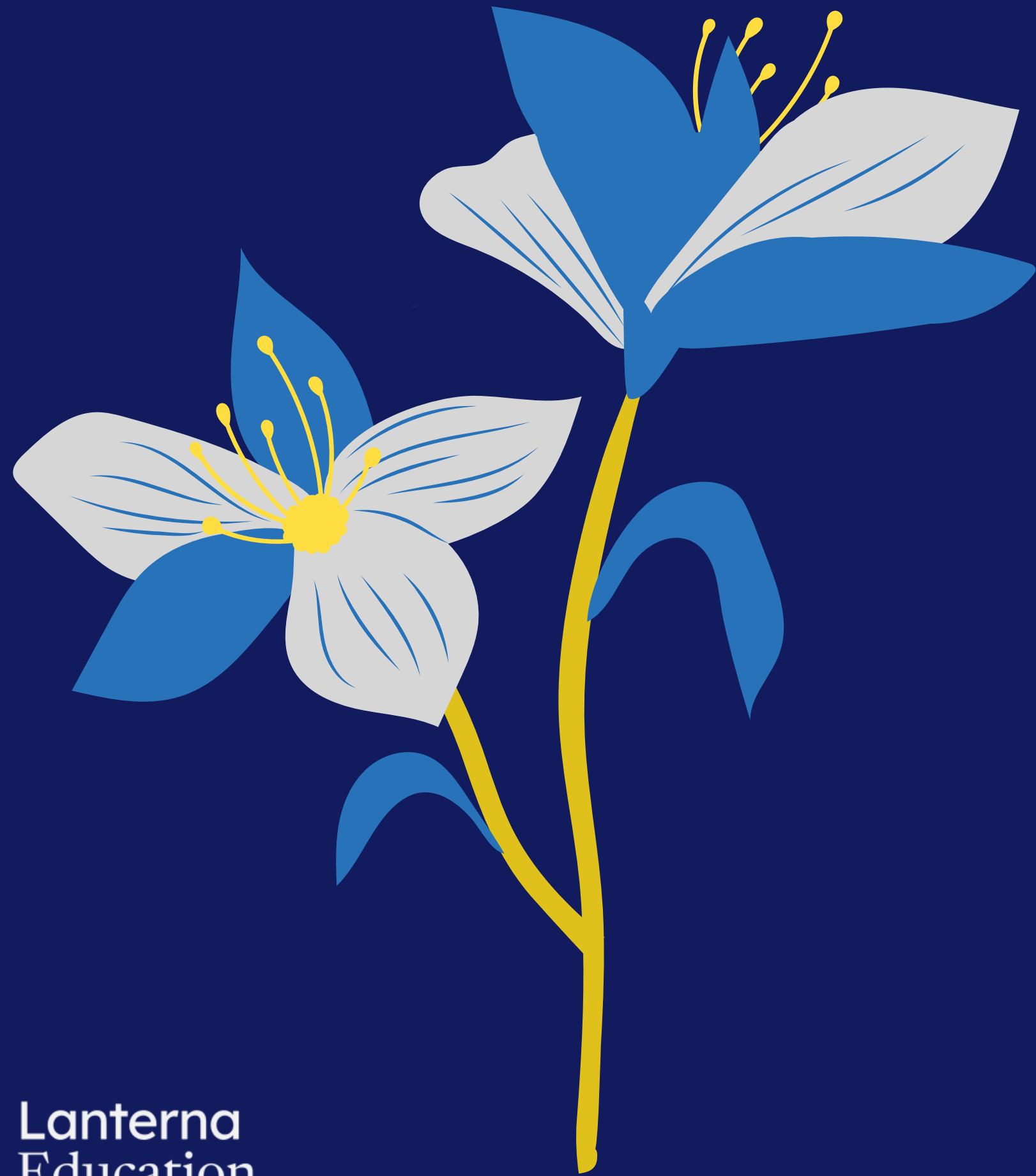




IB BIOLOGY

The Ultimate Study Guide

Updated for the 2025 Syllabus



Lanterna
Education

ABOUT THIS GUIDE



This guide was created with one purpose: to give you the ultimate resource for mastering your IB subject. It's built on the invaluable advice of our fantastic Lanterna tutors—the very best in the field.

These tutors not only achieved top grades in the IB themselves but also have years of experience helping students like you succeed. Their insights, strategies, and tips are pure gold—insider knowledge you won't find anywhere else online.

Whether you're a current student or trying to decide if this subject is right for you, this guide has everything you need to thrive.

