



Principals' Training Center *PTCnet Survey*

Topic HS Science Curriculum (Grades 9-10)

Query What approach are IB DP schools taking in Grades 9 & 10 science options (integrated vs. specialized)?

Date November 2010

Query Submitted and collated by Renee Couturier, Director of Learning, American International School - Riyadh

Total number of responses 11

Individual responses

For non-MYP IB DP high school principals: can you tell me what your grade 9 and 10 science program sequence and program is for schools that offer Bio SL/HL, Chem SL/HL, and Physics SL/HL? We would be interested in looking at your curriculum topics.

I have cleaned up the format and apologize if I am revealing identities, but others who may find these useful may want to contact our colleagues. Thank you to everyone who responded and my sincere apologies for the delay in collating these and getting them out. RW

1.

We are a DP school with no MYP.

We require physical science in grade nine (semester of physics, semester of chem) and a year of bio in grade ten. Kids who want to do IB Chem or IB Physics double in grade 10 with bio and either Chem or Physics.

So, essentially, we require 1.5 years of Chem or Physics and 1 year of Bio to move into the IB program.

Joelle Basnight
High School Principal
Lincoln School
Buenos Aires, Argentina





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2.

At my last school, we had the Brit system IGCSE Bio/Chem/Phys options and taught them t Gr 9 and 10 (whereas normally those are taught at Gr 10 and 11). They seemed more rigorous, more focused and more similar in scope to what the demands of the IB would be when kids got there...
I'd be interested in the results of your query.

Shane Kells
Elementary Principal
Korea International School
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Korea

3.

9th Grade Biology
Holt Biology (2008) ISBN 13: ?978-0-03-067214-9
ISBN 10: 0-03-067214-7

This book comes with CD's that have great powerpoint (including animations) for each chapter, lesson plans and a test bank. ?Also, there are resource booklets for each chapter (includes directed reading, active reading, critical thinking, vocabulary, quiz, several tests, and interpreting graphs). ?This is by far the best text I have come across.?

IB Biology HL/SL
Pearson International Edition
Campbell.Reece Biology eight edition ISBN 13: 978-321-53616-7
ISBN 10: 0-321-53616-9

This book comes with a password for internet access for activities associated with the chapters. ?A study guide and lab book.

In my opinion this book is the worst biology book I have seen, it's a difficult book for the students to read and understand on their own. Also, it's not as specific as IB needs it to be. I have purchased the IB Biology companion guide, IB Biology SL/HL book, and ?the study guide. ?I used these books for my notes and homework assignments and I use the IB test bank (CD) to make my test/quiz. ?Also, I put together a handbook with all of the requirements for IB Biology including EE in biology, and lab samples for the





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students. ?These book can be purchased through the IB store or on Amazon. ? Also, Vernier Logger Pro equipment is great for labs in each of the Sciences it's a bit expensive however it's worth it and IB requires the students to use these lab equipments.

10th Grade Physics
Holt Physics ISBN 13: 978-0-03-036816-5
ISBN 10: 03-036816-2

This book comes with CD's that have great powerpoint (including animations) for each chapter, lesson plans and a test bank. ?Also, there are resource booklets for each chapter (includes directed reading, active reading, critical thinking, vocabulary, quiz, several tests, and interpreting graphs). ?This book is highly recommended by the physics teacher.

IB Physics HL/SL
IB Physics Companion guide and Study guide, they can be purchased through the IB Store or Amazon.

10th Grade Chemistry
Holt Modern Chemistry ISBN: 0-03-073546-7

This book comes with CD's that have great powerpoint (including animations) for each chapter, lesson plans and a test bank. ?Also, there are resource booklets for each chapter (includes directed reading, active reading, critical thinking, vocabulary, quiz, several tests, and interpreting graphs). ?

IB Chemistry HL/SL
IB Chemistry Companion guide and Study guide, they can be purchased through the IB Store or Amazon.
The chemistry teacher also recommends the IB Chemistry HL/SL book.

Linda Forde-Green
AIS-Lagos, Nigeria





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4.

