

**THE  
INTERNATIONAL  
BACCALAUREATE  
AT SEVENOAKS**

**SEVENOAKS SCHOOL**

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## INTRODUCTION

The Sevenoaks Sixth Form is large, cosmopolitan and exciting. All of our Sixth Formers pursue the International Baccalaureate, a programme the school has delivered for over thirty years. The diploma represents, in the school's view, the best preparation for university and the world of work.

Every student in the Sixth Form at Sevenoaks is encouraged to be curious, creative, critically aware, and to develop his or her talents to the full. Life is fast-paced, dynamic and expectations are high. At the same time, we try to cultivate in our pupils the habit of reflection, and the school's international outlook promotes principles of tolerance and open-mindedness. There exists strong pastoral support in addition to expert teaching, and a broad range of co-curricular opportunities complements the academic courses on offer. Ambitious but principled, confident and compassionate, our pupils are prepared for leadership in an increasingly complex world.

Moreover, we demand the highest standards of academic honesty and integrity from our students in the work they complete and submit.

The following pages comprise an introduction to the IB diploma and to all of the courses we offer within it. Please read carefully and make your choices by selecting one subject from each of the six groups.

**Chris Greenhalgh**

*Deputy Head Academic*

*Every effort is made to accommodate all choices, though resources and timetabling constraints may render some options or combinations of subjects impracticable.*

*The information in this booklet was correct at the time of publication (October 2011), but may subsequently change as a result of developments that could not have been foreseen.*

## THE INTERNATIONAL BACCALAUREATE LEARNER PROFILE

Sevenoaks recognizes the importance of each of the characteristics listed in the IB's Learner Profile and teachers seek to develop each of them both in and out of the classroom.

“The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

IB learners strive to be:

Inquirers	They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.
Knowledgeable	They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.
Thinkers	They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.
Communicators	They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.
Principled	They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.
Open-minded	They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.
Caring	They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.
Risk-takers	They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.
Balanced	They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.
Reflective	They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.”

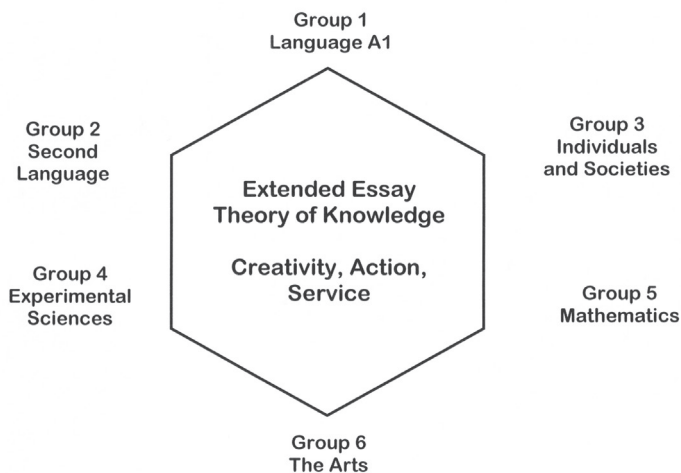
From: *IB Learner Profile Booklet*, International Baccalaureate Organization. Geneva. 2008

# INTERNATIONAL BACCALAUREATE COURSES

## INTRODUCTION

The International Baccalaureate (IB) Diploma programme is a comprehensive and rigorous education programme for the final two years of secondary school. The overall objectives of the IB are to provide students with a broad and balanced education, to develop creative and compassionate life-time learners, and to promote international understanding. Since its founding in the 1960s the IB Diploma has become a symbol of academic integrity and intellectual rigour. By successfully completing the Diploma course students demonstrate a strong commitment to independent learning and all-round personal development, including the ability to express themselves clearly and work together with others. They leave school well equipped for higher education, the world of work and a healthy and active life.

The IB Diploma consists of six subjects chosen from the hexagon illustrated below:-



In order to obtain the Diploma students must take **one** subject from Groups 1-6, and study **three at Higher Level (HL)** and **three at Standard Level (SL)**.

Subjects are covered in sufficient depth and breadth to provide balance and flexibility. The choice of HL subjects allows a student to pursue areas of personal interest and to meet specialist requirements for university entrance. The IB also provides the opportunity for students to specialize in the Humanities, in the Sciences or in Languages by allowing them to choose a second subject from Groups 2, 3 or 4 instead of an Arts subject in Group 6.

1. **Language A.** The study of literature, including selected works from World Literature, or combined with drama to form the 'Literature and Performance' course (the latter available at SL only).
2. **Language B.** A modern language, or Latin, or Classical Greek.
3. **Individuals and Societies.** Economics, Geography, History, Philosophy, Psychology, Classical Civilisation (SL only).
4. **Experimental Sciences.** Biology, Chemistry, Design Technology, Physics, Sports Exercise and Health Science.
5. **Mathematics.** Mathematics HL, Mathematics SL, Mathematical Studies SL
6. **The Arts.** Visual Arts, Music, Theatre Arts.  
A second subject chosen from Groups 2, 3 or 4 can be taken instead of an Arts subject.

