General Studies Supplementary Notes:
Empowering Teaching and Learning in Macau
(An English Resource for Macau's Educational Context)

Edited by TCHIANG, Van Man Isabel

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聖若瑟大學
UNIVERSITY OF SAINT JOSEPH
MACAO

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Title |

General Studies Supplementary Notes: Empowering Teaching and Learning in Macau
(An English Resource for Macau's Educational Context)

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** The following names are organized in alphabetical order*

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Bishop's Foreword

Education is the foundation of human flourishing, and it is with great joy that I introduce the *General Studies Supplementary Notes*. This resource aligns with the Requirements of Basic Academic Attainments for primary education in Macau, offering educators and students a pathway to explore knowledge that is both locally relevant and globally meaningful.

As our Lord declares in the Gospel, "I am the Way, the Truth, and the Life" (John 14:6). These words inspire the mission of Catholic education, which seeks to guide students along the *Way* of love and responsibility, lead them to the *Truth* of wisdom and discernment, and foster in them a *Life* of dignity, purpose, and service. This publication emerges from that sacred mission, carefully crafted to explore themes of cultural identity, ecological responsibility, and the intricate connections between human experience and the natural world. It challenges students to think deeply, act with wisdom, and cultivate an enduring passion for knowledge.

I extend my gratitude to the Teachers' Professional Development Centre of USJ, and all authors who contribute tirelessly to this resource. May the supplementary notes inspire our young learners to embrace education as a journey of growth — intellectually, spiritually, and personally, always guided by the luminous virtues of faith, hope, and love.

Yours in Christ,

✝*Stephen Lee Bun-Sang*

Bishop of the Catholic Diocese of Macau

Rector's Foreword

Close collaboration between academics and practitioners across all fields is now not only essential but brings with it a wealth of innovation and a diversity of perspectives that strengthens practical output. It is, then, is with the greatest pleasure that we are able to bring forward this inaugural publication from the School of Education at the University of Saint Joseph (USJ), produced in partnership with three English-language medium Diocesan schools in Macao: CDSJ, CDSJ5 and Colégio de Santa Rosa de Lima. Developed under the auspices of the Teachers' Professional Development Centre at USJ, this initiative represents a significant milestone in our collective dedication to advancing educational practice and nurturing a thriving learning community in Macao.

The collaborative endeavour among our institutions has been both inspiring and fertile. Together, we have engaged in constructive dialogues, exchanged diverse pedagogical approaches, and crafted innovative resources that enhance the General Studies curriculum. This publication exemplifies the concerted efforts of educators who firmly believe in the transformative potential of working in unison. It further encapsulates our shared aspiration to provide students with a comprehensive and stimulating educational environment.

While celebrating the achievements of this cooperative venture, I wish to acknowledge the invaluable contributions of all participants—teachers, administrators, and support staff. Their unwavering commitment to fostering a climate of mutual respect and reciprocal learning has established a robust foundation for future collaborations.

It is my hope that this publication will not only serve as a valuable resource for educators but also stand as a testament to the positive impact of joint endeavours. May it inspire additional partnerships and ignite a sustained passion for collaboration, ultimately benefitting both our students and the wider community. By continuing to work together, we can further enrich educational experiences and ensure that our learners are well prepared to face the challenges and opportunities of the future.

The Rev'd Professor Stephen Morgan, Rector

University of Saint Joseph, Macao SAR, China

Foreword

resources, providing teachers and parents with an invaluable tool to deepen student learning and spark intellectual curiosity. This publication seeks to cultivate critical thinking, ethical awareness, and a genuine enthusiasm for understanding our complex society and world.

The development of this book aligns with the mission of the Diocesan Catholic Education Commission to promote holistic education. By supporting such initiatives, we strive to equip teachers with materials that uphold our commitment to academic excellence and moral integrity.

My deepest appreciation goes to all who contributed their expertise to this publication. May these notes inspire students to become thoughtful and compassionate individuals who will serve as positive agents of change in our society.

Dr. Stephen CHAN Teng Fong
Office Director, Diocesan Catholic Education Commission

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In Macau, there are over ten schools providing English primary or secondary education; however, the availability of local English teaching materials remains limited. We express our heartfelt gratitude to the teachers from Santa Rosa de Lima English Secondary School, CDSJ Primary (English Section), and St. Joseph Diocesan College (The Fifth School) for their efforts in translating and implementing the teaching materials on "Moral Education and Citizenship in Macau" into English. These translations serve as valuable supplementary resources for the General Studies curriculum.

This initiative not only helps students in the English section develop a deeper understanding of Macau's geography, history and cultural background, but also reduces teachers' workload in lesson preparation. We also extend our sincere thanks to the University of Saint Joseph and the dedicated teachers who contributed to this meaningful program.

Mr. WONG Kin Man
Principal, St. Joseph Diocesan College (The Fifth School)

This book, a collaborative effort by a group of experienced educators in Macau, serves as a beacon for those navigating the student's exploration and adventure in General Studies. It is designed to be their guide as they explore the humanities, social sciences, natural sciences, and formal sciences - within the milieu of the rich culture, narratives, landscapes and heritages that have shaped Macau into the dynamic city it is today.

Teaching is both an art and a science. It requires a deep understanding of subject matter, the ability to engage diverse learners, and the skill to adapt to the unique challenges that arise in the classroom. The contributors to this book have dedicated their careers to honing these skills, and they share their insights with generosity and clarity to inspire the present and a generation of learners in Macau.

Within the pages of this book, one will find a wealth of strategies, practical tips, and reflective practices that aligns with DSEDJ's education innovation initiatives. From innovative lesson planning to effective assessment techniques, this book provides a comprehensive toolkit for educators in the field of General Studies. Each theme is infused with the wisdom of experience, drawing on the successes and lessons learned in the field. Each lesson plan is crafted to ignite interest and inspire discussion, featuring relatable examples and thought-provoking topics that encourage learners to think deeply about their roles in society.

As a unique feature, this book lays a foundation to engage students to study the environment in a way that honours its beauty and fragility- leading them towards the urgent need for sustainable practices.

The projects indicated are intended to foster a deeper understanding of the main themes and unit lessons by requiring students to apply what they have learned. This hands-on approach encourages exploration and inquiry, making learning more dynamic and enjoyable.

As you delve into this resource, we encourage you to view it as a conversation—a dialogue between experienced teachers and those seeking to refine their craft. Embrace the ideas presented, adapt them to your context, and, most importantly, continue to share your own insights and experiences with your peers. Teaching is a communal endeavour, and together we can create an environment where both educators and students thrive. We hope this book ignites your passion for teaching and empowers you to inspire curiosity and a love for learning in your students. As you embark on this journey, remember that every lesson you teach has the potential to shape the future of the learners in Macau.

Mr. NG Teng Chio
Principal, Colégio Diocesano de São José

Collaboration among different schools is one of our educational targets. Our school members strongly believe that the more we collaborate with other schools and associations, the more we learn from one another. This certainly enhances the quality of education in the long run.

We were so fortunate to have been given such an opportunity in the school year 2023-2024. Under the University of Saint Joseph's invitation, we worked with two other Macao Diocesan schools, the CDSJ and the CDSJ5, on the primary General Studies Collaboration Project. Throughout the ten-month collaboration, the team exchanged ideas, shared teaching strategies, and collaborated on lesson planning. Regular feedback meetings were held for betterment. With the division of labour, our team members, Ms Alice Leong, Ms Marcella Lau, Ms Niko Lo and Ms Olga Zinampan, focused on developing the domain of Culture (East meets West). These themes are all connected to Macau. With the hard work and dedication of the team members in the three schools, the final masterpiece was ready in July 2024. The three schools will apply the materials according to the curricula in the respective schools.

I want to take this opportunity to thank Bishop Stephen Lee and Dr Isabel Tchiang for giving the team such a precious collaborative experience, the team members for developing such applicable teaching materials, as well as the University of Saint Joseph, the CDSJ and the CDSJ 5 for supporting the team. Our school longs for more chances to work with schools in the tertiary and non-tertiary sectors to improve education.

Ms Candy NG
Principal, Colégio de Santa Rosa de Lima, Secção Inglesa

The General Studies Supplementary Notes mark a meaningful stride in our educational

Teachers' Testimonials

"*The best way to predict the future is to create it*." I am so proud to have participated in this cross-school project for preparing teaching resources for Macao. We believe that by proactively collaborating with each other, we are actively shaping a brighter future for education. By sharing our expertise, knowledge, and passion for teaching, we hope that these resources will serve as a valuable tool that empower educators. We wish all teachers success in their teaching journey and hope these resources will enable them to bring great success to their students!

Ms. Elaine, AO I Leng

I am delighted to have participated in writing the Supplementary Notes for Macau General Studies alongside several talented teachers. Collaborating with them has provided me with diverse insights and approaches to teaching. While developing lesson plans, I discovered many new ideas that will enrich my own teaching methods. It brings me joy to contribute to the education sector, knowing that our efforts can make a difference. I would like to express my sincere gratitude to Dr. Isabel for inviting me to be part of this special experience. It has been both inspiring and rewarding.

Mr. Dickson, CHAN Tek Long

It is my honour to participate in this meaningful project. This enriching experience allowed me to explore various energy sources, sustainability, and technological innovations. I am happy to contribute to students' understanding of critical topics like renewable energy and energy efficiency. We generated numerous ideas and held many meetings to finalise our approach to the supplementary notes. Learning from other schools' methodologies provided valuable insights that inspired new strategies. Despite challenges in simplifying complex concepts and catering to diverse learning styles, this experience has enhanced my skills and passion for education, making it a highlight of my career.

Ms. Felicity, KONG Hang Mio

I am honoured to have played a role in developing these supplementary notes. Participating in their creation has been a remarkable experience. The journey from initial brainstorming to final publication involved extensive collaboration and creativity within our team. I learned so much from my teammates, who shared their insights and expertise, making the experience truly enriching. Each member brought unique perspectives that enhanced our content and made it more comprehensive. This project has reaffirmed my passion for education and my dedication to making a positive impact in the academic community.

Ms. Marcella, LAU Chong Si

Taking part in the General Studies Collaboration project led by the University of Saint Joseph and collaborating with teachers from two Diocesan schools in Macau has been an enriching journey. Working towards filling the gap of an English General Studies textbook tailored to Macau's history, culture, and society has been eye-opening. Beyond creating teaching materials, this endeavour has allowed me to immerse myself in diverse teaching methodologies and curriculum frameworks, sparking a profound reflection on my pedagogical practices. This experience has broadened my understanding of current educational trends and equipped me with valuable insights to create a dynamic General Studies curriculum to cater for the diverse learning needs of the students.

Ms. Alice, LEONG Ka Wai

Being part of the Macau General Studies supplementary note development team has been an enriching and rewarding experience. Veteran teachers from various schools came together to share insights and collaborate on enhancing General Studies education to meet the demands of the modern age. It was a true honour to contribute to this project as the deputy head teacher of CDSJ 2 and we shared the transformative power of interdisciplinary learning. In today's rapidly evolving world, integrating knowledge across disciplines fosters critical thinking and creativity—essential skills for the 21st century. This approach not only deepens students' understanding but also equips them with the adaptability and resilience needed to excel in diverse and dynamic environments. By emphasizing "learning how to learn", we empower students to embrace curiosity, pursue lifelong learning, and confidently face the challenges of the future.

Mr. Tony, LI Tuo Lin

Participating in the Macau General Studies project has been an amazing experience! Collaborating with other teachers to create lesson plans and helpful resources has deepened my appreciation for Macau's rich culture, history, and community. Our teamwork has brought together diverse ideas, which has really enhanced our teaching and engaged our students more effectively. I am grateful for the opportunity to be part of a project that enriches educational resources and raises awareness about the uniqueness of Macau. This initiative is a fantastic way to share valuable information with other schools and support our common goals in education.

Ms. Niko LO

Having participated in this collaborative learning experience for GS teachers, it has greatly impacted my career and professional development. All teachers tried our best to implement the four main domains of GS by integrating culture, health and science within the current and unique societal context of Macau. After some well-thought research and background collection, surely enough I have gained a greater understanding of different subject matter which directly enhanced my teaching pedagogies. Such a novel teaching strategy has also motivated me to think on how I can further connect my everyday lessons to the local context of Macau. On the other hand, it was also an amazing opportunity for me to work with other GS teachers where we all were able to collaborate by discussing our personal views and valuable insights unique to our own knowledge and experiences. Overall, I am now more equipped with pivotal knowledge and teaching tools to adapt with the changes in our society and adopt to the most suitable learning and teaching environment of my students.

Ms. Olga Ollet ZINAMPAN

Preface

In the vibrant educational landscape of Macau, the journey of creating these supplementary notes has been a truly collaborative and enriching experience. I would like to extend my heartfelt gratitude to Bishop Stephen Lee for his unwavering support and encouragement throughout this project. His vision and commitment to fostering educational excellence inspired me to collaborate with the three Macau Diocesan schools, making this endeavor not only possible but profoundly meaningful.

