

Study and exam skills

It is important to start the year with the correct attitude. There is a significant amount of content to be learned, understood and applied. There is no time in the year when you can comfortably do little or nothing. In order to achieve the best possible results, you must be like the tortoise: keep on track and moving forward, the whole time. This means attending every class, doing all the set homework and revising regularly.

You must also take care of yourself: eat properly, sleep properly and get enough exercise. Do not cut yourself off from all social interactions, but take a sensible approach—all work and no play will lead to burnout before the end of the year. VCE is a race, but it is not a sprint. It's a marathon. So remember: 'Slow and steady wins the race'.

In the examination you will be asked to apply your knowledge. Most questions will involve higher-order thinking tasks: interpreting, analysing, inferring and drawing conclusions. This means that just memorising material is not enough; you need to practise applying your knowledge by working through questions that use those skills.

Finally, your teacher is there to help you but they can't do the work for you, and they will not be in the examination room at the end of the year. Ultimately, how you go is up to you.

Starting out—know what is required of you

The first thing you need to do is make sure you know the requirements of the course and how assessment will be done.

In Units 3 and 4, Biology School Assessed Coursework constitutes 40% of the total score.

Unit	Outcome	Description	Marks allocated	Percentage of total mark
3	1	Explain the dynamic nature of the cell in terms of key cellular processes including regulation, photosynthesis and cellular respiration, and analyse factors that affect the rate of biochemical reactions.	50	8%
	2	Apply a stimulus-response model to explain how cells communicate with each other, outline human responses to invading pathogens, distinguish between the different ways that immunity may be acquired, and explain how malfunctions of the immune system cause disease.	50	8%
4	1	Analyse evidence for evolutionary change, explain how relatedness between species is determined, and elaborate on the consequences of biological change in human evolution.	30	8%
	2	Describe how tools and techniques can be used to manipulate DNA, explain how biological knowledge is applied to biotechnical applications, and analyse the interrelationship between scientific knowledge and its applications in society.	30	8%
	3	Design and undertake an investigation related to cellular processes and/or biological change and continuity over time, and present methodologies, findings and conclusions in a scientific poster.	30	8%

Do not be tricked into thinking that the Unit 4 School Assessed Coursework tasks are less important or are worth less because they are marked out of a smaller number. *Each outcome is worth exactly the same percentage of your mark.* Your mark for the scientific poster is reported to VCAA at the same time as the Unit 4 coursework, but the task could be completed at any time in the year before then.

The types of tasks specified by the study design vary. For Unit 3, Outcome 1, you will need to do at least two experiments and report on them. For Unit 3, Outcome 2, a number of options are available. Your teacher will tell you which option your school has chosen and how it will be assessed. In Unit 4 there are three outcomes. Outcome 1 requires you to write a report on the analysis of primary or secondary data, while Outcome 2 is a report of a practical activity or a written response to an issue. Once again your school will choose which task you are to do.

The final Outcome for Unit 4 is a student-designed practical investigation that must be reported as a poster, using the VCAA template. For this task you are required to keep a logbook of your methods and results, along with any thoughts you have about the validity of your results. Maintenance of this logbook will become crucial when you work on your poster and for your teacher to authenticate your work.

Details of the types of tasks permissible for each piece of School Assessed Coursework can be found in the study design. This can be accessed from the VCAA website. Your teacher should tell you exactly what tasks you will be doing and how they will be assessed.

Finally, collusion (deciding on answers together) and plagiarism (copying someone else's work without attributing it) are a significant breach of VCAA rules and can result in serious consequences, even a complete loss of all marks, so always ensure that every piece of work that you submit is entirely yours and that any parts that are based on the work of others are fully attributed. There are a number of ways to provide citations, and your teacher may have a preference; if not, choose a method that works for you. Also, remember that giving citations means more than just providing a bibliography.

The next step—prepare a suitable place to work

Look at the place where you are going to do your homework and study. Before you start to think about your study or assessments, make sure you have all the things you need to get your work done with as little hassle as possible. (This also means you won't be distracted!) Think about this area as your office, and make sure you have:

- a desk or table that can fit the books and papers you need. You might need to work out a system to keep your books and notes organised and easy to find when you need them. You can use trays, folders, boxes, or just stack materials for each subject or task together in one place
- good lighting and a chair that's comfortable to sit on, but not too comfortable—you want to work, not sleep
- no distractions—or at least try to keep them to a minimum. Some people work with music on, but research suggests that this is actually a hindrance to good learning. If you find that you need music in the background, make sure it is quiet and not a distraction. If you are singing along, you aren't giving your full attention to your study
- no Facebook, no phones or other communication devices—leave your phone in another room and turn off all other communication devices. It has been shown that having these devices active and near you while trying to study is a huge distraction and severely reduces the effectiveness of time spent studying
- all the supplies you will need: pens, pencils, sharpeners, erasers, calculator, paper, books, scissors, stapler, paperclips, highlighter, ruler etc. Work out what you need before you start and keep all supplies together in a drawer or box. This means you won't waste time looking for equipment
- a pin board to hold a wall chart, calendar or daily planner.