CONTENT

<u>Overview: Biology</u>	1
<u>Subject Levels: SL vs HL</u>	2
<u>Skills and Mindset for Success</u>	3
<u>Overview of the Assessments</u>	4
<u>Internal Assessment (IA)</u>	5
<u>Effective Study Strategies</u>	6
<u>Best Resources (Websites/Youtube/Books)</u>	7
<u>Advice from our expert Tutors</u>	8
<u>Final Thoughts</u>	9



WHY SHOULD YOU TRUST US?

The tutors whose information we compiled to create this guide have not only conquered the IB but they are experts in simplifying the learning journey for you. The most common score for our IB tutors is the full 45 points. More specifically, they have received a 7 in this particular subject.

42.3

Average IB score of
our tutors

150K+

Hours tutored



Lanterna
Education

OVERVIEW: BIOLOGY

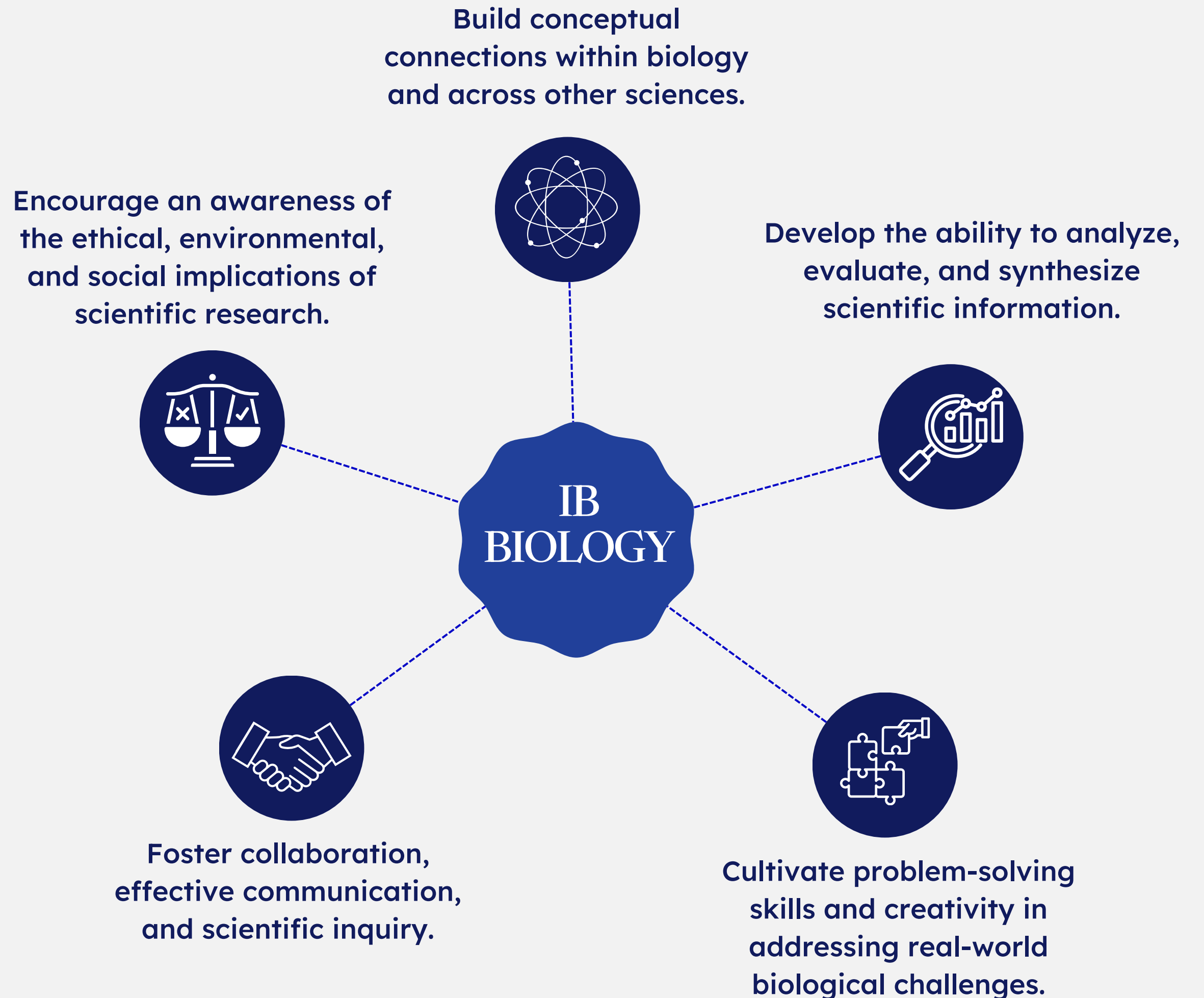
IB Biology focuses on the study of life and living systems, encouraging students to understand the interactions within and between organisms and ecosystems.