The contributions of the school principals cannot be overstated. Their active support and dedication have been invaluable, creating an environment where innovative ideas could flourish. I am particularly thankful to Alice, Tony, Felicity, Dickson, Marcella, Niko, Olga, and Elaine. Our discussions were not only fruitful but also invigorating, leading us to develop themes and sub-themes that resonate deeply with the cultural and social fabric of Macau. Each idea we explored was rooted in the unique context of our community, reflecting our shared commitment to the educational needs of our students.

A special acknowledgment must go to Stephen Chan of the Diocesan Catholic Education Commission, whose generous sponsorship made the publication of these supplementary notes a reality. His belief in the importance of quality educational resources is reflected in every page of this work.

I would also like to express my sincere gratitude to Fr. Franz Gassner, Ms. Annie Liu, and Ms. Tammy Chu for their invaluable assistance in the proofreading process. Their careful attention to detail and insightful suggestions have greatly enhanced the clarity and quality of the material, ensuring that the final product is polished and effective for our educators and students.

I must also appreciate the artistic contributions of Miss Kyrie Wong, whose stunning artwork and illustrations have brought the book and supplementary materials to life.

Lastly, I wish to express my appreciation for our Rector, whose steadfast support for research diversity and collaboration with local schools has been a guiding light throughout this project. His encouragement has not only fostered an atmosphere of teamwork but has also reinforced our shared mission to empower students through enriched learning experiences.

Together, we have crafted a resource that aims to enhance the teaching and learning of General Studies, catering to the diverse needs of our students. As we move forward, I am optimistic that these notes will serve as practical tools for educators, inspiring them to engage students in meaningful ways and to nurture their potential within the context of Macau's rich cultural heritage.

Isabel Van Man TCHIANG

Chapter 1
Introduction

In the rapidly evolving educational landscape of Macau, effective teaching resources are essential for fostering student engagement and promoting academic success. This supplementary note resource is designed to support General Studies educators by providing a comprehensive framework tailored to the unique cultural and contextual needs of Macau. By aligning with the Basic Academic Attainment Requirements for primary education and adhering to the Curriculum Framework outlined by the Education and Youth Development Bureau (DSEDJ), the notes are organised into three main themes, each accompanied by lesson plans:

1. **Cultural Heritage and Identity of Macau**

- Focuses on local temples, churches, civilization, geography, historical heritages, international cultural events, and the interplay between Chinese and Western cultures.
- Projects include designing heritage routes, video recordings, and presentations based on research.

2. **Environmental Dynamics and Urban Development of Macau**

- Covers geography and climate interactions, population dynamics, economic growth, and development impacts.
- Projects involve future urban development planning and exploring the implications of climate on the economy.

3. **Sustainable Community Infrastructure of Macau**

- Addresses power generation, drinking water sources, waste management, transportation infrastructure, recreational facilities, and educational institutions.
- Projects include energy-saving initiatives, creating models of solar-powered devices, water conservation activities, and crafting with recycled materials.

In addition to these lesson plans, this document introduces various teaching and learning methods recommended by experienced frontline General Studies teachers. Strategies such as iSTEM integrated inquiry learning, theme-based learning, and the 5E instructional model are integrated into the lesson plans to enhance the educational experience and support teachers in their practice.

To promote and implement the DSEDJ policy on assessment[1] for local non-tertiary education, student assessments will be conducted using diverse approaches aligned with the objectives for each educational level. Special attention will be given to students' learning processes, conditions, and environments to better understand their performance and learning needs. This supplementary note document outlines a range of assessment methods, including projects, posters, and observations, detailing how these should be assessed and evaluated.

Ultimately, we hope that General Studies teachers will find these supplementary notes to be practical and engaging tools that facilitate effective teaching while deepening their understanding of how to support students in line with the Macau education curriculum. We encourage all educators to utilise this resource and inspire their students to achieve their fullest potential.

1 Macao Special Administrative Region. (2020). *Administrative Regulation No. 28/2020: Student assessment system for formal education of local education system*. Retrieved from: https://www.dsedj.gov.mo/~webdsej/www/edulaw/202007/download/Regulation_28_2020e.pdf

Chapter 2
Teaching Strategies for General Studies

2.1 iSTEM Integrated Inquiry Learning Framework

The purpose of this inquiry-based module example is to showcase not only inquiry learning but also the power of integrated curriculum. For primary education, it is important for children to learn without the boundaries of traditional subject areas. This framework serves as a guideline on how to conduct cross-disciplinary teaching using inquiry learning and project-based learning (PBL) approaches. The content can be modified based on the needs of the curriculum, but the general framework remains. The sample provided in this book can be extended to an integrated inquiry learning framework by simply involving other subject areas in the design, as illustrated in figure 1. Again, each subject area still maintains its own specialised focus, but in a collaborative way under a unified cross-disciplinary theme.

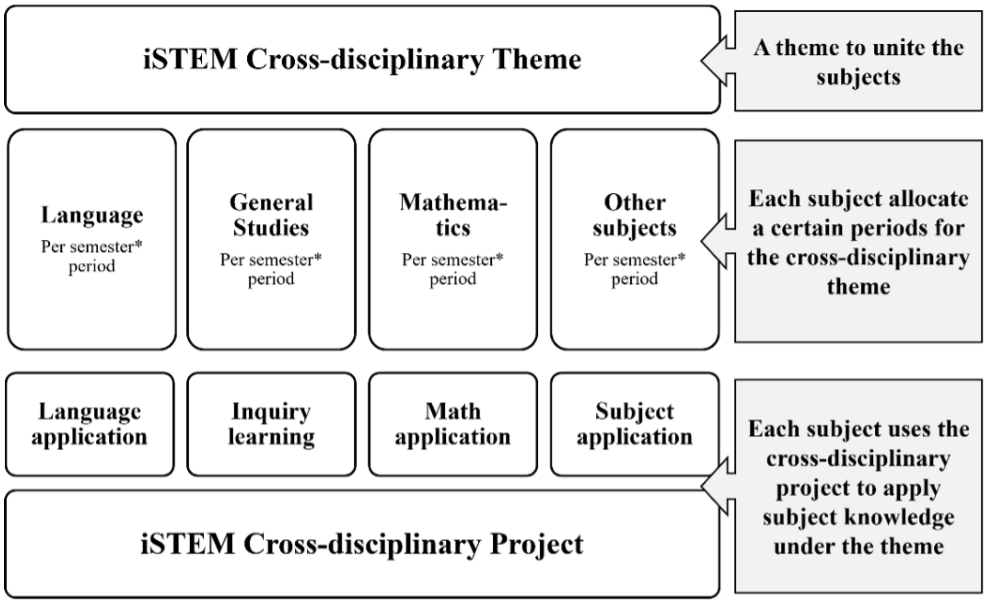

Figure 1 iSTEM Integrated Inquiry Learning Framework

Designing Cross-Disciplinary Themes

The cross-disciplinary theme can be designed based on the school's curriculum focus. The theme should be interrelated with a central idea that guides the students through the knowledge in different subject areas. The following sample (figure 2) has been adapted in Colégio Diocesano de São José (CDSJ) for students to understand the development of human in a holistic way and to foster a love for our world. It starts from the formation of the universe, gradually moving down in terms of

scale to earth science, life and ecosystems on earth, and then eventually the development of human history and society. This example serves only as an illustration; schools should consider their own focus and design their themes based on the school's goals and culture, in alignment with DSEDJ's guidelines.

When designing a school based integrated curriculum framework, schools should begin with a unifying cross-disciplinary theme that connects content across subject areas. This theme should be carefully selected to align with the school's educational objectives and the needs of the student population. By organizing the curriculum around a central idea, educators can facilitate holistic learning that transcends traditional subject boundaries.

The sample theme network below demonstrates how a theme centred on the development of the human can be explored through an interdisciplinary lens. Starting from the formation of the universe and progressing through earth sciences, biology, and human history, this approach allows students to construct a comprehensive understanding of our world and our place within it. However, schools are encouraged to adapt this model to reflect their unique contexts and priorities.

Ultimately, the development of an integrated curriculum framework requires careful planning and collaboration among educators. By aligning content, pedagogical approaches, and assessment practices around a unifying theme, schools can create a dynamic learning environment that fosters deep understanding and a love for learning.

Cross-Disciplinary Theme Structure

Once the cross-disciplinary framework and the themes are decided, the curriculum design should move on to create a structure within each theme. Below is an example of the first theme in the iSTEM model (figure 3), which demonstrates the use of the 5E model in inquiry learning. This helps structure the lessons in a logical way that guides students to explore the content using an inquiry-based learning approach.

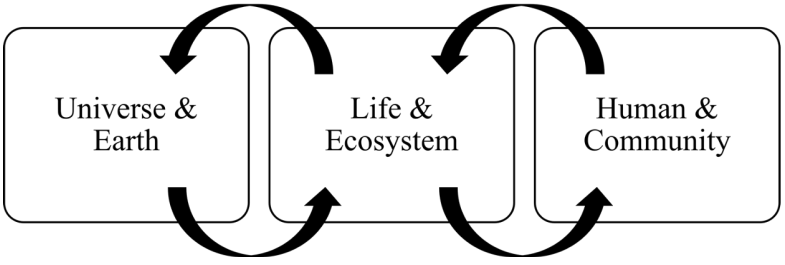

Figure 2 An example of how different interdisciplinary themes can be correlated

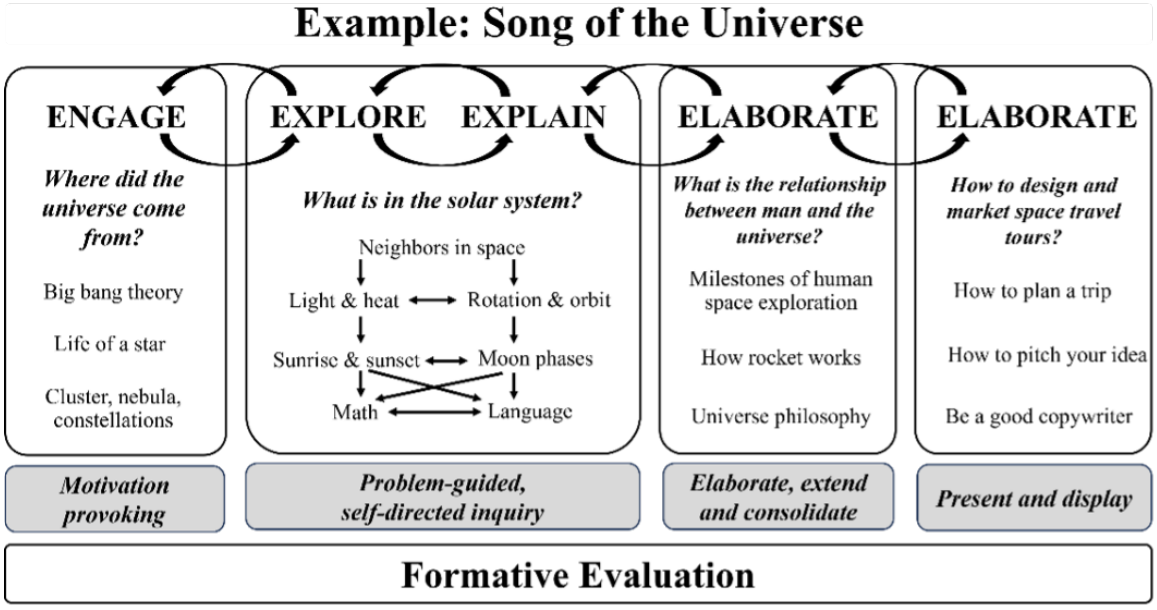

Figure 3 An example of a theme in the iSTEM model applying the 5E model

One very important aspect of the 5E model is that the last E, "evaluation," should be done formatively throughout the duration of the theme development. This means the teacher should be evaluating the students throughout the process, instead of conducting a summative assessment at the end. Within each of these "E" stages, content is shared between all the involved subjects. For example, the part about "copywriting" will be a language-focused content, so it should be delivered in the English lesson that is connected to the theme.

By structuring the lessons within each cross-disciplinary theme using the 5E model, educators can create a coherent and engaging learning experience that fosters inquiry, collaboration, and deep understanding across subject areas.

iSTEM 4C Assessment Rubric

For an inquiry-based learning module, the assessment should focus on evaluating the students' skills. Here, we illustrate the flowchart of how formative assessment should be conducted (figure 4), with constructive feedback provided to the students continuously.

A set of rubrics (Appendix i) is provided to showcase the standards of assessment, which in this case focus on the students' ability to demonstrate 21st century skills. All teachers should use these rubrics to perform formative assessments that help the students learn better. The 4C assessment rubric covers the following areas: (1) *Creativity*, (2) *Collaboration* , (3) *Critical Thinking and* (4) *Communication Skill*. Within each of these 4C categories, the rubric outlines various performance levels, from emerging to exemplary, that allow teachers to provide targeted feedback and support to the students throughout the learning process.

