



Taipei Kuei Shan School Primary Years Program

Grade Four Curriculum Overview

2022-
2023



臺北市政府教育局
DEPARTMENT OF EDUCATION
TAIPEI CITY GOVERNMENT





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The Primary Years Program at Kuei Shan

The IB Primary Years Program gives emphasis on the holistic development of a child as an inquirer, both in the classroom and in the real world setting, creating learning that is engaging, relevant, challenging, and significant. It is a curriculum framework guided by six transdisciplinary themes of global significance, explored using knowledge and skills derived from six subject areas, as well as transdisciplinary skills, with a big focus on inquiry-based learning.



At Taipei Kuei Shan School, an IB World School, the Primary Years program is taught and learned as one cohesive curriculum in two languages. Both English and Chinese languages are introduced as early as in Pre-kindergarten. In Primary School, from Grades 1 to 5, students spend approximately 50 percent of their time in English and 50 percent in Chinese. Our students become skilled and knowledgeable through this transdisciplinary program in the main subject areas while acquiring English as a second language.

The acquisition of language must be seen as a continuum along which each individual student progresses at his/her own rate. Kuei Shan strives to make every student proficient in both languages. All students will have the knowledge of and the ability to use both languages, but not to the same extent. Students vary in their ability to learn a second language; some will achieve functional proficiency in the target language while others "are potentially able to become balanced bilinguals who are highly proficient, literate and knowledgeable in two or more languages" (*Learning in a language other than mother tongue in IB programmes, 2008*). For more information on the IB-PYP, please visit www.ibo.org.



The IB prepares its students to be active participants in a lifelong journey of learning through international education as learners strive to be:



The IB mission statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

Kuei Shan mission statement

Kuei Shan's mission is to provide holistic education that is Biblically inspired, academically rigorous, socially friendly, and globally and culturally responsive. Students will be equipped to experience TRUTH:

Transformed: by the renewing of the mind
Rigorous: academic pursuits
United: life-giving community
Twined: heritage with globalization
Holistic: balanced development



Taipei Kuei Shan School Grade Four Units of Inquiry Overview

Who we are	Where we are in place and time	How we express ourselves	How the world works	How we organize ourselves	Sharing the planet
An inquiry into <u>the nature of the self</u> : beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; <u>rights and responsibilities</u> ; what it means to be human.	An inquiry into <u>orientation in place and time</u> : personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives.	An inquiry into <u>the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values</u> ; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.	An inquiry into <u>the natural world and its laws</u> : the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.	An inquiry into <u>the interconnectedness of human-made systems and communities</u> ; the structure and function of organizations; societal decision-making; <u>economic activities and their impact on humankind and the environment</u> .	An inquiry into <u>rights and responsibilities in the struggle to share finite resources with other people and with other living things</u> ; communities within and between them; <u>access to equal opportunities</u> ; peace and conflict resolution.
Central idea We make decisions everyday that influence who we are and what we will become. 我們每天所做的決定會影響我們成為什麼樣的人。	Central idea Earth is a part of a vast and mysterious solar system which we are continually striving to understand. 地球是我們不斷努力理解的巨大而神秘的太陽系的一部分。	Central idea People use creative arts to influence other people's perspective. 人們利用藝術創作來影響他人的觀點。	Central idea Forces are involved in making objects move. 施力能使物體移動。	Central idea Money is a human-made system that helps value goods and services. 金錢是一種助於衡量物品及服務價值的人造系統。	Central idea Humans and the environment are interconnected and impact each other. 人類和環境是彼此相關且互相影響的。
Focus: PSPE, Social Studies, Language	Focus: Science, Social Studies, Math, Language	Focus: Language, Art, Social Studies	Focus: Science, Math	Focus: PSPE, Social Studies, Math	Focus: Science, Social Studies, PSPE
Key Concepts: causation, responsibility, change	Key Concepts: form, function, connection	Key Concepts: form, function, perspective	Key Concepts: form, causation, change	Key Concepts: form, function, perspective	Key Concepts: responsibility, connection, perspective
Related Concepts: decisions, choices, impact, consequences, behavior	Related Concepts: space, system, planets, movement, composition, relationships, myths, creation	Related Concepts: pattern, communication, poetry, drama, influence, perspective	Related Concepts: force, motion, properties, effects, laws	Related Concepts: system, values, goods, services, spending, budget management, responsibility	Related Concepts: values, balance, systems, peace, war, environment, consequences, restoration, initiative
Learner Profile: principled, reflective, risk-taker	Learner Profile: thinker, inquirer, knowledgeable	Learner Profile: thinker, open-minded, communicator	Learner Profile: reflective, risk-taker, knowledgeable, thinker	Learner Profile: knowledgeable, principled	Learner Profile: caring, balanced, communicator

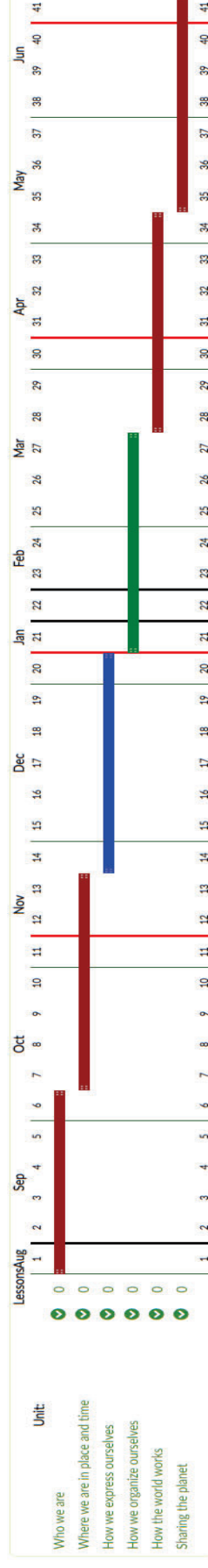


Taipei Kuei Shan School Grade Four Units of Inquiry Overview

Lines of inquiry: <ul style="list-style-type: none"> Ways decisions are made How decisions can be made to resolve conflict How consequences result from decisions 	Lines of inquiry: <ul style="list-style-type: none"> Introduction to solar system Earth's place in space & time (compare and contrast Earth with other bodies in the solar system) Mythological and ancient beliefs Current and future space exploration 	Lines of inquiry: <ul style="list-style-type: none"> Different forms of creative art Creative arts as a tool that influences people's emotions, actions, and future Creating and presenting different forms of creative art to entertain and persuade 	Lines of inquiry: <ul style="list-style-type: none"> Different forces (push or pull, friction, gravity) Effect of forces on objects Manipulating forces that result in change 	Lines of inquiry: <ul style="list-style-type: none"> Origins of money How money works as a human-made system How we view and value goods and services in relation to money 	Lines of inquiry: <ul style="list-style-type: none"> Positive and negative consequences of our actions Our shared responsibility for our choices Reasons for environmental decision-making
Approaches to Learning (ATLs) : <p>social-accepting responsibility, respecting others, resolving conflict</p> <p><u>self-management</u> – informed choices, communication - reading, speaking, writing, listening, presenting, viewing</p>	Approaches to Learning (ATLs) : <p>research – observing, interpreting data, presenting research</p> <p><u>communication</u> – writing, speaking, presenting</p> <p><u>thinking</u> - acquisition of knowledge, application self-management - time management</p>	Approaches to Learning (ATLs) : <p>communication – writing, presenting, listening, viewing</p> <p><u>thinking</u> - application</p> <p>social - accepting responsibility, <u>self-management</u> – gross-motor, fine-motor, spatial awareness</p>	Approaches to Learning (ATLs) : <p>research - observing, planning, interpreting data</p> <p><u>thinking</u> - application, analysis, synthesis, evaluation</p> <p><u>self-management</u> - time management, fine-motor, safety, codes of behavior</p>	Approaches to Learning (ATLs) : <p>research - collecting data</p> <p><u>thinking</u> - acquisition of knowledge, comprehension, analysis, metacognition</p> <p>self-management - informed choices, healthy lifestyle</p> <p>social - accepting responsibility, adopting a variety of roles, cooperating</p> <p>communication - speaking, writing, non-verbal</p>	Approaches to Learning (ATLs) : <p>social - respecting others, accepting responsibility</p> <p><u>thinking</u> – application, dialectical thought</p> <p>self-management – organization, informed choices</p> <p>communication - speaking, writing, presenting</p> <p>research - formulating questions, interpreting data, recording data, organizing data</p>

2022-2023 Unit Calendar

(generated by Rubicon Atlas System)





IB learner profile

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

As IB learners we strive to be:

INQUIRERS

We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

KNOWLEDGEABLE

We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

THINKERS

We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

COMMUNICATORS

We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

PRINCIPLED

We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

OPEN-MINDED

We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

CARING

We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

RISK-TAKERS

We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

BALANCED

We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

REFLECTIVE

We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

The IB learner profile represents 10 attributes valued by IB World Schools. We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national and global communities.





UNIT OF INQUIRY 1: Who we are

An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; rights and responsibilities; what it means to be human.

