

THE LEARNING LAB



CORE PROGRAMMES

SECONDARY 1 TO 4

CONTENTS

Pg. 01

Introduction

Welcome Message

A Teaching and Learning Model
that Puts Your Child First

Our Curriculum and
Teaching Team

Our Promise

Our Three Learning Goals for
Your Child's Success

Pg. 21

Mathematics

Secondary 1 Curriculum

Secondary 2 Curriculum

Secondary 3 and 4 Curriculum
(Mathematics)

Secondary 3 and 4 Curriculum
(Additional Mathematics)

Pg. 08

English

Secondary 1 Curriculum

Secondary 2 Curriculum

Secondary 3 Curriculum

Secondary 4 Curriculum

Pg. 31

Science

Secondary 1 and 2 Curriculum

Secondary 3 and 4 Curriculum
(Biology)

Secondary 3 and 4 Curriculum
(Chemistry)

Secondary 3 and 4 Curriculum
(Physics)

To sign up for our Secondary Core Programmes:
Please email enrollment@thelearninglab.com.sg
or contact our service hotline at 6733 8711

Dear Parent,

Over the past 20 years, our goal at The Learning Lab has always been to not only nurture the love of learning, but to also help your child achieve academic success in school and beyond.

We are here to lend our support and guidance at every stage of your child's learning journey, helping him or her to develop the knowledge, skills and dispositions needed to tackle challenges faced both in school and in life.

With dedicated curriculum experts and highly trained teachers, we help your child build a strong foundation in reading, writing and communicating, in strategic thinking and problem-solving, as well as essential techniques and skills to achieve success at key examination milestones. We are also committed to helping your child develop positive learning attitudes and habits.

With the ever-evolving education landscape, we continuously strive to make advancements to our programmes to ensure that our lessons are engaging and effective in meeting your child's learning needs.

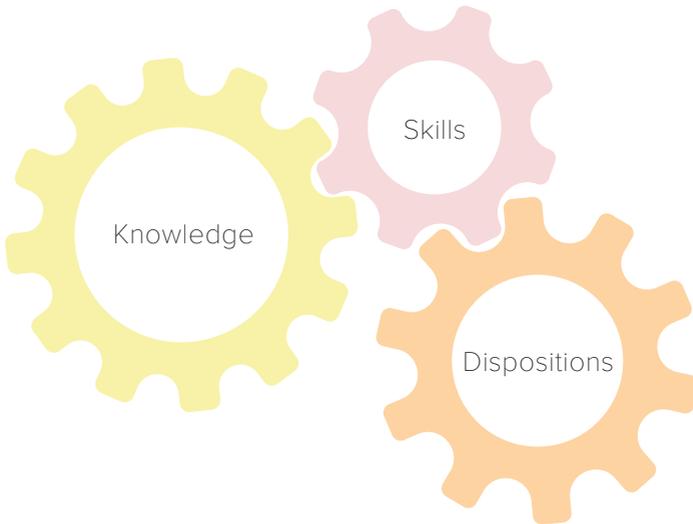
As you explore this programme booklet, discover the breadth and depth of a curriculum that does not just make learning engaging, but also enables your child to demonstrate progress and growth while attaining academic excellence.

We look forward to being part of your child's learning journey.

Welcome to The Learning Lab.

A Teaching and Learning Model that Puts Your Child First

Your child's rich and meaningful learning journey begins with us. In our classrooms, we create learning experiences that empower and motivate. We believe that academic growth and success in school, and beyond, are built on a strong foundation of knowledge, skills and dispositions.



Knowledge

To help your child achieve each milestone in his or her learning journey, we equip your child with the concepts and knowledge needed to tackle tasks and exams in school with confidence. Besides building a strong foundation in content mastery, we further stimulate your child's intellectual curiosity by drawing connections with what is learnt in school to real-world phenomena.



Skills

With The Learning Lab's teaching methodology and curriculum, your child will develop the necessary skills such as critical thinking, analytical and evaluative skills, to help him or her successfully address all types of academic challenges at school. A strong focus on task and error analysis, problem-solving strategies as well as communication skills means that your child will become a more confident, engaged and articulate thinker — a learner who is able to present what he or she knows and strive for improvement.

Dispositions

Your child's education at TLL is about nurturing his or her whole person. Our programmes recognise the importance of helping your child develop positive attitudes, habits and mindsets towards learning as a journey, whether in the classroom or beyond. He or she will develop self-awareness and a growth mindset — understanding his or her strengths and weaknesses, seeing mistakes or setbacks as opportunities for progress, and planning the next stage of success with an open mind.

Our Curriculum and Teaching Team

Our dedicated curriculum team of over 40 specialists and teachers help forge meaningful learning journeys for your child through the creation of bespoke lesson materials that are designed to motivate and enthuse your child. We believe learning is optimal when children are motivated and engaged. Our lesson materials excite and inspire, and are designed to build the knowledge and skills necessary for school success.

Our TLL teachers are also the best that your child can have. They are caring and passionate individuals who always strive to give their very best in class. As knowledgeable experts that focus on deep subject knowledge and pedagogical know-how, TLL teachers guide your child through the intricacies of the required exam syllabus using our renowned in-house tailor-made curriculum.