We are currently undergoing and major review and revision of our Grade 8-10 science curriculum – for various reasons, but primarily to ‘close the gap’ between the end of 10th grade and IB. We are structuring the curriculum framework based on a spiraling curriculum of major concepts. Basically, all grades from 8-10 (but also 6 and 7) sciences will include topics from all strands – biology/chemistry/physics/earth.

Brenda Perkins
Science Department Chair
International School Bangkok

5.

We do semester courses...
9: Bio/Physics
10: Human Bio./Chemistry

Nate Chapman
Secondary School Principal
Carlucci American International School of Lisbon

6.

We are a small, US standards-based school in grades PreK-10, followed by IB DP in grades 11 and 12. Our student body is about 50% HCN and 50% expatriate.

In grades 9 and 10, we try to accomplish two things with our curriculum design: 1) meet or exceed US standards (either AERO, NCTM or similar); 2) meet or exceed the prerequisite knowledge necessary for the IB Diploma program. In science, we want to do this in biology, chemistry and physics, just as you said. In order to do this, we team-teach the classes with two science teachers: a biology teacher and a chem/physics teacher. As we have two sections of each grade, the bio teacher takes one section and teaches them biology and 1/2 chemistry for a semester. In the second semester, the chem/physics teacher takes the kids and does 1/2 chem and physics. It's the reverse for the other section and exactly the same in Grade 10. Hope that makes sense. Grade 9 science is timetabled at the same time, as is Grade 10 science. At the end of the two years, the students have (hopefully) met the standards for biology, chemistry and physics and the pre-requisites for their respective IB courses. In grade 11, they can choose any one of the three, or a combined program (chem & bio or chem & physics, chem being treated as a group 6 subject).





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Scott J. Genzer
MS/HS Principal
American International School of Kingston, Jamaica

7.

Here at SSIS, we fit that description (non-MYP IB Dip). We do offer all three IB courses that you mention below. Our science program in grades 9 and 10 is an integrated science program that has equal doses of Chemistry, Biology, and Physics. It has some Environmental study there as well. I've attached the "Year At A Glance" documents for those two full-year courses.

Paul Johnson
MS/HS Principal
Saigon South International School
Ho Chi Minh City, Vietnam

8.

Grade 9 is a year of biology. Grade 10 is a semester of Chemistry and a semester of Physics with an option for students with strong math scores to take advanced Chem and Phys.

Jason Atkins, Brent Academy, Philippines

9.

We allow students to choose between Physical Science and Biology in grade 9, then Bio and Chem in grade 10. Many students choose to take Physical Science in 9 and double up in grade 10 so that they can take both HL Bio and HL Chem and they have a very good grounding in the physics. We are not currently offering the HL Physics, but looking to possibly start that at our next curriculum review cycle, which would be 2014. At that time, we'd just make sure that the Physical Science and a certain level of math were prerequisites. We found it wasn't so much the courses and sequence offered that we had to change for the DP program - it was the type of teaching. We have many good inquiry-based lessons and teachers that understand that approach. Content is important, but the approach to the learning and the critical thinking is what is key to get the kids prepared for the IB courses. We continue to be well above the world average with science scores, so I think we're on the right track.





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Michelle Remington
HS Principal
ACS Abu Dhabi

10.

Our 9th graders typically take Biology, then in grade 10 we run a Physics/Chemistry combo class where students take a semester of each subject. We think so students will have the basic background to take any of our IB classes: Physics, Chemistry, Biology or ESS. Here's the course description for the Physics/Chemistry course: "This course is designed to include some of the essential concepts of both Physics and Chemistry and provide a solid foundation for further study in either subject or IB level. It is provided for faster track students and allows them a broader range of subjects at this level. The chemistry component covers atomic theory, chemical bonding, mole theory and scientific measurements. In Physics, units covered include a study of motion, forces and energy, thermal physics, electricity and magnetism."

Our Science Department Head is Anne-Fleur Blijdenstein. Her email address is ablijdenstein@aisj-jhb.com.

Jon Walker
High School Principal
The American International School of Johannesburg
jwalker@aisj-jhb.com

11.

I have copied below the course descriptions for our grades 8-10 integrated science. To be honest, we're not convinced that the integrated method is working all that well, so we are discussing a move to more traditional, non-integrated courses (e.g. Biology, Earth Science, etc.).

Russell Menard
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