



MIDDLE YEARS PROGRAMME
Grade 6 - 10 SUBJECT GUIDE



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INTERNATIONAL SCHOOL BASEL

MISSION AND MISSION GUIDING STATEMENTS

MISSION

“We all want to learn more;
We all do it in different ways;
We all have fun learning;
We all help.”

- *ISB Student*

MISSION GUIDING STATEMENTS

“We all want to learn more”

- We support all our students to achieve educational excellence by discovering and developing their academic potential
- We foster the curiosity and creativity of each individual
- We empower our students to be future-ready, global citizens
- We encourage learning as a lifelong pursuit

“We all do it in different ways”

- We value inclusion of all learners
- We innovate and adjust our approaches to teaching and learning to address student needs
- We celebrate diversity as a strength and promote equal opportunity for all

“We all have fun learning”

- We offer an all-round education that serves the needs of the whole child
- We provide stimulating, connected, and relevant service learning opportunities within and beyond the classroom
- We inspire a sense of wonder in the world and optimism for the future

“We all help”

- We create safe, caring, and affirming learning spaces for our international community
- We cultivate collaborative, supportive, and positive partnerships
- We nurture the values of care, compassion, and responsible action
- We respect our personal, local, and global environments



LANGUAGE AND LITERATURE

Languages are powerful tools for communication in all societies. At ISB the MYP curriculum is taught through English and so mastery of English language and literature helps all students achieve their full potential in a range of subjects. Students are also able to study French (Grade 6 -7 and Grade 9 - 10) and German (Grade 6 - 10) at Language and Literature level.

The MYP Language and Literature courses include a balanced study of genres and literary texts, including a world literature component. Students' interactions with texts generate moral, social, economic, political, cultural and environmental insights. Through their studies, students learn how to form opinions, make decisions, and engage in ethical reasoning.

The aims of Language and Literature are to engage with texts from a variety of periods and cultures, to develop a life-long interest in reading, and to develop the skills involved in listening, speaking, reading, writing, viewing and presenting in a variety of contexts. Additionally, the literature component encourages the development of empathy, imagination and creativity. A further exploration of cultures and contexts are taught through topical units. Analytical, communication and inquiry-based skills of the Programme develop the attributes of an IB learner. MYP Language and Literature prepares students excellently for further study in languages and literature at the Diploma level.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Audience imperatives	Character	Context	Genres
Intertextuality	Point of View	Purpose	Self-expression
Setting	Structure	Style	Theme

TOPIC AREAS

- identity, heritage, culture, diversity
- communities, globalisation, migration, displacement
- social history, civilisations, journeys
- media and mass communication
- childhood, adolescence, youth, rebellion, innocence and experience, human sexuality
- families, friendships, relationships
- systems, power and protest, justice, peace and conflict, freedom and independence
- health and well-being, environment, lifestyle
- social roles, norms and expectations, gender, inclusion, minorities, class
- utopias, dystopias, survival
- religion, faith, values, ritual, spirituality, taboos
- allegiance, betrayal, revenge, atonement, forgiveness

SUBJECT OVERVIEWS

English

Grade 6

In Grade 6 English Language and Literature students complete four units. The year begins with a concept analysis of perspective, studying the use of self-expression in autobiographical, anecdotal writing and the author's point of view regarding important life events. Students then inquire into the concept of connections using a play adaptation to explore how playwrights use setting and character development to affect the personal growth of the main character. Students then utilise their literary understanding to analyse the concept of relationships in a literature study focusing on the related concepts of theme, point of view and character. The year concludes with a focus on literature studies examining and sharing a variety of multicultural themed works while inquiring into the related concept of theme and how the literary elements of setting, character and climax develop this.

Grade 7

In Grade 7 English Language and Literature students complete three conceptual units. The first unit allows students to review writing and language usage expectations by completing a unit focusing on the concept of connections while analysing plot lines. The second unit develops students' conceptual understanding of communication through an inquiry into personal narratives and diary writing exploring context and point of view. Students then explore the concept of creativity by examining numerous elements of poetry including structure, purpose and theme and then applying their understanding by creating and then annotating a poem.

Grade 8

Students explore stories and poetry from different cultures, looking at personal and cultural expression and how different cultural perspectives can coexist. In drama, students consider how conflicting points of view affect the relationships between individuals and their connections with their communities. Personal and cultural expression, identities and relationships are examined in our reading of a novel. Our study of travel writing and leisure focuses how a writer's perspective connects us to a place. In each unit, students explore a range of genres and text types incorporating visual literacy and media literacy.

Grade 9

Students explore personal and cultural expression in detective fiction, examining how historical contexts and intertextual representations shape our understanding. Our study of war literature examines how self-expression reflects cultural and individual experience and depictions of historical events. In drama, we explore relationships, including conflict and dignity. How individuals and society understand the role of rights and responsibilities, the nature of peace and conflict resolution, and the foundation of power and privilege are explored in our study of a novel. In each unit, students explore a range of genres and text types, incorporating visual literacy and media literacy.

