this information, a lot of students forget to answer some of the points, or answer some of them incompletely. Make sure you spend the time to nail each of the bullet points - as you will require a complete answer to gain those higher marks. ,

Mixing up orientation responses:

You are almost always assessed on your ability to identify the type of response occurring, as well as being able to name the specific response. Make sure you are able to distinguish between a taxis and a tropism, and be sure to label your directional responses as 'positive' or 'negative'

Not discussing all interspecific and intraspecific behaviours:

Behavioural responses based on relationships are often the most neglected topics when studying for this exam. When given a context or background information, make sure you take the time to pick out every response occurring. Remember that these can be intraspecific or interspecific, and can include going after food, territory, or a mate. We suggest going through all of the information you are given with a highlighter or pen - and picking out every behaviour you see. Then, try to incorporate as many as possible into your answer.

OVERALL STUDY AND EXAM STRATEGY:

At the end of the day, this standard is all about survival! Each of the different responses, orientations and behaviours you discuss are used by the animal or plant to help them survive long enough to reproduce. Because of this, everything you learn in this topic is linked - so it pays to think of everything as part of a bigger picture. Thinking of the standard like this will help you add more information to your answers, as well as remember the content and study more effectively!