Central Idea: We make decisions every day that influence who we are and what we will become.

Key concepts: causation, responsibility, change

Related concepts: decisions, choices, impact, consequences, behavior

Learner Profile: principled, reflective, risk-taker

Lines of inquiry:

- ways decisions are made
- how decisions can be made to resolve conflicts
- how consequences result from decisions

Approaches to Learning:

Social - accepting responsibility, respecting others, resolving conflict

self-management – informed choices

communication - reading, speaking, listening, writing, presenting, viewing

Core Literature: *El Deafo* by CeCe Bell

Unit Description:

In this unit, students will reflect on their own decision-making process. They will understand the consequences of making impulsive choices as opposed to informed decisions through reading various forms of literature, examining real-life scenarios, and learning about significant events in history. Ethical questions and classroom discussions will help students to examine their own 'moral compass'. They will conduct surveys to collect data on how majority of people make decisions and present them in charts or graphs. They will develop the skill to analyze the pros and cons of various propositions & choices, as well as to make a stand about what they believe would be the best choice or decision as they participate in debates. They will demonstrate their deeper understanding by analyzing characters in core literature – how they made their decisions, what were the consequences, and what could have happened if they decide differently. This literature, among others, will serve as the mentor text as students write a work of fiction that involves a character who has to make difficult choices. This unit ends with a self-reflection on how they make their everyday decisions and setting learning goals for the rest of the semester.



UNIT OF INQUIRY 2: Where we are in place and time

An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations; from local and global perspectives.

Central Idea: Earth is a part of a vast and mysterious solar system which we are continually striving to understand.

Key concepts: form, function, connection

Related concepts: space, system, planets, movement, composition, relationships, myths, creation

Learner Profile: thinker, inquirer, knowledgeable

Lines of inquiry:

- introduction to solar system
- Earth's place in space and time (compare and contrast Earth with other bodies in the solar system)
- mythological and ancient beliefs
- current and future space exploration

Approaches to Learning:

research – observing, interpreting data, presenting research

communication - writing, speaking, presenting

thinking - acquisition of knowledge, application

self-management - time management

Core Text: *George's Secret Key to the Universe* by Stephen Hawking

Unit Description:

This unit allows students to explore earth's relationship with the solar system, including the sun, stars, moon, and other planets. By following the discoveries of scientists from the past, they will appreciate how we know what we know as well as hold discussions on the limits of knowledge. They will read about past and current events on space exploration and discovery and identify the significance of these discoveries to further understand the Earth and appreciate God's creation. They will also dwell into creation myths and ancient beliefs and how these stories can also help us understand the universe. Students will create a model of the solar system and learn to draw circles of different sizes in visual arts through the use of a compass. These activities will show their understanding of the relative size & distances of objects within our solar system. They will also write an information report about the Earth's relationship with another object in the solar system. The children's skills in creating a space tourism material will also be assessed, and they will have an opportunity to present their projects to their peers. To support learning in this unit, students will be accessing the Sciencesaurus student handbook and the core text.



UNIT OF INQUIRY 3: How we express ourselves

An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.

Central Idea: People use creative arts to influence other people's perspective.

Key concepts: form, function, perspective

Related concepts: pattern, communication, poetry, drama, influence, perspective

Learner Profile: communicator, thinker, open-minded

Lines of inquiry:

- different forms of creative art
- creative arts as a tool that influences people's emotions, actions, and future
- creating and presenting different forms of creative art to entertain and persuade

Transdisciplinary skills:

communication – writing, presenting, listening, viewing

thinking – application, dialectical thought

social - accepting responsibility

self-management – gross-motor, fine-motor, spatial awareness

Core Literature: *Charlotte's Web* by E.B. White

Unit Description:

Throughout this unit, students will not only study selected examples of visual, musical, dramatic, & literary artworks, but will also take a glimpse inside the minds of various artists, writers, musicians through reading biographies and other related nonfiction books, watching selected TV interviews, and researching work commentaries online. Students will grow to understand the creative process as they study an artist's motivation & the ways in which their artworks influence the general public and contribute to culture at large. An author's craft, style, and purpose will be examined as they read a classic core literature. Some class time will be focused on debate & discussion as to questions of whether artists should carry any social responsibility. We will analyze examples in recent history when art and music were created specifically to inspire revolution or social stability. Students will have the chance to express themselves through music as they learn to use various musical instruments as well as compose and sing relevant songs. They will create artworks that illustrate a personal conviction or reflection which will allow the viewers to enjoy a new perspective.



UNIT OF INQUIRY 4: How we organize ourselves

An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.

Central Idea: Money is a human-made system that helps value goods and services.

Key concepts: form, causation, change

Related concepts: force, motion, properties, effects, laws

Learner Profile: reflective, risk-taker, knowledgeable, thinker

Lines of inquiry:

- Origins of money
- How money works as a human-made system
- How we view and value goods and services in relation to money

Approaches to Learning:

research - collecting data

thinking - acquisition of knowledge, comprehension, analysis, metacognition

self-management - informed choices, healthy lifestyle

social - accepting responsibility, adopting a variety of roles, cooperating

communication - speaking, writing, non-verbal

Core Literature: *The Lemonade War* by Jacqueline Davis

Unit Description:

This unit will have a big emphasis on how to manage money, and the students will get to learn the basics of spending, saving and being generous with their finances. We will also utilize their English mathematical number skills throughout this unit. Students will also develop a new perspective on money – why we have it & what we did before it was ‘invented’. We will analyze the question of how it plays a major role in society and how it brings out the best and the worst in human nature. Together, we will explore the methods by which goods & services are given monetary value & we will judge the fairness or unfairness of the system. Students may hear of the experimental Universal Basic Income and discuss its pros and cons. Students will be asked to imagine a future without cash and discuss the benefits and drawbacks of digital money. We will also give some basic insight into the love-hate relationship we have with money and study the Biblical assertion that “the love of money is the root of evil.”



UNIT OF INQUIRY 5: How the world works

An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.

Central Idea: Forces are involved in making objects move.

Key concepts: form, causation, change

Related concepts: force, motion, properties, effects, laws

Learner Profile: reflective, risk-taker, knowledgeable, thinker

Lines of inquiry:

- Different forces (push or pull, friction, gravity)
- Effect of forces on objects
- Manipulating forces that result in change

Approaches to Learning:

research - observing, planning, interpreting data

thinking - application, analysis, synthesis, evaluation

self-management - time management, fine-motor, safety, codes of behavior

Core Literature: *Frank Einstein and the Electro-Finger: Book 2* by Jon Scieszka

Unit Description:

In this unit, students will not only develop an understanding of the natural forces that have to be harnessed in order to benefit society but will also learn to appreciate the people whose pioneering work has made it possible for civilization to reach its current state. Students will have the opportunity to experience and measure the natural forces of gravity, friction between different surfaces, magnetism, static electricity and steam power and understand how mankind has first played with & then harnessed these various forms of energy to run our homes and cities. They will learn to observe, experiment on, and predict the movement of objects depending on the type and amount of force applied. We will also discuss & debate the pros and the cons of current scientific & technological advances. Students will get involved in using simple machines and understand how even a door handle does work for us. Then, they will collaborate to design and build their own machines that make objects move in prescribed ways.



UNIT OF INQUIRY 6: Sharing the planet

An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.

Central Idea: Humans and the environment are interconnected and impact each other.

Key concepts: responsibility, connection, perspective

Related concepts: values, balance, systems, peace, war, environment, consequences, restoration, initiative

Learner Profile: caring, balanced, communicator

Lines of inquiry:

- positive and negative consequences of our choices
- our shared responsibility for our choices
- reasons for environmental decision-making

Transdisciplinary skills:

social - respecting others, accepting responsibility

thinking – application, dialectical thought

self-management – organization, informed choices

communication - speaking, writing, presenting

research - formulating questions, interpreting data, recording data, organizing data

Core Literature: *Wild Wings* by Gill Lewis

Unit Description:

This unit begins with a thorough inquiry into the definition of 'environment'. Students will gain deeper understanding and come to appreciate how animals have a natural, symbiotic relationship with their environment. They will discuss to what extent humans – past, present & future – have used or abused their connection to their environment. We will explore the attitudes that have caused an imbalance (from overfishing to poaching to deforestation) in various parts of the world and look at the work of people who are striving to raise awareness and fix the problem. We will look into which resources are renewable and those that are not and identify the nations who take the responsibility or sustainable energy seriously, and those who should do better. This unit, being a "mini-exhibition" unit, already starts preparing fourth graders for the Exhibition in fifth grade. They learn to demonstrate the Learner Profile and five ATLs as they inquire into their research questions related to humans' environmental decision-making and plan on how they present their findings.



Language

At Kuei Shan, Grades Pre-K-5 students learn in two languages. The Language curriculum addresses language learning in all languages taught in Kuei Shan. Language is being taught, through the realistic context of the units of inquiry. In addition, some aspects of the language curriculum might be taught as a stand-alone following the principles of the PYP, using a constructivist, inquiry-based approach.