Grade 10

Students explore fairness and development through utopian and dystopian fiction and how authors' perspectives are affected by the context of production and reception. Our reading of poetry examines how it is a creative expression of human understanding and intimacy. Our study of Shakespearean drama focuses on intertextuality and the universal and timeless aspects of theme and genre. In a writing portfolio, students consider how purposeful self-expression allows for meaningful communication. In each unit, students explore a range of genres and text types incorporating visual literacy and media literacy.

French

Grade 6

In Grade 6, students begin to develop analytical skills while studying a variety of texts and topics, as well as organizing their ideas in both speaking and writing. In addition, the focus in Grade 6 is to refine the accuracy of language, expand vocabulary and begin to use literary terminology.

Grade 7

In Grade 7, students continue to develop analytical skills while studying a variety of texts and topics, as well as organizing their ideas in both speaking and writing. In addition, Grade 7 continues to focus on refining the accuracy of language, development of vocabulary and increasing use of literary terminology.

Grade 8

In Grade 8, students produce longer and more complex analytical, factual and creative texts, with particular emphasis on argumentation. Topical themes are explored through researched projects and individual as well as group presentations. The analysis and interpretation of literary and visual texts is beginning to place importance on the context of author and text.

Grade 9

In Grade 9, students explore a variety of literary and non-literary texts and use language to explore themes and express opinions in a structured manner. A strong emphasis is placed on the study of cultural themes and developing critical and analytical thinking. Literary texts offer insight into a range of centuries and settings.

Grade 10

In Grade 10, students continue to study, analyse and interpret complex texts of a variety of formats and literary epochs. The exploration of topical themes encourages strong student involvement and the development of detailed critical thinking. Students present their work independently in a variety of verbal and written formats in preparation for smooth transition into the Diploma Programme.

German

Grade 6

In Grade 6 students begin to develop their analytical skills through the study of a variety of types of texts and topics, including youth novels and shorter literary texts. The linguistic emphasis is on developing accuracy of language, expanding vocabulary and using subject-specific terminology by producing analytical, factual and creative texts.

Grade 7

In Grade 7 students produce longer and more complex analytical, factual and creative texts, with particular emphasis on argumentation. The literary work involves the study of youth novels, epic poetry and dramatic works, continuing to emphasize development of linguistic accuracy, vocabulary and use of subject-specific terminology.

Grade 8

In Grade 8 students are consolidating their knowledge and use of complex grammar. Topical themes are explored through researched projects and individual as well as group presentations. The analysis and interpretation of literary and visual texts is beginning to place importance on the context of author and text.

Grade 9

In Grade 9 students continue to explore relationships between text internal and external characteristics and determinants. A strong emphasis is placed on the study of cultural themes. Literary texts offer insight into a range of centuries and settings.

Grade 10

In Grade 10 students are studying, analysing and interpreting complex texts of a variety of formats and literary epochs. The exploration of topical themes encourages strong student involvement and the development of detailed critical thinking. Students present their work independently in a variety of verbal and written formats in preparation for smooth transition into the Diploma Programme.



LANGUAGE ACQUISITION

The aspirations and expectations of the Language Acquisition programme at ISB are:

- To enable students to access, respect, appreciate and understand other languages and cultures.
- To explore the nature of language, develop the skills to facilitate further language learning and become critical and competent communicators.

In MYP Modern Languages (ML) students are provided with the opportunity to study combinations of German, French and Spanish. As well as learning the grammar and vocabulary of the various languages students are also taught about the cultural aspect of the language(s) that they choose. The curriculum encourages students to reflect on the different forms of language and the function that language has in different contexts. The advantage of studying language at ISB is that the programme allows for a broad range of experience ranging from emergent, capable, proficient, through to native in most languages in MYP years.

In Grade 6 - 7, students in English as an Additional Language or Learning Support will study English and German. All other students in Grades 6 - 7 study an additional language, either French or Spanish. In Grade 8 - 10 students select one “Main” language (8 classes per 2-week cycle), either German, French or Spanish. Students can also study another language as their “Option” language (4 classes per 2-week cycle) in the electives group. Languages and levels available will depend on students’ choices and their own language profiles and needs.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Phases 1-2			
Accent	Audience	Context	Conventions
Form	Function	Meaning	Message
Patterns	Purpose	Structure	Word choice
Phases 3-4			
Audience	Context	Conventions	Empathy
Function	Idiom	Meaning	Message
Point of view	Purpose	Structure	Word choice
Phases 5-6			
Argument	Audience	Bias	Context
Empathy	Idiom	Inference	Point of view
Purpose	Stylistic choices	Theme	Voice

OVERVIEW OF LEVELS

Grade 6 - 10

Throughout Grade 6 - 10, the levels below apply to each language studied as a language acquisition course:

- **Emergent:** Towards the end of this level, emergent communicators understand and respond to simple spoken and written texts. If your child has received German/French/Spanish instruction for 2 years or less, he/she should join this group.
- **Capable:** Towards the end of this level, capable communicators understand and respond to simple spoken and written texts. They can communicate substantial information with a clear sense of audience and purpose. Generally, if a child has received German/French/Spanish instruction for 3-4 years, he/she should join this group.
- **Proficient:** Towards the end of this level, proficient communicators evaluate the important information, details and ideas presented in spoken, written and visual language in social and academic contexts. Generally, if a child has received German/French/Spanish instruction for 5+ years, he/she should join this group.



