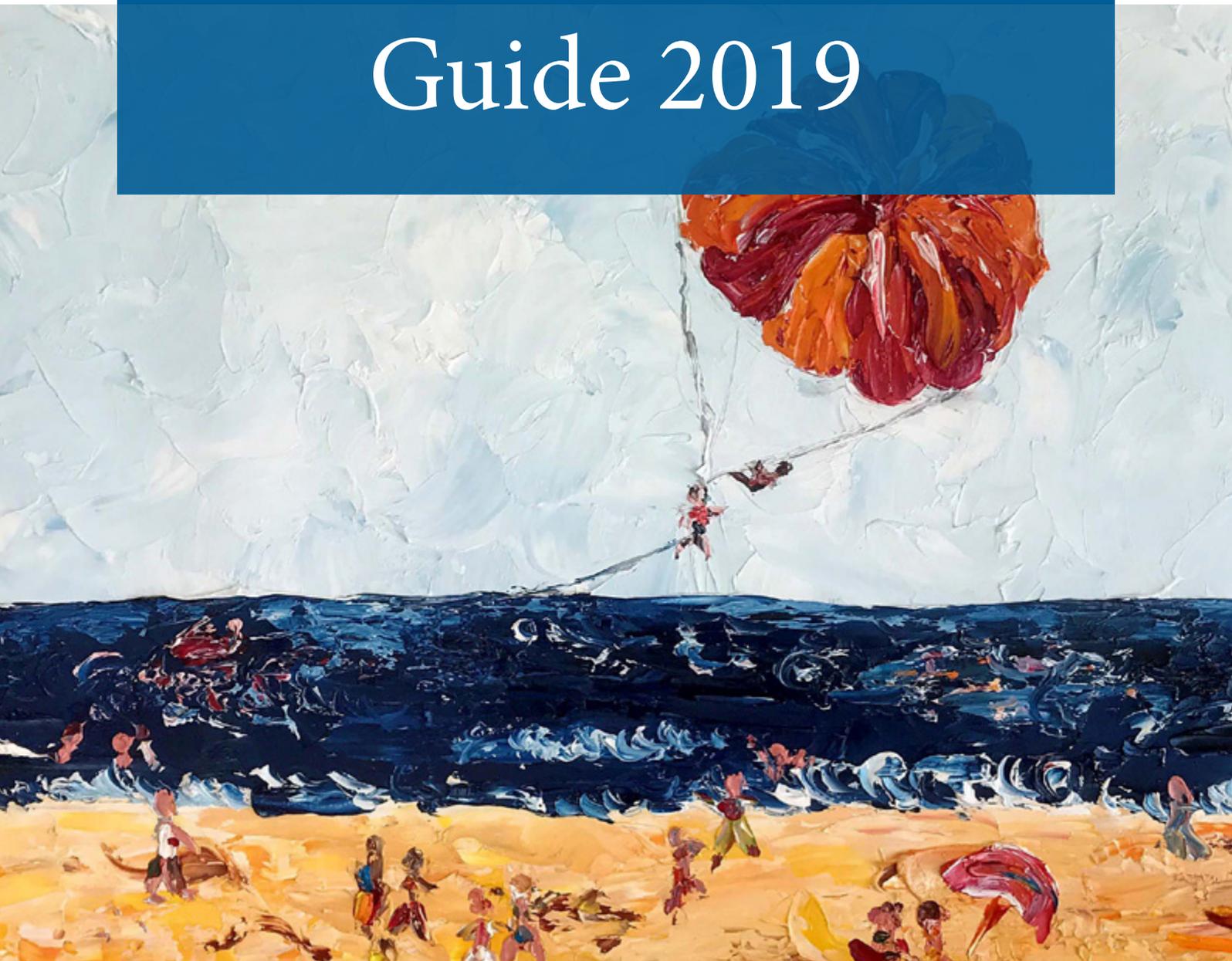




**St Leonard's College**  
An education for life.

# IBDP Course Guide 2019





# Contents

Foreword	4
Introduction	5
English	9
Chinese A	11
Ab Initio Spanish	12
Chinese B	13
English B	14
French B	15
Indonesian B	16
Economics	17
Geography	19
History	21
Psychology	23
Science Subjects	25
Biology	27
Chemistry	29
Physics	31
Sports, Exercise and Health Science	32
Mathematics	34
Music	36
Theatre	38
Visual Arts	40

# Foreword

**This booklet is designed to provide specific information on the studies available in the International Baccalaureate Diploma Programme at year 11 in 2019 and year 12 in 2020.**

It helps to provide a reference in the process where students make choices for their final two years of secondary education, laying a foundation for future work or study.

Each of the IBDP subjects offered at St Leonard's College is described in this booklet, including mention of any prerequisites, a description of the subject, some advice on assessment, and examples of some of the possible career options that the subject might support.

**Please note that a subject will only run provided that a viable number of students choose it. In cases where a subject will not run due to insufficient numbers, families will be contacted so that an alternative can be selected.**

It is important that students ensure that their choices satisfy any prerequisites for courses they may be interested in for future study.

If you have any queries please do not hesitate to contact me at the College.

Robyn Marshall  
**Director of Learning Operations**  
[robyn.marshall@stleonards.vic.edu.au](mailto:robyn.marshall@stleonards.vic.edu.au)

Craig Rodgers  
**IBDP Coordinator**  
[craig.rodgers@stleonards.vic.edu.au](mailto:craig.rodgers@stleonards.vic.edu.au)

# Introduction

## Background

The International Baccalaureate Diploma Programme is a two-year, internationally recognised pre-university course. The International Baccalaureate Organization (IBO) is an international, non-government body that has responsibility for setting the curriculum utilised by all participating schools.

The IBO emphasises a global perspective. On a practical level, IB Diploma holders are accepted for entry into leading universities throughout the world and at all Australian universities. The course also enables students who are internationally mobile to transfer their studies from one IB school to another. The IBDP is based on sound educational principles, offering students breadth and depth of study at an approachable level of challenge, and is excellent preparation for tertiary study.

In 1982 St Leonard's College became the first school in Victoria, and the second in Australia, to introduce the International Baccalaureate Diploma Programme.

## Curriculum

The IBDP is a two-year course. The curriculum structure is based on a framework of subject choices from six designated groups together with three central compulsory components.