Our Promise

Our materials are prepared with your child's best interests in mind. We provide your child with lessons that not only help your child become invested in his or her learning journey, but also encourage him or her to take charge of it.



Nurturing the Love of Learning

These two elements run through all our lesson materials:

- Sparking interest even when the topics are abstract or studying has elements of drill and practice
- Making connections with the real world so that our students can see the relevance of what they are learning



Attaining Academic Excellence

Our students achieve academic excellence through our teaching methods and curriculum which focus on nurturing:

- deep understanding of the topics
- strong analytical and problem-solving skills that help students in answering any question in tests and exams



Achieving Student Progress and Growth

At The Learning Lab, every child's growth and progress is important to us:

- Our curriculum introduces topics and skills progressively, revisiting and weaving deep threads of learning.
- Our teachers check on your child's progress throughout the term through in-class activities, end-of-lesson exit tickets as well as more rigorous mock tests.
- Personalised feedback is provided to parents about their child, identifying key challenges and strengths.

Our Three Learning Goals for Your Child's Success

Helping your child to find success in learning stems from giving him or her the confidence to enjoy the learning journey and to face challenges with the right skills and attitudes.

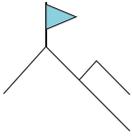


Grow What You Know

Developing Knowledge for the Classroom and Beyond

Learning is not only about getting your child school and exam-ready but it is also about preparing for what lies beyond the classroom.

Our curriculum has the breadth and depth to help your child achieve this — with comprehensive lesson materials such as notes, practice papers and interactive games that strengthen areas requiring attention while exposing them to real-world contexts.



Show What You Know

Applying the Knowledge and Skills Learnt

When your child is aware of their thought processes, he or she is able to refine their thinking and problem-solving skills to overcome problems in class or in life.

By equipping your child with a wide range of problem-solving strategies and techniques, he or she learns how to analyse questions, understand the success criteria and know which methods to use to solve the different problems they will be dealt with.