It is arranged into three main strands:

Oral language - **listening and speaking**

Visual language - **viewing and presenting**

Written language - **reading and writing**

Each strand has been considered from both the **receptive** aspect—receiving and constructing meaning, and **expressive** aspect—creating and sharing meaning (figure 1). While the receptive and expressive aspects are clearly reciprocal, the processes involved in receiving and constructing meaning are different from those involved in creating and sharing meaning.

Strand	Receptive - receiving and constructing meaning	Expressive - creating and sharing meaning
Oral language	Listening	Speaking
Visual language	Viewing Presenting	
Written language	Reading	Writing

Figure 1 Receptive and expressive aspects of language strands
(PYP Language Scope and Sequence 4)

The language learning process is non-linear, and different learners have different proficiency levels and needs although they might be in the same class or have the same age. Kuei Shan learning outcomes are a description of this language learning process. The specific outcomes for a grade level describe what most learners are able to do by the end of this grade level in their first language. Some learners will have already moved on and are able to work towards the next phase and others might need more time to attain the targets set out. The assessments of the language outcomes are helping teachers decide how to set specific individual learning goals for their students. The individual progression of the child in each language is shared with parents in parent teacher conferences and the report cards.



Grade Four English Language Arts Content Expectations
(adopting the U.S. Common Core State Standards)

Reading
new vocabulary: use context clues and word roots to determine meaning describe different story elements (characters, feelings, settings, events, and themes) analyze, compare and contrast, and make connections to various literature types compare and contrast similar topics and types of literature fiction: compare basic story elements and points of view non-fiction: identify cause and effect; fact from opinion
Writing
write to entertain, inform, and persuade. imaginative stories personal narratives informational pieces group and individual research projects all at least four to five paragraphs
Listening and Speaking
recite, narrate, explain using appropriate visual aids and presentation skills use listening comprehension strategies (questions to clarify, list ideas, visualize and sketch) pose and respond to questions to clarify or follow up on information make comments to build on other's ideas paraphrase text or information read aloud text mapping present own ideas and present in a group differentiate between formal and informal discourse
Grammar
produce complete sentences, use interesting adjectives and start recognition of tenses appropriate use of capitalization, punctuation and spelling



Grade 4 PYP English Language Arts Overview

*Plans may change depending on students' interests and needs

Theme	Central Idea	Subject Overview	Main Resources
UOI 1 Who we are	We make decisions every day that influence who we are and what we will become.	In this unit, the English language focus is reading and analyzing graphic novels, where we examine retelling stories, describing characters in depth, furthering our vocabulary use by replacing our words with more difficult ones. Students also work on extending their paragraphs while using textual evidence from our readings. They explain their ideas and identify character traits while making judgements about character decisions and how they relate to decisions we make every day. The unit ends with a reflective piece of writing where students analyze, compare and discuss an important decision from their own lives.	Core Book: <i>El Deafo</i> by CeCe Bell Supplementary Texts: <i>Journeys textbook</i> Raz-Kids Classroom library books
UOI 2 Where we are in place and time	Earth is a part of a vast and mysterious solar system which we are continually striving to understand.	This unit works to connect the English language to the academic language used by scientists to describe the solar system. Students use precise language to describe functions and situations in space. They determine the main idea of a text and explain how it is supported by key details. They continue to examine characters in their core book and investigate motivations. They practice oral presentations and prepare to research, write and share their findings about different space topics. They learn to integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably. They continue to work on citations and adding evidence to their writing.	Core Book: <i>George's Secret Key to the Universe</i> by Stephen Hawking Supplementary Texts: <i>Journeys textbook</i> Raz-Kids <i>Sciencesaurus</i> Classroom library books
UOI 3 How we express ourselves	People use creative arts to influence other people's perspectives.	Students work on identifying the author's purpose and theme in this unit. They explore many forms of creative media and find evidence to support their ideas as well as identify elements of persuasive writing or arguments. They make connections to texts and compare them to their own lives. They attempt to recreate these ideas and elements as they explore Stop Motion animation to influence others' perspective. This unit ends with an analysis of a piece of film and identify the different elements that they have learned over the unit while making an argument for why certain characters act.	Core Book: <i>Charlotte's Web</i> by E.B. White Supplementary Texts: <i>Journeys textbook</i> Raz-Kids <i>Sciencesaurus</i> Classroom library books
UOI 4 How we organize ourselves	Money is a human-made system that helps value goods and services.	Students work on writing reflections and demonstrating their knowledge of longer paragraphs where they continue to focus on stretching their sentences and vocabulary. They attempt to utilize their persuasive techniques to persuade others to act. They research and write to inform. They use definitions, concrete details and differentiate between formal and informal English. They identify quotations and explain their importance, they tie their knowledge of money and history to inform, persuade, and entertain others as they advocate for the proper use of saving money.	Core Book: <i>Lemonade War</i> by Jacqueline Davis Supplementary Texts: <i>Journeys textbook</i> Raz-Kids Classroom library books



<p>UOI 5 How the world works</p>	<p>Forces are involved in making objects move.</p>	<p>In this unit, students again turn to a big focus on scientific inquiry and build on their knowledge of precise vocabulary. They focus on independently identifying evidence to back up claims and ideas. They learn to explain procedures, ideas, or concepts in a scientific text, such as Newton's laws of motion, including what happened and why, based on specific information in the text. They cite evidence as they explain scientific processes and they practice writing scientific lab reports to describe precise procedures.</p>	<p>Core Book: <i>Frank Einstein and the Electro-Finger: Book 2</i> by Jon Scieszka</p> <p>Supplementary Texts: <i>Journeys textbook</i> Raz-Kids <i>Sciencesaurus</i> Classroom library books</p>
<p>UOI 6 Sharing the planet</p>	<p>Humans and the environment are interconnected and impact each other.</p>	<p>This is the cumulative unit where students practice all of the skills learned over the course of the year. Students will express themselves by researching, discussing, comparing, presenting and defending their findings to their classmates and teachers. Their information will come from their individual and group research. They will create and interpret information presented visually and quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. They learn to paraphrase portions of a text or information presented in diverse media and formats. They will inform others about what they learned and convince them to take actions to create change.</p>	<p>Core Book: <i>Wild Wings</i> by Gill Lewis</p> <p>Supplementary Texts: <i>Journeys textbook</i> Raz-Kids <i>Sciencesaurus</i> Classroom library books</p>



四年級 PYP 中文語言課程概述

*教學計劃可依學生興趣和需求而改變

Theme	Central Idea	Subject Overview	Main Resources
我們是誰	我們每天所做的決定將會影響自己未來的定位。	<p>在品格小故事這個單元，透過「失敗是成功的調味」、「江湖救急，義所當為」、「團結力量大」的故事，引導學生了解失敗是成功的養份；生活中的行俠仗義之舉令人感動；不分你我的團結力量大，期培養學生在生活點滴中重視堅毅、行善與團結的好品格。明瞭做決定對自己人生的重要性，並且能學習掌握文本中的句子與段落的重要概念，更加激勵自己對於良好決定的堅持！最後，學生將撰寫一篇人生哲理的記敘文，敘寫自己做決定的經驗，並且與他人分享。</p> <p>學習表現：</p> <p>1-III-1 聆聽時能讓對方充分表達意見。 2-II-1 用清晰語音、適當語速和音量說話。 2-II-2 運用適當詞語、正確法表達想法。 4-II-1 認識常用國字至少 1,800 字，使用 1,200 字。 4-II-2 利用共同部件，擴充識字量。 4-II-4 能分辨形近、音字詞，並正確使用。 5-II-1 以適切的速率朗讀文本，表現抑揚頓挫與情感。 5-II-2 理解各種標點符號的用法。 5-II-3 掌握句子和段落的意義與主要概念。 6-II-1 根據表達需要，使用各種標點符號。 6-II-2 培養感受力、想像等寫作基本能力。</p>	<p>共讀書 《猜一猜，我是誰？看 61 位名人怎樣做自己》</p> <p>四上翰林版課文 L.7 松鼠先生的麵包 L.8 平凡的大俠 L.9 王子折箭</p> <p>臺山學校教材： 第三冊古文課本 第七冊古詩課本</p>
我們身處的時空	地球是我們不斷努力理解的巨大而神秘的太陽系的一部分。	<p>在航向天際這個單元，透過發明家不斷嘗試而實現的「發行夢」，在「月光下」對月亮的傳統認識與科學觀念的碰撞，進而動手實踐規畫「一起去月球」的計畫，引導學生認識科技發展是動手實踐夢想，不怕困難、發揮創意、解決問題的成果。</p> <p>同時也希望從「海洋事件簿」主題，帶領學生認識美麗熱鬧的海底世界，再用隱喻的方式告知學生：人類的垃圾竟成為海洋生物的「美食島」危及海洋生物的性命，期盼學生透過文本了解地球不單只是太陽系的一部分，同時也蘊藏了豐富的資源，建立學生愛護地球，尊重動物生命，與地球和平共存的環保情懷。用新聞報導的方式介紹地球的奧秘。</p> <p>學習表現：</p> <p>1-II-2 具備聆聽不同媒材的基本能力。 2-II-3 把握說話的重點與順序，對談時能做適當回應。 2-II-4 樂於參加討論，提供個人的觀點和意見。 3-II-2 運用注音符號，檢索資訊，吸收新知。 4-II-3 會利用書面或數位方式查字辭典，並能利用分辨詞義。 4-II-5 利用字義推論詞。</p>	<p>共讀書： 《晨讀 10 分鐘：星際奇航 宇宙故事集》</p> <p>四上翰林版課文 L.4 飛行夢 L.5 月光下 L.6 一起去月球 L.10 海中的熱帶雨林 L.11 美食島 L.12 寧靜的音樂會</p> <p>臺山學校教材： 第三冊古文課本 第七冊古詩課本</p>