INDIVIDUALS AND SOCIETIES

The MYP Individuals and societies programme offers a broad and contemporary curriculum. It is mainly taught through the disciplines of History and Geography and encourages learners to respect and understand the world in which they live. The programme is inquiry based and encourages students to become independent learners in order to develop their identities as individuals and as responsible members of local and global communities. Studies in individuals and societies are essential for developing empathy and international-mindedness.

At ISB students in Grade 6 - 8 study an integrated Individuals and societies (Humanities) programme. In Grade 9 - 10 students are taught Geography and History as discrete subjects in a semester course. In addition, in Grade 10 students may choose PEP (units of Politics, Economics, Business and Psychology) as an elective.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Geography		
Causality (cause / consequence)	Culture	Disparity and equity
Diversity	Globalization	Management and intervention
Networks	Patterns and trends	Power
Processes	Scale	Sustainability
History		
Causality (cause/consequence)	Civilization	Conflict
Cooperation	Culture	Governance
Identity	Ideology	Innovation and revolution
Interdependence	Perspective	Significance
PEP		
Choice	Resources	Scarcity
Model	Government	Equality
Behaviour	Group	Cooperation
Culture	Ethics	Leadership

TOPIC AREAS

Geography

- demographics and human movements
- settlement and urban morphology
- pioneering and discovery
- trade, aid and exchange
- tourism and development
- atmosphere, weather and climate
- process and management of land and river or coastal environments
- process and management of two biomes (aquatic, deserts, forests, grasslands, tundra)
- impacts and management of resource extraction, production and consumption
- impacts and management of natural disasters
- impacts and management of tectonically active areas
- the use and outputs of technology to revolutionize geography

History

- superpowers, empires and supra-national alliances and organisations
- significant individuals
- warfare and peacekeeping
- independence and national identity
- rights and social protest
- industrialization, industry and labour
- trade, aid and exchange
- intellectual and ideological movements/developments
- pioneers, innovators and developers
- medicine and health
- individual, household and daily life
- social, cultural and artistic developments

PEP

- Communist command economies vs. market based economies
- Scarcity and resources
- Market functioning and equity
- Government failure
- Market failure
- Leadership styles
- Marketing, e.g. compliance techniques, questionnaire design for market research
- Workplace stress

SUBJECT OVERVIEW

Grade 6

In Grade 6 students complete four units which are organised into two introductory units and two discrete Geography and History units. The introductory units are skills based but also foster conceptual understanding of how History and Geography give us an understanding of time, place and space. In the Geography unit, *Where Do We Live?*, the concept of change will be investigated by describing, explaining and identifying settlement changes. The History unit, Superpowers, explores the concepts of power through political, military and economic change.



Grade 7

In Grade 7 student inquiry begins with a focus on the interaction of History and Geography through the concept of time, place and space. Students examine the causes and effects of the Industrial Revolution and then examine Pioneers, Innovators and Developers of the recent past and present. The concept of systems is then explored by investigating how we continue to manage the physical, economic and environmental issues that natural hazards can create. The concept of time, place and space is re-visited through the third unit, Development of Civilizations, wherein students investigate how beliefs spark the growth of civilisations.

Grade 8

In Grade 8 students study Geography through the concept of change by investigating the positive and negative aspect of global development. They investigate how this leads to inequalities and research possible solutions. Through the concept of change students investigate and complete fieldwork to understand how natural physical process create and shape our mountain environments. In History the concept of change is developed as students focus on the cause, effect and legacy of revolutions. They study the French revolution and independently investigate a revolution.

Grade 9

In Grade 9 Geography students study the concept of systems; Students undertake fieldwork to collect data in order to investigate river theories and determine the consequences that management of rivers has on our natural systems. The concept of change is taught through the topic of demographics and migration. Students will use research skills to inquire into the cause and effect of an ever increasing and changing population.

In Grade 9 History students study the concept of Global interactions by looking at conflict and cooperation using case studies to address the reasons for conflict and the global implications of such conflicts. The concept of change will be studied through the causes and consequences of World War 1, allowing students to gain understanding that conflicts are multi causal (social, political, economic and ideological) and derive from, and lead to, change. Related topics include social impacts such as women's suffrage and geopolitical changes regarding the Paris Peace Conferences.

Grade 10

In Grade 10 Geography students study the concept of time, place and space, students will investigate the patterns of development and how the sustainable growth of the tourist industry can support development over time. The concept of Systems is also investigated by looking at the global distribution of climate types and investigating the cause and effect of changing weather patterns that are more frequently resulting in hazards and systems that need management. Students will also study the concept of time, place and space by looking at the changing morphology of urban patterns as our cities continue to grow and adapt to sustainable strategies.

In Grade 10 History students investigate ideological systems using case studies in order to understand the key concepts of systems and change. The key concept of change is used in the first unit and focuses on the growth of new ideologies towards the end of the 19th century and early 20th century. Political ideologies such as Marxism, Socialism, Anarchism, Libertarianism, and Authoritarianism will be explored in detail. The key concept of systems is used in the second unit to explore the desire for systematic changes in early 20th century in Russia as the country moved from a monarchy to communist state.