## Subject choices

All of the subjects offered by the IBO for study by Diploma students at St Leonard's College are categorised into six groups:

<b>Group 1</b>	<b>Studies in Language and Literature</b> Language A - English, Chinese Literature OR Language and Literature
<b>Group 2</b>	<b>Language Acquisition</b> Language B - Chinese, English, French, Indonesian Language ab initio - Spanish
<b>Group 3</b>	<b>Individuals and Societies</b> Economics, Geography, History, Psychology
<b>Group 4</b>	<b>Experimental Sciences</b> Biology, Chemistry, Physics, Sport, Exercise and Health Science
<b>Group 5</b>	<b>Mathematics</b> Mathematics SL, Mathematics HL
<b>Group 6</b>	<b>The Arts</b> Visual Arts, Music, Theatre

Students are required to study six subjects. One subject is chosen from each of Groups 1 to 5. The sixth subject may be chosen from Group 6, or another subject from one of the other groups. Subjects offered as the sixth subject vary each year and are dependent on student numbers.

If a student chooses to study a subject via an external tutor, the associated costs will be at the expense of the parents.

Students can also study a limited range of courses via the online provider Pamoja Education. Students should speak to Mr McKenzie if they have an interest in studying an online course. Again this cost will be at the expense of the parents.

At least three, and not more than four subjects are taken at Higher Level (HL) and the others at Standard Level (SL). This allows for some subjects to be explored in depth (HL) and some more broadly over the two-year period (SL).

## The three central components

### Theory of Knowledge (ToK)

TOK is a course about critical thinking and inquiring into the process of knowing, rather than about learning a specific body of knowledge. The TOK course examines how we know what we claim to know. It does this by encouraging students to analyse knowledge claims and explore knowledge questions. The task of TOK is to emphasize connections between areas of knowledge and link them to the knower in such a way that the knower can become aware of his or her own perspectives and those of the various groups whose knowledge he or she shares. TOK, therefore, explores both the personal and shared aspects of knowledge and investigates the relationships between them

### Creativity, Activity, Service (CAS)

The CAS component promotes the view that there are significant benefits in being involved in creative pursuits, physical activities and service projects. Participation in CAS encourages students to share their energies and special talents while developing awareness, concern and the ability to work cooperatively with others. Expected participation in these cocurricular activities equates to approximately 150 hours over the two-year period. Seven learning outcomes need to be addressed and expected participation in these cocurricular experiences should equate to approximately 150 hours over the two-year period.

### Extended Essay

Each student is required to investigate a topic of special interest and write an extended essay of 4,000 words. This project provides students with research and writing skills that can be put to good use at university. Each student is supervised by a teacher who advises on resources and writing techniques.

### Assessment

IBDP assessment involves a variety of methods including written examinations, spoken examinations, essays, portfolios, field work, science practical reports and internal assessment of coursework over the two years.

Responsibility for all academic judgements about the quality of candidates' work rests with IB Assistant Examiners worldwide, led by Chief Examiners who are international authorities in their fields.

### The grading system

The IBDP grading system measures the students' submissions against a defined set of performance criteria that is used consistently from one examination session to the next and applied equally to all schools. Students' results are not influenced by how well other students perform.

Each of the six subjects is awarded a grade from 1 (minimum) to 7 (maximum). In addition, performance on the Extended Essay and in the Theory of Knowledge course can gain candidates up to three bonus points. Thus, the maximum possible score for the IB Diploma is 45 points. A Diploma is awarded to any candidate who achieves a minimum total of 24 points, subject to a series of conditions, which include satisfactory completion of the Extended Essay, the ToK course and

the CAS program.

Students who do not reach this level are awarded a certificate that records their achievements. They are ineligible for an ATAR.

### University accreditation

The IB Diploma is recognised by all Australian universities. Students completing the IBDP in 2018 and beginning tertiary studies in 2019 in any Australian State or Territory (except South Australia and the Northern Territory) will receive a Combined Rank measure of overall achievement comparable with the Australian Tertiary Admissions Rank (ATAR). This means that a Combined Rank of 92.45 equals an ATAR of 92.45. This rank is based on the overall result in the IB Diploma, with an aggregate of six IB subjects plus Theory of Knowledge and the Extended Essay, giving scores of up to 45.

The table below samples some of the conversions made in recent years.

IB Score	ATAR 2015	ATAR 2016	ATAR 2017
45	99.95	99.95	99.95
40	98.15	98.30	98.30
36	94.05	94.40	94.60
30	83.00	83.85	84.70
24	66.10	68.10	69.30

## Why choose the IBDP?

The International Baccalaureate offers:

- **Breadth:** the course structure dictates a broad, well-rounded education
- **Depth:** students pursue strong personal interests through their Higher Level subjects and the Extended Essay
- **An international perspective:** the curriculum emphasises the international basis of knowledge and fosters an acceptance of alternative cultures and points of view
- **Currency:** each course within the IB Diploma Programme is reviewed every seven years, and all schools are involved in the process
- **Personal growth:** the course requires personal reflection and allows students to develop an awareness of the world-wide community of thinkers and learners

Above all, education does not stop at the completion of year 12. A vast majority of St Leonard's College students go on to tertiary studies and the IB Diploma Programme offers an excellent preparation for the demands of life at university. The academic rigour of the Higher Level subjects, the depth of research in the Extended Essay, the reflective nature of the Theory of Knowledge course and the service component of the CAS program forge an independence that holds students in good stead for whatever studies they pursue in the future.

## Additional charges for International Baccalaureate Diploma Programme students

Annual subscription charges for IBDP students are paid to the International Baccalaureate Organization. The additional tuition fee, levied in both years 11 and 12, covers student registration and associated costs for the IBDP exams, as well as the four-day Theory of Knowledge camp in year 11. In year 12, IBDP students are charged to sit the General Achievement Test (GAT). Details of the levy can be found in the Information Handbook available on the College website and STL Link.

For more information regarding the IBDP please contact Craig Rodgers, IBDP Coordinator at [craig.rodgers@stleonards.vic.edu.au](mailto:craig.rodgers@stleonards.vic.edu.au) 9909 9597

In addition, consider speaking to students currently enrolled in the IBDP at St Leonard's College.

## Group 1

# English

### Language A: Literature

### Language A: Language and Literature

## Introduction

Group 1 (first language) subjects aim to introduce students to a range of texts from different periods, styles and genres, and to develop in students the ability to engage in close, detailed analysis of individual texts. These subjects also aim to develop students' powers of expression in both oral and written communication. Students are encouraged to recognise the contexts in which texts are written and to understand the different perspectives of people from other cultures. The final aim is to promote an enjoyment of, and lifelong interest in, language and literature.

Students are offered the choice of two different and equally demanding English courses:

- Language A: Literature
- Language A: Language and Literature.

Each course runs over two years and students do not need to decide whether they wish to study at Higher or Standard Level until near the end of year 11.

## Syllabus

### Language A - Literature

#### Part 1: Works in translation

This part focuses on understanding the ways literature represents and interacts with the culture in which

it was written. Students will study works originally written in French, Japanese or Polish.

SL: Two works, HL: Three works

#### Part 2: Detailed study

A close study of particular authors in different genres, such as a Shakespearean tragedy, a novelist such as Joseph Conrad, and a poet such as Margaret Atwood.