In addition students are required to complete a course in Theory of Knowledge (TOK), to write an Extended Essay of 4000 words on a subject of their choice, and to complete a minimum of 150 hours of activities in the areas of Creativity, Action and Service (CAS).

### **Theory of Knowledge**

The Theory of Knowledge (TOK) course, taken by all Diploma students, explores the assumptions and values on which the various subject disciplines are based, as well as their limitations, and considers the implications for our pursuit of 'the truth'. Students are encouraged to reflect critically on the nature and validity of 'knowledge claims' within their various subjects and to draw on their personal experience as well as what they have been taught. TOK is taught by a team of teachers from different subject disciplines, and assessed by means of an essay (from a prescribed list of titles marked externally); and an oral presentation on a topic of the student's own choice (marked internally).

### **Extended Essay**

The Extended Essay is a substantial piece of independent research (4000 words) on a topic of the student's choice from a wide range of subject areas and supervised by a member of staff. The emphasis is on original research, careful analysis, and academic rigour. The essays are marked externally.

### **Creativity, Action and Service (CAS)**

In addition to their academic studies, every IB Diploma student is required to complete a CAS programme, including around fifty hours of activities in

each of 'Creativity', 'Action' and 'Service'. The overall aim is to provide for the well-rounded development of imaginative, healthy and compassionate young people who leave school ready and able to participate in the life of the wider community. It is through their CAS activities that students are most able to develop many of the IB Learner Profile characteristics and is therefore central to their "IB experience". While the School offers a wide range of opportunities for fulfilling the CAS requirements, students are encouraged to come up with their own ideas and activities.

### **Assessment**

Responsibility for academic judgment on the quality of candidates' work rests with the team of examiners worldwide and chief examiners with international authority. The final exam session takes place in May and results are issued in early July. Both the IB and Sevenoaks School takes academic integrity very seriously. We want the students to develop, explore and communicate their own ideas. Any instance of academic dishonesty (e.g. plagiarism or collusion) will result in severe consequences, and could jeopardize the awarding of the Diploma.

Each subject is graded on a scale of 1 (minimum) to 7 (maximum). The award of the Diploma requires students to meet certain standards and conditions including a minimum total of 24 points and satisfactory completion of the Extended Essay, Theory of Knowledge and CAS (Creativity, Action and Service). The maximum score of 45 points includes three points for exceptional work in TOK and an excellent Extended Essay.

### **University Admission**

The IB Diploma is recognised and respected as an entry qualification to all British universities, including the most prestigious, as well as those in the USA and elsewhere in the world. Almost all IB graduates from Sevenoaks in recent years have gained places at top universities.

**John Sprague**  
*Director of IB*

**Nigel Haworth**  
*IB Diploma Programme Co-ordinator*

# GROUP ONE: LANGUAGE A: English

*Head of Department: Mrs C J Henshaw*

English Literature is a mandatory element of the IB Programme. As such, students are able to pursue it at either Higher or Standard Level.

The IB English course is dynamic and exciting. There are three distinctive elements:

- The **international** nature of the course: a significant number of texts are studied in translation.
- The two **oral** assessments
- All exams are terminal, rather than modular.

In addition to the 30% oral coursework which is internally assessed, there is a written coursework component which constitutes 25%. The final 45% of the course is accounted for by the final written examination, which tests candidates in their knowledge of Literary Genres and in Unseen Appreciation.

Higher Level students study thirteen texts in all. They are taught by two teachers in a total of nine periods per fortnight. Standard Level candidates study ten texts, and are taught by just one teacher, enjoying five periods in both the Upper and Lower Sixth.

The programme is flexible in its range of texts, but departmental prescription ensures that Higher Level candidates study Shakespeare, and cover a full range of genres and periods.

Candidates are marked against specific and published criteria which test the use of language, the knowledge of works, the quality of ideas and presentation, and literary insight and response. Ultimately, students who take IB English will benefit from an appreciation of literature which is both rigorous in its depth and international in its breadth and perspective.

## **ENGLISH Literature and Performance**

*Head of Department:* Mr M P Beverley

### **Standard Level only**

Now a well-established alternative to Standard Level English, this course combines the study of Literature with aspects of Theatre. It suits students who wish to combine English with Drama, or who would like to approach the study of texts from a performance perspective. Lessons involve a mixture of conventional literary study and performance work, with emphasis on the potential and actual inter-relationship of the two. Previous experience of Drama is not essential.

As well as exploring practical approaches to performance, students study a minimum of five texts:

- 2 works of poetry (for written examination)
- 1 prose work (for written examination)
- 1 Shakespeare play (for performance and written coursework)
- 1 further work of poetry or prose (for theatrical transformation)

There are two written exam papers, each worth 20% of the total marks:

- Paper 1: Prose and Performance (1½ hours)  
One essay question concerned with issues involved in transforming a novel into a performance.
- Paper 2: Poetry (1½ hours)  
One comparative essay from the poetry questions on the Standard Level English genre paper.

There is one externally assessed coursework essay of 1500-2000 words, worth a further 20% of the total mark, based on the student's own performance of extracts from a Shakespeare play, and combining literary with theatrical analysis.