In Grade 10 PEP students study one semester of integrated Economics and Politics and a semester of Psychology. In Economics and Politics students will study the key concept of systems by investigating the core economic objectives of countries and the fiscal and monetary tools a government has to influence the economy. Through various case studies they will consider the question of whether the country leader makes a difference in managing the macroeconomy. In Psychology, students will investigate the key concept of change, students will explore how human behaviour can be studied scientifically. They will analyse research that could help to explain real world events, discussing intra and inter- group factors such as conditioning, conformity, obedience, aggression and bystanderism.

SCIENCES

With inquiry at the core, Science at MYP aims to guide students to independently and collaboratively investigate issues through research, observation and experimentation. The MYP Sciences curriculum also explores the connections between science and everyday life. As they investigate real examples of science applications, students will discover the tensions and dependencies between science and morality, ethics, culture, economics, politics, and the environment. Key concepts will be developed throughout the Programme.

At the ISB, students in Grade 6 - 8 study Integrated Science. In Grade 9 students will follow a modular approach to the Sciences. In Grade 9 and 10, all students will have modular science course which involves one semester of Chemistry and one semester of Biology (but not necessarily in that order). Students in both grades will also have the option of taking Physics as an additional science.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Biology		
Balance	Environment	Transformation
Consequences	Energy	Evidence
Form	Function	Interaction
Models	Movement	Patterns
Chemistry		
Balance	Conditions	Transfer
Consequences	Energy	Evidence
Form	Function	Interaction
Models	Movement	Patterns
Physics		
Development	Environment	Transformation
Consequences	Energy	Evidence
Form	Function	Interaction
Models	Movement	Patterns

TOPIC AREAS

Biology

- cells (tissues, organs, systems, structure and function; factors affecting human health; physiology; vaccination)
- organisms (habitat, ecosystems, interdependency, unity and diversity in life forms; energy transfer and cycles [including nutrient, carbon, nitrogen]; classification)
- processes (photosynthesis, cell respiration, aerobic & anaerobic, word and chemical equations)
- metabolism (nutrition, digestion, biochemistry and enzymes; movement and transport, diffusion; osmosis; gas exchange; circulation, transpiration & translocation; homeostasis)
- evolution (life cycles, natural selection; cell division, mitosis, meiosis; reproduction; biodiversity; inheritance and variation, DNA)
- interactions with environment (tropism, senses, nervous system, receptors & hormones)
- interactions with organisms (pathogens/parasites, predator/prey, food chains/webs; competition, speciation and extinction)
- human interactions with environments (human influences, habitat change or destruction, pollution/conservation; overexploitation, mitigation of adverse effects)
- biotechnology (genetic modification, cloning; ethical implications; genome mapping and application; 3D tissue and organ printing)

Chemistry

- periodic Table (metals and non-metals; transition metals, noble gases; periodic trends: groups and periods)
- organic Chemistry (IUPAC naming and classification of: alkanes, alkenes, alcohols, carboxylic acids and esters; structural formulas)
- the atmosphere (characteristics of gases; atmospheric composition, testing and treatment; extraction, emission and environmental implications)
- matter (states and properties of matter; particle/kinetic theory, diffusion; atomic structure [including isotopes]; electron configuration and valency)
- pure and impure substances (types of mixtures [solutions, oils, alloys, emulsions]; separation techniques, including: filtration, distillation [including crude oil], chromatography)
- bonding (chemical formulas, chemical reactions and the conservation of mass; balancing equations, the mole concept and chemical calculations; reaction kinetics [rates, and factors affecting rates/collision theory]; equilibria/reversible reactions; energy changes in reactions, endo- and exothermicity; combustion of fuels)
- types of Chemical reaction (acids and bases, acid/base reactions, formation of salts, uses of salts; redox reactions, reactivity series; extraction of metals, and corrosion, electrochemical cells)

Physics

- forces and energy (measurement in science; states and properties of matter, kinetic theory, density; forces and effects of forces; forces and motion, speed, motion graphs, Newton's laws; pressure; work and power, efficiency; gravity and gravitational fields; energy sources and resources, fuels and environmental impact; transfer and transformation of energy, conservation of energy)
- electromagnetism (magnetism, electric and magnetic fields; static electricity; electromagnetic forces and induction, AC & DC; current, voltage, power, generation and transmission of electricity; electric circuits)
- astrophysics (the solar system, planets and satellites, the Big Bang theory)
- heat, light and sound (thermal physics; heat transfer, condensation and evaporation)
- waves (longitudinal and transverse waves, sound waves; wave phenomena including reflection, refraction, diffraction; wave equation; electromagnetic spectrum, imaging and applications)
- atomic physics (atomic structure, particles, charges and masses; radioactivity and decay, forms of radiation; uses and dangers)



SUBJECT OVERVIEW

Grade 6

In Grade 6 students begin the year with a transdisciplinary unit with mathematics. Within science, the focus is on scientific skills such as measurement, collecting data, analysing and interpreting data. The year continues with units focusing on Life Systems: plant and mammal cells and reproduction; Matter: particle theory of matter, states of matter and mixtures; Forces: contact and non-contact forces; Earth and Space: the movements of the moon and earth.