SL: Two works, HL: Three works

#### Part 3: Literary genres

At St Leonard's, we choose the genre of drama and include playwrights such as Arthur Miller, Tennessee Williams and Caryl Churchill.

SL: Three works, HL: Four works

#### Part 4: Options

This part of the course gives students an opportunity to study works in a particular genre or period, or from particular countries. They may study works that have been recently published, a film, or a specific collection of poetry.

SL: Three works, HL: Three works

### Language A - Language and Literature

#### Part 1: Language in cultural context

This part focuses on the evolution of the English language and its predominance as the lingua franca in a globalised world, along with the growth of dialects such as 'Singlish' and 'Chinglish'.

**Part 2: Language and mass communication**

Exploration of the power of mass media and social media looking at a vast array of text types, such as newspaper articles, propaganda posters, cartoons, websites and social shorthand lingo (SSL).

**Part 3: Literature – Texts and contexts**

This part covers classical and contemporary literature, some written in English and one translated from another language, such as Spanish, Japanese or German.

SL: Three works, HL: Three works

**Part 4: Literature – Critical study**

A close investigation of aspects of literary language, such as metaphors, narrative as figurative language, narrative voice and theories of literary criticism.

SL: Three works, HL: Three works

**Assessment**

External assessment at Higher Level and Standard Level accounts for 70% of the total grade. It comprises externally assessed essays and two examination papers. Higher Level examinations are two hours; Standard Level examinations are 1.5 hours.

Internal assessment consists of oral work based on Parts 2 and 4 of the course.

## Group 1

# Chinese A

### Language A: Language and Literature

#### Introduction

Group 1 (first language) subjects aim to introduce students to a range of texts from different periods, styles and genres, and to develop in students the ability to engage in close, detailed analysis of individual texts. These subjects also aim to develop students' abilities of expression in both oral and written communication. Students are encouraged to recognise the contexts in which texts are written and to understand the different perspectives of people from other cultures. The final aim is to promote an enjoyment of, and lifelong interest in, language and literature.

The Language and Literature course runs over two years and students do not need to decide whether they wish to study at Higher or Standard Level until near the end of year 11.

#### Syllabus

##### Language A: Language and Literature

###### Part 1 - Language in cultural context

This part focuses on the exploration how language develops in specific cultural context, how it impacts the world, how language shapes both individual and group identity.

###### Part 2 - Language and mass communication

Exploration of the power of mass media and social media looking at a vast array of text types, such as newspaper articles, propaganda posters, cartoons, websites and social shorthand lingo (SSL).

###### Part 3 Literature – Texts and contexts

This part covers classical and contemporary literature, some written in Chinese and one translated from another language, such as English, Spanish, Japanese or German.

SL: Three works, HL: Three works

###### Part 4 Literature – Critical study

A close investigation of aspects of literary language, such as metaphors, narrative as figurative language, narrative voice and theories of literary criticism.

SL: Three works, HL: Three works

#### Assessment

##### External assessment at Standard Level.

1. Paper 1: Textual analysis
2. Paper 2: Essay
3. Written task

##### Internal assessment

1. Individual oral commentary
2. Further oral activity

##### Assessment for HL

###### External assessment

1. Paper 1: Comparative textual analysis
2. Paper 2: Essay
3. Written tasks

###### Internal assessment

1. Individual oral commentary
2. Further oral activity

# Ab Initio Spanish

## Introduction

The College offers the possibility for students to commence Spanish as a new language from the beginning (known as ab initio). The language ab initio course is designed for students with little or no prior experience of the language, therefore Spanish must be new to the student. If a student has been studying another language up to year 10 level and wishes to continue it into the IBDP it must be taken as a Language B subject.

Ab initio Spanish can only be taken at the Standard Level.

Language ab initio is a language acquisition course designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where the language studied is spoken. This process encourages the learner to go beyond the confines of the classroom, expanding an awareness of the world and fostering respect for cultural diversity.

The language ab initio course is organized into three themes:

- Individual and society
- Leisure and work
- Urban and rural environment

Each theme has a list of topics that provide the students with opportunities to practise and explore the language as well as to develop intercultural understanding. Through the development of receptive, productive and interactive skills, students should be able to respond and interact appropriately in a defined range of everyday situations. Some of the topics covered include travel, youth issues, leisure activities and future plans.

## Assessment

Over the two years students will be preparing for three external assessments and one internally assessed, but externally moderated examination (the oral component).

The external assessments are:

- The written assignment
- Paper 1: on reading comprehension (text handling)
- Paper 2: on essay writing (text production) and a written assignment

In year 12 students will also prepare for the individual oral examination conducted by the teacher. This consists of a presentation, a discussion and general conversation based on the themes developed in class.

# Chinese B

## Introduction

The 21st Century has been described as “The Asian Century” and in Australia we need to be focused and methodical in how we equip our young people with the essential skills they will need to engage in this globalised environment. Learning Chinese is at the heart of this training and skill set.

Chinese is spoken in a number of Asian countries. Australia has strong trade and cultural ties with China and its neighbouring countries so the language is a useful tool in industrial, commercial, cultural and scientific fields. Through the language students learn about different periods of history, literature, art and music, and are engaged in new modes of expression and different perspectives on current issues. Students learn how languages work, and the study imparts strategies of learning that can be applied in further language studies.

All language learning helps students to engage with new cultural realities and ideas. Language students develop greater intellectual curiosity along with the understanding that there are different ways of presenting reality.

Chinese in the IBDP continues the development of listening, speaking, reading and writing skills. Students work through a variety of themes over the two years of the Diploma Programme including communication and media, global issues, social relationships, cultural diversity, customs and traditions, health, leisure, and science and technology.

To enter the year 11 course students must have completed year 10 Chinese.

## Assessment

Over the two years’ students will be preparing for three external assessments and two internal assessments at Standard Level (SL) and Higher level (HL).

External assessments:

- Paper 1: Receptive skills
- Paper 2: Written productive skills
- Written assignment: Receptive and written productive skills.

Internal assessments:

- Individual oral
- Interactive oral

# English B

## Introduction

English B provides students the opportunity to study English as an additional language in the Diploma Program. If English B is studied, students will need to study another language as their Language A.

All language learning helps students to engage with new cultural realities and ideas. Language students develop greater intellectual curiosity along with the understanding that there are different ways of presenting reality.

English in the IBDP continues the development of listening, speaking, reading and writing skills. Students work through a variety of themes over the two years of the Diploma including communication and media, global issues, social relationships, cultural diversity, customs and traditions, health, leisure, and science and technology.

## Assessment

Over the two years' students will be preparing for two examinations on reading comprehension (text handling) and essay writing (text production).