Internal assessment takes the form of a devised theatre performance transformed from a poetry or prose text studied in class, together with an oral presentation explaining, justifying and evaluating the performance. Performance and Oral together make up 40% of the total marks.

Literature and Performance offers an alternative to the Literature syllabus, while enjoying the same prestige and status with both the IB and universities, but is not an easier option.

# GROUP TWO: MODERN & CLASSICAL LANGUAGES

Head of Faculty: Mr D W Mott

The study of a foreign or classical language is a compulsory part of the IB programme at either Higher or Standard Level. Both levels give the opportunity to increase competence in the written and spoken language, and also to develop knowledge of the culture and civilisation of the 'target-language' country through reading both literary and non-literary texts, and working with native language assistants in weekly conversation lessons.

It is essential to develop oral fluency and therefore Higher Level candidates must, and Standard Level candidates should, ensure that they spend time in the 'target language' country. We have established exchanges and study trips (which are accompanied by school staff) with schools in France, Belgium, Germany, Russia, Spain and Italy, and students are encouraged to take advantage of these.

The following information offers guidance for the appropriate course.

**Language A1: Language and Literature** (SL or HL) is for a fluent language user. Students who complete this course will receive a Bilingual Diploma as they will also study English A1. This course is for a student who:

- is a native or near-native speaker; (s)he will be bilingual in reading and/or writing
- lives, or has lived for a significant period, in a country where the target language is spoken

**Language B** (SL or HL) is for a language learner who:

- has two to five years experience of the target language (eg GCSE or equivalent)
- has lived and been taught outside the country where the language is spoken

**Ab initio** (SL only) is for a beginner who:

- has little or no previous experience of the language
- may, in the case of a language with a written script different from the English one, have had formal lessons for up to one year in the target language

*The following modern language courses are normally offered and taught as a standard part of the Sixth Form curriculum. However, provision is still subject to there being sufficient demand.*

A1: Language and Literature		Language B		Ab Initio
Higher Level	Standard Level	Higher Level	Standard Level	Standard Level
French	French	French	French	Italian
German		German	German	Japanese
			Mandarin	Mandarin
		Russian	Russian	
		Spanish	Spanish	Spanish

*The following modern language courses are offered subject to demand and/or availability of resources on a year-on-year basis. The school reserves the right not to offer a course in any one year.*

A1: Language and Literature		Language B		Ab Initio
Higher Level	Standard Level	Higher Level	Standard Level	Standard Level
Mandarin	Mandarin	Mandarin	Italian	Russian
Spanish			Japanese	
Russian			Hindi	

*In the event of there being insufficient demand it may be possible to arrange tuition on a private basis (i.e. the costs to be met by the parents). Private tuition must be arranged by, and under the supervision of, the School. For the avoidance of doubt, the payment of fees for private tuition will not lead to any reduction in the normal school fee.*

It may also be possible to organise private tuition for the following languages, either for public examinations or for intellectual curiosity: Arabic, Danish, Dutch, Finnish, Modern Greek, Norwegian, Portuguese, Swedish.

At both Standard and Higher Levels, the written examinations comprise 70% of the examination. The text-handling paper involves comprehension exercises and language manipulation exercises as well as a written response to a stimulus text. The written production paper and written assignment require students to write in a range of registers (everything from an informal letter to a formal discursive essay). Language B Higher Level students are also required to study two literary works as part of their course.

The oral component constitutes of 30% of the whole. Candidates at both levels are required to participate in group discussions and in individual orals to present their knowledge and opinion on topics they have researched.

## **CLASSICAL LANGUAGES (Latin and Greek)**

*Head of Department: Mr S M Carr*

Students studying Latin and Greek at Higher and Standard Levels read a selection of the works of ancient authors so that, while all the time improving their linguistic competence, they can develop critical understanding and appreciation of the literary qualities, historical and cultural contexts, and philosophical ideas contained in these works. Pupils are also encouraged to become aware of the place of such texts in the history of European literature and ideas, and to consider the essential differences and similarities between the classical civilisations and their own.

The final exam consists of two papers. In Paper One the candidate has to translate an unseen passage from a prescribed author. For Paper Two pupils have to study two topics, from a choice of five genres, and are then tested on their linguistic understanding, literary appreciation and response, and their knowledge of the historical and cultural background of text studied, through questions on extracts from the set works.

### **The prescribed authors for Paper 1 are:**

Higher and Standard Latin - Cicero (Speeches) and Ovid (Metamorphoses)  
Greek - Xenophon

### **For Latin the topics for Paper 2 are:**

1) Epic - Virgil 2) Philosophy - Lucretius 3) Elegaic and Lyric Poetry - Catullus and Horace 4) Historiography - Tacitus 5) Letters - Pliny

### **For Greek they are:**

1) Epic - Homer 2) Tragedy - Euripides 3) Comedy - Aristophanes  
4) Historiography - Herodotus 5) Philosophy - Plato

For each topic a text from each author is set, which is read in the original. Higher Level students read a longer prescription than Standard Level.