Grade 7

In Grade 7 students begin the year with a transdisciplinary unit with mathematics. Within science, the focus is on scientific skills such as writing a hypothesis, determining variables, and collecting data. The year continues with units focusing on Life Systems: living things within an ecological system as well as a unit on healthy eating and its impact; Matter: the unit focuses on change and models through chemistry, specifically atoms, elements and compounds; Forces & Energy: electricity and current and the impact of scientific innovation.

Grade 8

Students cover the following topics: Fit and Healthy, with a focus on the concepts of energy, movement and transformation; Energy and Electricity, with a focus on the concepts of energy models and transformation; Reactions of Metals and Patterns of Reactivity, with a focus on the concepts of balance, evidence and patterns; Inheritance and Selection, with a focus on the concepts of consequences and evidence; Pressure and Moments, with a focus on the concepts of energy and movement; Gravity and Space, with a focus on the concepts of consequence, environment and models.

Grade 9

Grade 9 Sciences starts with an investigative skills unit, with a focus on the concepts of evidence and patterns. After the first unit, there will be three modules each mainly focusing on one of Biology, Chemistry or Physics. Each unit is equal in length. The order of the modules may be different depending on the class.

Biology module:

Cell Biology, with a focus on the concepts of form, function and movement; Molecules, with a focus on the concepts of balance and function; Ecology, with a focus on the concepts of balance, interaction and consequences.

Chemistry module:

Matter and Atomic Theory, with a focus on the concepts of evidence, models, energy; Chemical Bonding & Structure, with a focus on the concepts of evidence, models and interaction; Acids & Bases, with a focus on the concepts of consequences and interaction.

Physics module:

Thermal Physics, with a focus on the concepts of energy and models; Mechanics, with a focus on the concepts of energy, transformation and consequences.

Grade 10

In Grade 10 Biology: How do species interact, How do the choices people make affect the environment?, How do characteristics pass from one generation to another?, How are organisms adapted to survive?, How have different forms of life arisen?

In Grade 10 Chemistry: Review of bonding and formulae; Rates of Reaction, with a focus on the concepts of change, balance and conditions; Patterns of Reactivity, with a focus on the concepts of relationships, patterns and interaction; Petrochemicals & Organic Chemistry, including energy changes, with a focus on the concepts of energy, function and patterns.



In Grade 10 Physics (Option): Oscillations and Waves, with a focus on the concepts of relationships and energy; Electricity, with a focus on the concepts of change and transformation; Electromagnetism & EM Induction, with a focus on the concepts of relationships and development; Atomic & Nuclear physics, with a focus on the concepts of consequences, energy and environment.

MATHEMATICS

In MYP Mathematics students are encouraged to view Mathematics as a language through which we make sense of the world. They acquire mathematical understanding through investigation and discovery and then develop a full range of mathematical tools which they are able to apply to unfamiliar situations. The structure of the curriculum allows for a thorough preparation for further study at Diploma level and beyond. Students are also introduced to the use of the graphical calculator as an investigative tool for learning, applying and communicating mathematics.

At ISB students in Grade 6 - 10 study the four branches of Mathematics: Number, Pattern and Functions, Shape and Space and Data. Each topic within the branches is introduced in Grade 6 - 8 and then built upon and developed further in Grade 9 - 10. In Grade 6 - 8 students are provided with a solid foundation of Mathematics and are challenged with additional topics. In Grade 9 - 10 students are guided towards either the Standard or the Extended Mathematics programmes.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Change	Equivalence	Generalization	Change
Justification	Measurement	Model	Justification
Pattern	Quantity	Representation	Pattern
Simplification	Space	System	Simplification

TOPIC AREAS

Extended Mathematics only topics are in *italic*.

Branch: Number

Forms of Number

- Forms of numbers: integers, fractions, decimals, exponents, absolute value, standard form, recurring decimals and surds/radicals
- Number systems: set of positive integers and zero (N), rational numbers (Q), irrational numbers (Q'), real numbers (R) *complex (C)*
- The four number operations
- Prime numbers and factors, including greatest common divisor and least common multiple
- Number lines
- Estimation
- *Imaginary and complex numbers as roots of quadratics equations*
- Concept of Modulus



- Use of absolute value within Logarithms
- *Modulus Function*
- Logarithms as an inverse function
- Laws of logarithms
- Logarithmic equations
- Application of logarithms
- Index laws
- Irrational numbers
- Operations with surds

Ratio and Proportion

- Application of ratio
- Direct Proportion
- Indirect proportion

Combinatorics

- *Factorial notation*
- *Arrangements*
- *Combinations*

Branch: Pattern and Function

Sequences and Series

- Arithmetic sequences and Series
- Geometric sequences and series
- *Sum of an infinite series*
- *Applications of geometric sequences and series*
- *Generalisation of non-arithmetic and non-geometric sequences*

Algebra

- Generalisation of index laws
- Linear algebra
- Quadratic algebra
- *Higher order polynomials*
- *Factor and remainder theorem*

Functions

- Types of functions: linear, quadratic, exponential, sine and cosine
- Domain and range
- Transformation of functions
- Inverse and composite functions
- Modeling with functions
- *Oblique asymptotes*
- *Domain and range restrictions for composite and inverse functions*