		<p>4-II-6 掌握偏旁變化和間架結構要領書寫美觀的硬筆字。</p> <p>5-II-4 認識記敘、抒情說明及應用文本的特徵。</p> <p>5-II-5 運用適合學習階段的摘要策略，擷取大意。</p> <p>5-II-6 就文本的觀點，找出支持理由。</p> <p>6-II-3 學習審題、立意選材組織等寫作步驟。</p> <p>6-II-4 書寫記敘、應用說明事物的作品。</p> <p>6-II-6 運用改寫、縮擴等技巧作。</p>	
我們如何表達自己	人們利用藝術創作來影響他人的觀點。	<p>在我愛家鄉單元中，學生將透過文本學習主要概念的創意，相關概念的觀點和看法，讓學生透過詩人對家鄉「美麗島」的想像與頌讚，開啟學生對家鄉的憧憬，以「請到我的家鄉來」書信往返，介紹不同家鄉人文風情；再以「鏡頭下的家鄉」分享家鄉居民生活點滴，期許學生認識並珍惜家鄉之美，激發對家鄉關懷與奉獻的情感。最後，學生將透過創意的寫作方式，分享自己鏡頭下的照片之故事。</p> <p>學習表現：</p> <p>1-II-3 聽懂適合程度的詩歌、戲劇，並說出聆內容要點。</p> <p>1-II-4 根據話語情境，分辨內容是否切題理解主要和感並與對方互動。</p> <p>2-II-5 與他人溝通時能注重禮貌，並養成說話負責的態度。</p> <p>4-II-7 掌握 楷書筆畫 的書寫方法。</p> <p>4-II-8 知道古今書法名家的故事。</p> <p>5-II-7 能運用預測、推論提問等策略，增進對文本的理解。</p> <p>5-II-8 覺察自己的閱讀理解情況，適時調整策略。</p> <p>5-II-9 能透過大量閱讀，體會的樂趣。</p> <p>5-II-11 能主動參與班級、學校或社區的閱讀社群活動。</p> <p>6-II-5 仿寫童詩。</p> <p>6-II-7 找出作品的錯誤，並加以修改。</p> <p>6-II-8 養成寫作習慣。</p>	<p>共讀書： 《我的家鄉真美麗》</p> <p>四上翰林版課文 L.1 美麗島 L.2 請到我的家鄉來 L.3 鏡頭下的家鄉</p> <p>奎山學校教材： 第三冊古文課本 第七冊古詩課本</p>
我們如何組織自己	金錢是一種助於衡量物品或服務價值的人造系統。	<p>在〈阿公的祕密〉裡認識桐花祭裡家人團聚與享受美景的幸福，學習發掘美好與歡笑，散播歡樂的能力。透過劇本〈孫悟空三借芭蕉扇〉，還有〈機器人與青鳥〉與〈閱讀課〉，帶領學生體會故事的趣味、想像與感動，進而引導學生練習選擇書本與閱讀分享的能力。同時透過共讀書《10歲開始學理財、10歲開始學經濟》，讓學生了解金錢與生活的關係，進而學習建立正確的金錢價值觀，學生將書寫一篇我的理財方法的說明文。</p> <p>學習表現：</p> <p>1-II-2 具備聆聽不同媒材的基本能力。</p> <p>2-II-2 運用適當詞語、正確法表達想法。</p> <p>2-II-4 樂於參加討論，提供個人的觀點和意見。</p> <p>3-II-2 運用注音符號，檢索資訊，吸收新知。</p> <p>4-II-3 會利用書面或數位方式 查字辭典，並能利用分辨詞義。</p>	<p>共讀書： 《10歲開始學理財》 10歲開始學經濟》</p> <p>四下翰林版課文 L.10 孫悟空三借芭蕉扇 L.11 機器人與青鳥 L.12 閱讀課 L.6 阿公的祕密</p> <p>奎山學校教材：</p>



		<p>4-II-5 利用字義推論詞。</p> <p>4-II-6 掌握 偏旁變化和間架結構 要領書寫美觀的硬筆字。</p> <p>5-II-4 掌握句子和段落的意義與主要概念。</p> <p>5-II-7 就文本的觀點，找出支持理由。</p> <p>5-II-8 能運用預測、推論提問等策略，增進對文本的理解。</p> <p>5-II-10 能透過大量閱讀，體會的樂趣。</p> <p>5-II-12 能主動參與班級、學校或社區的閱讀社群活動。</p> <p>6-II-2 培養感受力、想像等寫作基本能力。</p> <p>6-II-6 運用改寫、縮擴等技巧寫作。</p> <p>6-II-7 找出作品的錯誤，並加以修改。</p>	<p>第四冊古文課本 第八冊古詩課本</p>
<p>世界如何運作</p> <p>獨立單元</p>	<p>施力能使物體移動。</p>	<p>在〈快樂兒童日〉裡認識不同國家如何歡慶兒童節及帶給所有孩子祝福的正能量、透過「運動樂趣多」單元帶領學生認識不同面向的戶外教育及體育休閒活動令人著迷的樂趣。在連續性文本的〈棒球英雄夢〉分享作者對運動的熱愛，〈夢幻全壘打〉裡參與作者精彩的棒球比賽，最後在〈單車遊日月潭〉認識結合環保與休閒運動的單車旅遊樂趣。</p> <p>由於科技的發展與我們社會生活息息相關，因科技的發展，我們的生活每天都在發生變化，並且越變越好，科技：融入了人們的生活，豐富了生活，給我們的生活帶來方便，帶來了舒適，沒有科技的發展也就沒有現在舒適的生活。我們將從共讀書的學習，了解學習簡單機械的科學原理。使原本抽象難懂的機械原理變得淺顯易懂，將科學原理應用在生活當中，最終完成一篇屬於科學與生活科普文章。</p> <p>學習表現：</p> <p>1-II-1 聆聽時能讓對方充分表達意見。</p> <p>1-II-4 根據話語情境，分辨內容是否切題理解主要和感並與</p> <p>對方互動。</p> <p>2-II-3 把握說話的重點與順序，對談時能做適當回應。</p> <p>2-II-5 與他人溝通時能注重禮貌，並養成說話負責的態度。</p> <p>3-II-1 運用注音符號，理解生字新詞提升閱讀效能。</p> <p>4-II-1 認識 常用國字至少 1,800 字，使用 1,200 字。</p> <p>4-II-3 會利用書面或數位方式 查字辭典，並能利用分辨詞義。</p> <p>4-II-7 掌握楷書筆畫的書寫方法。</p> <p>5-II-2 理解各種標點符號的用法。</p> <p>5-II-3 讀懂與學習階段相符的文本。</p> <p>5-II-5 認識記敘、抒情說明及應用文本的特徵。</p> <p>5-II-6 運用適合學習階段的摘要策略，擷取大意。</p> <p>5-II-9 覺察自己的閱讀理解情況，適時調整策略。</p> <p>6-II-1 根據表達需要，使用各種標點符號。</p> <p>6-II-3 學習審題、立意選材組織等寫作步驟。</p> <p>6-II-4 書寫記敘、應用說明事物的作品。</p>	<p>共讀書： 《好玩的機器原理：輪子、槓桿、滑輪》</p> <p>四下翰林版課文 L.5 快樂兒童節 L.7 棒球英雄夢 L.8 夢幻全壘打 L.9 單車遊日月潭</p> <p>奎山學校教材： 第四冊古文課本 第八冊古詩課本</p>