A further element is an internally assessed Individual Study. Under the guidance of the teacher the pupil researches a topic in classical history, literature, language, religion, mythology, art or archaeology, of his or her own choice, and writes a 1200 (Higher Level) or 800 (Standard Level) word essay or commentary. This Individual Study counts for 20% of the final assessment. Most years, the Classics Department is fortunate to be able to run a study trip to Rome for pupils in the Lower Sixth studying a classical subject. We stay for a week, exploring Rome, placing the literature in the context of the ancient city.



## ECONOMICS

*Head of Department: Mr P L Eversfield*

**Economics** is a well-established subject in the Sixth Form, with approximately 130 students currently in each year of their IB course. All students, whether coming from the Middle School or new to the School, start the subject 'from scratch' with no presumption of prior knowledge.

The subject is offered at both Higher and Standard Level, with core topics common to both, and extension material required for Higher Level. The common themes are: microeconomics, focusing on individual consumers, producers and markets; macroeconomics, focusing on national economic issues such as inflation, unemployment, growth and the balance of payments, including the theoretical and policy debate; international trade, focusing on trade policy, exchange rates and international economic relations; and finally development economics, looking at the causes and consequences of economic development and the problems and strategies available to less developed, or underdeveloped, nations.

Assessment at both levels is through final examination and coursework. The examination consists of three papers (two at Standard Level) using essay and data response questions. Coursework is completed during the two years with students required to write four commentaries on relevant, current news articles from the media, providing an opportunity to explore issues of interest away from the examination room.

The course requires students to apply their theoretical knowledge to problems in the real world, with particular emphasis on international issues. It is therefore important for students to take an active interest in current affairs by reading the 'quality' press, magazines and journals, and making selective use of television and radio programmes.

*Please note: the school no longer offers Business and Management.*

## GEOGRAPHY

*Head of Department: Mr P R Thompson*

Geography is a dynamic subject that is firmly grounded in the real world and focuses on the interactions between individuals, societies and the physical environment in both time and space. It seeks to identify trends and patterns in these interactions and examines the processes behind them. It also investigates the way that people adapt and respond to change and evaluates management strategies associated with such change. Geography describes and helps to explain the similarities and differences between spaces and places. These may be defined on a variety of scales and from a range of perspectives.

At **Standard Level**, pupils study the Core Theme – *Patterns and change*. This provides an overview of the geographic foundation for the key global issues of our times. The purpose is to provide a broad factual and conceptual introduction to each topic and to the UN's Millennium Development Goals, in particular those concerning poverty reduction, gender equality, improvements in health and education and environmental sustainability. The core theme also develops knowledge of the likely causes and impacts of global climate change. In addition, two other Themes are studied – *Oceans and their coastal margins* and *Extreme environments*. Students also acquire a number of geographical skills: mapping, graphics, statistical calculations, data research/processing/interpretation and the application of ICT. There is an element of Internal Assessment leading to **one** written report (25%) based on a fieldwork question, information collection and analysis with evaluation (2500 words). The final examination includes two papers.

The **Higher Level** programme includes the same Core Theme as the Standard Level. HL pupils study **three** optional themes – *Oceans and their coastal margins*, *Extreme environments* and *Urban environments*. In addition, HL students study the HL extension – global interactions. The **HL extension** theme focuses on the global interactions, flows and exchanges arising from the disparities that exist between places. It presents important and contestable geographic issues of change in space and time. HL students also acquire a range of geographical skills: mapping, graphics, statistical calculations, data research/processing/interpretation and the application of ICT. There is Internal Assessment leading to one written report (25%) based on a fieldwork question, information collection and analysis with evaluation (2500 words). The final examination consists of three papers.

Fieldwork plays an important role in the study of Geography. In addition to local studies during term time, we also go on a 10 day field course to Morocco (Marrakech, High Atlas and Saharan fringe) during the Easter holidays of the Lower Sixth.

## HISTORY

*Head of Department: Mr G Parker-Jones*

The aim of the IB History course is to enable students to develop a critical and reflective understanding of the past and the forces that shaped it. Many of the themes of the course have an enduring relevance – the formation and disintegration of states; authority and legitimacy in government; revolution, nationalism and conservatism. The structure of the IB History courses enables students to engage with these ideas at a global level, as it requires them to consider change and continuity not only over time but also between countries and regions. Considerable attention is given to the development of written communication, skills of analysis and explanation.

Both Higher Level and Standard Level students study a core of twentieth century History, focusing on the inter-war period in Europe, the dictatorships and The Cold War. In addition, Higher Level students examine key processes and concepts in nineteenth century History, including different models of political legitimacy; nationalism, revolution and ideology; and state formation in Germany, Italy and Russia. All History students are also required to complete a piece of coursework: a 2000 word written investigation on a topic of their own choosing (subject to guidance). Many pupils also choose to write their IB Extended Essay on an historical topic; this is strongly recommended for those wishing to apply for a History degree programme. Every year several Sevenoaks IB History students go on to study History, or degrees including History, at a range of highly competitive UK and international universities.