The course emphasizes a balance between theoretical concepts and experimental investigation, preparing students to think critically, analyze data, and develop solutions to real-world scientific challenges.

With an increasing focus on global environmental issues and scientific innovation, IB Biology equips students with the skills needed to engage with scientific issues meaningfully.

COURSE AIMS

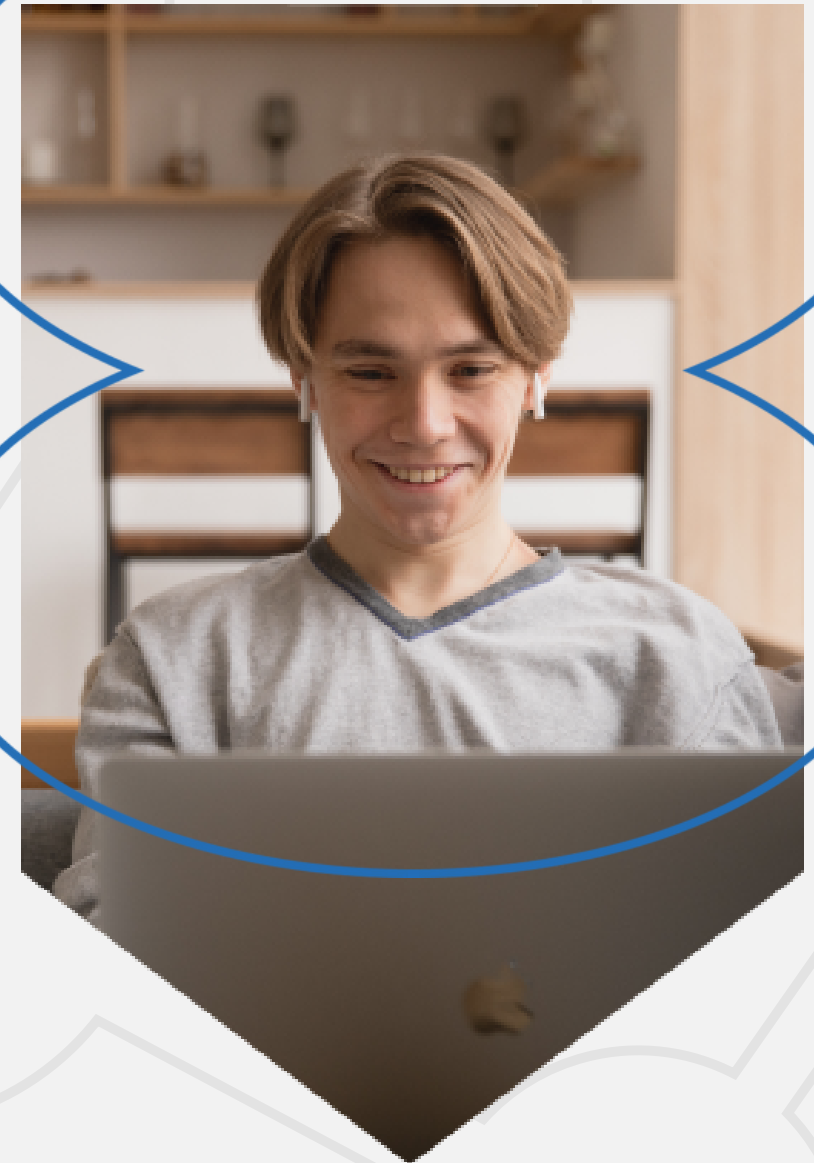
IB Biology aims to develop students' understanding of biology while promoting essential scientific skills.



WHO SHOULD CHOOSE IT?

IB Biology is perfect for students who are curious about the natural world and enjoy understanding how living systems work—from molecules and cells to ecosystems and global processes. It's a great choice if you:

- Love science and problem-solving
- Are considering careers in medicine, biotechnology, environmental science, or health sciences
- Enjoy hands-on experiments and scientific investigation



SL

Teaching Hours **150**

Exams **3 hours**

focuses on foundational concepts.

HL

Teaching Hours **240**

Exams **4.5 hours**

deeper exploration of core themes & additional topics

- Origins of cells
- Viruses
- Classification and cladistics
- Muscle and motility
- Chemical signalling
- Gene expression

HOW BIG IS THE **JUMP** FROM SL → HL

The difference in difficulty between SL and HL Biology is moderate, with tutors rating it at 3.45 out of 5.