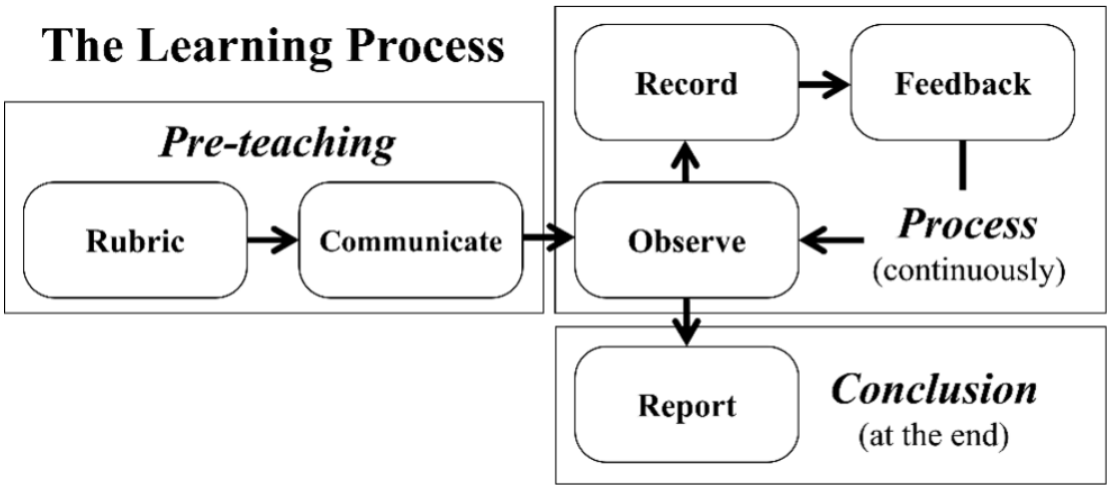

Figure 4 Flowchart of how formative assessment should be conducted

It is important to note that this is just an example, and all assessment standards should be designed within the school's academic context and aligned with the school's educational goals. Adapting and customizing the assessment rubric to fit the specific needs of the students and the curriculum is essential for ensuring the effectiveness of the formative assessment process.

2.2 Theme-based Learning

Theme-based learning in General Studies is an innovative and effective pedagogical approach that enhances learning effectiveness by providing students with a cohesive and interconnected learning experience. By organizing topics within a common theme, students can comprehensively understand the subject matter and make meaningful connections between different concepts. This approach promotes deeper learning, critical thinking, and creativity among students, preparing them for the challenges of the 21st century. When exploring the theme of "East Meets West" in the context of Macau, by focusing on Macau's rich religious, cultural, and historical elements, students can embark on a journey of discovery that extends beyond geographical boundaries. Through this approach, theme-based learning enhances understanding and encourages creativity, critical thinking, and practical application.

The theme of "East Meets West" in Macau provides a captivating backdrop for students to explore various aspects, including religion, temples, churches, civilizations, heritages, and international cultures. By examining the religious sites and practices in Macau, students can gain insights into the diverse beliefs and traditions that have shaped the region. They can explore the architectural features of temples and churches, understand their significance, and analyse the cultural influences that have shaped these religious spaces.

Furthermore, students can delve into the rich civilizations and heritages of Macau, tracing their roots and exploring their impact on the present. This exploration enables students to connect with

the past, understand the evolution of civilizations, and appreciate the cultural diversity that exists in Macau. Through an interdisciplinary approach, students can integrate historical, geographical, and cultural perspectives to develop a holistic understanding of the subject matter.

As students delve into the theme of "East Meets West", they are encouraged to compare and contrast the Eastern and Western cultures that converge in Macau. This comparison enables students to identify similarities, differences, and points of intersection between these cultures. By investigating cultural exchanges, trade routes, and historical events, students can gain a deeper appreciation for the interconnectedness of global cultures and the impact of these interactions on Macau's development.

Throughout the learning journey, mini-tasks can be assigned after each topic to engage students actively and reinforce their understanding. These tasks can encourage critical thinking, research skills, and creativity. Students could be asked to create presentations, write reflective essays, or participate in group discussions to analyse and synthesise their learned information. These activities allow students to apply their knowledge, think critically, and develop communication skills.

To culminate the theme-based learning experience, a final project can be assigned to students. This project should serve as an exit ticket that checks their understanding of the theme and encourages them to create and explore something new. Students could be tasked with designing a cultural exchange program between Eastern and Western countries, organizing an exhibition showcasing the cultural heritage of Macau, or developing a multimedia presentation highlighting the importance of cultural diversity and understanding. This final project serves as a platform for students to apply their learning, think creatively, and make meaningful connections between the content and real-world contexts.

Theme-based learning in the context of Macau's "East Meets West" theme brings numerous benefits to students. By immersing themselves in this theme, students develop a profound understanding of the subject matter and cultivate a sense of cultural appreciation and empathy. They are encouraged to think critically, analyse complex issues, and draw connections between different ideas and concepts. Through the mini-tasks and final project, students actively engage in learning, fostering their creativity, problem-solving skills, and collaboration.

Moreover, theme-based learning equips students with practical skills and knowledge that extend beyond the classroom. Students develop skills such as research, communication, and project management by exploring real-world contexts and applying their learning to authentic situations. These skills are highly valuable in the 21st century, where adaptability and interdisciplinary thinking are crucial for success.

Theme-based learning allows students to explore a specific theme or topic in depth. Traditional approaches to education often focus on fragmented and isolated topics, making it challenging for

students to see the bigger picture and make connections between different concepts. However, theme-based learning allows students to delve into and examine a theme from multiple angles. By focusing on a particular theme, students can gain a deeper understanding of the subject matter and develop a more holistic perspective.

Students can engage in higher-order thinking and develop critical thinking skills by exploring a theme in depth. They are encouraged to analyse and evaluate information, connect different ideas, and develop unique insights. This approach goes beyond rote memorization and encourages students to think critically and reflect on the content they are learning.

Theme-based learning also promotes interdisciplinary connections. By exploring a theme that cuts across different subject areas, students can make connections between various disciplines and see the relevance of their learning in real-world contexts. For example, when studying the theme of "East Meets West" in Macau, students can integrate knowledge from history, geography, cultural studies, and even economics to understand the topic better. This interdisciplinary approach fosters a broader perspective and encourages students to see the interconnectedness of different fields of knowledge.

Moreover, theme-based learning encourages student engagement and motivation. Teachers can tap into students' intrinsic motivation and curiosity by framing learning around a theme that is relevant and interesting to students. When students see the practical applications and real-world relevance of their learning, they are more likely to be actively engaged in the learning process. As Albert Einstein famously said, "I never teach my pupils; I only attempt to provide the conditions in which they can learn." Theme-based learning provides such conditions by creating a meaningful and engaging learning environment.

In conclusion, theme-based learning supports the development of essential 21st century skills. As students engage in collaborative activities, research, and project-based tasks within a thematic framework, they develop communication, teamwork, problem-solving, and information literacy skills. These skills are highly valued in the modern world and are essential for students to succeed in their future careers and endeavours.

2.3 The 5E instructional model

The 5E Instructional Model serves as an effective framework for designing science lessons, drawing upon principles from cognitive psychology and constructivist learning theory (Bybee & Landes, 1990; Duran & Duran, 2004). This instructional model positions teachers as facilitators, guiding students through the learning process across five distinct phases: *engage, explore, explain, elaborate and evaluate*.

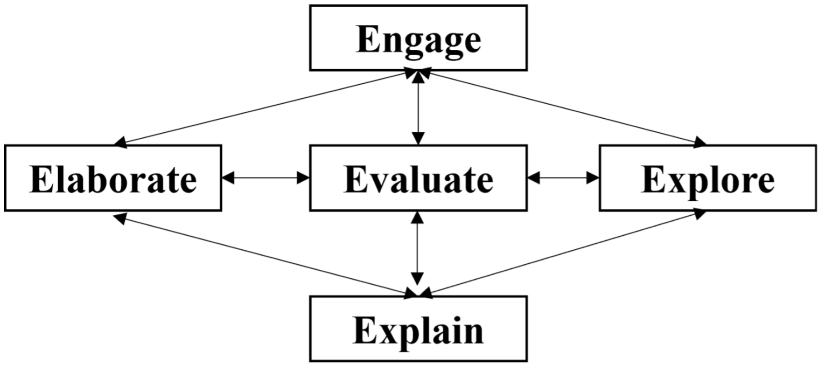

Figure 5 The 5E Instructional Model

This model (figure 5) is particularly suitable to be applied to the General Studies subject for primary students in Macau for two key reasons. First, the model encourages students to build their understanding based on prior knowledge and experiences, which local students can easily draw from their daily surroundings. Second, it promotes active engagement and deeper understanding through hands-on experiences, allowing students to interact directly with learning materials readily available in their environment.

Additionally, the model fosters a collaborative learning environment, enabling students to work together, thereby enhancing their communication and teamwork skills. It also incorporates ongoing assessment opportunities, helping teachers identify student understanding and pinpoint areas that may require further support formatively.

The five phases of this model are elaborated as follows:

Engage

In this initial phase, students are prompted to connect with the topic. Teachers assess students' prior knowledge and introduce the main concept. For example, they might ask students to identify different sources of energy they encounter in Macau and discuss activities that consume significant amounts of energy in their daily lives. These relatable prompts encourage observation and connection to real-world experiences.

Explore

During this phase, students actively engage with the new concept through various learning activities. They collaborate with peers to observe, discuss, and participate in tasks, such as exploring different energy sources and creating action plans for saving energy at home. Working in groups enhances learning and engagement while helping students develop social skills. This collaboration encourages critical thinking and problem-solving, aligning with one of the main educational focuses of the Macau.

Explain

Following exploration, students begin to form their understanding of the concept. This phase provides an opportunity for teachers to assist students in synthesizing their new knowledge through class discussions on topics such as the importance of sustainable energy practices for achieving the UN Sustainable Development Goals (SDGs). Teachers encourage students to articulate what they have learned and provide additional materials to clarify concepts, enhancing comprehension.

Elaborate

In this stage, students are given opportunities to extend and apply their knowledge in various contexts, reinforcing their understanding of the topic. For example, students might organize data from their electricity bills into bar graphs or other visual representations to compare their energy consumption patterns. They could also estimate and measure how much energy a single building consumes in a day, discussing the broader impact. This hands-on approach keeps students actively involved, making the learning experience more engaging and memorable. Additionally, practical applications help students understand how concepts work in real life and improve retention.

Evaluate

Finally, teachers assess students' learning and progress to determine their grasp of the concepts. Evaluation methods can include written assessments, projects, and formative assessments, alongside observations of student participation in class discussions. Exit tickets can also be utilised at the end of lessons to identify areas needing further support. This phase may incorporate self and peer evaluations, allowing students to engage in mutual assessment. Teachers can review these evaluations to identify students' strengths and areas for improvement, encouraging them to reflect on the feedback they receive and motivating them toward continuous improvement.

References

Bybee, R., & Landes, N. M. (1990). Science for life and living: An elementary school science program from Biological Sciences Improvement Study (BSCS). *The American Biology Teacher*, 52(2), 92-98.

Duran, L. B., & Duran, E. (2004). The 5E Instructional Model: A Learning Cycle Approach for Inquiry-Based Science Teaching. *The Science Education Review*, 3(2), 49-58.

Chapter 3
Macau Context Lessons Plans I: Cultural Heritage and Identity of Macau

In this chapter, the theme "East Meets West" is explored in the context of Macau through twelve lessons designed to cover various BAA General Studies items primarily found in Strand B: Culture, Society, and Life. The journey begins with an introduction to the temples and churches in Macau, connecting to students' daily experiences. From there, students delve deeper into the civilizations, religions, and cultures of the world. The theme of "East Meets West" is reinforced through local examples, such as historical heritage sites and international cultural events, offering students the opportunity to examine the fusion and coexistence of diverse cultures in Macau. Worksheets and supplementary notes (see appendices ii to viii) are provided to support teachers with ideas for assessment and activities.

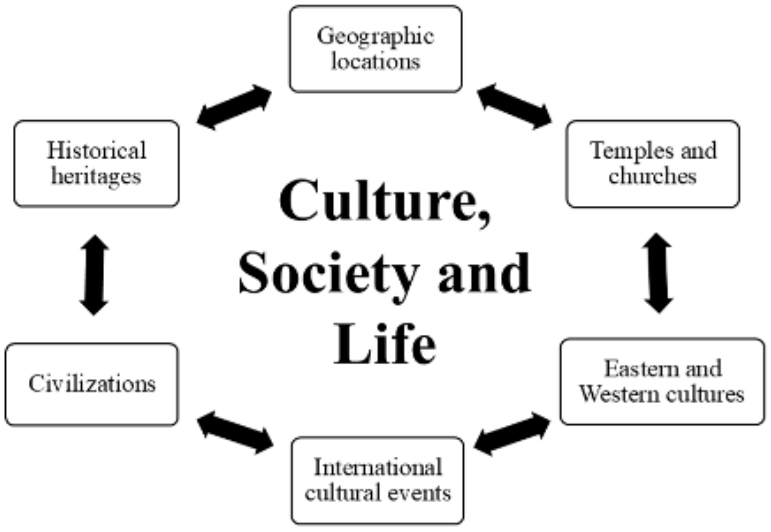

Figure 6 A theme-based learning example - "East Meets West"

The DSEDJ Requirements of Basic Academic Attainments (Primary General Studies, updated on 15 July 2024) achieved in this chapter:

Learning strand B: Culture, Society and Life

B-1-7	Be able to describe Macau as a melting pot of Eastern and Western cultures, be willing to celebrate festivals and respect different cultures.
B-1-8	Be able to give examples to illustrate China's long history and culture, enjoy reading historical stories and be interested in history and culture.