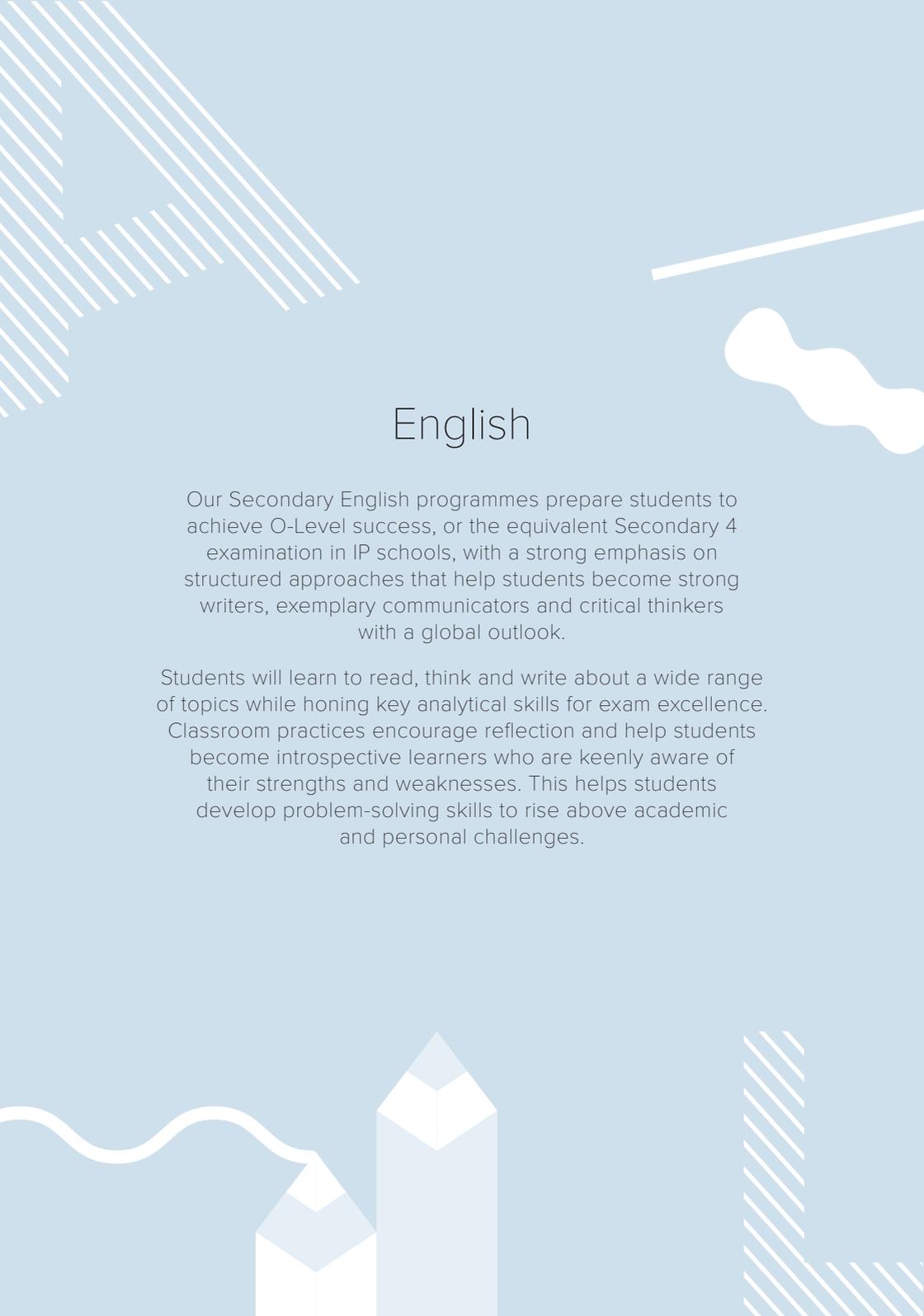


Present What You Know

Be Your Best Self

We teach our students how to master answering techniques that allow them to address questions accurately. Using the right phrasing and terminology, they learn how to craft precise and coherent answers.

Our teachers continually reinforce good habits and techniques of answering questions accurately and comprehensively so that your child grows in confidence and realises his or her personal best, again and again.



English

Our Secondary English programmes prepare students to achieve O-Level success, or the equivalent Secondary 4 examination in IP schools, with a strong emphasis on structured approaches that help students become strong writers, exemplary communicators and critical thinkers with a global outlook.

Students will learn to read, think and write about a wide range of topics while honing key analytical skills for exam excellence. Classroom practices encourage reflection and help students become introspective learners who are keenly aware of their strengths and weaknesses. This helps students develop problem-solving skills to rise above academic and personal challenges.

Secondary 1 Curriculum

At Secondary 1, we use structured, skills-based lessons to introduce students to expectations of new components that they would not have encountered in primary school like summary writing and Literature. We also provide step-by-step guidance to help students understand the higher expectations of components they have already encountered in primary school: continuous writing, situational writing, comprehension and oral communication.

Writing

- Excel in writing skills through:
 - scaffolded writing lessons that help students understand the different requirements of each text type (e.g. descriptive writing, narrative writing or personal recounts)
 - writing practices that allow students to apply what they have learnt
 - introduction to expository writing*
 - situational writing practices for real-life purposes (focus on formal and informal letters and emails)
 - critical analysis of sample essays (for continuous and situational writing) to learn from models of good writing, evaluating errors and making edits for improvement

Reading

- Excel in critical thinking and comprehension skills through:
 - close reading lessons geared towards helping students understand main ideas in a text, pay attention to the language and techniques used and make inferences based on contextual clues
 - scaffolded comprehension, summary, visual text comprehension and Literature lessons geared towards exam excellence
 - for comprehension: question types and answering techniques, tackling deeper inferential questions (e.g. use of literary techniques)
 - for visual text comprehension:
 - focus on how to analyse two texts (as according to the revised exam syllabus) to see the inter-connections and to answer questions in relation to two texts
 - focus on understanding and analysing visual texts (e.g. advertisements, posters)
- for Summary: question analysis, identifying relevant points, paraphrasing and using varied sentence structures
- for Literature: introduction to poetry and prose in a range of styles, focus on characterisation, themes and literary techniques

Oral Communication

- Develop public speaking skills and experience through:
 - individual oral practice, especially on the newly introduced Planned Response Question / presentation lessons
 - step-by-step strategies to respond to the visual stimulus
 - teacher and peer feedback

Secondary 2 Curriculum

At Secondary 2, we continue to use structured, skills-based lessons to deepen our students' grasp of the various examinable components. We ensure a progression of literary skills and techniques, expose students to more complex types of text and writing styles, and develop critical-thinking skills in order for them to craft answers of greater depth for both writing and oral communication.

Writing

- Excel in writing skills through:
 - more exposure to a complex text type: expository writing (discussions and personal views)
 - scaffolding writing lessons that help students understand the requirements of more complex text types (e.g. how to elaborate in expository essays)
 - writing practices that allow students to apply what they have learnt
 - situational writing practices for real-life purposes (focus on formal proposals and speeches)
 - critical analysis of scaffolded responses (for continuous and situational writing) to learn from models of good writing, evaluating errors and making edits for improvement

Reading

- Excel in critical thinking and comprehension skills through:
 - close reading lessons geared towards helping students learn how to: understand main ideas in more complex texts, pay attention to the language and techniques used, make inferences based on contextual clues
 - scaffolded comprehension, summary, visual text comprehension and Literature lessons geared towards exam excellence
 - for comprehension: question types and answering techniques, tackling deeper inferential questions (e.g. tone/ perspective of author, use of complex literary techniques like irony)
 - * IP students will receive a separate set of questions based on IP school requirements
 - for visual text comprehension:
 - focus on how to analyse two texts (as according to the revised exam syllabus) to see the

inter-connections and to answer questions in relation to two texts

- focus on understanding and analysing visual texts (e.g. web pages, advertisements, posters, magazine covers*)
 - for Literature: introduction to poetry and prose in a range of styles, focus on characterisation, themes and literary techniques, how to craft responses to essay questions
 - for Application Question: scaffolded lessons that teach students how to identify and evaluate an author's claims as well as applying those claims to the Singapore context*

Oral Communication

- Develop public speaking skills and experience through:
 - individual oral practice, especially on the newly introduced Planned Response Question / presentation lessons
 - teacher and peer feedback

Secondary 3 Curriculum

At Secondary 3, we ensure that students are exposed to all the components that will be tested in the O-Level or equivalent IP examinations. Our programme builds on what students have learnt in Secondary 1 and 2 to develop more powerful language techniques, as well as to read and write with more skill, accuracy, depth and speed in order to tackle the questions that will be tested in the O-Level or equivalent IP examinations.