HL students have increased workload, especially in experimental skills and extended syllabus content, making Biology HL more demanding but manageable with consistent effort and strong study habits.



Compiled from our best IB Biology tutors

WHO SHOULD PICK HL?

If You're Interested in Life Sciences or Health-Related Careers

Biology HL is essential for students planning to pursue medicine, biotechnology, environmental science, or related fields at university.

If You Enjoy In-Depth Science and Hands-On Investigation

HL takes you beyond the basics, covering more advanced topics and offering opportunities to explore biology through detailed experiments and research.

If You're Good at Memorization and Connecting Concepts

Biology HL involves a lot of content, but students who can memorize key facts and connect different topics will excel.

If You're Up for a Challenge and Ready to Work Consistently

HL requires more depth and time commitment than SL, but with consistent effort and the right strategies, it's a highly rewarding subject that opens exciting academic paths.



CORE SKILLS FOR SUCCESS

Content Understanding and Conceptualization

Biology becomes much easier when you visualize how processes work, especially in physiology. Build a strong mental framework to connect concepts and avoid abstract memorization.



Link Concepts Across Topics

Biology is not just isolated facts—molecular biology, genetics, and evolution are all connected. Linking these topics helps you see the bigger picture.



Master Memorization and Terminology

You'll need to memorize a lot of facts and terminology. Focus on understanding how to apply them in the right context for different types of exam questions.



Have Consistent Study Habits

Regular study, not cramming, is the key to mastering IB Biology. A little at a time ensures you stay on top of the content and perform well.



Develop Data Analysis and Critical Thinking

Be ready to interpret graphs, analyze data, and apply your knowledge to unfamiliar scenarios. These skills are crucial for success on exam papers.



“WHAT IS THE MOST IMPORTANT SKILL FOR A STUDENT TO DEVELOP?”

“



“Visualize biological processes—understanding how different systems work together makes complex concepts easier to grasp.”

“Practice past questions regularly. Understanding how markschemes work is key to writing structured answers that score well.”

“Link concepts across topics rather than memorizing in isolation. This helps you see the bigger picture and apply knowledge in unfamiliar situations.”



Lanterna
Education

Compiled from our best IB Biology tutors

MEMORIZATION



9 OUT OF 10

Tutors believe that **strong memorization** is
a **crucial skill** to succeed in IB Biology

ASSESSMENT STRUCTURE

PAPER 1

External — 36% final grade

Two sections – Part A features multiple-choice questions, while Part B includes four data-based questions covering all themes in the syllabus.

This paper tests recall, data analysis, and interpretation skills.

PAPER 2

External — 44% final grade

A combination of data-based and short-answer questions, followed by extended-response questions.

This paper requires deeper understanding and critical analysis of core syllabus content.

INTERNAL ASSESSMENT (IA)

Internal — 20% final grade

An open-ended scientific investigation where students design and conduct an experiment to answer a research question.

The final output is a detailed written report (up to 3,000 words) that analyzes and evaluates the findings.

TRICKS FOR YOUR PAPER 1

Do's

- READ THE QUESTION CAREFULLY, paying particular attention to questions including the words “not” or “except”.
- READ ALL OF THE OPTIONS BEFORE CHOOSING ONE. If you are unsure, try to eliminate answers which are obviously wrong to narrow down the possibilities.

Don'ts

- DON'T SPEND TOO MUCH TIME ON INDIVIDUAL QUESTIONS. If you are unsure of an answer, just mark them and come back once you have gone through the entire paper.
- DON'T SKIP ANY QUESTION. No marks are deducted for incorrect answers, so worst case, just guess!

TRICKS FOR YOUR PAPER 2

Do's

- Look at the number of marks for each question to guide the level of detail required in your answer.
- Familiarize yourself with IB command terms (e.g., identify, describe, compare) to match your answers to what the examiner expects.
- Use bullet points for short-answer questions when appropriate to keep your answers clear and concise.

Don'ts

- Don't over-explain short-answer questions; be precise and to the point.
- Don't leave extended-response questions blank—write something, even if you're unsure.
- Don't use unnecessary jargon—keep your language clear and scientifically accurate.
- No matter how stressed you are, Don't write in messy or illegible handwriting

HOW TO ACE YOUR IA

PERSONAL ENGAGEMENT

Relate your research to personal or local experiences, and choose a unique research question that reflects your genuine interest.