共享地球	人類和環境是彼此相關且互相影響的	<p>人類和環境是互相影響的。透過「與自然共處」單元，認識〈稻間鴨〉生物防治自然農法、〈會呼吸的房子〉綠建築及保育類動物〈石虎要回家〉，引導學生用平等、尊重的眼光看待自然，進而愛護自然，學習與大自然共處。學生在〈阿里棒棒〉中認識達悟族飛魚祭傳達的樂天知命與崇敬自然的精神，並且透過共讀書的學習與討論，完成一篇有關自己對地球、環境的看法、想法和如何採取行動影響自然環境的演講稿。</p> <p>學習表現：</p> <p>1-Ⅱ-1 聆聽時能讓對方充分表達意見。</p> <p>1-Ⅱ-3 聽懂適合程度的詩歌、戲劇，並說出聆內容要點。</p> <p>2-Ⅱ-1 用清晰語音、適當語速和音量說話。</p> <p>3-Ⅱ-2 運用注音符號，檢索資訊，吸收新知。</p> <p>4-Ⅱ-2 利用 共同部件，擴充 識字量。</p> <p>4-Ⅱ-4 能分辨形近、音字詞，並正確使用。</p> <p>4-Ⅱ-8 知道古今書法名家的故事。</p> <p>5-Ⅱ-1 以適切的速率朗讀文本，表現抑揚頓挫與情感。</p> <p>5-Ⅱ-4 掌握句子和段落的意義與主要概念。</p> <p>5-Ⅱ-7 就文本的觀點，找出支持理由。</p> <p>5-Ⅱ-10 能透過大量閱讀，體會的樂趣。</p> <p>5-Ⅱ-11 能閱讀多元文本，以認識重大議題。</p> <p>6-Ⅱ-2 培養感受力、想像等寫作基本能力。</p> <p>6-Ⅱ-5 仿寫童詩。</p> <p>6-Ⅱ-8 養成寫作習慣。</p>	<p>共讀書：</p> <p>SDGs：我們想要的未來：17 項永續發展目標&國際實踐範例</p> <p>四下翰林版課文</p> <p>L.1 稻間鴨</p> <p>L.2 會呼吸的房子</p> <p>L.3 石虎要回家</p> <p>L.4 阿里棒棒</p> <p>奎山學校教材：</p> <p>第四冊古文課本</p> <p>第八冊古詩課本</p>
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Mathematics

At Kuei Shan, Grades Pre-K-5 students learn in two languages. Our students are given the opportunity to construct, transfer, and apply mathematical understanding in all languages taught at Kuei Shan. Math is being taught, whenever possible, through the realistic context of the units of inquiry; if the direct teaching of mathematics in a unit of inquiry is not feasible it is taught as a stand-alone following the principles of the PYP, using a constructivist, inquiry-based approach.

Math is arranged into five main strands: data handling, measurement, shape and space, pattern and function, and number. For each of these strands we have identified specific learning outcomes. These outcomes describe what most learners are able to do by the end of any given grade level. Different learners have different proficiency levels and needs, although they might be in the same class or have the same age. Some learners will have already moved on and are able to work towards the next phase and others might need more time to attain the targets set out. The acquisition of mathematical understanding must be seen as a continuum along which each individual student progresses at his/her own speed.

The assessment of the math outcomes is helping teachers decide how to set specific individual learning goals for their students. The individual progression of each child in math is shared with parents in parent teacher conferences and the report cards.

Data handling

Data handling allows us to make a summary of what we know about the world and to make inferences about what we do not know. Data can be collected, organized, represented and summarized in a variety of ways to highlight similarities, differences and trends; the chosen format should illustrate the information without bias or distortion. Probability can be expressed qualitatively by using terms such as “unlikely”, “certain” or “impossible”. It can be expressed quantitatively on a numerical scale.

Measurement

To measure is to attach a number to a quantity using a chosen unit. Since the attributes being measured are continuous, ways must be found to deal with quantities that fall between numbers. It is important to know how accurate a measurement needs to be or can ever be.

Shape and space

The regions, paths and boundaries of natural space can be described by shape. An understanding of the interrelationships of shape allows us to interpret, understand and appreciate our two-dimensional (2D) and three-dimensional (3D) world.

Pattern and function

To identify pattern is to begin to understand how mathematics applies to the world in which we live. The repetitive features of patterns can be identified and described as generalized rules called “functions”. This builds a foundation for the later study of algebra.

Number

Our number system is a language for describing quantities and the relationships between quantities. For example, the value attributed to a digit depends on its place within a base system. Numbers are used to interpret information, make decisions and solve problems. For example, the operations of addition, subtraction, multiplication and division are related to one another and are used to process information in order to solve problems. The degree of precision needed in calculation depends on how the result will be used.



It is important that learners acquire mathematical understanding by constructing their own meaning through ever-increasing levels of abstraction, starting with exploring their own personal experiences, understandings and knowledge. Additionally, it is fundamental to the philosophy of the PYP that, since it is to be used in real-life situations, mathematics needs to be taught in relevant, realistic contexts, rather than by attempting to impart a fixed body of knowledge directly to students. How children learn mathematics can be described using the following stages (see figure 1).

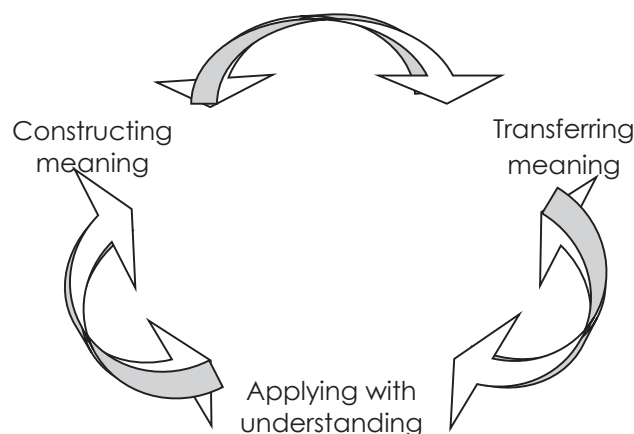


Figure 1 *How children learn mathematics*
(PYP mathematics Scope and Sequence 1)

Constructing meaning about mathematics

Learners construct meaning based on their previous experiences and understanding, and by reflecting upon their interactions with objects and ideas. Therefore, involving learners in an active learning process, where they are provided with possibilities to interact with manipulatives and to engage in conversations with others, is paramount to this stage of learning mathematics. When making sense of new ideas all learners either interpret these ideas to conform to their present understanding or they generate a new understanding that accounts for what they perceive to be occurring. This construct will continue to evolve as learners experience new situations and ideas, have an opportunity to reflect on their understandings and make connections about their learning.

Transferring meaning into symbols

Only when learners have constructed their ideas about a mathematical concept should they attempt to transfer this understanding into symbols. Symbolic notation can take the form of pictures, diagrams, modeling with concrete objects and mathematical notation. Learners should be given the opportunity to describe their understanding using their own method of symbolic notation, then learning to transfer them into conventional mathematical notation.

Applying with understanding

Applying with understanding can be viewed as the learners demonstrating and acting on their understanding. Through authentic activities, learners should independently select and use appropriate symbolic notation to process and record their thinking. These authentic activities should include a range of practical hands-on problem-solving activities and realistic situations that provide the opportunity to demonstrate mathematical thinking through presented or recorded formats. In this way, learners are able to apply their understanding of mathematical concepts as well as utilize mathematical skills and knowledge.



Grade 4 PYP Math Overview

**Plans may change depending on students' interests and needs*

Theme	Central Idea	Subject Overview	Main Resources
<p>UOI 1 Who we are</p>	<p>UOI central idea: We make decisions every day that influence who we are and what we will become.</p> <p>Math central idea: Being able to decide which action of modeling and solving complex operations involving big numbers up to million and its multiplication and division.</p>	<p>The unit will provide students opportunities to look for examples of big numbers up to 100000000 from real-life situations (e.g., books, newspapers and magazines). They need to estimate a big number (e.g. the seating capacity of an indoor stadium in Taiwan) and discuss how the estimation is done. Students will compare numbers digit by digit from left to right, and use language such as 'greater than', 'greatest', 'smaller than', 'smallest' and 'the same as' to describe the comparison of numbers up to 100000000. Students will re-explore multiplication and division of integers, and work with factors, multiples and their relationship. They will work on determining if a number is a multiple of a given number and finding the common multiples of two given numbers. In addition, they need to determine if a number is a factor of a given number and find the common factors of two given numbers. Some word stories (verbal forms) involving multiplication and division of integers will be presented. They will understand and apply multiplication and division of integers. They will be taught how to use and elect appropriate methods for solving a problem involving integer multiplication and division, for example, using mental estimation, mental or written strategies, or a calculator.</p> <p>Math summative assessment: students should be able to apply their knowledge of multiplication and division of integers to solve real-life problems using different sources and properties.</p>	<p><i>Math in Focus:</i> <i>Singapore Math 4A</i> textbook and workbook</p> <p>Math manipulatives Online math games Teacher-created materials</p>
<p>UOI 2 Where we are in place and time</p>	<p>Earth is a part of a vast and mysterious solar system which we are continually striving to understand.</p>	<p>Students will have opportunities to work in groups to look for numbers larger than 100 million. They will read, compare, and order the numbers. They will use objects in the classroom to practice simplifying ratios and using ratio language. Further, they will apply their knowledge of big numbers up to 100 million related to the size of planets, distance between two planets, and ratio of planets' size. The units will also focus on understanding and applying four arithmetic operations of integers to solve real-life problems. They will explore some of the laws that govern these operations and use mathematical models to reinforce the algorithms they commonly use. The problems could require either a single or a mixed operation. Students will have opportunities to use part-whole and comparison models to represent and solve word problems involving the four arithmetic operations. They will also use a variety of mental strategies for the four operations and explain the process. In the end, they should work in groups to create 3-step word problems involving the 4 operations for other groups to solve. If possible, students can be requested to solve non-routine problems using different heuristics and share their ideas.</p> <p>Math summative assessment: students should be able to apply their understanding of numbers and operations (i.e., the four arithmetic operations) to solve related problems in real-life situations, such as calculating a budget and actual expenses for space exploration and colonization project.</p>	<p><i>Math in Focus:</i> <i>Singapore Math 4A</i> textbook and workbook</p> <p>Math manipulatives Online math games Teacher-created materials</p>