Writing

- Excel in writing skills through:
 - more exposure to complex text types: argumentative writing and hybrid essays
 - guided practices that help students understand the requirements of more complex text types (e.g. how to draw from personal experiences to add a layer of introspection in their writing)
 - situational writing practices for real-life purposes (focus on speeches and feature articles)
 - critical analysis of scaffolded responses (for continuous and situational writing) to learn from models of good writing, evaluating errors and making edits for improvement

Reading

- Excel in critical thinking and comprehension skills through:
 - critical reading lessons geared towards helping students understand main ideas in a text, pay attention to the language and techniques used, make inferences based on contextual clues and evaluate the author's overall argument
 - scaffolded comprehension, summary, visual text comprehension and Literature lessons geared towards exam excellence
 - for comprehension: focus on tackling higher-level inferential questions (e.g. use of punctuation, rhetorical question)
 - * IP students will receive a separate set of questions based on IP school requirements
 - for visual text comprehension:
 - focus on how to analyse two texts (as according to the revised exam syllabus) to see the inter-connections and to answer questions in relation to two texts
 - focus on more difficult language and inferential questions (e.g. analysing effectiveness of taglines, describing why certain images serve the purpose of the visual text)
 - for Summary: focus on sourcing for valid points and using varied sentence structures
 - for Literature: focus on crafting full essay responses to the poem or prose piece
 - for Application Question: focus on crafting full responses to the AQ prompt*

Oral Communication

- Develop public speaking skills and experience through:
 - individual oral practice / presentation lessons
 - practice flash cards with a variety of questions and guided frameworks to study for the oral communication exams, especially for the newly introduced Planned Response Question
 - teacher and peer feedback

Secondary 4 Curriculum

At Secondary 4, we ensure that students undertake a thorough review and consolidation of skills that are necessary for them to excel in their O-Level or the equivalent IP examinations. We achieve this by using passages and questions that closely follow prevailing exam trends and establishing frequent correlations to tips and strategies taught in previous years in order to ensure exam excellence.

Writing

- Excel in writing skills through:
 - review of the whole range of text types, including those that were introduced at Lower Secondary
 - guided practices that help students draw from these text types to incorporate into frequently tested hybrid essays
 - situational writing practices for real-life purposes
 - critical analysis of scaffolded responses (for continuous and situational writing) to learn from models of good writing, evaluating errors and making edits for improvement

Reading

- Excel in critical thinking and comprehension skills through:
 - critical reading lessons geared towards helping students understand main ideas in a text, pay attention to the language and techniques used, make inferences based on contextual clues and evaluate the author's overall argument
 - scaffolded comprehension, summary, visual text comprehension and Literature lessons geared towards exam excellence
 - for comprehension: focus on answer precision and error analysis
 - * IP students are introduced to A-Level question phrasing and marking requirements
 - for visual text comprehension:
 - focus on how to analyse two texts (as according to the revised exam syllabus) to see the inter-connections and to answer questions in relation to two texts
 - focus on more difficult language and inferential questions (e.g. analysing effectiveness of taglines, describing why certain images serve the purpose of the visual text)
- for Summary: focus on answer precision and error analysis where students are provided with common errors and must correct them
 - * IP students are introduced to A-Level question phrasing and marking requirements
- for Literature: focus on crafting full essay responses to poems and prose pieces that are of higher complexity
- for Application Question: focus on crafting full responses to more complex AQ prompts (e.g. AQ questions with multiple parts or whose applicability to Singapore is not immediately discernible)*

Oral Communication

- Develop public speaking skills and experience through:
 - individual oral practice / presentation lessons
 - step-by-step strategies to respond to stimulus-based conversation
 - practice flash cards with a variety of questions and guided frameworks to study for the oral communication exams, especially for the newly introduced Planned Response Question
 - teacher and peer feedback

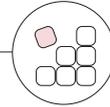
Key features of our Secondary English programme

Exposure: Grow What You Know



Specially Curated Materials

- Passages adapted from credible international publications such as *The New York Times*, *TIME*, *The Economist* and *The Wall Street Journal*
- Comprehensive guided notes developed in-house to help students excel in key examinable components



Active Learning

- Discussion questions to help students explore and engage in topics
- Students are encouraged to ask questions, clarify doubts, hear others' opinions and learn how to use logic and evidence to support their points when sharing ideas with others



Applied Learning

- Introduction of exciting and relevant topics, like advancements in technology, cutting-edge medical research and sociopolitical issues
- Engage in thought-provoking discussions in class
- Exposure to a wide range of questions, following National Examination formats