Equations

- Linear, Quadratic, Trigonometric, Logarithmic
- Simple and complex algebraic.
- Linear inequalities
- Modeling with functions
- *Quadratic inequalities*
- Linear simultaneous equations
- Quadratic simultaneous equations



Transformations

- Transformation of domain sets and the effect on the coordinate plane
- Parent functions
- Transformation notation
- *Transformation of trigonometric functions*

Calculus

- Differentiation and the gradient function
- Tangents and normals
- Maxima and minima
- *Introduction to Limits*

Matrices

- Matrix algebra
- Solutions of linear systems
- Nature of system solutions and application

Branch: Shape and Space

Geometry and Trigonometry

- Geometrical elements and their classification
- Distance
- Angle properties
- Triangle properties
- Perimeter / Area / Volume
- The Cartesian plane
- Trigonometric ratios in right-angled triangles
- Simple isometric transformations
- Circle geometry
- Angle measures
- The unit circle
- Sine and Cosine rules
- Three-dimensional coordinate geometry

Extended Geometry and Trigonometry

- *Similarity & congruence*
- *Vectors & vector spaces*
- *Trigonometric identities*

Branch: Data

Statistics and Probability

- Graphical analysis and representation
- Population sampling
- Measures of central tendency for discrete and continuous data
- Measures of dispersion for discrete and continuous data
- Probability of an event
- Probability of independent, mutually exclusive and combined events
- Probability of successive trials
- *Standard deviation*
- *Conditional probability*
- *Probability Distributions: Binomial and Normal*

Set Theory

- Set notation
- Venn Diagrams



SUBJECT OVERVIEW

Grade 6

In Grade 6 the year begins with a transdisciplinary unit with mathematics unit focusing on statistics: collecting, representing and analysing data. The first numbers unit focuses on directed numbers and the second focuses on generalisations of fractions and applying these concepts within problem solving. Geometry is explored through the key concept of form and concentrates on ensuring that the properties quadrilaterals are clearly understood and can be applied to calculating areas and perimeters. Students then focus on Algebra through the key concept of logic. The final unit returns to geometry with a form as a key concept and the focus on rectangular prisms.

Grade 7

In Grade 7 the year begins with a transdisciplinary unit with science with a focus on patterns and the processes of representation and communication. The second unit focuses patterns within numbers including fractions, decimals, percentages. The key concept of relationship continues through exploration of probability in the third unit. Geometry is revisited through the key concept of form where the focus is on properties of circles, and geometric construction. A second numbers unit focuses on modeling with ratios where students explore the relationship of equivalency and use visuals to problem solve. The year ends continues with a continued focus on patterns and algebra through the key concept of logic, focusing on factorisation. The final unit focuses on three-dimensional geometry.

Grade 8

In Grade 8 the Mathematical concepts of Relationships, Logic and Form are explored through number, algebra, data and shapes. The course begins with a comprehensive review of Grade 7 skills to embed them before introducing further ideas. The Grade 8 units start with an exploration of ratio and proportion then algebraic skills are honed and students are introduced to simultaneous equation examples and functions. Statistical methods are developed and the concept of bivariate data is introduced, complex geometric ideas are explored including 3D examples and Pythagoras' Theorem, and Sine, Cosine and Tangent ratios are introduced and applied to right angled triangles.

Grade 9

In Grade 9 the Mathematical concepts of Relationships, Logic and Form are explored further through number, algebra, data and shapes, and the related concept of the model is covered in detail. Radicals are covered formally within number theory, building upon their introduction within geometry in Grade 9. Number patterns are extended to include non-linear systems. Inequalities are explored in terms of algebraic and graphical contexts and non-linear algebra is explored fully within Quadratics and Polynomials for some groups. Trigonometry is extended to include the Sine Rule and the Cosine Rule for non-right-angled triangles. Finally, the statistics section begins to explore the further analysis methods such as regression and sampling.

Grade 10

In Grade 10 the mathematical concepts of Relationships, Logic and Form are explored further still through number, algebra, data and shapes, and the related concept of equivalence is covered in detail as the holistic nature of Mathematics becomes apparent. The great majority of number work is revised and the extended program investigates the idea of a logarithm. Complex algebraic ideas are covered and the Diploma syllabus is introduced with students challenged with functions, vectors and further probability. Further Trigonometry is also introduced with the unit circle and the radian measure being explored.

ARTS

At ISB students in Grade 6 - 8 study Drama, Music and Visual art. In Grade 9 students take one of the Arts subjects and have the option to select a second Arts. In Grade 10 students have the option of selecting one Arts subject.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Performing Arts – Drama and Music			
Audience	Expression	Interpretation	Presentation
Boundaries	Genre	Narrative	Role
Composition	Innovation	Play	Structure
Visual Arts			
Audience	Expression	Interpretation	Representation
Boundaries	Genre	Narrative	Style
Composition	Innovation	Presentation	Visual culture

DRAMA

SUBJECT OVERVIEW

The aim of MYP Drama is to provide students with the opportunity to combine the joy of collaborative working methodology with a specific set of skills which fosters a greater understanding of the creative voice through improved self-confidence and self-discipline. The nature of the subject allows students to experience a range of different roles: as performers, directors, designers, researchers and technicians. Drama is a dynamic art form, often molded by the society which produces it, and students learn to understand and interpret the world around them through the study of world theatre practices, as well as their own.