<p>UOI 3 How we express ourselves</p>	<p>UOI central idea: People use creative arts to influence other people's perspectives.</p> <p>Math central idea: People can express their creativities when working with angles, triangles, graphs, and quadrilaterals.</p>	<p>The unit will focus on understanding and using notation such as $\angle ABC$ and $\angle b$ to name angles. Students will have opportunities to measure angles in degrees and draw an angle of given size. They will have to work on features related to quarter, half and complete turns to angles in degrees. In addition, they will draw angles using a protractor, and find the angles (in degrees) between two 8-point compass directions. The units will also focus on properties of isosceles triangle, equilateral triangle, and right-angled triangle. Students will understand and be able to count the angle sum of a triangle. They will have opportunities to find unknown angles in geometric figures without additional construction of lines.</p> <p>Students will work in groups to discuss how to collect data, e.g. through interview or survey, and how to represent the data in a bar graph. Students will represent and interpret picture graphs in both vertical and horizontal forms, and make a story using information from a graph.</p> <p>They also will discuss examples of inappropriate representations of data from newspapers e.g. whether certain representations are correct or misleading.</p> <p>Math summative assessment: students should be able to apply their knowledge of angle, triangle, and graph to create a Stop-Motion film and explain the visual elements and how the animations were produced.</p>	<p><i>Math in Focus:</i> <i>Singapore Math 4A & 4B</i> textbook and workbook</p> <p>Math manipulatives Online math games Teacher-created materials</p>
<p>UOI 4 How we organize ourselves</p>	<p>Money is a human-made system that helps value goods and services.</p>	<p>The unit will focus on making a collection of quadrilaterals (4-sided figures) from pictures and photographs, and identify the various special quadrilaterals besides square and rectangles. Students will discuss how each special quadrilateral is different from the others, and explore its properties using cutouts or applets. They should use the properties of special quadrilaterals to find unknown angles and explain how they obtain the answers. In the end, they will sketch and draw special quadrilaterals according to given angles and lengths using ruler, protractor and setsquares. Regarding fraction units, students will work on mixed numbers and improper fractions, and their relationships. In addition, they will work on fractional multiplication. Students will have opportunities to use fraction discs or number line to represent and interpret fractions greater than one whole as improper fractions and mixed numbers. They will compare whole numbers and fractions as well as two fractions using fraction discs or number line, and then without using fraction discs or number line by changing to common denominators. In the end, they should achieve mastery of conversion between mixed numbers and improper fractions.</p> <p>Math summative assessment: students manage their expenses and calculate possible profit or return-of-investment (ROI) for their vegetable garden harvest, silkworm raising product, and any fundraising projects they decide to organize.</p>	<p><i>Math in Focus:</i> <i>Singapore Math 4B</i> textbook and workbook</p> <p>Math manipulatives Online math games Teacher-created materials</p>



<p>UOI 5 How the world works</p>	<p>Forces are involved in making objects move.</p>	<p>Students look for decimals in everyday situations e.g. advertisements from books, newspapers and magazines. The units focus on identifying the whole-number parts, tenths and hundredths in decimal. They will have opportunities to recognize that a decimal is made up of a whole-number part and a fractional part, represent the decimal on a number line, and make connections between decimals, fractions and measurement. Students will represent equivalent decimals such as 0.5, 0.50 and 0.500, and explain that they are the same number. The units will focus on comparing two decimals by first comparing the whole-number parts, and then compare the tenths, hundredths, thousandths in order. In the end, students will place a given decimal on a number line between two consecutive whole numbers/tenths/hundredths, and determine which whole number/tenth/hundredth is nearer to the given decimal. Further, students will have opportunities to do calculation of decimals using four arithmetic operations.</p> <p>The units also focus on making estimation and approximations in real-life situations involving whole numbers, fractions, and decimals.</p> <p>For summative assessment, students will solve real-life problems involving decimals and approximations when measuring movement, speed, distance, and velocity accurately.</p>	<p><i>Math in Focus:</i> <i>Singapore Math 4B</i> textbook and workbook</p> <p>Math manipulatives Online math games Teacher-created materials</p>
<p>UOI 6 Sharing the planet</p>	<p>Stand-alone: Conversion of units and measurements allows us to make sense of the world we live in</p>	<p>The units will focus on understanding the concepts of area, perimeter, and volume of an object in real-life situations. Students will have opportunities to measure area, perimeter and volume. They will use their own ways to find area and perimeter of rectangle/square, to find one dimension of a rectangle given the other dimension and its area/perimeter, to find the length of one side of a square given its area/perimeter, and to find the area of figures made up of rectangles and squares. When learning area and perimeter, students will have opportunities to convert kilometer to other standard units. Students will also find volume of a given object using procedures and mathematical formulae.</p> <p>Regarding the capacity and weight, students will explore and work in groups to measure the capacities of different sized containers using measuring tools such as measuring jars and beakers. Students will collect and talk about real-life examples of the uses of different units of measurement, e.g. weighing scales, car capacity in cubic centimeters (cm³ or cc), etc. They will also represent given information such as starting time, finishing time and duration of activity on a timeline and use it to solve problems.</p> <p>Math summative assessment: students will solve real-life problems involving area, perimeter, weight, capacity, and time, and be able to create word problems based on everyday experiences.</p>	<p><i>Math in Focus:</i> <i>Singapore Math 4B</i> textbook and workbook</p> <p>Math manipulatives Online math games Teacher-created materials</p>



Science

Science at Kuei Shan is taught entirely within the PYP Program of Inquiry. Major conceptual ideas are developed over the entire primary curriculum, and inquiry is the main approach in the organization and selection of students' activities. We have developed the Science strands from the IB-PYP Science Scope and Sequence documentation. They are:

Living Things

The study of the characteristics, systems and behaviors of humans and other animals, and of plants; the interactions and relationships between and among them, and with their environment.

Earth and Space

The study of planet Earth and its position in the universe, particularly its relationship with the sun; the systems, distinctive features and natural phenomena that shape and identify the planet; the infinite and finite resources of the planet.

Materials and Matter

The study of the properties, behaviors and uses of materials, both natural and human-made; the origins of human-made materials and how they are manipulated to suit a purpose.

Forces and Energy

The study of energy, its origins, storage and transfer, and the work it can do; the study of forces; the application of scientific understanding through inventions and machines.

All teaching and learning provides the opportunity to utilize and develop the transdisciplinary skills identified in *Making the PYP happen: A curriculum framework for international primary education* (2007). In addition to these, the science component of the curriculum also provides opportunities for students to develop a range of science-specific skills and processes.

- a. **Observe carefully in order to gather data**
- b. **Use a variety of instruments and tools to measure data accurately**
- c. **Use scientific vocabulary to explain their observations and experiences**
- d. **Identify or generate a question or problem to be explored**
- e. **Plan and carry out systematic investigations, manipulating variables as necessary]**
- f. **Make and test predictions**
- g. **Interpret and evaluate data gathered in order to draw conclusions**
- h. **Consider scientific models and applications of these models (including their limitations)**



Grade 4 PYP Science Overview

**Plans may change depending on students' interests and needs*

Theme	Central Idea	Subject Overview	Main Resources
Where we are in place and time	Earth is a part of a vast and mysterious solar system which we are continually striving to understand.	<p>Students will investigate space, formation of planets, examine solar bodies and compare and contrast. They will explore the history and future of space exploration and colonization sustainability. They will consider space exploration so far and what challenges exist in colonization. Students will gain an understanding of the engineering process as they design and build pasta rovers and take part in real world applications. Colonization viability design project, plan, research, compare, test, problem solve and build.</p> <p>This unit also has an agricultural science component. Students review the fundamentals of pot planting as they grow bell pepper seeds. They observe, reflect, and do research to solve weather or growth issues that arise. Students also start their vegetable garden planting experience. They learn the process of vegetable garden cultivation and experience first-hand the patience and hardships needed when farming – this is how hard the healthy food we eat are produced. Students will also go through the design process as they prepare their plot for planting, as well, they explore a different planting technique for their space colonization project.</p>	<p>Core book: <i>George's Secret Key to the Universe</i> by Stephen Hawking</p> <p>Supplementary texts: <i>Sciencesaurus</i> Design Process Journal - JPL</p> <p>Digital resources: Newsela <i>National Geographic</i> 101 Ted-Ed Brainpop Dr. Binocs <i>Magic School Bus</i> Raz-Kids</p>
How We Organize Ourselves	Money is a human-made system that helps value goods and services.	<p>Students explore the origin of money, trade and goods. Students experience why money came to be and the challenges of life before money. They will apply their knowledge of trade and bartering to explain why money came into being. They will experience different scenarios of how money or trade functions. This unit also has an agricultural science component – silkworm raising. Students examine the life cycle of silkworms and their needs – diet, habitat, and reproduction. Then, students learn how silkworms became a valuable source of exquisite commodity and how silk became a dominant force of trade in the world. Finally, students experience silkworm-raising firsthand and learn simple techniques for silk production. Students continue to maintain their vegetable garden and harvest crops, then reflect on this economic activity.</p>	<p>Core Book: <i>Lemonade War</i> by Jacqueline Davis</p> <p>Supplementary Texts: <i>Journey of Marco Polo</i> <i>The Silk Road</i> <i>Life Cycle of a Silkworm</i></p> <p>Digital resources: Raz-Kids Scenario Situations</p>
How the World Works	Forces are involved in making objects move.	<p>Students gain an understanding of how forces interact to create and resist movement. Students learn about Newton's three laws of motion, be able to explain, understand, and apply knowledge about magnetic force, and gain an appreciation of simple vs. complex machines. Students end by researching, examining and applying their knowledge to build and manipulate box roller-coasters.</p>	<p>Core book: <i>Frank Einstein and the Electro-Finger: Book 2</i> by Jon Scieszka</p> <p>Supplementary texts: <i>Sciencesaurus</i> Design Process Journal</p> <p>Digital resources: Raz-Kids Brainpop <i>National Geographic</i> <i>Magic School Bus</i> Bill Nye Dr. Binocs Newsela</p>