What next? Get organised

It is easy to procrastinate and then find yourself rushing to complete tasks at the last minute. 'Just in time' might work well for catching a bus, but it is not a good strategy for VCE success. You need to allow yourself time for reflection and polishing. You also need to factor in the possibility of unforeseen problems. You may get ill, have a sudden family emergency or may just be swamped with work from all your subjects; being organised well ahead of time will stop these things impairing your performance. Being organised also reduces your stress level. Disorganisation and the stress it causes is a big factor in poor VCE performance.

In order to get yourself as organised as you can be:

- Use a homework diary or planner to write down all homework and assessments as soon as you get them. Make sure you know when the work is due and what you have to do. A wall chart or calendar can also be really helpful—you can write all your tasks on it and have a long-term overview of what needs to be done.
- Plan your work by writing a list of what you have to do each day. As you finish each task on the list, draw a line through it. This will remind you of what you have completed, which can be very satisfying and motivating.
- If you have problems getting your work done in the time available each day, try using a weekly planner. Include everything you have to do in the week (not just schoolwork)—include sports, any part-time jobs, time to watch your favourite TV show, as well as social or family events.
- When you have a larger task, break it down into separate, smaller steps.
- Be honest: make sure that your planning and lists are realistic. Never set yourself more work than you can actually do in the time that you have. If you set the bar too high for yourself, you are more likely to become discouraged and de-motivated.
- Set tasks to do rather than just saying 'study Biology' in the timeslot between 6.00 pm and 7.00 pm. It is far better to have an active study plan including questions, drawings, essays, and so on, rather than a passive plan of flicking through a textbook.

How should you study?

Studying effectively requires a great deal of concentration. You need to remove any distractions. If you have half of your attention on the television or your 'chat page' you aren't really studying.

You need to factor in breaks while studying. Intensive concentration can only be maintained for a short time. Allow yourself 10 minutes of break time in every hour of study.

Different study techniques work for different people. You should have already found one that works for you, but if not, here are some suggestions:

- Read your textbook and class notes to make sure you know the content and understand the concepts before you attempt to answer any questions.
- Use active study techniques such as those listed below.
 - Highlight or underline important points as you read your notes or text.
 - Create headings or appropriate structures under which to organise dot points.
 - Diagrams are useful to summarise concepts.
 - Tables are good for comparisons (e.g. causes/effects, for/against).
 - Create summary sheets for relevant names, terms, definitions or examples.
 - Use boxes, circles and colour to highlight points on your summary sheets.

- Use other summary techniques such as scatter diagrams, mind maps or concept maps—these are all ways of organising key information.
- Create ways to remember key points, e.g. mnemonic devices like **King Penguins Can Only Fly Going South** for the classification of living things (**K**ingdom, **P**hylum, **C**lass, **O**rders, **F**amily, **G**enus, **S**pecies).
- Compile a glossary of new terms. Use your own words, not those lifted straight from the textbook. Your own words cement your understanding and help you remember new terms.
- Repeat out loud as a way of memorising the steps in important processes, etc.
- Answer as many review questions as you can. You can get them from your teacher, your textbook and from the VCAA website.
- Form a small study group with friends who are willing to work together and help you to keep on track. Question each other and discuss topics.

One technique that many students find helpful is to make flash cards. On one side you write a question with the answer written on the back, or you write a word on one side with the definition on the back. Use the cards to test yourself. You can get your friends or family to help here by using your cards to test you.

Another technique is to teach someone else. If you are struggling with a difficult concept, try to teach a friend or family member the idea. You cannot explain something to another person until you have it clear in your own mind. *Verbalising concepts helps to make them clearer to you.*

Do lots of practice questions. Write down your answers, so that you get practice at expressing yourself. Verbalising or thinking the answer is not the same as writing it, and your responses may not always come out in writing how you want them to, unless you have plenty of practice.

It is important that you *spend at least some of the time writing things down*. Writing (not typing) is a very good way to memorise definitions, metabolic pathways and important facts. It is also important to remember that the examination is two and a half hours long and you will need to be able to write for that entire time without tiring, and your writing must remain legible.

Practise writing your answers within a time limit. You should allow about 1.3 minutes per mark. This means that a question worth 6 marks should take you just under 8 minutes.

Revise work from earlier in the year on a regular basis. It is easy to forget information if you don't keep reminding yourself.

As you study, revise and do practice questions, write down any questions that you have and then follow up with your teacher as soon as possible. Don't leave everything until just before the examination. Concepts in Biology are interrelated, and not understanding one will make it difficult, or impossible, to understand concepts covered later in the course.