Students work individually, in pairs and in larger groups to make theatre of all kinds; physical, scripted, improvised and immediate. There is a range of performance opportunities available, both in-class and for a wider audience at every grade level. These include the grade level performance evenings and the Senior School and Middle School productions.

Grade 6

Students are introduced to the idea of the ensemble theatre and the collaborative working model. Through a variety of activities, they learn the basics of stagecraft, including storytelling and awareness of the space. The units covered are Building Skills, Mime, Choral Speaking, and From Page to Stage. All students are required to respond critically to their work in written and/or pictorial form.

Grade 7

Students continue to augment the skills covered in Grade 6. The units covered are Eastern Theatre and Performance, Improvisation, and Introduction to Musical Theatre. All students are required to respond critically to their work in writing.

Grade 8

Students continue to develop their growing bank of performing and ensemble skills. The topics covered include character development and the Classical Greek Theatre. All students are required to respond critically to their work in writing and research into theatre history is introduced. The Grade 8 Greek Theatre plays are performed for parents at the end of the semester in which the groups take the Drama course.

Grade 9

Students are introduced to dramaturgical research through a special study of theatre in medieval Britain and Japan. Other topics include the mastery and practice of stage combat, Devising Theatre from a Stimulus and the plays and language of Shakespeare. Written work, including reflections, research and a growing understanding of theory help to inform all processes.

Grade 10

The focus is on performance work. Grade 10 students will be given the opportunity to develop and perform a scripted play during the first semester. Other topics covered will include the genres of theatre, Stanislavski's Method and the Monologue Form, and Self-Directed Plays. Written work, including reflections, research and the practical application of theory inform all processes.

MUSIC

SUBJECT OVERVIEW

The MYP Music curriculum at ISB gives students a broad, yet thorough education in music within a truly international cultural spectrum. The student learning is unit-based, with equal emphases placed on listening, performing, composing and responding.

All students in Grades 6 - 8 study Music. In Grade 9 - 10 students have the opportunity to choose Music as one of their elective subjects.

In addition to their Music classes, students are strongly encouraged to be actively involved in the vibrant co-curricular music programme at the school.

Grade 6

Students have one intensive semester of music lessons in Grade 6. They begin by exploring The Elements of Music through listening and group performance. This allows students to develop the interpersonal skills – as well as technical musical abilities – needed to be successful in the subject. Students apply their newfound knowledge in a Band Skills unit, in which they are also able to begin exploring their chosen instrument and develop their ensemble skills further through their own arrangement of a four chord song. Their learning is developed further as students create and compose their own four chord songs using Garageband on ipads. This allows them to extend their understanding of musical theory and develop their contextual understanding of technology in music.

Grade 7

Students begin their Grade 7 semester course with the Development of the Orchestra, which looks at the evolution of this ensemble and its instruments over time. This unit allows students to further develop their understanding of melody writing and perform and compose as part as an ensemble. This is followed by a Music & Media unit, which examines the use of music in advertising. Students are given the opportunity to compose their own soundtrack to a short television commercial using Garageband and develop their understanding of music technology.



Grade 8

Students in Grade 8 take an intensive trimester of Music, rotating with the other Arts subjects. They undertake two units. 'Jazz & Blues' encompasses the historical and harmonic development of music in the southern USA in the early 1900s. Students devise their own 12-bar blues performances and compositions, and develop skills in improvisation. 'Film Music' examines the role of music and sound effects in supporting and enhancing on-screen action. Students then compose their own soundtracks for selected movie excerpts, using GarageBand software (and many of the skills developed in Grades 6 & 7).

GRADE 9

Students who opt for Music begin the year with a unit entitled 'Dance Music from around the world'. This involves listening to each style and determining which musical characteristics are responsible for making it unique. This leads into a series of lessons entitled 'How and Why Music Works', which examines music theory with a view to individual composition. Thereafter, students undertake a 'Melodic Composition' unit, which introduces them to the rigours of writing their own original works. Alongside these courses of study, students also prepare works for twice-yearly performances, in which they participate either as soloists or as part of a small ensemble.

Students who elect to study Music in Grade 9 should be proficient enough on their chosen voice or instrument to perform in public. All students are expected to continue with individual vocal or instrumental lessons throughout the course. This allows students to reinforce and build upon concepts encountered in class. An ability to read western music notation is advantageous. (This may be covered to some degree during lessons, depending on the needs of the class.)

GRADE 10

In Grade 10 students begin with a unit entitled 'Variation and its Forms'. This involves research and analysis of theme and variation form, as well as individual student compositions in the genre. Using these analytical skills, students go on to study 'French Impressionism', and then undertake a performance unit on 'Jazz Standards'. Alongside these courses of study, students also prepare works for twice-yearly performances, in which they participate either as soloists or as part of a small ensemble.

Students who elect to study Music in Grade 10 should be proficient enough on their chosen voice or instrument to perform in public. All students are expected to continue with individual vocal or instrumental lessons throughout the course. This allows students to reinforce and build upon concepts encountered in class. An ability to read western music notation is advantageous.