In year 12, students will also prepare several interactive oral tasks in class in order to complete the two oral assessments: the interactive oral and the individual oral examination. The latter is conducted by the teacher in term 3 and consists of a presentation of a visual stimulus/image, a discussion, and general conversation based on the themes developed in class.

There is also a written assignment to be completed in year 12. At SL the topic will not be divulged to students before the session while at HL the literary source for this assignment may be an entire work that has been read in class, or a fragment of this work.

# French B

## Introduction

French is widely spoken throughout the world, from the province of Quebec in Canada, through North, West and Central Africa, and of course to Europe. French is an important language in Belgium, Luxemburg and Switzerland, as well as being the national language of France. French, along with English, is one of the two official languages of the United Nations and its agencies. French is also a key language in many international organisations such as the International Olympic Committee, Doctors Without Borders and the Red Cross.

France plays an important role in international affairs, is an important cultural beacon and is referred to as one of the 'motors' of European integration.

All language learning helps students to engage with new cultural realities and ideas. Language students develop greater intellectual curiosity along with the understanding that there are different ways of presenting reality. French students often find they can learn other romance languages, such as Italian and Spanish, more easily.

French in the IBDP continues the development of listening, speaking, reading and writing skills. Students

work through a variety of themes over the two years

of the Diploma Programme including communication and media, global issues, social relationships, cultural diversity, customs and traditions, health, leisure, and science and technology.

To enter the year 11 course students must have completed year 10 French.

## Assessment

Over the two years' students will be preparing for three external assessments and two internal assessments Standard Level (SL) and Higher level (HL).

External assessments:

- Paper 1: Receptive skills
- Paper 2: Written productive skills
- Written assignment: Receptive and written productive skills.

Internal assessments:

- Individual oral
- Interactive oral

# Indonesian B

## Introduction

Indonesia is one of Australia's closest neighbours and links with, and mutual understanding of, this country and its people are important for our country's future. The study of Indonesian offers our students an Asian language with a romanised script and the opportunity to explore fascinating cultural traditions based on an agricultural and religious heritage.

The language is useful for students when visiting Indonesia, Malaysia and Singapore and when mixing with Indonesians and Malaysians in Australia or in future careers. The study of the language reveals the workings of language in general, and imparts strategies of learning that can be applied in further language studies.

Indonesian in the IBDP continues the development of the skills of listening, speaking, reading and writing. Students firstly follow social objectives, being able to respond to the complex demands of everyday communication. Secondly, they pursue academic objectives, demonstrating accuracy and variety in their language use, and cultural objectives showing an awareness and understanding of different cultural mores. With more knowledge students will gain a greater appreciation of Indonesia, its history, traditions and people.

The course comprises five topics: three from the core and two chosen from five options. The core and options

at both Standard and Higher Levels are studied within the culture of Indonesia.

There are three topics in the core: communication and media, global issues and social relationships. These three core topics are compulsory for students at both standard and higher levels. Indonesian students will be studying the two options of health and customs and traditions.

To enter the year 11 course students, need to have completed year 10 Indonesian.

## Assessment

Over the two years students will be preparing for three external assessments and two internal assessments at Standard Level (SL) and Higher level (HL).

External assessments:

- Paper 1: Receptive skills
- Paper 2: Written productive skills
- Written assignment: Receptive and written productive skills.

Internal assessments:

- Individual oral
- Interactive oral

# Economics

## Introduction

Economics is a dynamic social science that studies the problem of scarcity, resource allocation and the methods and processes by which choices are made in the satisfaction of human wants. As a social science, economics uses scientific methodologies that include quantitative and qualitative elements.

The IB Diploma Programme Economics course emphasises the economic theories of:

- Microeconomics, which deal with economic variables affecting individuals, firms and markets
- Macroeconomics, which deal with economic variables affecting governments and societies
- International economics
- Development economics

The ethical dimensions involved in the application of economic theories and policies underpins the Economics course, as students are required to consider and reflect on human end goals and values.

The Economics course encourages students to develop international perspectives, fosters a concern for global

issues, and raises students' awareness of their own responsibilities at a local, national and international level. The course also seeks to develop values and attitudes that will enable students to achieve a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interdependent world.

## Distinction between Higher Level and Standard Level

SL and HL students of Economics are presented with a common syllabus, with HL extension in some topics. While the skills and activity of studying economics are common to both SL and HL students, the HL student is required to acquire a further body of knowledge and develop quantitative skills in order to explain and analyse economic relationships. These skills are specifically assessed at HL in the final examination, therefore the HL component has some simple maths based topics.

All topics covered in year 11 will include the Higher Level components. At the end of year 11 students elect to study Economics at either Higher or Standard Level.

## Assessment

### Standard Level

#### External assessment - 80%

- Paper 1: 90 minutes - extended response (40%)
- Paper 2: 80 minutes - data response (40%)

#### Internal assessment - 20%

Students keep a portfolio in which they collect short extracts from published news media and comment on them in the light of their understanding of economics at that stage of the course. Three 650 to 750 word commentaries are selected for assessment.

## Higher Level

#### External assessment - 80%

- Paper 1: 90 minutes - extended response (30%)
- Paper 2: 90 minutes - data response (30%)
- Paper 3: 60 minutes - HL extension paper (20%)

#### Internal assessment - 20%

Students keep a portfolio in which they collect short extracts from published news media and comment on them in the light of their understanding of economics at that stage of the course. Three 650 to 750 word commentaries are selected for assessment.

# Geography

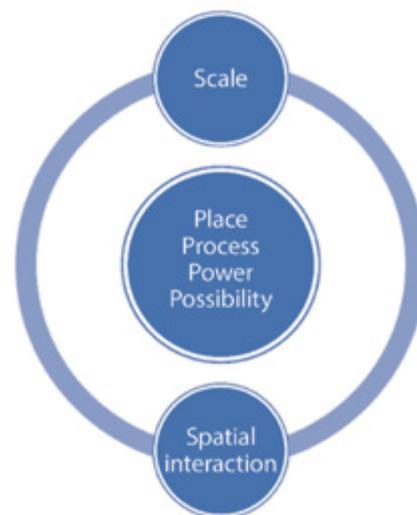
## Introduction

The new Geography course will have its first set of exams in 2019. Geography is a dynamic subject that is firmly grounded in the real world and focuses on the interactions between individuals, societies and physical processes in both time and space. It seeks to identify trends and patterns in these interactions and investigates the way in which people adapt and respond to change, and evaluates actual and possible management strategies associated with these changes. Geography helps to describe and explain the similarities and differences between places from a variety of scales and from a variety of perspectives.

The Geography course integrates environmental, physical and human geography, and ensures that students acquire elements of both scientific and socioeconomic methodologies. Geography takes advantage of its position to examine relevant concepts and ideas from a wide variety of disciplines. This helps students develop an appreciation of, and a respect for, alternative approaches, viewpoints and ideas.