Sharing the Planet	Humans and the environment are interconnected and impact each other	This unit is their "mini-Exhibition" where students experience forming their own inquiry question, doing extensive research, and applying all skills they learned to deliver their research presentation to their peers and teachers. Students will assist the teachers in a research exploration of the effect of plastic on the planet. Students will practice their thinking skills, research skills, communication skills, collaborative skills, and self-management skills, apply problem solving and prepare to present their own findings on an approved issue from the United Nations Sustainable Development Goals (UN-SDG).	Core Book: <i>Wild Wings</i> by Gill Lewis Supplementary texts: <i>Sciencesaurus</i> Digital resources: Student generated research National Geographic Newsela
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Social Studies

Social Studies at Kuei Shan is taught entirely within the PYP Program of Inquiry. Major conceptual ideas are developed over the entire primary curriculum, and inquiry is the main approach in the organization and selection of students' activities. We have developed the Social Studies strands from the IBPYP Social Studies Scope and Sequence documentation. They are:

Human systems and economic activities

The study of how and why people construct organizations and systems; the ways in which people connect locally and globally; the distribution of power and authority.

Social organization and culture

The study of people, communities, cultures and societies; the ways in which individuals, groups and societies interact with each other.

Continuity and change through time

The study of the relationships between people and events through time; the past, its influences on the present and its implications for the future; people who have shaped the future through their actions.

Human and natural environments

The study of the distinctive features that give a place its identity; how people adapt to and alter their environment; how people experience and represent place; the impact of natural disasters on people and the built environment.

Resources and the environment

The interaction between people and the environment; the study of how humans allocate and manage resources; the positive and negative effects of this management; the impact of scientific and technological developments on the environment.

Although these strands are considered separately, in practice they are inextricably linked. Social Studies is essentially about people: how they think, feel and act; how they interact with each other; their beliefs, aspirations and pleasures; the problems they have to face; how and where they live (or lived); how they interact with their environment, the work they do and how they organize themselves.

All teaching and learning provides the opportunity to utilize and develop the transdisciplinary skills identified in *Making the PYP happen: A curriculum framework for international primary education* (2007). In addition to these, the social studies component of the curriculum also provides opportunities for students to develop a range of social studies skills and processes.

- a. **Formulate and ask questions about the past, the future, places and society**
- b. **Use and analyze evidence from a variety of historical, geographical and societal sources**
- c. **Orientate in relation to place and time**
- d. **Identify roles, rights and responsibilities in society**
- e. **Assess the accuracy, validity and possible bias of sources**



Social and Emotional Learning (SEL)

Social and Emotional Learning (SEL) is concerned with the ongoing development and growth of our students in respect to feelings, beliefs and behaviors and how they interrelate. SEL is included in the curriculum in order to help students develop an understanding of how to manage and communicate their feelings; understand how their choices and practices can maintain their health and safety; develop an awareness of social norms and perspectives; build relationships and develop an appreciation of commonalities and differences; develop strategies to resolve conflicts; recognize rights and responsibilities towards others and the environment and develop self-management strategies to become successful learners. SEL is an essential and integral part of the curriculum; it is transdisciplinary in nature, yet needs to be thoroughly planned and carefully implemented. The students will develop knowledge and understanding in the three strands of **identity, active living, and interactions.**

Grade Four students learn to understand that a person's identity is shaped by a range of factors, such as the decisions he or she makes, and that this identity evolves over time. They explore and reflect on the strategies they use to manage change, approach new challenges and overcome adversity. Learners understand that there are potential positive and negative outcomes for risk-taking behaviors and are able to identify these risks in order to maximize enjoyment and promote safety. They are aware that developing self-reliance and persisting with tasks independently will support their efforts to be more autonomous learners. They understand that healthy relationships are supported by the development and demonstration of constructive attitudes towards other people and the environment.

All IB learners develop specific Approaches to Learning (ATL) skills alongside cognitive skills. Kuei Shan PYP stresses on the development of social skills and self-management skills, as these are essential abilities that need to be formed early on in life. See overall expectations below:

Self-management skills	ORGANIZATION	ORGANIZATION	STATES OF MIND	STATES OF MIND	REFLECTION / METACOGNITION
Grade 4	<p>ORGANIZATION I can responsibly follow the class schedule.</p> <p><i>Look for:</i> 1. I check the class schedule for the next day and make sure all the books and tools I need are in my bag. (ex. I bring my instrument for music class tomorrow) 2. I can prepare the materials I need before class starts. 3. I can switch from one classroom/place to another and arrive there on time. 4. I am responsible for what I should wear each day (ex.</p>	<p>ORGANIZATION I can maintain good health, hygiene, and overall appearance.</p> <p><i>Look for:</i> 1. I am conscious of how I look. (ex. hair is combed well, uniform tucked in, not very messy or stained after playing outside) 2. I can take care of my own health or well-being. (ex. drink enough water at school; no sweets or junk food, don't sleep late) 3. I can keep my uniform, socks and shoes clean and tidy.</p>	<p>STATES OF MIND I can adjust my thinking and emotions to new situations. (resilience)</p> <p><i>Look for:</i> 1. I can make a good choice when I am in an unfamiliar situation or place, like going on a field trip or meeting someone for the first time. 2. I can show that I'm extra alert and careful when working on a new task.</p>	<p>STATES OF MIND I can work through setbacks or problems on my own. (resilience)</p> <p><i>Look for:</i> 1. I can handle frustration and use strategies to find solutions. 2. I can remain focused on the task when I encounter something difficult along the way.</p>	<p>REFLECTION / METACOGNITION I keep a journal to regularly reflect on my strengths and weaknesses.</p> <p><i>Look for:</i> 1. I can record my reflections at least weekly. 2. I can set a specific goal and track how I'm trying to reach the goal through my journal. 3. I can write about my strengths and/or weaknesses and how I can improve on a weekly basis. 4. Through my journal, I can see how I have improved or changed over time</p>



	PE uniform on PE days; follow dress code if there are any schedule changes)	4. I keep my nails trimmed. 5. I get a haircut regularly (particularly boys). 6. I can fix my hair so that it doesn't cover my face and I won't look lousy (particularly girls). 7. I wipe off sweat and clean myself after a rigorous activity at school.			(gradual improvement).
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Social Skills	RESPECTING OTHERS	RESOLVING CONFLICT	SOCIAL INTELLIGENCE
Grade 4	<p>RESPECTING OTHERS I can describe tone and how it is used in communicating with others.</p> <p><i>Look for:</i> 1. I can listen intently to others' ideas and accept my classmates' good ideas; not be biased (non-example: choosing your best friend's ideas even though someone else has a better idea). 2. I can communicate my ideas with a polite tone and appropriate volume. 3. I can sense when my peer or teacher is upset or frustrated, and I adjust my way of communication accordingly.</p>	<p>RESPECTING OTHERS I can use strategies to resolve my own conflict with others.</p> <p><i>Look for:</i> 1. I can resolve my conflict by myself without involving the teacher. 2. I can work with my friends to find the right advice. 3. I can come to an agreement with my peers through voting or other strategies. 4. I can negotiate peacefully and agree to compromise. 5. I can think about how my actions might be affecting others and what actions I can then take. 6. I can speak politely to the other person and find out what they are feeling. 7. I can use thinking/feeling resources to understand how I and others feel.</p>	<p>SOCIAL INTELLIGENCE I demonstrate cooperative behaviors in a group.</p> <p><i>Look for:</i> 1. I can learn cooperating by being courteous, sharing, taking turns, and helping others to succeed. 2..I speak polite, courteous words during group discussions. 3. I listen and take turns with peers in expressing opinions during group discussions. 4. I can encourage and help my peers succeed in completing the group task. I can work with others, showing support and encouragement, willingly for a common purpose. 5. I am willing to take on leadership roles (small groups, cleaning, helping teachers/classmates).</p>

Physical Education (PE)

Physical Education is concerned with the physical and health aspects of our students' development. It gives students the opportunity to learn about movement and through movement. Skills are developed through a wide variety of physical activities, designed to ensure maximum participation by all. The PE program also provides opportunities for cooperation, teamwork, decision making and problem solving. The students will develop knowledge and understanding in the strands of health-related activities, body control and spatial awareness, athletic activities, games, movement to music and adventure challenge.