Analysis and Strategy: Show What You Know



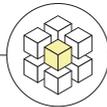
Question Analysis

- Methods to systematically analyse and annotate question requirements



Answer Precision

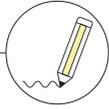
- Easy-to-use checklists to evaluate work for weaknesses



Problem-Solving Strategies

- Teaching of brainstorming techniques to select and develop engaging writing content
- Teaching of organisational approaches to formulate logical responses
- Posing of questions on current topics to address real-world problems to better make links to Comprehension and Summary passages as well as Oral topics

Answering Technique: Present What You Know



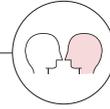
Answering Techniques

- Detailed scaffolded, sample answers that are analysed to help students with precision and clarity of answers for different components



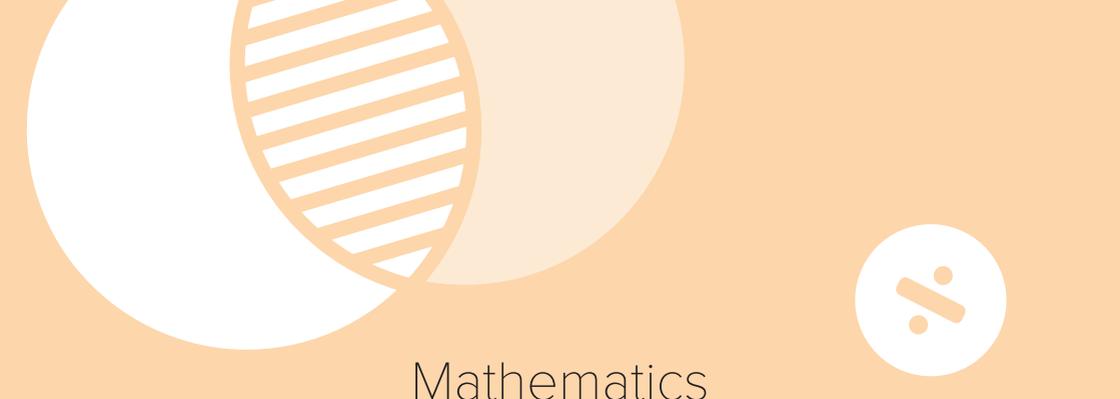
Exam Excellence

- Practice tests that simulate exam conditions to prepare for examinations



Metacognition

- Error analysis of answers to reinforce expectations of good answers
- Feedback and discussion on common mistakes so that similar pitfalls can be identified and avoided
- Inktrailing as a way to analyse questions and make learning more effective



Mathematics

Our Secondary Mathematics programmes feature a powerful curriculum specially designed to improve students' academic performance in Maths based on examination trends. The programmes focus on developing a strong understanding of crucial mathematical concepts through deep learning and problem-solving techniques.

On top of that, students are exposed to real-world problems that allow them to connect Maths with real-world applications.

Our lessons are customised to cater to different students' needs. Students will receive tutorials aligned with their school syllabus to ensure a complete reinforcement of concepts and ample practice. Our notes, tutorials and practice papers are constantly updated with current questions to ensure students are equipped with the necessary skills and knowledge. Each set of notes and tutorials help students develop fundamental techniques to solve routine questions, apply complex concepts and hone critical reasoning skills for tackling non-routine problems that include real-world contexts.

Beyond developing a good grasp of concepts, students also focus on developing strong exam performance techniques. Students will learn to avoid and correct common mistakes through error analysis practices.



Secondary 1 Curriculum

In Secondary 1, students will learn new topics such as Solving Linear Equations, Functions and Graphs and Statistics. The topics taught in primary school will be covered in greater depth while students master new and more complex concepts.

Comprehensive notes and tutorials will be provided to strengthen students' conceptual knowledge in ensuring competency and mastery. Students will solidify their examination skills through our error analysis exercises and practice tests.

Numbers

- Integers, Rational Numbers and Real Numbers
- Primes, Factors and Multiples
- Estimation and Approximation
- Ratio and Rate
- Percentages

Algebra

- Algebraic Expansion, Factorisation and Manipulation
- Linear Equations
- Linear Inequalities*
- Functions and Graphs
- Number Patterns

Geometry

- Basic Geometrical Concepts and Properties
- Angle Properties of Polygons
- Pythagoras' Theorem*
- Mensuration
 - Area and Perimeter
 - Volume and Surface Area of Cube, Cuboid and Cylinder
 - Volume and Surface Area of Cone, Pyramid and Sphere*

Statistics

- Statistical Diagrams
- Measures of Central Tendency
 - Mean, Mode and Median*
- Data Analysis

Secondary 2 Curriculum

In Secondary 2, students will learn new topics such as Expansion and Factorisation of Quadratic Expressions, Quadratic Equations and Graphs, Algebraic Fractions, Linear Simultaneous Equations, Direct and Inverse Proportions, Scales and Maps, Congruency and Similarity, Probability and Trigonometric Ratios. Additionally, the topics taught previously in Secondary 1 will be expanded on. For example, the topic on Volume and Surface Area will include new content such as cones, pyramids and spheres.