Avoid generic topics—make it personal and creative to stand out.

CRAFT A STRONG RESEARCH QUESTION

Research common IA topics for inspiration, then adapt one to match your personal interests. A focused question with clear, measurable variables will make your investigation unique and engaging.

COLLECT 1ST HAND (QUALITY) DATA

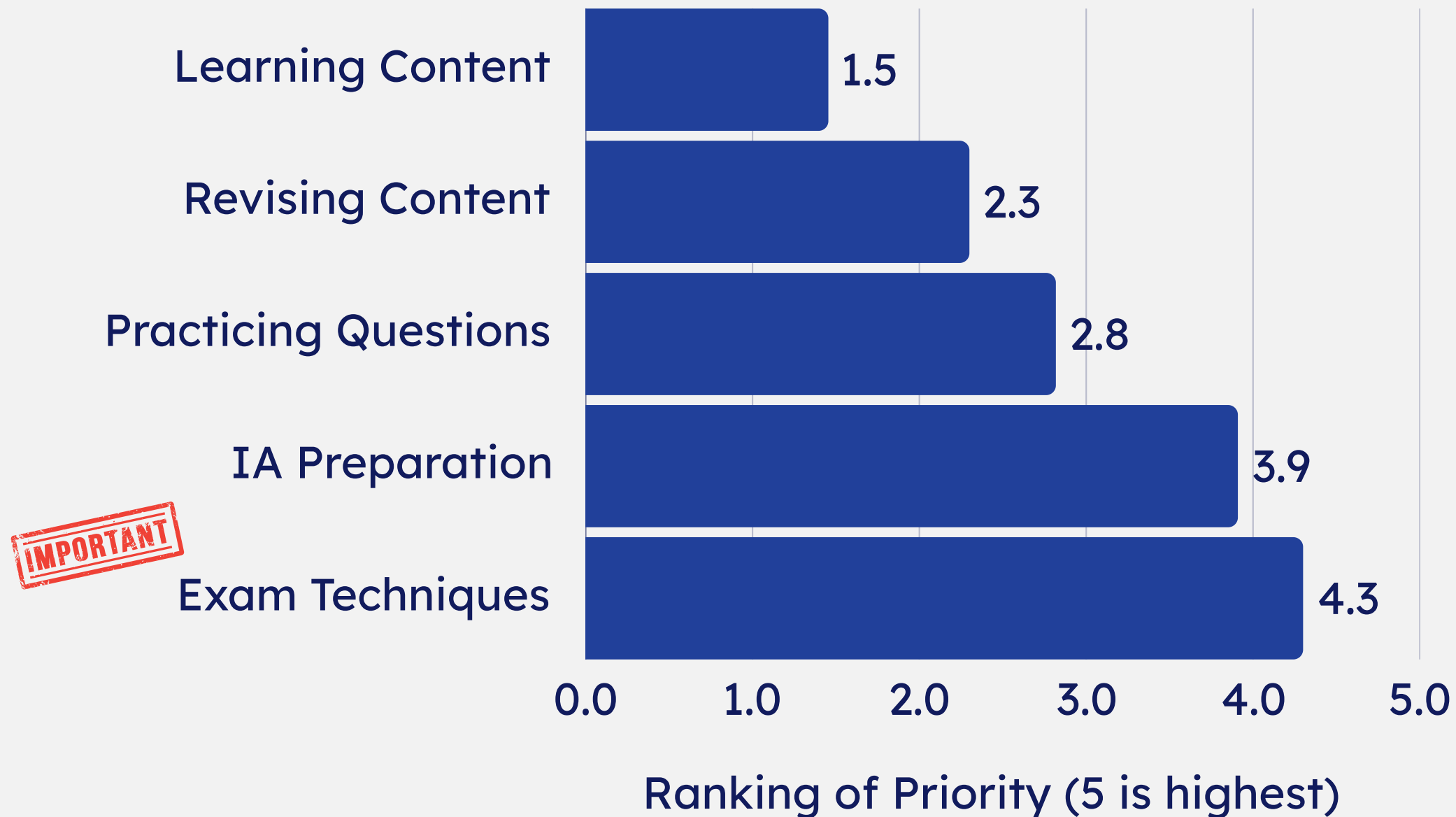
Aim for at least 25 data points by conducting five trials for five different values of your independent variable. Accurate, repeatable data is key to producing reliable and high-scoring results.

HAVE A DELIVERABLE CONCLUSION

Your conclusion should answer your research question and address your hypothesis. Clearly state whether your hypothesis was supported, explain your findings, and suggest improvements for accuracy and reliability in future experiments.