	SL	HL	Topics
Paper 1	30%	20%	Peacemaking and peacekeeping - international relations 1918-36
Paper 2	45%	25%	The cold War (US-Soviet Relations, China, Germany, Korea and Vietnam); single party rulers (communism in Russia and China, Nazi Germany).
Paper 3	N/A	35%	Europe in the nineteenth and twentieth centuries - imperial and communist Russia; Conservation and Reaction in Europe after 1815; Italian unification to 1871; German unification and the Second Reich to 1890.
Historical Investigation	25%	20%	A 2000 word investigation on an aspect of the taught course. This is written in class and as homework in the second half of the Lower Sixth year.

## PHILOSOPHY

*Head of Department: Mr T Stuart*

The aim of the course is to produce a philosopher. Thus, rather than concentrating on what philosophers in the past have said, it tries to inculcate the skills necessary for philosophical thought to flourish.

The open-ended nature of the subject (and the course) is both liberating and daunting; the former because the very elasticity of the ‘boundaries’ allows great scope for freely exploring ideas; the latter because there is not a finite body of knowledge which, once learnt, automatically produces satisfaction. The pupil who chooses Philosophy must be comfortable with this as well as being willing to give the necessary time and mental effort to thinking things through.

Philosophy can be taken at Higher or Standard Levels. Both levels include:

- the **Core Theme** (considering a range of problems related to what it means to be human)
- **Ethics**
- **Text** (a critical examination of Descartes’ Meditations)
- **Coursework** (1600–2000 word essay prompted by some non-philosophical stimulus).

In addition, the Higher Level includes **Religion** and the study of **Philosophy as an Activity** (as interpreted variously in terms of methodology and scope).

Further details of these elements, together with a good deal of other information about the course and the department can be found on our website [www.sevenoaksphilosophy.org](http://www.sevenoaksphilosophy.org).

# PSYCHOLOGY

*Head of Department: Mr I C Campbell*

## **Introduction**

Psychology is the study of behaviour and mental processes, and with its roots in both the natural and social sciences it provides a unique opportunity to understand modern society.

## **Core: Levels of Analysis**

The core of the course explains behaviour from biological, cognitive and sociocultural perspectives, and attempts to integrate these three approaches holistically. Some of the specific topics in the core include localising brain functions using split brain research, studying how visual perception is affected by culture, and how and why people often conform to the behaviour of a group they belong to. Themes which are integrated within all these approaches include culture, gender, methods and ethics.

## **Option: Abnormal Psychology**

Abnormal psychology focuses on diagnosing, explaining and treating humans suffering from psychological disorders. This option begins with a consideration of 'normal' and 'abnormal behaviour' and then looks into the issues related to diagnosis and treatment. Students look at a range of psychological disorders but focus in depth on depression and bulimia.

## **Coursework**

Students are required to plan and undertake a simple experimental study and then to produce a written report of their research. Examples might include investigating the effect of physical attractiveness on the prison sentence given to a criminal, or looking at the effects of leading questions on the accuracy of eyewitness reports.

## **External assessment**

**Paper 1 (the Core):** Three short answer questions and one essay question (50%)

**Paper 2 (the Option):** One essay question (25%)

**Internal assessment of one psychology experiment:** (25%)

Students have access to a large book and DVD library to broaden their knowledge and understanding, a Psychology discussion group led by students and occasional visiting speakers.

## GROUP FOUR: SCIENCES

*Head of Science Faculty: Mr G A Lawrie*

IB Science starts from the assumption that all students should become aware of the way in which scientists work and communicate with each other throughout the world. This approach is especially evident in the Group Four Science Project, an extended research project which is undertaken by all IB students.

Those students who take more than one Science subject will have the opportunity to investigate a research problem from the perspective of different disciplines. The project forms part of the Internal Assessment marks which contribute to the final grade. The common model of Internal Assessment permits a wide variety of types of investigation to take place and contributes 24% to the final mark, except in Design Technology where the contribution is 35%.

There are three examination papers:

*Paper 1. Multiple choice answers*

*Paper 2. Data based question (compulsory) and extended response questions.*

*Paper 3. Compulsory short answers/structured questions on optional topics.*

The syllabus for each subject consists of core material which is common to both Higher and Standard Levels and options from a range of topics.

## **BIOLOGY**

*Head of Department:* Mrs K L Pitcher

Both Higher Level and Standard Level courses in Biology have a thematic approach. The four unifying biological concepts are:

- Structure and Function of Organisms
- Universality versus Diversity in the living world
- Equilibrium
- Evolution

The courses are regularly updated; they include up-to-date science and address current issues.

The Higher and Standard Level courses are taught separately within the Department and both prove popular with students. The Higher Level course provides an excellent qualification for entry into university courses such as Biological Sciences, Medical and Veterinary Sciences and Neurobiology.

The Standard Level course may be the only Biology a student studies, and has therefore been designed to provide a good understanding of human physiology, the environment and the implications of science in society, including genetic engineering and the ethical issues surrounding the use of therapeutic stem cells.

Both Higher and Standard Level courses have a statistical analysis section, which enables students to analyse data more fully during practical assessments. The practical work and development of practical skills are important and integral parts of both courses. They aid critical thinking as well as comprising a significant proportion of the student's final exam grade.