B-1-9 Be able to tell that there are rich and diverse national cultures in the world, respect different customs and social habits.

B-2-10 Be able to tell that Macau played an intermediary role in cultural exchange between East and West in early times, and that Macau has made outstanding contributions to the exchange and development of Eastern and Western cultures.

B-2-11 Be able to collect, organise and analyse information, discuss and share views on the topic of the Historic Centre of Macau with classmates.

B-2-12 Be able to appreciate and protect cultural heritage.

B-2-13 Be able to name the famous historical figures who once lived in Macau and acknowledge their contribution to Macau, China and the world.

B-2-14 Be able to tell the major cultural events in Macau and enjoy participating in cultural activities.

B-2-15 Be able to explore the process and influence of the Portuguese settling in and occupying Macau, by reading a variety of historical materials.

B-2-22 Be able to tell the contribution of the four ancient civilisations of the world to the development of human civilisation.

B-2-23 Be able to name the major religions in the world and respect different religious beliefs.

Learning strand C: Natural Environment and Life

C-2-16 Be able to tell the geographical location, composition and the basic terrain characteristics of Macau.

3.1 Introduction of Temples and Churches I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	3
Unit Title	Temples and Churches	**Lesson**	1

Learning Objectives	*By the end of this lesson, students should be able to:* • Understand the historical development in Macau by learning about the history and characteristics of the ancient temples and ancient churches in Macau. • Understand the cultural integration between Eastern and Western cultures in Macau. • Learn to respect different cultures and cherish the precious cultural heritages in Macau. Requirements of Basic Academic Attainments: • B-1-7 • B-2-13	**Bloom's Taxonomy** This lesson provides opportunities for: ■ Creating □ Evaluating □ Analysing ■ Applying ■ Understanding ■ Remembering **5 E's Framework** ■ Engage ■ Explore □ Explain ■ Elaborate ■ Evaluation
Challenges for Learners	• Students may encounter unfamiliar traditions, rituals, and beliefs associated with different temples and churches. Understanding and appreciating this diversity may require a level of cultural sensitivity and open-mindedness. • Understanding the historical context in which temples and churches were built, the events that shaped them, and their significance in Macau's history can be challenging for students.	
Links to Prior Learning	Map of Macau	

Instructional Procedures	
Introduction (15 mins)	• Teacher will ask students to sketch two simple diagrams on temple and church. • Teacher will show some photos with background information of the architectures in Macau. • Students will be asked to compare the given photos with their drawn diagrams
Development (20 mins)	• Based on the photos provided previously, teacher will discuss further on the historical background of the temples and churches in order for students to understand the cultural integration between Eastern and Western cultures. Students will be asked to name and separate the photos according to the cultures (Eastern or Western). Students may also try to point out their locations in Macau. • Students will research for a temple and church in Macau. They are required to write the names on the board. https://www.macaotourism.gov.mo/en/macao-full-of-fun/world-heritage-tour-in-central-district

Development (20 mins)	• Based on the students' research work, teacher will choose some common temples and churches for the students to dig deeper. Teacher may also provide extra examples for the students. Activity (pair-work) A specific temple or church will be assigned to each pair. Students will search for the following items and sharing will be done in the next lesson. Students are required to act out the items as a sharing and other students will try to match them according to the names provided. • Location in Macau • Historical background • Architecture design (including symbols)
Closure (5 mins)	Kahoot • Historical background information on temples and churches • Characteristics of temples and churches in Macau • Difference between Eastern and Western cultures
Assessment items	Sketched diagrams, research
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook	■ Direct instruction	■ Performance task
□ Worksheet	■ Board work	□ Quiz/Test
■ Graphic organiser	■ Questioning	■ Open-ended questions
■ Chart/ Table/ Diagram	■ Think-pair-share	■ Observation
■ Map	■ Summary reflection	□ Self-assessment
■ Media projector	■ Class discussion	■ Peer-assessment
□ Video	□ Independent seat work	■ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
■ Visual aids	■ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.2 Introduction of Temples and Churches II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	3
Unit Title	Temples and Churches	**Lesson**	2

<table>
<tr><td>Learning Objectives</td><td>By the end of this lesson, students should be able to:
• Understand the historical development in Macau by learning about the history and characteristics of the ancient temples and ancient churches in Macau.
• Understand the cultural integration between Eastern and Western cultures in Macau.
• Learn to respect different cultures and cherish the precious cultural heritages in Macau.

Requirements of Basic Academic Attainments:
• B-1-7
• B-2-13</td><td>Bloom’s Taxonomy
This lesson provides opportunities for:
□ Creating
■ Evaluating
■ Analysing
□ Applying
■ Understanding
■ Remembering

5 E’s Framework
■ Engage
■ Explore
□ Explain
■ Elaborate
■ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Temples and churches often feature intricate symbolism and iconography that convey religious and cultural meanings. Explaining these symbols and their significance to students may require simplified explanations and engaging teaching methods to ensure comprehension.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Map of Macau</td></tr>
</table>

Instructional Procedures	
Introduction (15 mins)	• Teacher will recap the assigned task and write the name of the architectures on the board. • A map of Macau will be shown on the board as well.
Development (30 mins)	<u>Performance sharing</u> Based on the research done by the students, they will attach a magnet on the map to show the location of the respective architecture. Then they will perform their findings without saying out the name of the respective architecture. Audiences will match them according to the list provided and jot down the information shared by their classmates on the worksheet. • Location in Macau • Historical background • Architecture design (including symbols) • Teacher will summarise their findings on a table as shown on the worksheet. <u>Discussion questions</u> How do you show respect to others when • you visit temples or churches? • your friends or relatives have different religion beliefs?

Closure (5 mins)	Kahoot • Historical background information on temples and churches • Characteristics of temples and churches in Macau • Difference between Eastern and Western cultures
Assessment items	Performance sharing, worksheet (Appendix ii)
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook	■ Direct instruction	■ Performance task
■ Worksheet	■ Board work	□ Quiz/Test
□ Graphic organiser	■ Questioning	■ Open-ended questions
□ Chart/ Table/ Diagram	■ Think-pair-share	■ Observation
■ Map	■ Summary reflection	□ Self-assessment
■ Media projector	■ Class discussion	■ Peer-assessment
■ Video	□ Independent seat work	■ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
■ Visual aids	■ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.3 Introduction of Civilization

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Civilisations and Religionss	**Lesson**	1

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Define the concept of civilization and religion.
• Identify the basic features of civilisations.

Requirements of Basic Academic Attainments:
• B-1-8
• B-1-9
• B-2-22</td><td>Bloom’s Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
■ Creating
□ Evaluating
□ Analysing
■ Applying
■ Understanding
■ Remembering

5 E’s Framework
■ Engage
■ Explore
□ Explain
■ Elaborate
■ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Civilisations span vast time periods and geographical regions, making it challenging for students to comprehend the breadth and diversity of human history.
• Understanding the motivations, values, and experiences of people from different civilisations can be difficult for students.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Locations in world map</td></tr>
</table>

Instructional Procedures	
Introduction (10 mins)	• Teacher will share images of the four major civilisations. Students try to name them according to their features. • Teacher will show the symbols / buildings for students to match them based on the four major civilisations. Students need to circle the features from the pictures which indicate their choices and share among the class.
Development (25 mins)	• Teacher provides examples from the four different types of writings. Students are asked to classify them into four groups. Teacher informs the students with the four types of writings. • Guessing game: Teacher provides different examples of the four types of writings; students will guess the meanings of the provided examples. • Based on the four types of writings, teacher will show the evolution of Arabic numerals. Students will be asked to discuss the origination of it and the system behind. • Research - Students will be asked to compare the differences between Ancient Greek and Ancient Roman civilisations. Write down two to three main points and post it on the bulle

Development (25 mins)	tin board. They are asked to go through the work of the other groups. Summarise and share in the next lesson
Closure (5 mins)	Questions and Answers • The four major civilisations • Four types of writings • Evolution of Arabic numerals Video - Why does the West use Arabic numerals? https://www.youtube.com/watch?v=j9WV2T7Y_E4
Assessment items	Worksheet (Appendix iii) Video clip - based on the four great inventions in China, record a short video clip, including the following items: • Background information and, • Application in daily life, • Reflection on the advantages or disadvantages in the present/future.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignment ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	■ Direct instruction	■ Performance task
□ Worksheet	■ Board work	□ Quiz/Test
■ Graphic organiser	■ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	■ Observation
■ Map	□ Summary reflection	□ Self-assessment
■ Media projector	■ Class discussion	■ Peer-assessment
■ Video	□ Independent seat work	■ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
■ Visual aids	■ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.4 Introduction of World's Major Religions

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Civilisations and Religions	**Lesson**	2

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Explore the religions of ancient civilisations.
• Compare and contrast the religious beliefs and practices.

Requirements of Basic Academic Attainments:
• B-2-23</td><td>Bloom's Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
□ Creating
■ Evaluating
■ Analysing
□ Applying
■ Understanding
■ Remembering

5 E's Framework
■ Engage
■ Explore
□ Explain
■ Elaborate
■ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Learning about multiple religions, students may struggle to differentiate between different beliefs, rituals, and practices.
• Religion often intersects with familial and cultural beliefs, which can influence a student's perspective.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Practices at school, including morning and afternoon prayers, mass, theme-based activities (Feast Day, Easter celebration, etc.).</td></tr>
</table>

Instructional Procedures	
Introduction (10 mins)	• Share their findings of the differences between ancient Greek and ancient Roman civilisations. • Teacher asks "What are the common features between the ancient Greek and ancient Roman civilisations?" Teacher will try to link to the religious belief and allow students to state the other major religions in the world. https://www.thoughtco.com/comparisons-ancient-greece-and-ancient-rome-118635
Development (25 mins)	• Teacher provides buildings /facilities in Macau that represent the specific religion (Buddhism, Islam, Taoism and Christianity[2]). Students will build-up concepts of the four major religions. • Worksheet: Each group will be assigned with one of the major religions, they are asked to find information according to the following elements:

2 "Christianity" is the general term used in the religion that stems from the life and teachings of Jesus. The 3 major branches of Christianity are Roman Catholicism, Protestantism and Eastern Orthodoxy.

Development (25 mins)	• Origin / spread and founder • Daily practices • Events • Food • Clothing • Sharing: Invite each group to share their findings with the others. Students compare and contrast among themselves. Throughout the process, students will notice the differences between the religions. In addition, students can also find related buildings/ facilities/ places in Macau.
Closure (5 mins)	• Teacher shows the features of different religions. Students are asked to match them accordingly. • Teacher sums up the major religions by a video. https://www.youtube.com/watch?v=Byc0dPPr8ec
Assessment items	Sharing and worksheet (Appendix iv).
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignment ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook ■ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram □ Map ■ Media projector ■ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning ■ Think-pair-share ■ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test □ Open-ended questions ■ Observation □ Self-assessment ■ Peer-assessment ■ Reflection □ Classroom assessment technique □ Others: ___

3.5 Geographical features of Macau

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	3
Unit Title	Geographical Location of Macau	**Lesson**	1

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Able to read the map and indicate the geographical location of Macau on the map.
• Describe the geographical features of Macau.

Requirements of Basic Academic Attainments:
• C-2-16</td><td>Bloom's Taxonomy
This lesson provides opportunities for:
□ Creating
□ Evaluating
■ Analysing
■ Applying
■ Understanding
□ Remembering</td></tr>
<tr><td>5 E's Framework
■ Engage
■ Explore
□ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may have limited personal experiences with geographical features beyond their immediate surroundings. Macau's geographical features, such as hills, rivers, and coastline, may be unfamiliar to them.
• Learning about geographical features also involves developing an understanding of the environment and its conservation. Students may need guidance in understanding the importance of protecting natural resources, conserving ecosystems, and practicing sustainability.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">The main parts of Macau; the four directions.</td></tr>
</table>

Instructional Procedures	
Introduction (10 mins)	• Teacher shows a globe to students and ask them to indicate the location of Macau on the globe. • Guessing game - Teacher shows pictures of the main parts of Macau. Students are asked to name the main parts (Macau Peninsula, Taipa Island, Coloane Island, Cotai Reclamation Zone) and estimate their area according to the provided pictures. • Visit the Cartography and Cadastre Bureau website and find out the area of different parts of Macau and the total area of Macau. https://www.dscc.gov.mo/zh-hant/home.html
Development (25 mins)	• Teacher shows pictures of hills and slopes in Macau and asks if any of the students have reached these hills or slopes before. • Students share their experiences.