VISUAL ARTS

SUBJECT OVERVIEW

In MYP Visual arts students are provided with ample opportunities to develop, engage and respond to the world around them through a creative and curious process. They will become artists and develop work through skills, processes and reflecting on art works to analytically understand the process of art making and the purpose and function of art in cultures around the world. Students are given the opportunity to experience 'real' art and interact with the work through discussions.

At ISB, students in Grade 6 - 8 study the elements and principles of art and explore ways of expression with different approaches and intentions. In Grades 9 - 10, students select Visual arts among other artistic and non-artistic subject group choices.

Grade 6

In Grade 6 students are involved in hands on exploration of the elements of art through guided exploration of media and techniques.

Grade 7

In Grade 7 students learn about the use of the principles of art through inquiries into artworks and creative responses to them.

Grade 8

In Grade 8 students explore and create artworks that show physical expressions as a means to understand societal, personal and cultural contexts.

Grade 9

In Grade 9 students investigate and explore techniques of mark making looking at texture and pattern from the natural world around them and their own personal space and community. They will use different materials and techniques in order to build their skills through problem solving and creative thinking in order to understand time, place and space. Research, reviewing, refining, developing, experimenting and reflecting about their own work and that of artists and cultures will open a diverse range of understanding of processes and concepts. Purposeful use of the Process Journal which is a working, living real time book to show ideas, thoughts, experiments and creative thinking along with questioning and reflections.

Grade 10

In Grade 10 work continues to build on the skills learnt in grade 9 whilst looking at the theme of identities and relationships. Figure drawing, photography and image manipulation creates the starting points for observational work. Students also investigate how the process of artistic creation in the area of portraiture provides opportunities for skills development, creative self-discovery and exploration of personal and cultural identity. This is explored through art making, creative problem solving and responding as well as through art appreciation. Independent thinking and creativity is one of the key elements of grade 10 and the use of the Process Journal at a higher level continues to develop creative thought, an enquiring mind, reflective processes and exploration of new materials and techniques.



DESIGN

MYP Design requires the use of the Design Cycle as a methodology to structure inquiry into the potential for new answers to problems, the development and creation of feasible solutions, and the testing and evaluation of those solutions. Students become actively involved in this cycle which challenges their ingenuity and develops a foundation of knowledge and skills. Students follow a general design course from Grade 6 to Grade 10 covering both practical and digital media by completing a range of project-based activities. For their final MYP award, students solve a brief set by the IB in the final semester of Grade 10.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Adaptation	Collaboration	Ergonomics
Evaluation	Form	Function
Innovation	Invention	Markets and Trends
Perspective	Resources	Sustainability

SUBJECT OVERVIEW

Some of the Design project-based activity lines of inquiry are:

Grade 6

- Form and function are equally important to a design's success.
- Design works best when systems are easy to understand.

Grade 7

- Mechanical advantage allows people to achieve tasks they could not have otherwise.
- Designers draw & draft to help communicate ideas when problem solving.

Grade 8

- Iterative development & collaboration enables Designers to improve their products (such as software programs).
- Limiting resources must be considered when designing for markets and trends.

Grade 9

- Individuals and organisations use websites as a global platform for cultural expression.
- By understanding the perspective of others we can empower their full participation in their community.

Grade 10

Student led projects are undertaken based on the themes directed from the IB such as Community & Inclusion and Applying scientific information when designing.

PHYSICAL AND HEALTH EDUCATION

At ISB all students in Grade 6 - 10 follow a MYP Physical and Health Education course. MYP Physical and Health Education (PHE) aims to empower students to understand and appreciate the value of being physically active and develop the motivation for making healthy life choices. To this end, physical and health education courses foster the development of knowledge, skills and attitudes that will contribute to a student's balanced and healthy lifestyle.

KEY CONCEPTS

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

RELATED CONCEPTS

Adaptation	Balance	Choice
Energy	Environment	Function
Interaction	Movement	Perspectives
Refinement	Space	Systems

TOPIC AREAS GRADE 6 - 7

- team building activities
- outdoor invasion games
- health-related fitness
- aesthetic movement
- indoor invasion games
- indoor court games
- fielding games
- individual pursuits

TOPIC AREAS GRADE 8 - 10

- soccer
- gymnastics
- creative movement
- basketball
- health-related fitness
- volleyball
- badminton
- boxfit
- weight training
- move to music
- crosstrain
- yoga
- training programmes

SUBJECT OVERVIEW

In Grade 6 - 10 students participate in a variety of units including team sports, aesthetic activities and fitness based activities. The emphasis is on what the student can do, in an atmosphere of participation and enjoyment. In addition to physical participation, students will be expected to plan performance (e.g. plan a gymnastics routine), complete class tests (e.g. the rules and strategies in soccer) and reflect on performance (e.g. reflection on performance in a volleyball unit). In Grades 9 - 10 there is a greater expectation on students managing their own learning.

Ultimately, the overall aim of PHE in the ISB is to maintain and stimulate student interest in sports and other forms of physical activity that will continue beyond their school career.





“We all want to learn more;
We all do it in different ways;
We all have fun learning;
We all help.”

- ISB Student

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