Comprehensive notes and tutorials will be provided to strengthen students' conceptual knowledge in ensuring competency and mastery. Students will solidify their examination skills through our error analysis exercises and practice tests.

Numbers

- Direct and Inverse Proportions
- Scales and Maps
- Indices*
- Standard Form*

Algebra

- Algebraic Expansion, Factorisation and Manipulation
- Algebraic Fractions and Subject of Formulae
- Quadratic Equations
- Quadratic Graphs and its Applications
- Linear Simultaneous Equations

Probability

- Probability of Single Events

Geometry & Trigonometry

- Pythagoras' Theorem
- Congruency and Similarity
- Proof of Congruency and Similarity*
- Area and Volume of Similar Figures and Solids*
- Trigonometric Ratios*
- Further Trigonometry
 - Sine Rule
 - Cosine Rule
 - Area of Triangle

Statistics

- Statistical diagrams
 - Dot Diagram
 - Stem-and-Leaf Diagram
 - Histogram
- Measures of Central Tendency
 - Mean, Mode and Median
- Data Analysis

Secondary 3 and 4 Curriculum

The Upper Secondary Mathematics programmes develop students' mathematical knowledge and understanding using comprehensive curriculum materials of differing difficulty.

Comprehensive notes and tutorials will be provided to strengthen students' conceptual knowledge in ensuring competency and mastery.

To prepare students for O-Level success, they will be exposed to topical revision through comprehensive concept maps and noteworthy past examination questions. Students will further solidify their examination skills through our error analysis exercises and practice tests.

Numbers

- Indices
- Standard Form
- Set Notation
 - Use of Set Language and Notation
 - Union and Intersection of Two Sets
 - Venn Diagram

Algebra

- Solutions to Quadratic Equations
- Linear Inequalities

Graphs

- Sketching of Quadratic Graphs
- Graphs of Power Functions
- Graphs of Exponential Functions
- Estimation of the Gradient of a Curve
- Graphs Applied to Kinematics

Geometry

- Congruent and Similar Triangles
- Area and Volume of Similar Figures and Solids
- Geometrical Properties of Circles

- Further Trigonometry
 - Sine Rule
 - Cosine Rule
 - Area of Triangle
 - Bearings
- Coordinate Geometry
 - Gradient, Length and Equation of a Straight Line
- Mensuration
 - Radian Measure
 - Arc Length
 - Sector Area

Statistics

- Cumulative Frequency Diagram
- Box-and-Whisker Plot
- Data Analysis
- Measures of Spread of Data
 - Range, Interquartile Range and Standard Deviation

Probability

- Probability of Combined Events
 - Tree Diagrams
 - Possibility Diagrams
- Probability of Mutually Exclusive and Independent Events

Matrices

- Addition, Subtraction and Multiplication of Matrices
- Applications of Matrices

Vectors

- Representing Vector as a Directed Line Segment
- Translation of a Vector
- Position of a Vector
- Magnitude of a Vector
- Addition, Subtraction and Multiplication of a Vector

Secondary 3 and 4 Curriculum (Additional Mathematics)

The Upper Secondary Additional Mathematics programmes develop students' mathematical knowledge and understanding using comprehensive curriculum materials of differing difficulty.

To prepare students for O-Level success, they will be exposed to topical revision through comprehensive concept maps and noteworthy past examination questions. Students will further solidify their examination skills through our error analysis exercises and practice tests.

Algebra and Functions

- Non-Linear Simultaneous Equations
- Indices*
- Surds
- Logarithms
- Polynomials
- Factor and Remainder Theorem
- Partial Fractions
- Quadratic Equations and Functions
- Quadratic Inequalities
- Binomial Theorem
- Graphs of Logarithmic and Exponential Functions
- Modulus*
- Transformation of Graphs*
- Functions*

Geometry & Trigonometry

- Coordinate Geometry
- Circles
- Linear Law
- Trigonometric Functions
- Trigonometric Identities and Equations
- Proof in Plane Geometry

Calculus

- Differentiation
- Applications of Differentiation
 - Equations of Tangent and Normal
 - Maxima and Minima
 - Rate of Change
- Derivatives of Exponential and Logarithmic Functions
- Derivatives of Trigonometric Functions
- Integration
- Area of a Region
- Kinematics

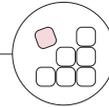
Key features of our Secondary Maths programme

Exposure: Grow What You Know



Specially Curated Materials

- Developed in-house, our weekly worksheets contain essential notes and examples to explain key concepts and show how to solve different question types
- Tutorials provide exposure to a wide range of questions from basic application skills to questions that require critical thinking



Active Learning

- Interactive games and activities that help students apply mathematical concepts in real-world contexts to consolidate learning and check on understanding



Applied Learning

- Exposure to questions in real-world contexts to equip students with the skills to handle higher-order thinking / non-routine questions in the examinations and develop an understanding of how mathematical concepts are applied

Analysis and Strategy: Show What You Know



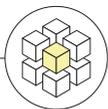
Question Analysis

- Methods to analyse questions systematically
 - Study and highlight keywords in the question
 - Draw visual diagrams to represent the problems
 - Identify topics and concepts tested