Development (25 mins)	• Discuss the geographical features of Macau by showing a map. • Teacher states out that Macau is generally flat but has numerous hills. <u>Activity (pair-work)</u> • Each pair will visit the Cartography and Cadastre Bureau website and find out the highest hills in the Macau Peninsula, Taipa and Coloane. https://www.dscc.gov.mo/zh-hant/home.html • They are asked to fill in the names and the height of the hills in in the respective worksheet. • Teacher invites students to share their findings. • Teacher makes a conclusion regarding their findings.
Closure (5 mins)	<u>Questions and Answers</u> • The main parts of Macau • The geographical features of Macau • The highest hills in the Macau Peninsula, Taipa and Coloane
Assessment items	Research, worksheet (Appendix v)
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignment ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	■ Direct instruction	■ Performance task
■ Worksheet	■ Board work	□ Quiz/Test
□ Graphic organiser	■ Questioning	□ Open-ended questions
■ Chart/ Table/ Diagram	■ Think-pair-share	■ Observation
■ Map	■ Summary reflection	□ Self-assessment
■ Media projector	■ Class discussion	■ Peer-assessment
□ Video	□ Independent seat work	□ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
■ Visual aids	■ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.6 Parishes in Macau

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	3
Unit Title	Geographical Location of Macau	**Lesson**	2

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Know the seven parishes in Macau and recognise their locations on the map.

Requirements of Basic Academic Attainments:
• C-2-16</td><td>Bloom's Taxonomy
This lesson provides opportunities for:
□ Creating
□ Evaluating
■ Analysing
■ Applying
□ Understanding
□ Remembering</td></tr>
<tr><td>5 E's Framework
■ Engage
■ Explore
□ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Students may have limited personal experience or knowledge about the specific parishes in Macau. The geographical locations, landmarks, and cultural aspects associated with each parish may be unfamiliar to them.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">The main parts of Macau. Most students have heard about the names of the parishes in their daily life</td></tr>
</table>

Instructional Procedures	
Pre-task	Students are asked to find out which parish they live in to share in class.
Introduction (10 mins)	• Statistical activity - Teacher asks students the parishes that they live in and list out on the board. • Teacher introduces the seven parishes in Macau.
Development (25 mins)	• Teacher shows the map about the seven parishes in Macau and has further discussion with students. <u>Group work (one parish per group)</u> • Each group will be given a map. They are asked to label the seven parishes and spot out which parish that they live in on the map. • Teacher provides some examples of featured streets and pictures about Macau. • Each group will be assigned one parish. They are asked to distinguish the featured streets or pictures which are in the assigned parish. • Students may find the hints through the following website: https://macaostreets.iam.gov.mo/zh_mo/freguesiaindex.html • Sharing – each group will share their findings in class.

Closure (5 mins)	• Teacher shows the map and asks students to list out the seven parishes. • Teacher sums up the geographical features of Macau.
Assessment items	Sharing, worksheet (Appendix v)
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignment ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook	■ Direct instruction	■ Performance task
■ Worksheet	■ Board work	□ Quiz/Test
□ Graphic organiser	■ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	■ Think-pair-share	■ Observation
■ Map	■ Summary reflection	□ Self-assessment
■ Media projector	■ Class discussion	■ Peer-assessment
□ Video	□ Independent seat work	■ Reflection
■ Computer	■ Group work	□ Classroom assessment technique
■ Visual aids	□ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.7 The Historic Centre of Macau

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4
Unit Title	Historical Heritages	**Lesson**	1

<table>
<tr><td>Learning Objectives</td><td>By the end of this lesson, students should be able to:
• Recognise the process of applying for World Heritage.
• Identify the components of Historic Centre of Macau.

Requirements of Basic Academic Attainments:
• B-2-11
• B-2-12
• B2-14</td><td>Bloom’s Taxonomy
This lesson provides opportunities for:
□ Creating
□ Evaluating
■ Analysing
■ Applying
■ Understanding
□ Remembering

5 E’s Framework
■ Engage
■ Explore
□ Explain
■ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may find it challenging to understand abstract historical concepts like colonization, trade, and cultural exchange.
• Macau’s historic centre is known for its multicultural influences, including Chinese, Portuguese, and other international influences. Students may struggle to comprehend the diverse cultural elements and their contributions to the city’s heritage.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Most students know that the Historic Centre of Macau is listed in the World Heritage Site. Many of them have heard of or visited some of the buildings or squares there.</td></tr>
</table>

Instructional Procedures	
Pre-task	Students are asked to watch a video about highlights of the Macau World Heritage. https://www.youtube.com/watch?v=5LowBhA2NmY
Introduction (10 mins)	• Teacher starts by showing the World Heritage logo to students. • Students share where they can find the logo and its meaning. • Teacher sums up students’ ideas and states out that the Historic Centre of Macau was enlisted on the “World Heritage List” on 15 July 2005.
Development (25 mins)	<u>Group activity</u> Teacher shows the map of the Historic Centre of Macau. Students are asked to circle the historical buildings or squares that were mentioned in the video (pre-task).

Development (25 mins)	• Based on their sharing, teacher lists more historical buildings or squares and summarises that there are 22 historic buildings and 8 squares in the Historic Centre of Macau.
	• Research - Teacher provides pictures of historical heritages in Macau. Each group will select one of the historical heritages and find information about it. They are asked to finish the following items on the "Heritage Card" and share it in the next lesson.
	  • When was it built?
	  • Where is it?
	  • Style
	  • One fact about it

Closure (5 mins)	Questions and answers • The process of applying for World Heritage • The Historic Centre of Macau
Assessment items	Pre-task, research, worksheet (Appendix vi) and the Heritage Card
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignment ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
■ Worksheet	■ Direct instruction	■ Performance task
□ Graphic organiser	■ Board work	□ Quiz/Test
□ Chart/ Table/ Diagram	■ Questioning	□ Open-ended questions
■ Map	□ Think-pair-share	■ Observation
■ Media projector	□ Summary reflection	□ Self-assessment
■ Video	■ Class discussion	□ Peer-assessment
■ Computer	□ Independent seat work	□ Reflection
■ Visual aids	■ Group work	□ Classroom assessment technique
□ Dictionary/Thesaurus	□ Pair work	□ Others: ___
□ Calculator	□ Experiment	
□ Others: ___	□ Others: ___	

3.8 Conservation of Historical Heritages

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4
Unit Title	Historical Heritages	**Lesson**	2

<table>
<tr><td>Learning Objectives</td><td>By the end of this lesson, students should be able to:
• Identify the components of Historic Centre of Macau.
• Appreciate and care for the historical heritages.

Requirements of Basic Academic Attainments:
• B-2-11
• B-2-12
• B2-14</td><td>Bloom’s Taxonomy
This lesson provides opportunities for:
■ Creating
■ Evaluating
■ Analysing
■ Applying
■ Understanding
■ Remembering

5 E’s Framework
■ Engage
■ Explore
□ Explain
■ Elaborate
■ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Understanding the value of historical heritages requires students to balance the importance of preserving the past with the needs and preferences of the present. Developing an appreciation for the historical significance while considering the community’s evolving needs can be a cognitive challenge.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Under the promotion and education efforts of relevant departments, students generally have an awareness of caring for cultural relics.</td></tr>
</table>

Instructional Procedures	
Introduction (10 mins)	• Teacher prepares a poster and asks each group to paste their “Heritage Card” on it. • Students should distinguish the characteristics of their “Heritage Card” before pasting it.
Development (25 mins)	• Teacher asks some groups to share their “Heritage Card”. • Based on their sharing, teacher Summarises that the historical heritages in Macau have diverse histories, uses, and characteristics. • Group discussion - Teacher shows pictures related to government initiatives in promoting and conserving cultural heritage. Each student should think about how they, as residents of Macau, would promote and conserve the Historic Centre of Macau. Then, share their own ideas with their group members. • Teacher invites some groups to share their ideas in class. • Teacher shares some incorrect examples of what children do when visiting the historic centre. • Invite students to act what children should do when visiting the historic centre.

Closure (5 mins)	Questions and answers • List some historic heritages in Macau. • List some ways to promote and conserve the Historic Centre of Macau.
Assessment items	Sharing, poster and discussion
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignment ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook	■ Direct instruction	■ Performance task
□ Worksheet	■ Board work	□ Quiz/Test
□ Graphic organiser	■ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	■ Think-pair-share	■ Observation
□ Map	■ Summary reflection	□ Self-assessment
■ Media projector	■ Class discussion	■ Peer-assessment
□ Video	□ Independent seat work	■ Reflection
■ Computer	■ Group work	□ Classroom assessment technique
■ Visual aids	□ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.9 Introduction to International Cultural Events

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	International Cultural Events	**Lesson**	1

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Identify international cultural events in Macau.
• Explain the importance of international cultural events.

Requirements of Basic Academic Attainments:
• B2-14</td><td>Bloom's Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
■ Creating
□ Evaluating
■ Analysing
■ Applying
■ Understanding
□ Remembering

5 E's Framework
■ Engage
■ Explore
■ Explain
■ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• International cultural events are often deeply rooted in the history, beliefs, and social practices of the countries they represent. Students may need guidance in understanding the historical and cultural contexts that shape these events and make them meaningful.
• Students should understand the importance of respecting and honouring cultural practices without appropriating or misrepresenting them.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Continents and countries; the common festivals of Macau.</td></tr>
</table>

Instructional Procedures	
Introduction (5 mins)	Teacher will share images of the international cultural events that have been held in Macau. Students will name them accordingly.
Development (30 mins)	• Teacher will explain what cultural events are. Elaborate the importance of international cultural events in Macau. • Students will share their experiences of international cultural events they have attended. The class will prepare a list of international cultural events. <u>Group activity</u> • Each group will be given an iPad to visit the Cultural Affairs Bureau website. https://www.icm.gov.mo/cn/ • Each group is assigned to research on one international cultural event. 

Development (30 mins)	They will prepare a poster to show the following information: • Background information • Month of celebration • Countries participating in the event
Closure (5 mins)	Questions and answers • International cultural events • Reflect on the importance of the celebration
Assessment items	Sharing and poster
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring □ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations □ Instructional assistance □ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	□ Direct instruction	□ Performance task
□ Worksheet	□ Board work	□ Quiz/Test
□ Graphic organiser	□ Questioning	□ Open-ended questions
■ Chart/ Table/ Diagram	□ Think-pair-share	□ Observation
□ Map	□ Summary reflection	□ Self-assessment
□ Media projector	□ Class discussion	□ Peer-assessment
□ Video	□ Independent seat work	■ Reflection
■ Computer	■ Group work	□ Classroom assessment technique
■ Visual aids	□ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.10 Presentation of the International Cultural Events

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	International Cultural Events	**Lesson**	2

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Describe the features, origin and importance of each international cultural events in Macau..

Requirements of Basic Academic Attainments:
• B2-14</td><td>Bloom’s Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
■ Creating
□ Evaluating
■ Analysing
■ Applying
■ Understanding
■ Remembering

5 E’s Framework
■ Engage
■ Explore
□ Explain
■ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Learning about international cultural event requires sensitivity and respect for diverse cultures and traditions. Students may need guidance in understanding and appreciating cultural differences, avoiding stereotypes, and embracing diversity.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">The common festivals in Macau.</td></tr>
</table>

Instructional Procedures	
Introduction (5 mins)	Teacher shows videos of Macau Grand prix, Macau International Fireworks Display and Lusofonia Festival to engage students.
Development (30 mins)	<u>Group presentation and discussion</u> Each group will present their findings using a poster on their assigned international cultural event include the following information: • Background information • Month of celebration • Countries participating in the event • Teacher will encourage the class to share their reactions and thoughts on the presented events. • Teacher will ask on the impacts of these events on the residents of Macau, economy and promote cultural exchange.

Closure (5 mins)	• Teacher will ask the students the key takeaways of the lesson. • Students will reflect on how they will help to promote international cultural events in Macau through completing a worksheet.
Assessment items	Presentation and worksheet (Appendix vii)
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments □ Extension activities □ Test accommodations □ Instructional assistance □ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook ■ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram □ Map □ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	□ Direct instruction □ Board work ■ Questioning ■ Think-pair-share ■ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others: ___	□ Performance task □ Quiz/Test □ Open-ended questions ■ Observation □ Self-assessment ■ Peer-assessment ■ Reflection □ Classroom assessment technique □ Others: ___

3.11 Eastern and Western Cultures I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Eastern and Western Cultures	**Lesson**	1

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Identify the fusion between Eastern and Western cultures.
• Develop cultural awareness and appreciation for diverse cultures.

Requirements of Basic Academic Attainments:
• B-2-10
• B-2-15</td><td>Bloom's Taxonomy
This lesson provides opportunities for:
■ Creating
■ Evaluating
■ Analysing
■ Applying
■ Understanding
□ Remembering</td></tr>
<tr><td>5 E's Framework
■ Engage
■ Explore
□ Explain
■ Elaborate
■ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Understanding the historical, social, and geopolitical factors that have shaped Eastern and Western cultures requires a solid foundation in history and social studies. Students may need guidance in making connections between historical events and their impact on cultural practices and values.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">The common festivals in Macau.</td></tr>
</table>

Instructional Procedures	
Introduction (5 mins)	<u>Brainstorming</u> • Teacher asks students to name some Western countries. • Teacher shows students a globe and they will name three countries that is represented by the specific costume.
Development (30 mins)	• Engage students in a discussion about the concept of culture and its importance in shaping society and individual identities. • Teacher will show a short video clip of Macau: A city where Eastern and Western cultures collide and integrate. https://www.youtube.com/watch?v=AorYQyQ8EmM • Teacher will facilitate a brainstorming discussion to generate a list of the fusion of Eastern and Western cultures, such as language, food, buildings, streets, arts and festivals.