## CHEMISTRY

*Head of Department: Dr S M Owen*

The IB Chemistry course is divided into three sections: Core, Additional Higher Level and Options. The Standard Level students study the Core and two Options whereas the Higher Level students study the Core, the Additional Higher Level material and two Options.

The Core is made up of 11 topics in physical, inorganic and organic Chemistry. Students study the nature of the atom and how the number and arrangement of outer shell electrons leads to the properties of atoms and molecules. This leads on to a study of the trends in physical and chemical properties within the Periodic Table. Students learn about the key factors which influence how and why chemical reactions take place and how changes in conditions can affect the rate and yield of a reaction. In the sections on acid and bases and redox reactions, students learn about the differences between strong and weak acids and how to predict the feasibility of a redox reaction. Organic chemistry is introduced through the study of hydrocarbons and extended to look at the interrelationships between significant functional groups.

The additional Higher Level material extends the subject introduced in the Core, introducing more advanced treatments of the structure of atoms and molecules and taking a more quantitative approach to problem-solving.

For both Higher Level and Standard Level students must study two options. All Options are available at Higher Level and Standard Level and consist of a core component and an 'extension' component only studied by the Higher Level students. All Higher Level students study the Further Organic Chemistry Modern Analytical Chemistry options. Standard Level students study any two options from: Human Biochemistry, Chemistry in Industry and Technology, Medicines and Drugs, Environmental Chemistry, Food Chemistry, Further Organic Chemistry, Modern Analytical Chemistry.

The Higher Level course provides a very good grounding for the study of physical or biological sciences at university, whereas the Standard Level course provides a basic grounding in Chemistry which may be useful to students who wish to concentrate on other sciences or related courses at university.

## DESIGN TECHNOLOGY

*Head of Department: Mr G A Lawrie*

The programme is based on a model of learning which incorporates knowledge skills and design principles in problem-solving contexts. The aim is not solely the acquisition of knowledge about design and technology but about learning how to adapt to new experiences and approach problems with the appropriate skills and the relevant techniques so that students may identify the important elements of a design problem and develop an optimum solution.

The common core topics for both Higher Level and Standard Level focus on how designers carry out their activities, their consequent responsibilities to users and the effect of their actions on society at large. Knowledge of the properties and characteristics of a range of materials is gained and how these interface with appropriate manufacturing techniques and production systems.

Students at Higher Level will extend their knowledge of the core topics by focusing in greater detail on the structure and behaviour of materials and associated resource issues. In addition students at both levels study one option (which is a slight difference to the other Science subjects where they study two). The option studied at Sevenoaks is 'CAD/CAM' and again the Higher Level students will study Advanced Higher Level material for this option. The role of the designer in a global society is a central theme of the options.

The practical programme consists of a number of investigations based on the various elements of the course. Some of these investigations will be of a short duration, i.e. one or two lessons; some over a number of weeks; and one will be a project of considerable depth based on a problem chosen by the students.

No previous experience in design technology is assumed at the start of the course, but those students with existing knowledge and skills will be able to build on this in aspects of the practical programme.

Although Design Technology is in the Experimental Sciences group, it suits equally well arts-based students who wish to gain an understanding of how products and systems are designed, and their effect on the environment. The course is not solely about 'high technology' in a sophisticated industrialised society but also looks at the sustainability of technologies and how to exercise judgement and responsibility in their usage.

## **PHYSICS**

*Head of Department: Dr S J Sharp*

Physics is the most fundamental of the experimental sciences in that it seeks to explain the basic features of the natural world primarily in terms of the interactions between matter and energy and the underlying laws thereof. This is reflected in both the Standard Level and the Higher Level programmes with students also being made aware of the connecting domains of physical laws, experimental skills and some of the social and historical aspects of Physics.

The IB Physics course is divided into three sections: subject specific core, additional Higher Level, and Options. Standard Level students study the subject specific core and two options; whereas Higher Level students study the subject specific core, the additional Higher Level material and two options

The Subject Specific Core introduces basic ideas and concepts from different areas of Physics (e.g. mechanics, thermodynamics etc.); these ideas are explored in more depth and breadth in the Additional Higher Level material. The Standard Level options include Sight and Wave Phenomena, Quantum and Nuclear Physics, Digital Technology and Relativity and Particle Physics. The options of Astrophysics, Communications and Electromagnetic Waves are common to both Higher and Standard Levels. There are three further options for Higher Level only; these are Relativity, Medical Physics and Particle Physics.

Higher Level Physics is an excellent and essential course for any student intending to study Physics or a Physics related course at University, such as Natural Sciences (Physical) or Engineering. It also provides good support for other courses such as more general science courses, Mathematics, Economics and Medicine. Standard Level Physics is suitable for students with an interest in or curiosity about the natural world.

## SPORTS, EXERCISE AND HEALTH SCIENCE

*Head of Department: Mr G R Dinsdale*

The **aims** of the course are to :

- acquire knowledge and understanding to apply scientific principles in relation to sport
- enable students to critically analyze human performance
- encourage students to question data and appreciate the value of the scientific method

This new and exciting **standard level** course incorporates the traditional disciplines of anatomy, physiology, biomechanics, psychology and nutrition, which are studied in the context of sport, exercise and health. Students cover a wide range of topics from an applied perspective. The Biology-based topics look at the structure of muscles, bones, and joints as well as how structure is adapted to function in the ventilatory, cardiovascular, nervous and muscular systems. As well as these human physiology-based topics, students study some biochemistry when looking at nutrition and some physics through studying biomechanics. A short maths topic ensures students have the skills to effectively analyse the relevance of their data collected during practical work. The more sports science based topics include skill in sport, psychology and measurement and evaluation of human performance.