The course uses a conceptual and contextual approach which allows for the synthesis of knowledge and ideas and the integration of concepts and contexts through the study of specific and appropriate content.

The model shows the six main concepts of the course, the four key concepts (place, process, power and possibility) being at the center of any discussion whilst spatial concepts and scale provide the connections between the concepts.



The course comprises a core section and options. Standard Level students must study the core themes and any two optional themes while Higher Level students must study the core themes and three optional themes, as well as three compulsory topics in the HL extension.

## The core (SL/HL)

The three topics in the core are:

- Population distribution – changing population
- Global climate – vulnerability and resilience
- Global resource consumption and security

The core section provides an overview of the geographic foundation for the core issues of our time. The purpose is to provide a broad factual and conceptual introduction to the geography of population dynamics, climate change and resource consumption issues.

Attention will be given to the positive aspects of change (not just the negative) as well as the responsibility to seek solutions to the demographic, economic and environmental issues and where appropriate, the management strategies adopted to meet these challenges.

The optional themes are a mixture of physical geography and socioeconomic geography. They allow for the development of the key geographic concepts and encompass the integration of human and natural process that combine to shape the world in which we live.

## Optional themes (SL/HL)

- A. Freshwater – drainage basins
- B. Oceans and coastal margins
- C. Extreme environments
- D. Geophysical hazards
- E. Leisure, tourism and sport
- F. Food and health
- G. Urban environments

## HL extension – global interaction (HL only)

- Power, places and networks
- Human development and diversity
- Global risks and resilience

## Fieldwork (SL/HL)

One written report (2,500 words) based on a fieldwork question, information collection and analysis with evaluation.

There are no prerequisites for IBDP Geography, however students may have some background to these topics from Geography in year 10 or earlier.

## Assessment

Assessment consists of two final exam papers worth 75% at SL and three final exam papers worth 80% at HL, as well as one internal piece of fieldwork based on a topic from the syllabus.

# History

## Introduction

History is more than the study of the past. It is the process of recording, reconstructing and interpreting the past through the investigation of a variety of sources. It is a discipline that gives people an understanding of themselves and others in relation to the world, both past and present.

The IB DP History course aims to promote an understanding of history as a discipline, including the nature and diversity of its sources, methods and interpretations. It also helps students to gain a better understanding of the present through critical reflection upon the past.

## Syllabus

The courses studied by Higher Level and Standard Level students have certain similarities. All students undertake a source-based examination paper (Paper 1). For this examination students study military expansion from 1931 to 1941 with case studies on Japanese expansion in East Asia, and German and Italian expansion in Europe and Africa.

All students study two World History topics (assessed in Paper 2). Students will firstly investigate the origins

and development of 20th Century authoritarian states. This topic requires students to examine the origins, ideology, organisation, nature and impact of such states. Preparation is based on a number of detailed studies chosen from the following:

- Germany – Adolf Hitler
- Italy – Benito Mussolini
- USSR – Vladimir Lenin/Josef Stalin
- Spain – Francisco Franco
- Cuba – Fidel Castro
- China – Mao Zedong

All students undertake an in-depth study of an historical subject. This study relates to elements of the coursework addressed when preparing for Paper 1 and Paper 2. This piece will be internally assessed.

Higher Level students will undertake a regional study (assessed in Paper 3) in which they will consolidate and deepen their study and understanding of 19th and 20th Century Europe. Specific areas of study, building on the work done to prepare for Papers 1 and 2, are chosen within this framework.

## Assessment

### Standard Level

#### External assessment - 75%

- Paper 1: 1 hour document-based paper (30%)
- Paper 2: 1.5 hour essay paper on 20<sup>th</sup> Century history (45%)

#### Internal assessment - 25%

- Historical investigation

## Higher Level

#### External assessment - 80%

- Paper 1: 1 hour document-based paper (20%)
- Paper 2: 1.5 hour essay paper on 20<sup>th</sup> Century history (25%)
- Paper 3: 2.5 hour essay paper on regional study (35%)

#### Internal assessment - 20%

- Historical investigation

# Psychology

## Introduction

Psychology is the systematic study of behaviour and mental processes. It aims to understand why we behave the way we do through the evaluation of theory and research. This is done by examining the interaction of biological, cognitive and sociocultural influences on human behaviour, thereby adopting an integrative approach. Understanding how psychological knowledge is generated, developed and applied enables students to achieve a greater understanding of themselves and appreciate the diversity of human behaviour. The ethical concerns raised by the methodology and application of psychological research are key considerations in IBDP Psychology.

Examined through three levels of analysis and a number of options, Psychology offers the IBDP candidate a field of study that brings together several academic traditions. Psychology's reliance upon the construction and testing of theories through rigorous empirical investigations has enabled it to develop as a social science quite distinct from neighbouring disciplines. The extensive breadth of research interests often presents psychologists with complex theoretical challenges. Through elaborate research designs and rigorous control of experimental variables, psychologists attempt to unravel these complexities. In recent years greater attention is being given to cultural variables and in vogue options such as sport and relationships, among others topics.

## Syllabus

### Standard Level

The course of study must include:

- all three compulsory levels of analysis
- one option from a choice of five
- one simple experimental study

### Higher Level

The course of study must include:

- all three compulsory levels of analysis
- two options from a choice of five
- qualitative research methodology
- one simple experimental study

### Core (SL/HL) - Part 1

- The biological level of analysis
- The cognitive level of analysis
- The sociocultural level of analysis

### Options (SL/HL) - Part 2

- Abnormal psychology
- Developmental psychology
- Health psychology
- Psychology of human relationships
- Sport psychology

### Qualitative research methodology (HL only) - Part 3

Theory and practice in qualitative research methods, interviews, observations and case studies

## Simple Experimental Study (HL/SL)

Introduction to experimental research methodology

### Assessment Standard Level

#### External assessment - 75%

- Paper 1: 2 hours on Part 1 (50%)
- Paper 2: 2 hours on Part 2 (25%)

#### Internal assessment - 25%

A 1,500 word report of a simple experimental study conducted by the student.

## Higher Level

#### External assessment - 80%

- Paper 1: 2 hours on Part 1 (35%)
- Paper 2: 2 hours on Part 2 (25%)
- Paper 3: 1 hour on Part 3 (20%)

#### Internal assessment - 20%

A 2,000 word report of a simple experimental study conducted by the student.

# Science Subjects

The experimental science subjects offered at St Leonard's College are Biology, Chemistry, Physics and Sport. In each of these subjects Higher and Standard Level students share a common internally assessed year 11 course, after which they choose which level to study in year 12.