Answer Precision

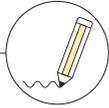
- Learn to recognise question types, identify important markers and apply effective strategies to answer questions



Problem-Solving Strategies

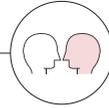
- Questions that highlight concepts in real-life scenarios to build flexibility in applying concepts to unfamiliar situations

Answering Technique: Present What You Know



Answering Techniques

- Emphasis on presentation skills, especially in practice tests, to ensure proper presentation of mathematical concepts to eliminate any misunderstanding and hence, loss of marks



Metacognition

- Error analysis handouts introduce common mistakes so that similar pitfalls can be identified and avoided
- Inktrailing as a way to analyse questions and make learning more effective



Exam Excellence

- Formative assessment through low-stakes testing using topical quizzes to provide ongoing feedback
- Regular practice tests are conducted to simulate exam conditions such as time management



Science

The transition from Primary Science to Secondary Science requires students to acquire more in-depth conceptual knowledge and analytical ability in Biology, Chemistry and Physics.

Our Secondary School Science programmes will fully equip students with comprehensive scientific knowledge and skills, and train them in higher-order thinking skills such as critical reasoning, logical deduction, and question analysis. These skills will allow students to apply deep insights into specific scientific inquiries and hone their ability for data analysis, as well as allow students to appreciate the relevance of science in their daily lives.

Comprehensive notes and tutorials over a wide range of topics equip students with firm scientific knowledge, while engaging hands-on experiments allow students to acquire experimental skills to develop a vibrant and dynamic relationship with the sciences.

Secondary 1 and 2 Curriculum

Secondary 1 Curriculum

In Secondary 1, students will acquire knowledge of new topics such as Laboratory Skills, Cell Structure and Organisation, Exploring Diversity of Matter by Its Chemical Composition and Exploring Diversity of Matter by Its Physical Properties, and learn to apply their insights in the disciplines of General Science, Biology, Chemistry and Physics.

Students will be exposed to foundational questions to cement their conceptual understanding, as well as challenging questions to develop higher-order thinking skills.

Secondary 2 Curriculum

In Secondary 2, students will continue to develop their scientific knowledge and understanding, as well as skills and dispositions, through topics such as Human Sexual Reproductive System, Chemical Changes and Thermal Processes.

Students will continue to be trained in question analysis, answering techniques and higher-order thinking skills in the disciplines of Biology, Chemistry and Physics.

General Science

- Experimental Skills
- Laboratory Skills
- Experimental Design

Biology

- Cell Structure and Organisation
- Movement of Substances
- Biological Molecules
 - Nutrition and Food Tests
- Biological Molecules
 - Enzymes
- Human Digestive System
- Transport System in Living Things – Plants
- Transport System in Living Things – Humans
- Human Sexual Reproductive System
- Interactions within Ecosystems
- Diversity of Living Things*
- Nutrition in Flowering Plants*
- Respiration*
- Molecular Genetics*
- Microorganisms*
- Antibiotics*
- Hydroponics*

Chemistry

- Exploring Diversity of Matter by Its Chemical Composition
- Exploring Diversity of Matter using Separation Techniques
- Kinetic Particle Theory
- Atoms and Molecules
- Chemical Changes
- Acids and Bases
- Periodic Table*
- Formulae and Equation Writing*
- Chemical Bonding and Structure*

Physics

- Exploring Diversity of Matter by Its Physical Properties
- Forces and Pressure
- Turning Effects of Forces*
- Energy
- Kinematics*
- Thermal Processes
- Effects of Heat
- Light — Reflection
- Light — Refraction
- Light — Thin Lenses*
- Current of Electricity
- D.C. Circuits
- Practical Electricity
- Sound*

Secondary 3 and 4 Curriculum (Biology)

The Upper Secondary Biology programmes develop students' scientific knowledge and understanding through the use of comprehensive curriculum materials, which focus intensively on answering techniques through a systematic thought process. The programmes cater to students taking both the O-Level and IP curricula.

Comprehensive notes, topical and thematic tests will cement students' conceptual knowledge after each topic to ensure competency and mastery. Additionally, mock practice tests that mirror examination settings will provide students with the rigorous revision that can help them confidently ace their O-Level or end of year examinations.

Lessons are enriched with hands-on experiments, videos, simulations or games, allowing students to acquire experimental skills while developing a keen interest in taking their Biology education further.

Cells and The Chemistry of Life

- Cell Structure and Organisation
- Movement of Substances
- Biological Molecules
- Enzymes

The Human Body – Maintaining Life

- Nutrition in Humans
- Transport in Humans
- Respiration in Humans
- Excretion in Humans
- Homeostasis and Hormones
- The Nervous System
- The Human Eye
- Infectious Diseases in Humans

Living Together – Plants, Animals, and Ecosystems

- Nutrition in Flowering Plants
- Transport in Flowering Plants
- Organisms and their Environment

Continuity of Life

- Molecular Genetics
- Modes of Reproduction
- Sexual Reproduction in Flowering Plants
- Sexual Reproduction in Humans
- Inheritance

Secondary 3 and 4 Curriculum (Chemistry)

The Upper Secondary Chemistry programmes develop students' scientific knowledge and understanding through the use of comprehensive curriculum materials, which focus on fundamental concepts and answering techniques before challenging students with higher-level application questions. The programmes cater to students taking both the O-Level and IP curricula.