EFFECTIVE STUDY STRATEGIES



WHAT SHOULD YOU PRIORITIZE IN YOUR STUDY TIME?

From the results from our tutors, exam techniques and IA preparation are the top priorities for success in IB Biology. Focus on refining your exam strategies and mastering past papers. For the IA, dedicate time to careful planning, data collection, and analysis, as it's a significant part of your final grade. Prioritize applying your knowledge over simply memorizing content.

UNDERSTAND
THE CONTENT

1

MEMORIZE
SMARTLY

2

PRACTICE,
PRACTICE,
PRACTICE!

3

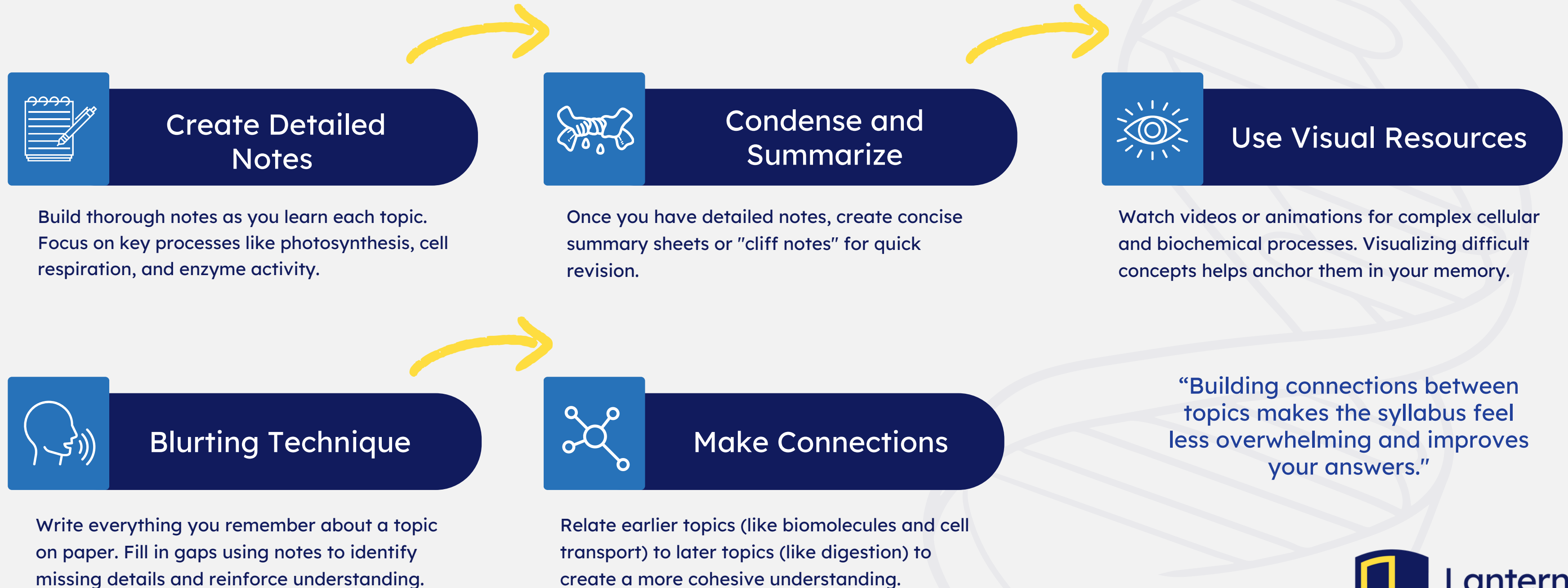
THE 3-STEP REVISION STRATEGY



Lanterna
Education

1. UNDERSTAND THE CONTENT

The first step in your revision is mastering the content. With such a broad syllabus, it's crucial to break the material into manageable chunks and focus on understanding each process.



STRUGGLING WITH CONTENT?

WE CAN HELP

Using a tutor is a great way to understand complex content and prepare effectively.

Lanterna Tutors have received a 7 in the subject they are teaching and are able to break-down complex tasks so that they become more understandable and relatable.

They also know exactly what the IB requires and can guide you on what's most important for exams.



2. MEMORIZE SMARTLY



Active Recall

The most effective way to memorize. Test yourself regularly on key concepts without looking at your notes.