It is the intention of all experimental science programs that students should be able to:

- Demonstrate an understanding of:
  - scientific facts and concepts
  - scientific methods/techniques
  - scientific terminology
  - methods of presenting scientific information
- Apply and use:
  - scientific facts and concepts
  - scientific methods/techniques
  - scientific terminology to communicate effectively
  - appropriate methods to present scientific information
- Construct, analyse, and evaluate:
  - hypotheses, research questions and predictions
  - scientific methods/techniques and procedures
  - scientific explanations
- Demonstrate the personal skills of cooperation, perseverance and responsibility appropriate for effective scientific investigation and problem solving
- Demonstrate the manipulative skills necessary to carry out scientific investigation with precision and safety

## Course organisation

In each science, both HL and SL students complete a common, compulsory, subject-specific core (95 hours over two years). Higher Level students also cover a further 60 hours of additional HL material. Additionally, students cover one optional topic – 15 hours at SL and 25 hours at HL. All year 11 Science (Physics, Chemistry and Biology) students will also spend 10 hours on the Group 4 Project.

## Assessment Standard Level

### External assessment - 80%

- Paper 1: 45 minutes on core material – multiple choice (20%)
- Paper 2: 1.25 hours – data-based question, short answer questions, one extended response (40%)
- Paper 3: 1 hour – data-based question, short answer questions on experimental work, extended response questions from one option (20%)

### Internal assessment - 20%

Practical work totalling at least 30 hours, including a 10-hour assessed practical investigation and a Group 4 project

## Higher Level

### External assessment - 80%

- Paper 1: 1 hour on core material – multiple choice (20%)
- Paper 2: 2.25 hours – data-based question, short answer questions, two extended responses (36%)
- Paper 3: 1.25 hours – data-based question, short answer questions on experimental work, extended response questions from one option (24%)

### Internal assessment - 20%

Practical work totalling at least 50 hours, including a 10-hour assessed practical investigation and a Group 4 project

# Biology

## Introduction

Biology is the scientific study of living organisms. Biologists investigate the living world at all levels using many different approaches and techniques.

At one end of the scale is the cell, its molecular construction and complex metabolic reactions. At the other end of the scale biologists investigate the interactions that make whole ecosystems function. Many discoveries remain to be made and great progress is expected in the 21st Century.

The Biology course shares the experimental science subjects aims. In addition the program aims to:

- inculcate in the student a respect for all forms of life through an understanding of the interaction between organisms and the unique position of humankind within such an interacting system
- inculcate in the student a respect for the uniqueness of an individual organism
- develop in the student the ability to evaluate biological knowledge with respect to those problems that are facing humankind at present and are likely to become more acute in the future
- develop in the student an appreciation of the impact of biology upon issues of ethical, philosophical and political importance

There are four basic biological concepts which run throughout the Biology course:

- Structure and function
- Universality versus diversity
- Equilibrium within systems
- Evolution

## Syllabus

The Biology course contains specific core topics for SL and HL, as well as additional HL topics. Both SL and HL students are also required to select one option topic.

### Core topics (HL and SL)

- Cell biology
- Molecular biology
- Genetics
- Ecology
- Evolution and biodiversity
- Human physiology

### Additional HL topics

- Nucleic acids
- Metabolism, cell respiration and photosynthesis
- Plant biology
- Genetics and evolution
- Animal physiology

## Options (HL and SL)

- A. Neurobiology and behaviour
- B. Biotechnology and bioinformatics
- C. Ecology and conservation
- D. Human physiology

HL treats each area in a much more rigorous and detailed manner, and includes more topics in each area, than SL. Biology students will not need to choose between SL and HL until late in year 11.

# Chemistry

## Introduction

Chemistry is an experimental science combining academic study with the acquisition of practical and investigational skills. It is often called the central science as chemical principles underpin both the physical environment in which we live and all biological systems. Apart from being a subject worthy of study in its own right, chemistry is often a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science.

The Chemistry course is designed to increase the student's understanding of theoretical and physical concepts in chemistry through experimentation, discussion and application of ideas through worked problems.

Chemistry is a demanding course and requires a very good knowledge and understanding of chemistry work covered in year 10, particularly descriptive chemistry and reactions and equations. Some students who complete Units 1 and 2 Chemistry in year 10 find

that this gives them an opportunity to reinforce ideas that are common to the IB course. This can be quite repetitive, however, if the student does not go on to HL Chemistry.

## Syllabus

The Chemistry course contains specific core topics for SL and HL, as well as additional HL topics. Both SL and HL students are also required to select one option topic.

### Core topics (HL and SL)

- Stoichiometric relationships
- Atomic structure
- Periodicity
- Chemical bonding and structure
- Energetics/thermochemistry
- Chemical kinetics
- Equilibrium
- Acids and bases
- Redox processes
- Organic chemistry
- Measurement and data processing

## Additional HL topics

These topics are a continuation and extension of what has been studied in the core topics.

- Atomic structure
- The periodic table – the transition metals
- Chemical bonding and structure
- Energetics/thermochemistry
- Chemical kinetics
- Equilibrium
- Acids and bases
- Redox processes
- Organic chemistry
- Measurement and analysis

## Options (HL and SL)

- A. Materials
- B. Biochemistry
- C. Energy
- D. Medicinal chemistry

HL treats each area in a much more rigorous and detailed manner, and includes more topics in each area, than SL. Chemistry students will not need to choose between SL and HL until late in year 11.

# Physics

## Introduction

Physics seeks to explain the basic features of the natural world primarily in terms of the interactions between matter and energy. It presumes to describe the world using such elementary concepts as mass, time, distance and charge, as well as more subtle constructions such as momentum, force, energy, field, waves, relativity and quantisation. There is also the technological side of physics that complements this conceptual view, in which physical principles have been applied to construct various devices and machines that affect our daily lives.

Physics is a demanding course and requires both confidence in mathematical skills and the ability to apply knowledge to interpret patterns and solve problems. Some students who complete Units 1 and 2 Physics in year 10 find that this gives them an opportunity to reinforce ideas that are common to the IB course. This can be quite repetitive, however, if the student does not go on to HL Physics.

## Syllabus

The Physics course contains specific core topics for SL and HL, as well as additional HL topics. Both SL and HL students are also required to select one option topic.

## Core topics (HL and SL)

- Measurements and uncertainties
- Mechanics
- Thermal physics
- Waves
- Electricity and magnetism
- Circular motion and gravitation
- Atomic, nuclear and particle physics
- Energy production

## Additional HL topics

- Wave phenomena
- Fields
- Electromagnetic induction
- Quantum and nuclear physics

## Options (HL and SL)

- A. Relativity
- B. Engineering physics
- C. Imaging
- D. Astrophysics

HL treats each area in a much more rigorous and detailed manner, and includes more topics in each area, than SL. Physics students will not need to choose between SL and HL until late in year 11.

# Sports, Exercise and Health Science

## Introduction

The IBDP course in Sports, Exercise and Health Science involves the study of the science that underpins physical performance. The course incorporates the traditional disciplines of anatomy and physiology, biomechanics, psychology and nutrition.