Comprehensive notes, topical and thematic tests are provided to build competency and mastery in every topic. On top of that, mock practice tests provide rigorous revision for students under examination settings.

Lessons are enriched with hands-on experiments, videos, simulations and games, allowing students to acquire experimental skills while developing a strong appreciation in the discipline of Chemistry.

Matter – Structures and Properties

- Experimental Design
- Methods of Purification and Analysis
- Kinetic Particle Theory
- Atomic Structure
- Qualitative Analysis
- Chemical Bonding and Structure

Chemical Reactions

- Formulae and Equation Writing
- Mole Concept and Stoichiometry
- Acids and Bases
- Salts
- Ammonia
- Qualitative Analysis
- Oxidation and Reduction
- Electrochemistry
- Periodic Table
- Reactivity Series
- Chemical Energetics
- Rate of Reactions

Chemistry in a Sustainable World

- Fuels and Crude Oil
- Introduction to Organic Chemistry
- Hydrocarbons
- Alcohols, Carboxylic Acids and Esters
- Polymers
- Maintaining Air Quality

Secondary 3 and 4 Curriculum (Physics)

The Upper Secondary Physics programmes develop students' scientific knowledge and understanding through the use of comprehensive curriculum materials. Emphasis is placed on grasping fundamental concepts before students are challenged with higher-level application questions. The programmes cater to students taking both the O-Level and IP curricula.

Mock practice papers that mirror actual examination conditions help give students the practice and confidence needed to ace their examinations. Revision packages are provided to help students consolidate their knowledge, review the typical questions for each topic and gain awareness of the common pitfalls encountered when answering questions.

Experimental skills, such as tabulation, drawing graphs, identifying experimental errors and experimental design, are also taught to prepare students for practical examinations.

Measurements

- Physical Quantities, Units and Measurements

Newtonian Mechanics

- Kinematics
- Dynamics
- Turning Effects of Forces
- Pressure
- Energy

Thermal Physics

- Kinetic Particle Model of Matter
- Thermal Processes
- Thermal Properties of Matter

Waves

- General Wave Properties
- Electromagnetic Spectrum
- Light

Electricity and Magnetism

- Static Electricity
- Current of Electricity
- D.C. Circuits
- Practical Electricity
- Magnetism
- Electromagnetism
- Electromagnetic Induction

Radioactivity

- Radioactivity

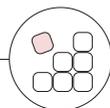
Key features of our Secondary Science programme

Exposure: Grow What You Know



Specially Curated Materials

- Comprehensive notes cover learning outcomes required in the Secondary syllabus and concept maps to consolidate key concepts for quick revision before exams
- Tutorials provide exposure to a wide range of questions, including commonly tested question types such as data analysis and application questions



Active Learning

- Hands-on experiments, experiment videos and simulations allow students to hone their experimental skills and master key techniques for practical examinations
- Interactive games and videos aid in visualisation of abstract concepts and instil a passion for Science



Applied Learning

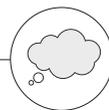
- Application questions provide exposure to real-world contexts and help students develop an understanding of how scientific concepts are applied
- Handouts which go beyond the curriculum introduce cutting-edge scientific news and how they relate to concepts learnt in school
- A spiral approach to learning helps students build on the basics they have learnt through application and cross-topic questions that are progressively more complex

Analysis and Strategy: Show What You Know



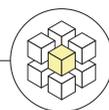
Question Analysis

- Introduction to techniques to analyse questions in a methodical manner:
 - Highlight keywords or key phrases provided
 - Observe diagrams, analyse data and compare experiment set-ups provided
 - Identify topics and concepts tested by the questions
 - Jot down relevant keywords or key phrases needed to answer the questions



Experimental Skills

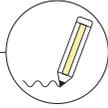
- Experiment-focused handouts and activities to equip students with a wide range of experimental skills:
 - Experimental design
 - Practical techniques
 - Data tabulation and graph drawing
 - Experimental analysis and evaluation



Problem-Solving Strategies

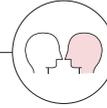
- Exposure to questions based on real-life scenarios to strengthen students' proficiency and inculcate flexibility in applying concepts to unfamiliar situations

Answering Technique: Present What You Know



Answering Techniques

- Introduction to various techniques helps students craft complete but succinct answers in a structured manner



Metacognition

- Question analysis and experiment analysis refine thinking processes and analytics skills
- Error analysis to identify common misconceptions and common mistakes so that similar pitfalls can be avoided
- Inktrailing as a way to analyse questions and make learning more effective



Exam Excellence

- Formative assessment through topical/thematic tests provides ongoing feedback for students, allowing them to identify their strengths and weaknesses and target areas of improvement
- Rigorous practice tests simulate exam conditions to prepare students for actual assessments in school

To sign up for our Secondary Core Programmes:
Please email enrollment@thelearninglab.com.sg
or contact our service hotline at 6733 8711

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