Development (30 mins)	• Group Activity - Students will be divided into small groups. Each group will be given pictures of examples of the fusion of Eastern and Western cultures. They will write a single-line caption or turn the image into a clever meme. • Students share their completed work with their classmates and engage in the whole class-discussion.
Closure (5 mins)	Teacher will summarise the fusion of Eastern and Western cultures.
Assessment items	Discussion and sharing
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments □ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	□ Direct instruction	□ Performance task
□ Worksheet	□ Board work	□ Quiz/Test
□ Graphic organiser	□ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	□ Observation
□ Map	■ Summary reflection	□ Self-assessment
□ Media projector	■ Class discussion	□ Peer-assessment
■ Video	□ Independent seat work	■ Reflection
■ Computer	■ Group work	□ Classroom assessment technique
■ Visual aids	□ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

3.12 Eastern and Western Cultures II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Eastern and Western Cultures	**Lesson**	2

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Identify the fusion between Eastern and Western cultures.
• Design a travel itinerary for tourists to promote Macau.

Requirements of Basic Academic Attainments:
• B-2-10
• B-2-15</td><td>Bloom's Taxonomy
This lesson provides opportunities for:
■ Creating
□ Evaluating
■ Analysing
■ Applying
■ Understanding
■ Remembering</td></tr>
<tr><td>5 E's Framework
■ Engage
■ Explore
■ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Learning about different cultures requires sensitivity and respect for cultural practices, traditions, and beliefs. Students may need guidance in recognizing and appreciating cultural diversity while avoiding cultural appropriation or misinterpretations.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Religious practices and customs associated with Eastern and Western cultures.</td></tr>
</table>

Instructional Procedures	
Pre-task	Students are asked to find more examples of the fusion of Eastern and Western cultures in Macau.
Introduction (5 mins)	Revise the previous lesson about the fusion between Eastern and Western cultures.
Development (30 mins)	Teacher provides pictures of the Eastern and Western Culture. Students will describe the Eastern and Western food culture. <u>Group work</u> • Divide students into small groups. Based on their findings from the pre-task, students pretend that they are a tour guide to promote Macau, each group will prepare a travel itinerary for one day. The itinerary should highlight the key aspects of Eastern and Western culture, such as food, art, buildings, language, etc. • Teacher invites some groups to present their one-day travel itinerary to the class. The classmates will ask questions and provide feedback after the presentation. • Students will post their travel itinerary in the classroom.

Closure (5 mins)	Teacher will ask the students about the importance of cultural understanding and appreciation of the fusion of Eastern and Western cultures in Macau.
Assessment items	Travel itinerary (Appendix viii), activity performance and class discussion.
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials ■ Differentiated assignments □ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	□ Direct instruction	■ Performance task
■ Worksheet	□ Board work	□ Quiz/Test
□ Graphic organiser	□ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	■ Observation
□ Map	□ Summary reflection	□ Self-assessment
□ Media projector	■ Class discussion	□ Peer-assessment
□ Video	□ Independent seat work	□ Reflection
■ Computer	■ Group work	□ Classroom assessment technique
□ Visual aids	□ Pair work	
□ Dictionary/Thesaurus	□ Experiment	□ Others
□ Calculator	□ Others	
□ Others		

Chapter 4
Macau Context Lesson Plans II:
Environmental Dynamics and Urban Development of Macau

This chapter presents a unit designed around the iSTEM integrated inquiry learning framework. (figure 7) By connecting six BAA General Studies items, teachers explore four main themes - Geography, Climate, Demography, and Economy - through the lens of Macau and their interrelations. Each lesson is closely linked to the next, culminating in a final project (see Appendix ix) to evaluate students' overall understanding and application of these themes.

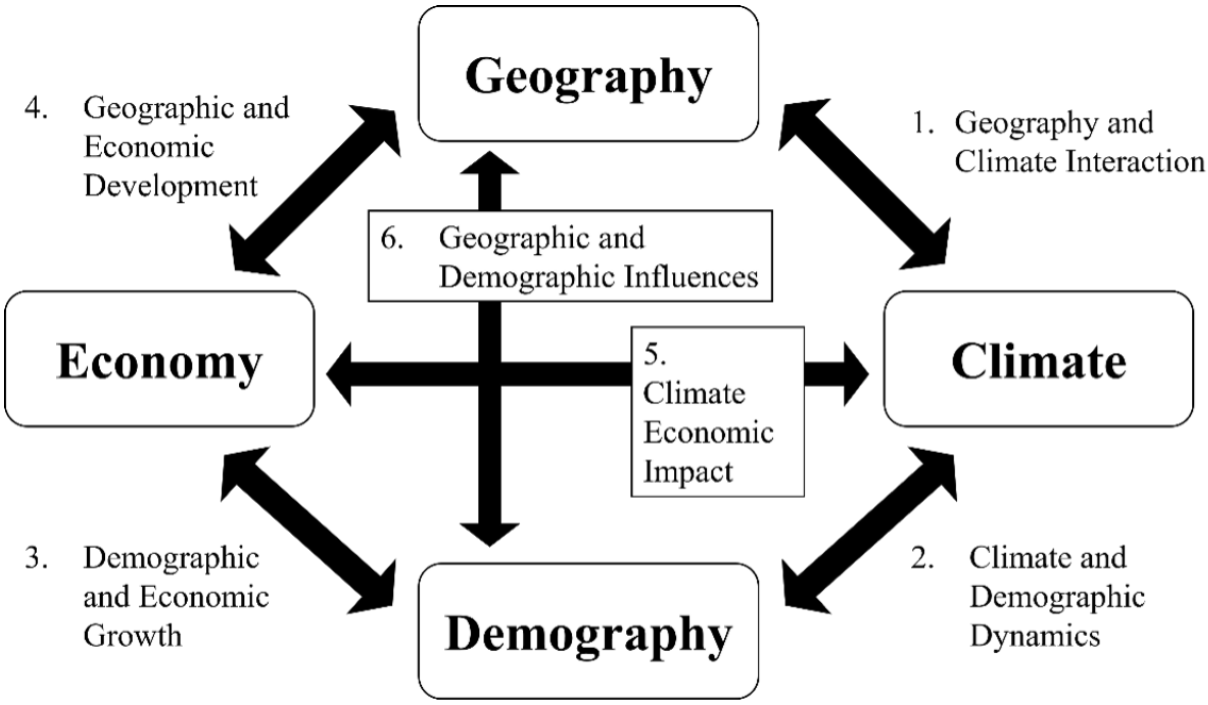

Figure 7 The four main themes and their interrelations explored in Chapter 4

Throughout the lessons, formative assessment will play a key role. For inquiry learning like this, we recommend using a rubric (see Appendix i) that focuses on the learning process as the foundation of formative assessment. Teachers should observe and document students' achievements based on this rubric, providing constructive feedback to help students understand the standards. The aim of formative assessment is to foster a collaborative learning environment between students and teachers, encouraging autonomous learning along the way.

The DSEDJ Requirements of Basic Academic Attainments (Primary General Studies, updated on 15 July 2024) achieved in this chapter:

Learning strand A: Healthy Life

A-2-9 Be able to tell the hazards of common infectious diseases and public health emergencies, propose prevention and response methods.

Learning strand B: Culture, Society and Life

B-2-2 Be interested in investigating social phenomena in daily life, and conduct basic social research.

B-2-3 Be able to explore the impact of Macau's economic and industrial development on Macau residents' life.

B-2-4 Be able to give examples to illustrate the close connection between Macau and its neighbouring regions in terms of economic development and residents' daily lives in Macau.

Learning strand C: Natural Environment and Life

C-2-11 Be able to use simple tools to measure meteorological elements such as temperature, wind direction, rainfall, humidity, use these elements to describe weather.

C-2-16 Be able to tell the geographical location, composition and basic terrain characteristics of Macau.

4.1 Geography and Climate Interaction I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Geography and Climate Interaction	**Lesson**	1

Learning Objectives	*By the end of this lesson, students should be able to:* • "Geography → Climate" • Explain how the geographic location of the small Macau peninsula, surrounded by the Pearl River estuary, determines its marine climate characterised by mild and humid conditions, as well as frequent typhoons. Requirements of Basic Academic Attainments: • C-2-11 • C-2-16
Challenges for Learners	Learners may face the challenge of explaining how Macau's geographic location on a small peninsula surrounded by the Pearl River estuary determines its marine climate, with mild and humid conditions as well as frequent typhoons. This would involve analysing the relationship between Macau's geographic features and its local climate patterns, including the potential impacts of climate change on the city's weather and climate.

Instructional Procedures	
Introduction (10 mins)	Activity: "Typhoon Tracker" • Begin by discussing the concept of typhoons and their relationship with geography and climate. Explain that Macau, being located on the small peninsula surrounded by the Pearl River estuary, is prone to typhoons due to its geographical location. • Introduce the world map or globe and locate Macau on it. • Highlight its proximity to the Pearl River estuary.
Development (25 mins)	• Divide the students into small groups and provide each group with markers or small stickers. • Distribute information cards about Macau's geography and climate to each group. The cards should include details about its location, the Pearl River estuary, and the influence of these factors on the climate. • Explain that each group will take turns placing the stickers or markers on the map to represent the path of a typhoon, starting from a random location in the Pearl River estuary. • After placing the stickers, ask each group to explain the path they chose based on Macau's geography and climate. Encourage them to describe how the typhoon would be affected by the peninsula and the estuary. • Facilitate a discussion among the groups to compare and contrast their paths. Encourage them to consider the similarities and differences in their explanations.

Closure (5 mins)	Conclude the activity by summarizing the main points about Macau's climate and how its geographic location influences the occurrence of typhoons.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others • Markers or small stickers • Information cards about Macau's geography and climate • Pictures or drawings representing typhoons	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.2 Geography and Climate Interaction II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Geography and Climate Interaction	**Lesson**	2

Learning Objectives	*By the end of this lesson, students should be able to:* • "Climate → Geography" • Analyse how the monsoon climate has shaped the unique rocky coastline and low-lying plain terrain of Macau. • Discuss how long-term climate change, such as sea level rise, can lead to potential geographic changes in Macau. • Evaluate the potential impact of climate-driven geographic changes on the environment. Requirements of Basic Academic Attainments: • C-2-11 • C-2-16
Challenges for Learners	Learners may face the challenge of analysing how Macau's monsoon climate has influenced the formation of its unique rocky coastline and low-lying plain terrain. This would require an understanding of the complex interactions between climate patterns and geographic features. Additionally, learners may need to discuss the potential impact of long-term climate change, such as sea level rise, on Macau's geography and evaluate the environmental implications of these climate-driven geographic changes.
Links to Prior Learning	Lesson 1: "Geography → Climate"

Instructional Procedures	
Introduction (10 mins)	Activity: "Climate Change Impact" • Start by showing pictures or illustrations of Macau's coastline and low-lying plain terrain. Discuss with the students how these geographical features have been shaped by the monsoon climate. • Introduce the concept of long-term climate change, focusing on sea level rise. Explain its potential impact on coastal areas like Macau.
Development (25 mins)	• Divide the students into small groups and provide each group with information cards about monsoon climate and sea level rise. • Instruct each group to discuss and analyse how the monsoon climate has shaped Macau's rocky coastline and low-lying plain terrain. They should consider factors such as erosion and sedimentation. • Ask each group to brainstorm and list potential geographic changes that could occur in Macau due to long-term climate change, specifically sea level rise. They can use the flipchart or whiteboard to note down their ideas. • After the groups have completed their lists, facilitate a class discussion. Each group should share their findings and ideas while others listen attentively.

Development (25 mins)	• Encourage students to evaluate the potential impact of these climate-driven geographic changes on the environment. Discuss the consequences for coastal ecosystems, human settlements, and infrastructure.
Closure (5 mins)	Conclude the activity by summarizing the main points and highlighting the importance of understanding the interplay between climate and geography in shaping the environment.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Pictures or illustrations of Macau's coastline and low-lying plain terrain • Information cards about monsoon climate and sea level rise • Flipchart or whiteboard • Markers	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.3 Climate and Demographic Dynamics I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Climate and Demographic Dynamics	**Lesson**	3

Learning Objectives	*By the end of this lesson, students should be able to:* • "Climate →Demographic" • Explain how Macau's tropical climate can lead to the prevalence of tropical diseases and influence the living and work habits of the local population. • Assess the potential health and social impacts of the local climate on Macau's residents. Requirements of Basic Academic Attainments: • C-2-9 • C-2-16
Challenges for Learners	Learners may face the challenge of understanding how Macau's tropical climate can lead to the prevalence of tropical diseases and influence the living and work habits of the local population through complex causal relationships. Additionally, they need to assess the potential health and social impacts of the local climate on Macau's residents, which may involve analysing multiple social, economic, and cultural dimensions.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography"

Instructional Procedures	
Introduction (10 mins)	Activity: "Tropical Disease Detective" • Divide the students into small groups and provide each group with information cards on Macau's tropical climate and tropical diseases. • Explain the objective of the game: to become "Tropical Disease Detectives" and investigate the relationship between Macau's climate and the prevalence of tropical diseases.
Development (25 mins)	• Distribute the game cards with different scenarios related to climate and health to each group. • Instruct each group to discuss and analyse the scenarios, considering how Macau's tropical climate can contribute to the spread of tropical diseases and how it may impact the living and work habits of the local population. • Each group should choose one scenario and present it to the class, explaining their analysis and the potential health and social impacts associated with the given situation. • Facilitate a class discussion after each group presentation, allowing students to ask questions and provide additional insights. • Encourage students to think critically about potential solutions or strategies to mitigate the impact of tropical diseases in Macau's tropical climate.
Closure (5 mins)	Summarise the main findings of the activity, emphasizing the importance of understanding the links between climate and health in a tropical region like Macau.

Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments	■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards on Macau's tropical climate and tropical diseases • Game cards with different scenarios related to climate and health • Board or large sheet of paper • Markers or sticky notes	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.4 Climate and Demographic Dynamics II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Climate and Demographic Dynamics	**Lesson**	4

Learning Objectives	*By the end of this lesson, students should be able to:* • "Demographic → Climate" • Analyse how Macau's dense population and high urbanization level have intensified local climate change, such as the urban heat island effect. • Evaluate the relationship between Macau's population growth/ urbanization and its impact on the local climate. Requirements of Basic Academic Attainments: • B-2-2
Challenges for Learners	Learners may face the challenge of grasping the complex interplay between Macau's dense population, high urbanization, and their impacts on the local climate. This requires an understanding of factors like the urban heat island effect and how population growth and urban development can exacerbate climate-related issues. Evaluating the relationship between demographic changes and climate impacts may involve synthesizing information from multiple disciplines, such as urban planning, climatology, and environmental studies.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic"

Instructional Procedures	
Introduction (10 mins)	Activity: "Urban Heat Island Challenge" • Divide the students into small groups and provide each group with information cards on Macau's urbanization, population growth, and the urban heat island effect. • Explain the objective of the game: to explore the relationship between Macau's population growth/urbanization and its impact on the local climate.
Development (25 mins)	• Display the game board or large sheet of paper depicting Macau's urban landscape in the centre of the classroom. • Instruct each group to place their tokens or markers on the game board, representing their "urban development projects" in different areas of Macau. • Each group should take turns explaining the characteristics of their "urban development project" and how it could contribute to the urban heat island effect. • Encourage other groups to ask questions and engage in a discussion about the potential impact of each "urban development project" on the local climate. • Facilitate a class debate, where groups can challenge or defend the choices made by other groups, considering the relationship between population growth/urbanization and the urban heat island effect.

Closure (5 mins)	Summarise the main findings of the activity, emphasizing the importance of understanding the links between climate and health in a tropical region like Macau.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards on Macau's urbanization, population growth, and the urban heat island effect • Game board or large sheet of paper depicting Macau's urban landscape • Tokens or markers for each group	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.5 Demographic and Economic Development I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Demographic and Economic Development	**Lesson**	5

Learning Objectives	*By the end of this lesson, students should be able to:* • "Demographic → Economy" • Discuss how Macau's dense population provides abundant labour resources to support the development of various industries. • Explain how population growth has driven the expansion of Macau's consumer market. Requirements of Basic Academic Attainments: • B-2-3 • B-2-4
Challenges for Learners	Learners may encounter the challenge of analysing the complex interrelationships between Macau's dense population, labour resources, and the development of various industries. This would require an understanding of how population dynamics can influence economic factors such as labour supply, consumer markets, and industrial growth. Additionally, learners may need to consider the potential trade-offs and unintended consequences that rapid population expansion and economic development can have on Macau's society and environment.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate"

Instructional Procedures	
Introduction (10 mins)	Activity: "Population Labour Match-Up" • Divide the students into small groups and provide each group with information cards or visuals depicting different industries in Macau. • Explain the objective of the game: Participate in the "Population Labour Match-Up" and explore the relationship between Macau's population and its economic development.
Development (25 mins)	• Display a large board or map representing Macau's labour market. • Instruct each group to place their game pieces on the board, representing their starting point. • Each group should take turns drawing an index card or piece of paper with a specific industry written on it. • The group must then discuss and explain how Macau's dense population contributes to the labour resources needed for that particular industry's development. • Encourage group discussions, questions, and interactions to explore the connection between population density, labour availability, and industry growth. • After each group presents, facilitate a class discussion summarizing the main points and discussing how population growth has driven the expansion of Macau's consumer market.

Closure (5 mins)	Conclude the activity by emphasizing the importance of a well-balanced labour market and the role of population dynamics in shaping economic development.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards or visuals depicting different industries in Macau • Index cards or small pieces of paper • Tokens or game pieces	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.6 Demographic and Economic Development II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Demographic and Economic Development	**Lesson**	6

Learning Objectives	*By the end of this lesson, students should be able to:* • "Economy → Demographic" • Assess how the rapid development of Macau's gaming and tourism industries has attracted many migrant workers, promoting the city's population growth. Requirements of Basic Academic Attainments: • B-2-3 • B-2-4
Challenges for Learners	Learners may face the challenge of understanding the intricate relationship between Macau's economic development, particularly in the gaming and tourism industries, and its impact on the city's demographic changes. This would require analysing how the influx of migrant workers attracted by these booming industries has contributed to Macau's population growth, as well as considering the potential social and cultural implications of this demographic shift. Learners may need to critically evaluate the sustainability of Macau's economic model and its long-term effects on the city's population dynamics.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate" Lesson 5: "Demographic → Economy"

Instructional Procedures	
Introduction (10 mins)	Activity: "Migrant Worker Rush" • Divide the students into small groups and provide each group with information cards or visuals depicting Macau's gaming and tourism industries. • Explain the objective of the game: Participate in the "Migrant Worker Rush" and explore the impact of the gaming and tourism industries on Macau's population growth.
Development (25 mins)	• Assign a specific time frame (e.g., 5 mins) for the game. • Instruct each group to discuss and strategize how to attract as many "migrant workers" (represented by tokens or game pieces) as possible within the given time frame. • Each group should consider the factors that would attract workers, such as job opportunities, wages, benefits, and living conditions. • Start the timer or stopwatch and allow the groups to make decisions and move their "migrant worker" tokens accordingly. • After the time is up, facilitate a class discussion where each group explains their strategies and the outcomes of their decisions. • Encourage critical thinking and reflection on how the rapid development of the gaming and tourism industries has influenced Macau's population growth.

Closure (5 mins)	Conclude the activity by summarizing the main insights gained from the game and discussing the implications of population growth, including challenges and opportunities for the city.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards or visuals depicting Macau's gaming and tourism industries • Tokens or game pieces • Timer or stopwatch	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.7 Geographic and Economic Development I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Demographic and Economic Development	**Lesson**	7

Learning Objectives	*By the end of this lesson, students should be able to:* • "Geography → Economy" • Explain how Macau's unique island-like geographic location has facilitated the development of trade, tourism and gaming as its dominant industries. Requirements of Basic Academic Attainments: • B-2-3 • C-2-16
Challenges for Learners	Learners may need to analyse how Macau's island-like geographic location has facilitated the development of its dominant industries, such as trade, tourism, and gaming. Additionally, they may need to consider the potential vulnerabilities and sustainability challenges posed by Macau's geographic constraints and economic dependence on a limited number of industries.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate" Lesson 5: "Demographic → Economy" Lesson 6: "Economy → Demographic"

Instructional Procedures	
Introduction (10 mins)	Activity: "Island Trade Challenge" • Divide the students into small groups and provide each group with a large world map or globe. • Explain the objective of the game: Participate in the "Island Trade Challenge" and explore how Macau's geographic location has influenced its economic development.
Development (25 mins)	• Display information cards or visuals depicting Macau's trade, tourism, and gaming industries. • Instruct each group to place their game pieces on Macau's location on the map or globe. • Each group should take turns selecting an information card or visual and explaining how Macau's geographic location has contributed to the development of that industry. • Encourage group discussions, questions, and interactions to deepen their understanding of the impact of geographic location on economic development. • Facilitate a class discussion after each group presents, summarizing the main points and highlighting the significance of Macau's island-like location.

Closure (5 mins)	Conclude the activity by emphasizing the importance of geographical factors in shaping economies and highlighting the uniqueness of Macau's situation.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	**Instructional Strategies**	**Assessment**
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Large world map or globe • Information cards or visuals depicting Macau's trade, tourism, and gaming industries • Tokens or game pieces	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.8 Geographic and Economic Development II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Demographic and Economic Development	**Lesson**	8

Learning Objectives	*By the end of this lesson, students should be able to:* • "Economy → Geography" • Analyse how Macau's highly developed economy has dramatically changed the city's geographic features through large-scale municipal construction and real estate development, such as land reclamation and high-rise buildings. Requirements of Basic Academic Attainments: • B-2-3 • C-2-16
Challenges for Learners	Learners may need to analyse how Macau's economic development has dramatically transformed the city's geographic features through large-scale construction and real estate projects, such as land reclamation and high-rise buildings. They may also need to consider the potential environmental and spatial impacts of these economic-driven geographic changes.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate" Lesson 5: "Demographic → Economy" Lesson 6: "Economy → Demographic" Lesson 7: "Geography → Economy"

Instructional Procedures	
Introduction (10 mins)	Activity: "City Transformation Mastermind" • Divide the students into small groups and provide each group with information cards or visuals depicting Macau's economic development, urbanization, and construction projects. • Explain the objective of the game: Participate in the "City Transformation Mastermind" and analyse how Macau's economy has shaped its urban landscape.
Development (25 mins)	• Display a large map or diagram of Macau's urban landscape in the classroom. • Instruct each group to select puzzle pieces representing different aspects of urban development and place them on the map, representing their "construction projects" in different areas. • Each group should take turns explaining the features of their "construction projects" and discussing how they have contributed to the transformation of Macau's urban landscape. • Encourage other groups to ask questions and engage in discussions about the effects and implications of each "construction project" on the city's geography. • Facilitate a class debate where groups can challenge or defend other groups' choices, considering the relationship between economic development, urbanization, and changes in the urban landscape.

Closure (5 mins)	Conclude the activity by summarizing the main insights gained from the game and discussing potential challenges and opportunities associated with the rapid transformation of Macau's urban environment.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards or visuals depicting Macau's economic development, urbanization, and construction projects. • Puzzle pieces representing different aspects of urban development (e.g., land reclamation, high-rise buildings). • Drawing materials or markers.	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.9 Climate Economic Impact I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Climate Economic Impact	**Lesson**	9

Learning Objectives	*By the end of this lesson, students should be able to:* • "Climate → Economy" • Describe the direct economic losses that extreme weather events like typhoons and heavy rains can cause to Macau's buildings, transportation, tourism industry, etc. • Discuss how climate change may impact the operation and viability of Macau's gaming industry. Requirements of Basic Academic Attainments: • B-2-3 • C-2-11
Challenges for Learners	Learners may need to analyse the direct economic losses that extreme weather events, such as typhoons and heavy rains, can cause to Macau's buildings, transportation, tourism industry, and other key sectors. They may also need to discuss how climate change may impact the operation and viability of Macau's gaming industry, a crucial component of the city's economy.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate" Lesson 5: "Demographic → Economy" Lesson 6: "Economy → Demographic" Lesson 7: "Geography → Economy" Lesson 8: "Economy → Geography"

Instructional Procedures	
Introduction (10 mins)	Activity:"Climate Disaster Recovery Challenge" • Divide the students into small groups and provide each group with information cards or visuals depicting extreme weather events and their economic impacts. • Explain the objective of the game: Participate in the "Climate Disaster Recovery Challenge" and explore the economic consequences of extreme weather events in Macau.
Development (25 mins)	• Display a game board or large map of Macau. • Instruct each group to place their game pieces on the map, representing their starting point. • Each group should take turns drawing an information card or visual and explaining the economic losses caused by the depicted extreme weather event. • Encourage group discussions, questions, and interactions to explore the impacts on buildings, transportation, and the tourism industry. • After each group presents, facilitate a class discussion summarizing the main points and discussing how climate change may affect the operation and viability of Macau's gaming industry.

Closure (5 mins)	Conclude the activity by emphasizing the importance of climate resilience and adaptation in the face of increasing extreme weather events and their economic impacts.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards or visuals depicting extreme weather events and their economic impacts. • Game board or large map of Macau. • Tokens or game pieces.	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.10 Climate Economic Impact II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Climate Economic Impact	**Lesson**	10

Learning Objectives	*By the end of this lesson, students should be able to:* • "Economy → Climate" • Explain how Macau's pillar industries of gaming and tourism, being high-energy consuming, generate large greenhouse gas emissions that exacerbate climate change. • Analyse how the development of Macau's key industries may lead to the deterioration of the urban heat island effect. Requirements of Basic Academic Attainments: • B-2-3 • C-2-11
Challenges for Learners	Learners may need to analyse how Macau's energy-intensive gaming and tourism industries, which are its pillar economic sectors, contribute to climate change through large greenhouse gas emissions. They may also need to evaluate how the development of these key industries may lead to the deterioration of the urban heat island effect in Macau, posing additional environmental challenges.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate" Lesson 5: "Demographic → Economy" Lesson 6: "Economy → Demographic" Lesson 7: "Geography → Economy" Lesson 8: "Economy → Geography" Lesson 9: "Climate → Economy"

Instructional Procedures	
Introduction (10 mins)	Activity:"Industry Carbon Footprint Challenge" • Divide the students into small groups and provide each group with information cards or visuals depicting the carbon footprint of Macau's gaming and tourism industries. • Explain the objective of the game: Participate in the "Industry Carbon Footprint Challenge" and explore the environmental impact of Macau's key industries.
Development (25 mins)	• Display a large diagram or drawing of Macau's urban environment. • Instruct each group to select puzzle pieces representing different aspects of industry development and place them on the diagram, representing their "industry components." • Each group should take turns explaining the environmental impact and greenhouse gas emissions associated with their chosen industry components.