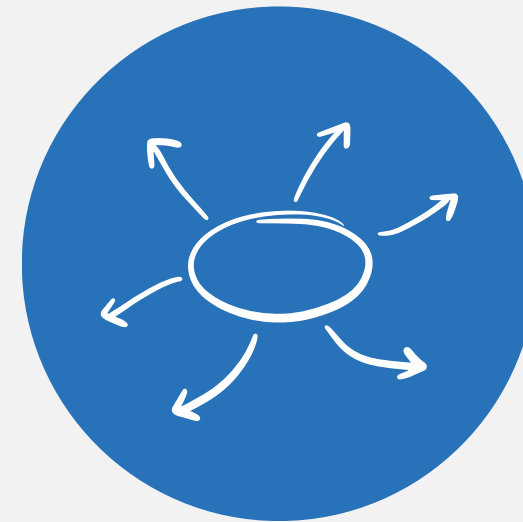
Use apps like Anki or Quizlet to quiz yourself on processes and definitions



Spaced Repetition

Spread your review sessions over increasing intervals to transfer information into long-term memory.

Example: Study a topic today, review it after 3 days, then after a week, and so on.



Mind-Maps

Organize and link key concepts visually to see the "big picture" and how topics connect.

Example: Build a mind map for photosynthesis, linking processes, enzymes, and reactants in a clear flow.



Teach Someone Else

Teaching forces you to explain concepts clearly and identify areas where you lack understanding.

Pro Tip: Even talking out loud to yourself works!



Lanterna
Education

3. PRACTICE, PRACTICE, PRACTICE!



The most important part of your revision is practice. 80% of your entire grade comes down to just a few hours of exams, so mastering how to answer questions is key. Think of exams like video game levels—repeat them enough, and they’ll become second nature. The more past papers you practice, the more confident and efficient you’ll be.

LEARN IB’S “CRYPTIC” LANGUAGE

This is where the markscheme is your best friend. It shows you exactly what the examiners expect in each answer. If you train yourself to write responses based on the markscheme, you’ll know precisely how to get full marks every time. Our tutors fast-track students to master this skill, teaching them how to break down questions, understand command terms like describe, explain, and evaluate, and write answers that hit full marks every time.

TIMING MATTERS TOO

Simulate real exam conditions by practicing under timed settings, focusing on data-based questions and longer responses. Review your mistakes, check how your answers compare to the markscheme, and adjust your strategy. With enough practice, exams will no longer feel like a challenge—they’ll feel like second nature.

BEST RESOURCES: WEBSITES



BioNinja (ib.bioninja.au)

Comprehensive summaries arranged by syllabus point—perfect for quick, targeted revision. Great for SL content but still useful for HL.



Save My Exams (savemyexams.com)

Offers practice questions, flashcards, and model answers. Ideal for testing yourself topic by topic.



Revision Dojo (revisiondojo.com)

Free question bank with options for SL and HL, covering Papers 1, 2, and 3. Excellent for mock exams and self-assessment.



Clastify (clastify.com/ia/biology)

Sample IAs and EEs with helpful insights on how to structure your work and meet IB standards.

BEST RESOURCES: YOUTUBE



Amoeba Sisters

Simplified, visual explanations of complex biological concepts—great for visual learners.



Crash Course Biology

High-quality, engaging videos with excellent visuals to help you grasp biochemical processes.



Sirius Revision & The7Student

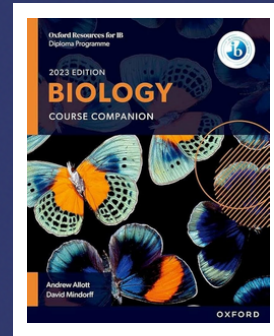
Short, concise IB Biology videos that summarize subunits with easy-to-understand explanations.



Ninja Nerd

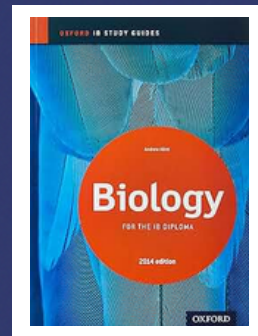
Advanced-level explanations, especially useful for HL topics like respiration and glycolysis.

BEST RESOURCES: BOOKS



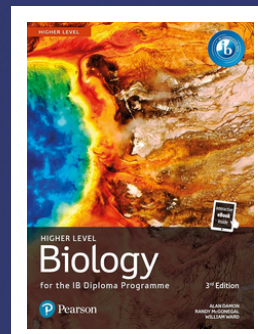
Oxford IB Biology Course Companion

Detailed explanations with plenty of practice questions and links to Nature of Science and Theory of Knowledge (TOK)



Oxford IB Biology Study Guide

A condensed version of the course companion, great for final revision with summary questions at the end of each chapter.