In the upper elementary grades, students learn to understand the factors that contribute to a healthy lifestyle. They understand that they can enhance their participation in physical activities through developing and maintaining physical fitness, refining movement skills, and reflecting on technique and performance. They understand the physical, social and emotional changes associated with puberty. They apply movement skills appropriately, and develop plans to help refine movements, improve performance and enhance participation in a range of physical contexts.



Music

The goal of music education is to enable every student to achieve a prescribed level of success in understanding and creating music. Our desire is to provide an opportunity for joyful and meaningful expression through singing, moving, and playing instruments, individually and in cooperation with others. The philosophies and methodologies of the Orff Schulwerk approach form the framework of music education at Kuei Shan.

In the upper primary grades, music is delivered in the Chinese language. Students in grades 4 to 5 focus on developing the ability to read musical symbols and applying their knowledge of musical elements through performances (singing, moving, playing instruments), creating and listening. In the 4th grade, students begin reading standard symbols in the treble clef and learn to sing while they play Hand Bells and Angklung using the Kodaly method. They continue to create simple rhythms and melodies as accompaniment and discover how music is organized.

Art

Visual art includes the development of creative skills, verbal and non-verbal expression, an awareness of the perspectives of others and aesthetic appreciation. Through visual arts, students can begin to construct an understanding of their community, their environment, their own feelings and emotions, and to develop their cultural awareness.

In visual arts class, students will develop knowledge and understanding in four strands: creative processes, elements and principles of art and design, reflection and appreciation of visual arts in society.

In the upper primary grades, students will understand that issues, beliefs, and values can be explored in arts. They will show an understanding that throughout different cultures, places and times, people have innovated and created new modes in arts. Students will further develop their creative skills and be courageous to try out new forms of media or art. They will use strategies, based on what they know, to interpret arts and understand the role of arts in our world. Activities include:

- Drawing/painting with crayons, markers, and watercolor
- Contemporary art
- Graphic novel making
- Art interpretation and appreciation
- Mixed media art



Assessment

In keeping with the school's assessment principles and the spirit of the IB Primary Years Program, assessment in the Early Years is geared toward improving, rather than simply documenting, student performance. The use of assessment to judge the effectiveness of both teaching and learning processes is essential to allow teachers and students to identify their strengths and weaknesses and the effectiveness of the program.

At Taipei Kuei Shan School, we strive to uphold academic integrity by delivering purposeful assessment for student and teacher use. The reason behind purposeful assessment is so that we can improve students' learning, track and diagnose student progress, and evaluate a program's effectiveness. It is important that all teachers be involved in using a variety of assessment strategies. These teachers should assess the common areas of the learner profile, attitudes and transdisciplinary skills. The information gathered is appropriately shared to promote the learning partnership of student, teachers, and parents. The reporting cycle includes:

- unit of inquiry summative assessment reports
- unit of inquiry report cards
- written report cards per semester
- reading evaluations per semester
- three-way conferences (parent-teacher-student)
- student-led conference



Central idea: Earth is a part of a vast and mysterious solar system which we are continually striving to understand.

Student Name _____ Number _____ Date _____

Solar System 3D Model and Information Report Rubrics						
	CRITERIA	TASK DESCRIPTION	BEGINNER	NEEDS STRENGTHENING	CONSOLIDATING	PROFICIENT
Concepts	Form - Composition of the universe	The student demonstrates accurate knowledge of the solar system, their order in relation to the sun, and distance between them through the 3D model. All planets are labeled and roughly proportional to each other. 正確標示各星球間距離並展示其比例	1	2	3	4
	Connection: Earth's place in space and time (relationship with other objects in the universe)	Informational report is complete and clearly explains relationship between Earth and another planet in the solar system.	1	2	3	4
	Connection: The relationship of the Earth and sun and how they are interconnected	完成閱讀國際議題7：可負擔的清潔能源文本，利用指南針思考法，呈現太陽能之各項特點。	1	2	3	4
	Thinking skills: English Language – writing an information report (research and interpretation)	Content is well organized, flows well, and is easy to read (ORGANIZATION). Grammar and punctuation are used correctly, and the report has been checked for spelling errors (CONVENTIONS).	1	2	3	4
Knowledge & Skills	Research skills – Interpreting data and presenting research	Student collects facts about planets and the moon (ex. distance, moons, temperature) to interpret relationships and cites different sources (books, websites, videos)	1	2	3	4
	Communication skills - writing: Chinese Language	能藉由觀賞楊亞祖貝童「從空中看地球」之攝影作品，體會地球之美，並完成一篇說明文。	1	2	3	4
	Thinking skills – Acquisition of Knowledge	能用海報介紹一個以農曆為主的傳統節慶及其由來、特點。	1	2	3	4
Learner Profile & Attitudes	Learner Profile: Inquirer, Thinker Attitudes: Creativity, Curiosity	The student independently plans and decides how to build an accurate 3D solar system model, including the types of material that will be used and how it will be presented.	1	2	3	4
TEACHER'S REMARKS:			PARENTS' COMMENTS AND SIGNATURE:			



Achievement Level Description (scoring rubrics)

- A Advanced 進階 - The student has demonstrated evidence of the learning outcomes in a variety of advanced ways and is applying higher level knowledge, skills, and understandings consistently. Learning is above expected level. 學生的學習成果已超過預期標準，能以多樣的方式展現更高階的學習成果，並一慣的應用知識和技能。
- P Proficient 精熟 - The student has demonstrated evidence of the learning outcomes in a variety of ways and is applying knowledge, skills, and understandings consistently and independently. Learning is at expected level. 學生的學習成果已達預期標準，能以多樣的方式展現學習成果，並一慣、獨立的學習知識和技能。
- C Consolidating 穩定 - The student has demonstrated evidence of the learning outcomes and is applying knowledge, skills, and understandings. Learning is at expected level but is not fully consistent or independent at this time. 學生的學習成果已達預期標準，但是尚未能一慣、獨立的學習。能展現學習成果，並能在知識、技能和理解上有所應用。
- NS Needs strengthening 加強 - The student has begun to demonstrate some evidence of the requirements of learning outcomes however applies limited knowledge, skills, and understandings. The student is working below expected level. 學生的學習成效低於預期標準，已開始展現部份學習成果，但在知識、技能和理解上仍是有限的。
- B Beginner 初階 - The student has not demonstrated any evidence of the requirements of learning outcomes and is struggling to grasp knowledge, skills, and understandings. The student is working below expected level. 學生的學習成效低於預期標準，尚未展現學習成果，並在知識、技能和理解上必須很奮力的去領會。
- NA Not applicable 不適用 - The student was unable to access the curriculum at this time because of absence or a modified program has been implemented for your child. 學生因缺席未參與課程，故無法評量。



Taipei Kuei Shan School Primary Years Program

November

27

Monday

Grade 4 Where we are in place and time

Summative Assessment Task: Performance assessment

Duration: 1 week

Central idea: *Earth is part of a vast & mysterious solar system which we are continually striving to understand.*

Summative Assessment Task: *To produce an infographic that illustrates interesting & surprising facts about the solar system.*

Task Description:

Students will demonstrate their ability to research a particular aspect of our inquiries that they are especially interested in, and to show what they have learned about basic layout, lettering, color schemes etc. After completing the poster, students will engage in a 1-on-1 conversation to demonstrate English speaking proficiency.

- what the solar system looks like (*form*),
- the Earth's connection to other parts of the solar system (*connection*),
- the relationship of the Earth and the sun and how they are interconnected (*connection*).
- As we grow in our understanding, we see new potential for colonisation & exploration. (*perspective*)

The Infographic must show:

- (1) The **theme** of your **infographic** shows a connection to the Central Idea.
- (2) The **title** is catchy & the **introduction** is clear.
- (3) There is a **balance** between TEXT & IMAGES.
- (4) The **LETTERING** looks neat and is of a consistent size.
- (5) Your **research** is good and it produces **ACCURATE information** which is easy to understand (in other words: YOU understand what you have written).
- (6) During the "**INTERVIEW**", you show the ability to answer questions in English.

School website: kshs.tp.edu.tw

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- SY111 School Calendar (PYP)
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- Curriculum information 課程內容

* PK-5 curriculum overview

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- Online resource links

- Online resource access info
(instructions)



Transformed: *by the renewing of the mind*

Rigorous: *academic pursuits*

United: *life-giving community*

Twined: *heritage with globalization*

Holistic: *balanced development*