Students cover a range of topics and carry out practical (experimental) investigations in both laboratory and field settings. This provides an opportunity to acquire the knowledge and understanding necessary to apply scientific principles and critically analyse human performance. Where relevant, the course will address issues of international dimensions and ethics by considering sport, exercise and health relative to the individual in a global context.

The aims of the sports, exercise and health science course are to:

- appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
- acquire a body of knowledge, methods and techniques that characterise science and technology
- apply and use a body of knowledge, methods and techniques that characterise science and technology
- develop an ability to analyse, evaluate and synthesise scientific information

- develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
- develop experimental and investigative scientific skills
- develop and apply 21st-century information and communication skills in the study of science
- become critically aware, as global citizens, of the ethical implications of using science and technology
- develop an appreciation of the possibilities and limitations of science and technology
- encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method.

## Assessment objectives

1. Demonstrate knowledge and understanding of: facts, concepts and terminology; methodologies and techniques; communicating scientific information.
2. Apply: facts, concepts and terminology; methodologies and techniques; methods of communicating scientific information.
3. Formulate, analyse and evaluate: hypothesis, research questions and predictions; methodologies and techniques; primary and secondary data; scientific information.
4. Demonstrate the appropriate research to carry out insightful and ethical investigations.

## Core Topics

There are six compulsory topics in the core.

Topic 1: Anatomy

Topic 2: Exercise physiology

Topic 3: Energy systems

Topic 4: Movement analysis

Topic 5: Skill in sport

Topic 6: Measurement and evaluation of human performance

## Additional higher level

There are seven additional topics for higher level.

Topic 7: Further anatomy

Topic 8: The endocrine system

Topic 9: Fatigue

Topic 10: Friction and drag

Topic 11: Skill acquisition and analysis

Topic 12: Genetics and athletic performance

Topic 13: Exercise and immunity

## Options

There are four options.

Students are required to study any two options.

A. Optimising physiological performance

B. Psychology of sport

C. Physical activity and health

D. Nutrition for sport, exercise and health

## Assessment

**External assessment – 80%**

- Paper 1: 45 minutes- (20%)
  - 30 Multiple Choice questions on the core syllabus (30 marks)
  - Assessment objectives 1 & 2
- Paper 2: 1 hour 15 minutes- (35%).
  - Section A: Students answer one data-based question and several short-answer questions on the core (30 marks)
  - Section B: Students answer one extended-response question on the core. (20 marks)
  - Assessment objectives 1-3
- Paper 3: 1 hour- (25%)
  - Several short-answer questions in each of the two options studied. (40 marks)
  - Assessment objectives 1-3

**Internal assessment/individual investigation – 20%**  
Assessment objectives 1-4. (24 marks)

This component is internally assessed by the teacher and externally moderated.

# Mathematics

## Introduction and aims

St Leonard's College offers two different courses in mathematics to cater for student differences in career aspirations, interests and abilities and to fulfill the requirements of various tertiary institutions. These are two-year courses, and at both levels the courses are designed to enable students to:

- enjoy mathematics and develop an appreciation of the elegance and power of mathematics
- develop an understanding of the principles and nature of mathematics
- develop logical, critical and creative thinking, and patience and persistence in problem-solving
- appreciate how developments in technology and mathematics have influenced each other
- appreciate the contribution of mathematics to other disciplines

Each course is designed to meet the needs of a particular group of students, therefore great care should be taken to select the course that is most appropriate for each individual student. In making this selection, students are advised to take account of the following factors:

- their own abilities in mathematics and the type of mathematics in which their greatest strengths and interests lie
- their academic and career ambitions

## Equipment

IBDP students are required to purchase a non-CAS Texas Instruments CX nSpire calculator. The CAS calculators used in year 10 are not permitted in the IBDP Mathematics course.

## Mathematics Standard Level

This course caters for students who possess a very good knowledge of mathematical concepts from year 10 (Level 10A), and who are equipped with the skills needed to apply mathematical techniques correctly. It does not have the same level of depth or expectation of rigour as Mathematics HL, yet is still a demanding course of study. It provides a sound mathematical basis for those students intending to pursue tertiary-level work in chemistry, economics, geography or business studies.

The two-year course consists of six topics:

- Algebra
- Functions and equations
- Circular functions and trigonometry
- Vectors
- Statistics and probability
- Calculus

## Assessment

### External assessment – 80%

- Paper 1: 1.5 hours, no calculator (40%)
  - Section A: Compulsory short-response questions based on the whole syllabus
  - Section B: Compulsory extended-response questions based on the whole syllabus
- Paper 2: 1.5 hours, non-CAS calculator required (40%)
  - Section A: Compulsory short-response questions based on the whole syllabus
  - Section B: Compulsory extended-response questions based on the whole syllabus

### Internal assessment – 20%

Mathematical exploration - a piece of written work investigating an area of mathematics.

## Mathematics Higher Level

This course caters for students with a very strong background in mathematics who are very competent in a range of analytical and technical skills. The majority of these students will be expecting to include mathematics as a major component of their university studies, either as a subject in its own right or within courses such as physics, engineering and technology. Students intending to study chemistry, economics or business studies will find it helpful.

Others may take this subject because they have a strong interest in mathematics and enjoy meeting its challenges and engaging with its problems. Students entering Mathematics HL at year 11 should have studied Mathematics 10A in year 10 and achieved high results across all topic areas.

The two-year course consists of six topics and one option.

## Topics

- Algebra
- Circular functions and trigonometry
- Probability and statistics
- Functions and equations
- Vectors
- Calculus

## Options

- Statistics and probability
- Sets, relations and groups
- Discrete mathematics
- Calculus

Students will be advised of the College's choice of option at the start of the academic year.

## Assessment

### External assessment – 80%

- Paper 1: 2 hours, no calculator allowed (30%)
  - Section A: Compulsory short-response questions based on the core syllabus
  - Section B: Compulsory extended-response questions based on the core syllabus
- Paper 2: 2 hours, non-CAS calculator required (30%).
  - Section A: Compulsory short-response questions based on the whole syllabus
  - Section B: Compulsory extended-response questions based on the whole syllabus
- Paper 3: 1 hour, non-CAS calculator required (20%)
  - Compulsory extended-response questions based mainly on the content of the chosen option

### Internal assessment – 20%

Mathematical exploration - a piece of written work that involves investigating an area of mathematics.

# Music

## Introduction

Through the Music course students develop their knowledge and potential as musicians, both personally and collaboratively.

Involving aspects of composition, performance and critical analysis of music, the course exposes students to forms, styles and functions of music from a wide range of historical and sociocultural contexts. Students create, participate in, and reflect upon music from their own background and those of others. They develop practical and communicative skills which provide them with the opportunity to engage in music for further study, as well as for lifetime enjoyment.