Pearson Biology for the IB Diploma

A deeper dive into biological content with all necessary keywords for structured answers.

BEST APPS & TOOLS

MASTER ACTIVE RECALL

Use these flashcard apps to memorize biological terms and processes effectively. Spaced repetition ensures key concepts stick in your long-term memory. Perfect for mastering definitions and tricky processes.



Quizlet



Anki

PRACTICE MAKES PERFECT

Familiarize yourself with IB-style questions and learn how mark schemes are structured. Regular practice will help you refine your answers and boost confidence for exam day.



IB Questionbank & Past Papers



Lanterna
Education

ADVICE FROM EXPERT TUTORS

“

IB Biology is a content-heavy subject, and waiting until the last minute to start revising is a big mistake. Break the syllabus into manageable chunks and begin reviewing early. The most effective way to retain information is through active recall and spaced repetition, which help transfer key concepts into long-term memory. Focus on understanding the material rather than just memorizing it—ask yourself questions like “Why does this happen?” or “How is this connected to what I learned before?” to improve your comprehension and make the information stick.

START EARLY & STAY CONSISTENT



ADVICE FROM EXPERT TUTORS



“

Practicing past papers is the most effective way to prepare for your exams. Familiarize yourself with IB command terms such as describe, evaluate, and justify. These terms tell you exactly how to structure your response and ensure you cover all the required points. Spend time analyzing mark schemes to understand what examiners are looking for in each question. When practicing, simulate real exam conditions by timing yourself. This will help you manage your time effectively during the actual exam and reduce stress on the day.

MASTER EXAM TECHNIQUES

ADVICE FROM EXPERT TUTORS

“

Biology makes far more sense when you see how different concepts are linked. For example, the study of biomolecules and cell transport early on in the course directly relates to later topics like digestion and absorption. Building these connections will help the syllabus feel less overwhelming and reduce your overall revision time. Mind maps and diagrams are powerful tools for visualizing how different concepts fit together. Linking ideas will also help you answer more complex questions that require an integrated understanding of multiple topics.

BUILD CONNECTIONS BETWEEN TOPICS



Lanterna
Education

ADVICE FROM EXPERT TUTORS



“

No single resource will cover everything you need for IB Biology, so it's essential to use a mix. Websites like BioNinja and Save My Exams offer concise notes and practice questions. For visual learners, YouTube channels like Amoeba Sisters and Crash Course Biology explain complex processes in an easy-to-understand way. Flashcard apps like Anki and Quizlet are perfect for memorizing biological terms and processes using active recall and spaced repetition.

USE MULTIPLE RESOURCES



Lanterna
Education

FINAL THOUGHTS: BIOLOGY

IB Biology is challenging but totally achievable if you work smart. It's a content-heavy subject that requires consistent effort, but with the right strategies—like understanding concepts, building connections, and practicing effectively—you'll be on track for success.

WHAT IF I FEEL STUCK?

Sometimes all you need is a little extra guidance to save countless hours of frustration. Lanterna's tutors are IB experts who've been exactly where you are. More than just teaching content, they'll coach you on how to study smarter, manage your time, and build habits that lead to top marks. We've helped students go from 4s to 7s in a few months, and you can do the same with the right support.

WHO IS TUTORING FOR?

1

IF YOU FEEL STUCK AND DON'T KNOW HOW TO CATCH UP

When you've fallen behind, it can feel overwhelming. Having a tutor who's recently done your subject—and aced it—means you get targeted, personal guidance to catch up quickly and focus on what matters most. They'll help you minimise wasted time and maximise your chances of top grades.

2

IF YOU LACK GUIDANCE ON HOW TO STUDY OR TACKLE IAS

If you're unsure how to approach your IA, EE, or even how to revise effectively, a tutor can make all the difference. A lot of stress and time-waste comes from not knowing exactly what you're supposed to do and how to do it. Our tutors guide you step by step and make sure that things are done right the first time, and avoid the frustration later on.

3

IF YOU STRUGGLE WITH MOTIVATION, STUDY SKILLS, OR HABITS

Sometimes it's not about content—it's about knowing how to work efficiently. That's where our tutors at Lanterna stand out. With over 300 tutors, all recent IB graduates who scored 7s in their HL subjects, we know exactly how to help you best.

We don't just teach content—we coach you on building smart habits, managing your time, and studying effectively.



Lanterna
Education

SEE YOU AT THE TOP!

We hope you found this
guide useful.

Be sure to check out other our
study guides, as well as our
world class tutors.



Lanterna
Education