It's Swot Vac—the exam is nearly here

Your revision should be well underway by the beginning of the Swot Vac period. You should have a good level of understanding of the content and should have done quite a few practice questions. Now it is time to start doing practice exams in their entirety.

If you have not already done so, read some past assessors' reports. These highlight common errors made by students. The assessor reports are available on the VCAA website.

Like most skills, your ability to do exams and to handle different types of exam questions will improve with practice. As well as testing your knowledge, practice exams are vital because they give you experience in:

- allocating the right amount of time for each question
- reading and interpreting questions
- comprehending the task required for each question

- deciding on relevant content
- planning your answers
- writing each response in the given time
- proofreading (checking for errors in) your own work.

Use your practice exam experience not only to revise, but also to analyse your strengths and weaknesses, and to check how you managed your time.

During Swot Vac, try to keep regular hours. Each day, get up at the time you would need to in order to get to an exam that starts at 9.00 am. Go to bed at a regular hour. Each evening, allow yourself some time for relaxation before getting into bed—watch your favourite show, go for a walk or do whatever helps you to unwind. Make sure you get enough sleep. Eat a healthy diet and as far as possible avoid people who are ill.

Remember, *as you study, revise and do practice examinations, write down any questions that you have and then follow up with your teacher as soon as possible.*

The exam is tomorrow—what do I do tonight?

At this stage you should be well prepared for your examination. You should not be trying to learn anything new. Some re-reading of your chapter summaries just to refresh your memory can be useful, but intense study is not.

Get everything ready for tomorrow. Choose your clothes and lay them out. Make sure you have everything you will need—at least two black or blue pens, at least two 2B pencils, an eraser, a pencil sharpener and a ruler. (Don't take any whiteout with you. Its use is against VCAA rules.)

Pack everything up ready to go.

Plan to have an early night. A good night's sleep will be much more useful than a couple of hours of study. Research has shown that every hour of sleep deprivation has a similar effect on the brain to drinking a glass of alcohol. A brain deprived of sleep will not perform at its best in the examination. The best way to ensure a good night's sleep is to do something relaxing before bed.

On the morning of the exam

Get up early enough to allow yourself plenty of time to get to the exam. Make sure you allow enough time to get to the exam even if there are transport delays. There is nothing worse than arriving in a panic because your train was cancelled and you are running late.

Eat breakfast—all the research has shown that not eating before an examination impairs performance.

Make sure you have all the materials you need.

When you get to the examination centre, avoid the stress heads. They will only make you anxious, which does not help at any stage, but particularly now. If you are one of the stress heads, avoid the others, as they will just make you worse. Instead, practise some relaxation techniques, such as deep breathing.

When you get to the examination centre, put your mobile phone and any other electronic devices in a secure place. *It is a serious breach of VCAA rules to have electronic devices in the examination room.*

The exam has started—what now?

During reading time, the only thing you are allowed to do is read through the exam. You are not allowed to write anything. You can't take notes, highlight or underline anything.

Use the reading time effectively. If you are really nervous at the start of the exam, reading time can be a good time to calm yourself down. The best way to do this is to take a deep breath, read through the exam carefully, and do your best to focus on the material in the exam rather than on how nervous you are feeling.

When you start reading the paper, *read the instructions*.

When you start on the actual questions, it is best to start with the short answer section. Read through each of the questions carefully and identify the section of the course upon which it is focused. Most questions are structured so that the question becomes more challenging from beginning to end, so don't get discouraged if the later parts feel hard. You may not be able to answer the last part of a question, but by the time you reach it you will have already gained most of the marks.

Once you have carefully read the short answer section, you should start reading the multiple choice questions. There are a large number of multiple choice questions, so you will not be able to read all of them. Start with the first one and try to work out the answer in your head. (Remember, you may not mark the paper in any way at this point.) Then move on to the second question, and so on. You are unlikely to be able to solve more than about five questions. Once you are allowed to start writing you can quickly fill in the answers and then move on to the other multiple choice questions. *Remember to mark the multiple choice answer sheet with a 2B pencil.* If you make an error, erase it carefully before filling in a new answer.

Answer every multiple choice question, even if all you can do is guess.

Answer each multiple choice question before you move on to the next one. You can mark a question to come back to later if you have time, but you should still fill in an answer before you move on. Allow just over a minute for each question. If the question takes longer than that, take a guess and move on.

When you get to the short answer questions, start with the question that you feel is easiest, and work your way to the hardest.

Here are some strategies and tips for answering as best you can.