The course includes a variety of practical experiments where students develop their scientific investigation skills. The assessment does not test physical performance.

This course will suit students who like to apply science to sport and will complement a wide variety of other subjects.

### **Core:**

- anatomy
- exercise physiology
- energy systems
- movement analysis
- skill in sport
- measurement and evaluation of human performance

### **Options:**

- optimizing physiological performance
- psychology in sport
- physical activity and health
- nutrition for sport and exercise

### **Assessment**

- |                                       |     |
|---------------------------------------|-----|
| • External examinations (3 papers)    | 76% |
| • Internal assessments                | 24% |
| Practical experimental investigations |     |

# GROUP FIVE: MATHEMATICS

*Head of Department: Mr T C R Jones*

## **Higher Level (HL)**

This course is designed for students with a very strong background in, and enthusiasm for, the subject. It comprises a Core syllabus and one of five Options; the Core includes work on Number and Algebra, Vectors, Matrices, Geometry, Trigonometry, Calculus and Probability.

The assessment is by three written papers and a portfolio of work worth 20% of the marks available.

## **Standard Level (SL)**

This course is intended for students with a strong Mathematics background wishing to support a scientific subject at Higher Level or intending to follow future studies which require some more advanced techniques than those offered in the Mathematical Studies course. The content is approximately half that of Higher Level. The assessment is by two written papers and a portfolio of written work worth 20% of the marks available.

## **Mathematical Studies (MSSL)**

This course is intended for students with a variety of backgrounds and abilities, aiming to equip students with some of the skills necessary to cope with the demands of a technological society on the non-specialist. Students are required to apply some of the Mathematics they have learned to a problem of their own choice; this project forms part of the final assessment. The syllabus includes work on Functions, Computation, Data Analysis, Structure, Geometry and Trigonometry. The assessment is by means of the project and two written papers.

Some students must choose to study the HL or SL course in order to gain entry to university in a particular country or for a particular course. Mathematical Studies is not always a sufficient qualification for entry. Requirements change from time to time and all students must ensure that they are choosing the appropriate course for their ability and ambitions. At appropriate times in the Lower Sixth, it is possible to change Maths courses, but before a request is made full consideration must be given to the implications of the change for university entrance.

Pupils wanting to study Mathematics at Higher level are expected to gain an A\* at IGCSE and an A or B at Additional Maths in Year 11 or equivalent. Those wanting to study Mathematics at Standard Level are expected to gain an A\* at IGCSE and grade A-C at Additional Maths. All others are advised to join the Maths Studies Standard Level course.

External candidates who have not taken IGCSE or Additional Maths should check requirements with the Admissions department.

## GROUP SIX: ELECTIVES

### MUSIC

*Head of Department: Mr C H Dyer*

The IB programme in Music is designed to promote greater awareness and understanding of both the power and variety of musical experiences for those who have a general interest, as well as for those intending to continue their study of music further. Candidates are exposed to a broad spectrum of music, ranging from that of Western traditions to that of non-western regions and cultures. The Music department's busy programme of concerts in school and of concert trips outside will complement performance and listening opportunities during the course and will aim to promote the importance of the living aspect of music in all styles. It is therefore essential that candidates opting for music are prepared to throw themselves wholeheartedly into the activities which the department lay on. These include the School Choral Society and an ensemble appropriate to the candidate's musical ability.

At Higher and Standard levels the creative, practical aspects of musical experience are balanced with the theoretical /academic. The syllabus is split into three main elements: a study of music in society from 1550 to the present day, which also incorporates the study of two set works (30%); Performance (25%); and Composition (25%). Candidates also undertake a musical investigation in the form of a media script investigating the relationship between two musical genres (20%).

SL candidates choose either Performance or Composition, a component that accounts for 50% of the qualification. Candidates without a strong interest in performance and/or composition are unlikely to achieve the highest scores.

Through the study of music of various cultures each student develops an awareness both of general aspects of style and social context and more specific technical features. In all areas there are some specific works to be studied as well as time to build up an overall picture of musical contrast and development. This area is assessed in an exam at the end of the course, an 'unprepared' listening paper in which each student is required to make observations about pieces they may or may not have heard before on CD and in score. Both the Composition and the Performance elements are assessed as coursework. Candidates are free to perform whatever music they choose. The composition portfolio is made up of two harmony and counterpoint exercises, one structured arrangement and one free composition.