Students are expected to be having private music lessons when they are undertaking IB Music.

## Aims

- Enjoy lifelong engagement with the arts
- Become informed, reflective and critical practitioners in the arts
- Understand the dynamic and changing nature of the arts
- Explore and value the diversity of the arts across time, place and cultures
- Express ideas with confidence and competence
- Develop perceptual and analytical skills
- Develop knowledge and potential as musicians, both personally and collaboratively

## Objectives at both Higher Level and Standard Level

- Develop knowledge, understanding and perception of music in relation to time, place and cultures
- Develop appropriate musical terminology to describe and reflect their critical understanding of music
- Develop comparative analysis of music in relation to time, place and cultures
- Develop creative skills through exploration, control and development of musical elements
- Develop performance skills through solo music making or group music making (SL only)
- Develop critical thinking skills through reflective thought

## Syllabus Standard Level

Musical Perception and Analysis – study, analysis and examination, comparing and contrasting of musical cultures.

In addition to Musical Perception and Analysis, SL students select one option from the following:

- SL creating - options include composing, music technology composing, arranging, improvising or stylistic techniques (two works)
- SL solo performing - one or more recitals (a 15 minute recording)
- SL group performing

### Higher Level

- Musical Perception and Analysis – study, analysis and examination, comparing and contrasting of musical cultures
- Creating - options include composing, music technology composing, arranging, improvising or stylistic techniques (three works)
- Solo performing - one or more recitals (20 minutes)

### Assessment Standard Level

#### External assessment - 50%

- Listening paper (30%)
- Musical links investigation (20%)

#### Internal assessment - 50%

Based on students' chosen option (creating, solo performing or group performing)

### Higher Level

#### External assessment - 50%

- Listening paper (30%)
- Musical links investigation (20%)

#### Internal assessment - 50%

- Creating (25%)
- Solo performing (25%)

# Theatre

## Introduction

Theatre is a dynamic, collaborative and live art form. It is a practical subject that encourages discovery through experimentation, the taking of risks and presentation of ideas to others. It results in the development of both theatre and life skills, and the building of confidence, creativity and working collaboratively.

The IB DP Theatre course is a multifaceted theatre-making course of study. It gives students the opportunity to make theatre as creators, designers, directors and performers. The course emphasises the importance of working both individually and collaboratively as part of an ensemble, and offers the opportunity to engage actively in the creative process, transforming ideas into actions as inquisitive and productive artists.

## Syllabus

### Theatre in context

This area of the syllabus addresses the common perception that theatre occurs in a vacuum. Students examine the personal, theoretical and cultural contexts that inform theatre-making and the ways in which these affect and influence creating, designing, directing, performing and spectating.

### Theatre in processes

This area of the syllabus addresses the students' exploration of the skills, techniques and process involved in theatre-making. Students reflect on their own creative processes and skills acquisition as well as gaining a practical understanding of the processes of others: creators, designers, directors and performers.

### Presenting theatre

This area of the syllabus addresses the staging and presentation of theatre as well as the presentation of ideas, research and discoveries through diverse modes of presentation, both practical and written. Students consider the impact theatre can have on the spectator. They are encouraged to think about their own artistic intentions as creators, designers, directors and performers and the impact they wish to have on an audience.

### Theatre journal

Students keep a theatre journal throughout the two-year theatre course which charts their development and their experiences of theatre as a creator, designer, director, performer and spectator.

## **Assessment**

### **Solo theatre piece**

Students at HL research a theatre theorist they have not previously studied, identify an aspect of their theory, and create and present a solo theatre piece (four to eight minutes) based on aspects of theory. A report and a video recording of the piece is externally assessed.

HL 35% (Not undertaken in SL)

### **Director's notebook**

Students at SL and HL choose a published play text and develop staging ideas for an audience, which are documented in a notebook. The notebook will be externally assessed.

HL 20%, SL 35%

### **Research presentation**

Students at SL and HL plan and deliver an individual presentation to their peers in which they outline and physically demonstrate their research into a convention of a theatre tradition they have not previously studied. A video recording of the live presentation is externally assessed.

HL 20%, SL 30%

### **Collaborative project**

Students at SL and HL collaboratively create and present an original piece of theatre for and to a specified target audience, created from a starting point of their choice. A process folio and a video recording are internally assessed.

HL 25%, SL 35%

# Visual Arts

## Introduction

The visual arts are an integral part of everyday life, permeating all levels of human creativity, expression, communication and understanding.

They range from traditional forms embedded in local and wider communities, societies and cultures, to the varied and divergent practices associated with new, emerging and contemporary forms of visual language. They may have sociopolitical impact as well as ritual, spiritual, decorative and functional value; they can be persuasive and subversive in some instances, enlightening and uplifting in others. We celebrate the visual arts not only in the way we create images and objects, but also in the way we appreciate, enjoy, respect and respond to the practices of art-making by others from around the world. Theories and practices in visual arts are dynamic and ever-changing, and connect many areas of knowledge and human experience through individual and collaborative exploration, creative production and critical interpretation.

The Visual Arts course encourages students to challenge their own creative and cultural expectations and boundaries. It is a thought-provoking course in which students develop analytical skills in problem-

solving and divergent thinking, while working towards technical proficiency and confidence as art-makers.

In addition to exploring and comparing visual arts from different perspectives and in different contexts, students are expected to engage in, experiment with and critically reflect upon a wide range of contemporary practices and media. The course is designed for students planning to study visual arts at a tertiary level, as well as those who are seeking lifelong enrichment through the visual arts.

## Syllabus and assessment

Visual Arts is a two-year course and consists of three tasks, all of which are compulsory.

### Theoretical practice

#### Comparative study – external assessment (20%)

Students analyse and compare artworks by different artists. This independent critical and contextual investigation explores artworks, objects and artifacts from differing cultural contexts.

SL/HL: 10 to 15 pages

HL students are also required to reflect on the extent to which their work and practices have been influenced by any of the art/artists examined in this presentation (three to five pages).

## Art-making practice

### Process portfolio – external assessment (40%)

Students submit carefully selected materials that evidence their experimentation, exploration, manipulation and refinement of a variety of visual arts activities during the two-year course. The work submitted should be in at least three different art-making forms.

SL: 9 to 18 pages, HL: 13 to 25 pages

## Cultural practice

### Exhibition – internal assessment (40%)

Students submit for assessment a selection of resolved artworks from their exhibition. The selected pieces should show evidence of their technical accomplishment during the visual arts course and an understanding of the use of materials, ideas and practices appropriate to visual communication. This assessment comprises finished works (SL 4 to 7 works, HL 8 to 11 works) and curatorial rationale (SL 400 words, HL 700 words).



## St Leonard's College