- Look carefully at any diagrams, pictures, tables or graphs and make sure you understand their relevance to the questions involved.
- For questions with graphs, read the labels on the axes carefully, so that you can establish the relationship the graph is showing.
- For questions with tables, read the headings on the columns and rows carefully, so that you can analyse the content of the table properly.
- Check for the key words in a question. Highlight them but don't colour the whole question.
- Plan your answers before you write, remembering to address the exam criteria.
- For Section B questions, read the whole question first. This gives you a complete mental picture of the question. It will also help to ensure that you do not repeat yourself in subsequent parts of the question.
- Make sure you are actually answering the question that is asked.
- Once you have answered the question, re-read your answer and then re-read the question, to ensure that you have actually answered the question.
- When writing a definition, don't use the word you are defining in the actual definition.
- If giving values from a graph, use a ruler to line up points with the axes so you can be accurate, and always include units in your answer.
- Be sure to answer all questions.

- Read over your answers to pick up careless errors—the mind is faster than the hand, and you don't always write what you intend (especially when you're 'running hot').
- Write legibly in blue or black pen. Exams are scanned and marked online. If the assessor can't read your answer, they can't mark it as correct.
- Keep an eye on the time.
- *Never* leave an exam early. Use any spare time to re-read and check your answers.

Each question should have enough space to answer the question. Unless you have very big writing, if you regularly run out of room you are writing more than is required. If you do have large writing or if you change your mind about what your answer is going to be, don't write outside the scanning area. This is shown by a black line and the instruction not to write in this area. If you need extra space it is perfectly acceptable to write your answer in a blank area somewhere else, preferably within the short answer section of the paper. *However, you must make it very clear where your answer is to be found. In the lines for the question, write: 'The answer to this question is on page ...'. Then, where you have written your answer, write: 'This is my answer to question ...'.* Ideally, put a box around the answer as well, to make it stand out. It is much better to do this than to try to squash your answer into the space, which would make it hard to read.

When answering questions, take careful note of the instruction in the question and the number of marks allocated to the response. The number of marks tells you the minimum number of points that you must make.

The instructions in the question are words that tell you the detail and type of answer required. The terms listed below are among those that are commonly used in examinations.

Term	Meaning
Name or State	This is simple factual recall. There is no need to give any details and no explanation is needed.
Define	This is a recall question. You are required to give a meaning.
Describe	State in clear terms 'what you have observed'. Sometimes this will be a graph or diagram that has been presented to you, or it could be a situation with which you should be familiar from your studies.
Explain	You must say why something is happening. The level of detail will depend on the number of marks. More marks means more detail.
Suggest	There is likely to be more than one answer. You need to come up with a plausible, sensible idea.
Hypothesise	You must generate a plausible and <i>testable</i> suggestion.
Discuss	Point out the important features, but make sure you tell both sides of the story.
Compare	You will have at least two different points to look at. You should point out both similarities and differences between the two factors.
Analyse	Consider all relevant factors, and then give your answer in an organised and methodical manner.
Account for	You must give reasons for whatever is being observed.

On the next two pages you will find a checklist for exam preparation and a planner to help you organise your study time.

It is better to rely on good preparation than luck, but a bit of luck can't hurt, so good luck with your exams.

Exam preparation checklist

Your study program	✓
Have you:	
• revised all areas of study, key knowledge and skills?	
• read over your revision notes?	
• highlighted important points? Summarised each topic?	
• read as much other relevant material as time permits?	
• looked at past exam questions?	
• answered some practice questions in the appropriate time limit?	
• read examiners' reports on past exam papers?	
The exam itself	
Have you:	
• checked the exact exam requirements?	
• obtained and read carefully the instruction cover-sheet from previous exams (ensuring there have been no changes)?	
• planned how to best use your reading time?	
Practical steps	
Have you:	
• assembled all pens, pencils, sharpeners, erasers, rulers and other materials required and allowed?	
• put in two black or blue pens to write your answers?	
• put in two 2B pencils to write your answers to the multiple choice questions?	
• double-checked dates and times for each exam?	
• remembered your student number?	
• arranged transport, allowing ample time to avoid rush and allow for delays? (Be sure to arrive early, to settle nerves and gather thoughts.)	
• planned for appropriate meals and drinks, as exam times vary? (Avoid heavy meals before exams, as they make you sleepy.)	

Planning your revision

The earlier you begin your revision, the easier it will become as the exam approaches.

Allow time for breaks within and between sessions—revision is normally most effective when undertaken in short, concentrated bursts.

Set realistic amounts of material to revise during each session, to ensure even coverage of the content you will be examined on.

Daily study planner

Photocopy or print this page for as many days as you need. Include *all* commitments.

Day: _____ **Date:** _____

TIME	ACTIVITY	TIME	ACTIVITY
6.00–7.00		2.00–3.00	
7.00–8.00		3.00–4.00	
8.00–9.00		4.00–5.00	
9.00–10.00		5.00–6.00	
10.00–11.00		6.00–7.00	
11.00–12.00		7.00–8.00	
12.00–1.00		8.00–9.00	
1.00–2.00		9.00–10.00	