Importance is attached to individual development during the course as well as specific standards. The structure of the programme and the weighting of assessment reflect the fine balance between emphasis on theoretical study and creative flexibility

## THEATRE

*Director of Drama: Mr G E Henry*

The IB Theatre student, at both Higher and Standard Levels, engages in an integrated study of many aspects of theatre, both practical and theoretical. These include the study of play texts and theatre traditions from different cultures, the practical application of performance skills and production techniques, and the evaluation of live theatre performances. At both Levels, the course places great emphasis on the interdependence of these aspects, as well as on the co-operative nature of theatrical activity, and the development of independent research skills.

### **At both Higher & Standard Levels**

There are two internally assessed components worth a total of 50%:

1. Theatre Performance and Production Presentation (PPP).  
An oral presentation with images – HL 30 minutes & SL 20 minutes
2. Independent Project - Creative Practical Option and written portfolio  
3000 words HL & 2000 words SL

and two externally examined components worth 50%:

3. Research Investigation – an academic essay based on a play from a different culture  
2500 words HL and 1750 words SL
4. Practical Performance Proposal - a written pitch with explanatory visual materials  
(1250 word rationale for HL only)

There are no written examination papers for IB Theatre. The course is supplemented by regular professional theatre visits to both mainstream and more experimental productions, enabling students to see theatre practices and techniques in action and to broaden their theatrical experience.

## VISUAL ARTS

*Head of Department: Mr C M Thomas*

The course is organised in such a way that it combines the development of technical/practical skills with intellectual and conceptual understanding and art history.

It allows pupils the opportunity to express themselves in a wide variety of media and on themes and ideas that are student led. Following the first term, the course has two components, and can be studied at **Higher Level** or **Standard Level**.

The course encourages pupils to explore their aesthetic, imaginative and creative faculties and trains them in visual and cultural awareness, perception and criticism.

### **Higher and Standard Level**

The programme consists of two parts, both of which are compulsory:

- (a) Studio (practical) work
- (b) Investigation Workbook

### **Studio (practical) work**

The studio course includes opportunities both for structured learning of the values of colour, tone, form, design etc., and for wide-ranging personal research of a more experimental nature. One aspect of the course does not exclude the other. In this course visual understanding and expression may be taught through techniques such as:

Ceramics  
Sculpture  
Digital Art  
Drawing  
Painting

Photography  
Thematic Studies  
Video and Animation  
Printmaking

Much studio work will combine several of these techniques and any media may be used.

Please see [www.sevenoaksschoolartspace.com](http://www.sevenoaksschoolartspace.com) There are pages for Lower Sixth and the Upper Sixth to see.

## THEORY OF KNOWLEDGE

*Head of Department: Mr J T Sprague*

In Theory of Knowledge we introduce some of the complexities and problems associated with knowledge. We look at what we believe to be true, the reasons we have for holding these beliefs and whether or not the reasons for holding them are good reasons. It is a wide-ranging course, and deals with

- Subject-related issues (*Is there such a thing as the scientific method? What makes a great piece of art? How reliable are history books?*)
- Personal and contemporary issues (*How can I know what is right? To what extent can we trust the media? How am I influenced by my culture?*)
- Perennial philosophical problems (*Can we know if God exists? Are humans predictable? Do our senses give us the truth?*)

While Theory of Knowledge demands and helps to develop rigour and logical analysis it goes well beyond what a traditional course in critical thinking might involve. The aim is to introduce students to a whole range of ideas and debates and allow them to see their own perspectives, beliefs and opinions in the light of the perspectives, beliefs and opinions of others. As such it demands openness, sensitivity and respect, and students spend a good deal of the course exploring their own views and those of their peers in a collaborative way.

### **Assessment:**

- an internally marked 10 minute oral presentation
- an externally marked 1200-1600 word essay.

The grades from these are combined with the grade from the Extended Essay to give up to 3 points towards a candidate's total score for their Diploma.

## STUDYING THE INTERNATIONAL BACCALAUREATE

There are 5 compelling reasons for studying the IB:

It provides a **better preparation** for:

### 1. **University**

- 19% of IB entrants achieved a first-class honours degree, compared to 14.5% with A-Level or equivalent. \*
- IB students are almost twice as likely to study medicine and dentistry: 5.1% compared to 2.9% of A-Level.\*

### 2. **Life**

- With its explicit Learner Profile and core set of values, IB students tend to be more tolerant and open-minded, more compassionate and principled.
- The diploma encourages risk-taking and reflection, so that students are more confident and creative, possessing the integrity and the skills to succeed in a global economy.

### 3. **Living**

- Having studied both literature and at least one foreign language, IB students are articulate on paper and in person, making them great communicators.
- The emphasis on Creativity, Action, Service (CAS) makes students appreciate the need for a healthy balance of physical and mental activity.

### 4. **Learning**

- Intellectually curious, IB students are almost twice as likely as their A-Level and equivalent peers to pursue further full-time study.\*
- The 4,000 word Extended Essay composed as part of the diploma and the study of Theory of Knowledge promote independent and critical thinking.

### 5. **Leadership**

- IB students are more likely to be employed in graduate level jobs, and enjoy higher salaries than their peers.\*
- Literate and numerate, linguistically and scientifically able, IB students are tremendously versatile. Ask any employer, and they will tell you that these are complementary rather than contradictory talents in today's world.

*\*Research published by the Higher Education Statistics Agency (HESA) in 2011*