Development (25 mins)	• Encourage other groups to ask questions and engage in discussions about the implications of high-energy consumption and greenhouse gas emissions on climate change and the urban heat island effect. • Facilitate a class debate where groups can challenge or defend other groups' choices, considering the trade-offs between industry development, economic growth, and environmental sustainability.
Closure (5 mins)	Conclude the activity by summarizing the main insights gained from the game and discussing potential strategies for mitigating the carbon footprint of Macau's key industries and addressing the urban heat island effect.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards or visuals depicting the carbon footprint of Macau's gaming and tourism industries. • Puzzle pieces representing different aspects of industry development. • Drawing materials or markers.	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.11 Geographic and Demographic Influences I

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Geographic and Demographic Influences	**Lesson**	11

Learning Objectives	*By the end of this lesson, students should be able to:* • "Geography → Demographic" • Describe how Macau's small land area of 32.8 square kilometres limits the expansion of its population size. Requirements of Basic Academic Attainments: • B-2-2 • C-2-16
Challenges for Learners	Learners may need to explain how Macau's small land area of 32.8 km2 limits the expansion of its population size, and analyse the spatial, social, and economic implications of this geographic constraint on the city's demographic growth.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate" Lesson 5: "Demographic → Economy" Lesson 6: "Economy → Demographic" Lesson 7: "Geography → Economy" Lesson 8: "Economy → Geography" Lesson 9: "Climate → Economy" Lesson 10: "Economy → Climate"

Instructional Procedures	
Introduction (10 mins)	Activity:"Population Puzzle" • Divide the students into small groups and provide each group with a large map or diagram of Macau. • Explain the objective of the game: Solve the "Population Puzzle" and understand how Macau's small land area limits population expansion.
Development (25 mins)	• Distribute the puzzle pieces representing different aspects of population growth to each group. • Instruct the groups to discuss and strategize how they can fit the puzzle pieces onto the map while considering the limited land area. • Each group should take turns placing their puzzle pieces on the map, explaining their choices, and discussing the implications of limited space on population growth. • Encourage group discussions and allow students to ask questions and provide additional insights.

Development (25 mins)	• Facilitate a class discussion after each group presents, highlighting the challenges and consequences of limited land area on population growth in Macau
Closure (5 mins)	Conclude the activity by summarising the main findings of the activity and emphasise the importance of considering land constraints in urban planning and population management.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • A large map or diagram of Macau. • Puzzle pieces representing different aspects of population growth (e.g., housing, infrastructure, amenities). • Markers or sticky notes.	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

4.12 Geographic and Demographic Influences II

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	4-6
Unit Title	Geographic and Demographic Influences	**Lesson**	12

Learning Objectives	*By the end of this lesson, students should be able to:* • "Demographic → Geography" • Examine how Macau's dense population and rapid urbanization have transformed the original geographic landscape through large-scale land reclamation and infrastructure construction. Requirements of Basic Academic Attainments: • B-2-2 • C-2-16
Challenges for Learners	Learners may face the challenge of analysing how Macau's dense population and rapid urbanization have transformed the city's original geographic landscape through large-scale land reclamation and infrastructure construction. This would involve understanding the spatial, environmental, and sustainability implications of accommodating Macau's demographic and economic growth within its confined land area.
Links to Prior Learning	Lesson 1: "Geography → Climate" Lesson 2: "Climate → Geography" Lesson 3: "Climate → Demographic" Lesson 4: "Demographic → Climate" Lesson 5: "Demographic → Economy" Lesson 6: "Economy → Demographic" Lesson 7: "Geography → Economy" Lesson 8: "Economy → Geography" Lesson 9: "Climate → Economy" Lesson 10: "Economy → Climate" Lesson 11: "Geography → Demographic"

Instructional Procedures	
Introduction (10 mins)	Activity:"City Transformation Challenge" • Divide the students into small groups and provide each group with information cards or visuals depicting Macau's population growth, urbanization, and land reclamation. • Explain the objective of the game: Participate in the "City Transformation Challenge" and explore how population growth and urbanization have transformed Macau's geographic landscape.
Development (25 mins)	• Display a large map or diagram of Macau's original geographic landscape in the classroom. • Instruct each group to select game cards representing different urban development projects and place them on the map to represent their "city development projects" in Macau.

Development (25 mins)	• Each group should take turns explaining the features of their "city development projects" and discussing how they may have contributed to the transformation of the geographic landscape. • Encourage other groups to ask questions and engage in discussions about the potential impacts of each "city development project" on the local landscape. • Facilitate a class debate where groups can challenge or defend other groups' choices, considering the relationship between population growth, urbanization, and the changing geographic landscape.
Closure (5 mins)	Conclude the activity by summarizing the main insights gained from the game and discussing potential strategies to mitigate the effects of rapid urbanization and land reclamation in densely populated areas of Macau.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance ■ Priority seating □ Others: ___

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram ■ Map ■ Media projector □ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator ■ Others: • Information cards or visuals depicting Macau's population growth, urbanization, and land reclamation. • Game cards representing different urban development projects. • Drawing materials or markers.	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others

Chapter 5
Macau Context Lesson Plans III: Sustainable Community Infrastructure of Macau

This chapter includes twelve lesson plans designed based on the 5E instructional model, focusing on different types of energy, their pros and cons and elaborating on the importance of sustainable energy consumption in our community and daily lives. Below is a table illustrating the "E" emphasized in each lesson, followed by a final project for assessment ideas. (see Appendix x)

5 E's Major Focus	Lesson	Content
Engage	1	Introduction to power generation
Explore	2	Non-renewable energy
Explore	3	Renewable energy
Evaluate	4	Activity: comparison of renewable & non-renewable energy
Explain	5	Sources of electricity in Macau/ Power generation in Macau
Elaborate	6	Energy demand and consumption in Macau
Elaborate	7	Activity: compare students' household bills
Explain	8	Green initiatives and policies in China
Explain	9	Prospects and sustainability
Explore	10	Ways to save power
Explore	11	Activity: What do you do to save energy at home?
Evaluate	12	Presentation: students present what they did to save energy
Project (Appendix x)		Awareness of phantom energy

The DSEDJ Requirements of Basic Academic Attainments (Primary General Studies, updated on 15 July 2024) achieved in this chapter:

Learning strand C: Natural Environment and Life

C-2-19 Be able to talk about the non-renewable nature of fossil fuels and the environmental damage caused by using fossil fuels.

C-2-20 Be able to name the major new sources of energy, describe how the development and application of such energy help promote sustainable development.

C-2-21 Be able to explore the causes of global warming and its impact on life.

Learning strand C: Science and Life

D-2-6 Be able to tell that energy such as electricity, light and heat can be converted into each other, and be able to give common examples.

D-2-7 Be able to name the power generation methods in Macau, and establish habits of saving electricity.

5.1 Introduction to power generation

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Introduction to Power Generation	**Lesson**	1

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Recognise and identify different sources of source of energy
• Distinguish between various power generation methods

Requirements of Basic Academic Attainments:
• D-2-6</td><td>Bloom's Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
□ Creating
■ Evaluating
□ Analysing
■ Applying
■ Understanding
□ Remembering

5 E's Framework
■ Engage
□ Explore
□ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Students might think electricity is the only energy source.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">• Students know what energy (light / heat / others) is.
• Students can collaborate with others.</td></tr>
</table>

Instructional Procedures	
Introduction (8 mins)	• <u>*Engage*</u>: ask student to brainstorm and discuss different sources of energy they may encounter in daily lives. Then show pictures or objects representing various energy sources like the sun, wind, water, and fossil fuels. • <u>*Connect*</u>: Ask students to write down their thoughts and experiences with the mentioned energy sources on a card. • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (25 mins)	<u>Discussion</u> • Guide a class discussion on the different power generation methods, both past and present. <u>Activity</u> • Divide students into small groups and provide them with cards labelled with different energy sources (solar, wind, and coal). • Ask students to discuss about the assigned energy source and make a poster introducing the energy source (power generation, positive / negative impact to the environment).

Development (25 mins)	Presentation • Present key points through visuals (diagrams and pictures). • Discuss how energy sources are converted into electricity through methods like burning coal, capturing wind energy, or using solar panels.
Closure (7 mins)	• Ask students to share the card finished in part one with another • Invite students to share one new thing they have learned today. (Exit ticket) • Homework: students will search for a piece of news about power generation around the world
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to think of any power generation method or facilities around them. • Use Real-World Examples: Use objects and videos to introduce different energy sources • Promote Collaboration: Create opportunities for students to work together in small groups to research, discuss, and present their ideas.
References & useful website	What Are Sources of Energy? https://www.youtube.com/watch?v=ViXtT8c4z-c

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram □ Map □ Media projector ■ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion ■ Independent seat work ■ Group work □ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment ■ Peer-assessment □ Reflection □ Classroom assessment technique □ Others: ___

5.2 Non-renewable energy

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Non-renewable Energy	**Lesson**	2

Learning Objectives	*By the end of this lesson, students should be able to:* • Identify different types of non-renewable energy sources. • Identify the reasons why fossil fuels are currently the principal energy resources around the world. • Analyse and explain how non-renewable energy has an impact on the world. Requirements of Basic Academic Attainments: • D-2-6	**Bloom's Taxonomy** This lesson provides opportunities for: □ Creating □ Evaluating ■ Analysing ■ Applying ■ Understanding □ Remembering **5 E's Framework** □ Engage ■ Explore □ Explain □ Elaborate □ Evaluation
Challenges for Learners	Students may find it difficult in understanding how these energy resources are converted into electricity and the concept of carbon emission.	
Links to Prior Learning	Students know what energy and different energy sources are.	

Instructional Procedures	
Introduction (8 mins)	• *Engage*: ask students to brainstorm how can we get energy in daily life. • *Connect*: Present a picture of a coal power plant and a wind farm. Ask students to discuss and compare in groups what they have noticed about each picture. • *Set expectations:* Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (25 mins)	Group work • Provide each group with samples (pictures) of coal, oil, and natural gas. Then ask students to observe and discuss their similarities and differences. • Ask students to identify which of the samples are fossil fuels and discuss why people use fossil fuel the most on the worksheet. Discussion • Lead a whole-class discussion on the concept of non-renewable energy sources and how they are converted into electricity. • Discuss how fossil fuels are formed over millions of years, their limited availability, and the environmental impact of burning them. • Discuss the environmental impact of burning fossil fuels (air pollution and greenhouse gas / carbon emissions).

Development (25 mins)	Activity • Students brainstorm ways and create a graphic organiser to discuss how they can reduce the use of fossil fuels in their daily lives. • Ask students to be creative for the solutions and emphasise the importance of conserving energy and exploring alternative energy sources.
Closure (7 mins)	• Invite students to share one thing they have learned about today's lesson / reflect on their behaviour when using energy (Exit ticket) • Plickers / Individual checking • Assign Homework (Worksheet on non-renewable energy)
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to think of how do they use energy/ ways to save energy • Use Real-World Examples: Use objects and videos to introduce the topic • Promote Collaboration: Create opportunities for students to work together in small groups to research, discuss, and present their ideas.
References & useful website	Non-renewable energy source https://www.youtube.com/watch?v=MpEJnnpye-k

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook ■ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram □ Map □ Media projector ■ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work □ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test □ Open-ended questions ■ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others: ___

5.3 Renewable energy

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Rrenewable Energy	**Lesson**	3

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Define renewable energy
• Identify different types of renewable energy sources.
• Analyse and explain how renewable energy has an impact on the world.

Requirements of Basic Academic Attainments:
• C-2-20</td><td>Bloom's Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
□ Creating
□ Evaluating
■ Analysing
■ Applying
■ Understanding
■ Remembering

5 E's Framework
□ Engage
■ Explore
□ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">Using simple explanations to convey complex renewable energy concepts to young learners.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Students know what non-renewable energy sources are.</td></tr>
</table>

Instructional Procedures	
Introduction (8 mins)	• <u>*Engage*</u>: Demonstrate pictures to show examples of non-renewable energy sources (i.e., wind mill/ solar panel/ hydroelectric dams) and ask students to guess the usage of them. • <u>*Connect*</u>: Ask students to discuss in groups what they have already knew about these energy sources and how they work. • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (25 mins)	<u>Research and presentation</u> • Provide each group with information about a specific renewable energy source. • With the information students researched at home / research in class, each group will deliver a short presentation to the class (Topics: how we get energy, its benefits, examples of how renewable energy is used in everyday life). <u>Discussion</u> • Lead a whole-class discussion on the concept of renewable energy sources and the advantages of using them. • Discuss the concept of sustainable development and how renewable energy plays a crucial role.

Development (25 mins)	<u>Sustainable planning</u> • Students will discuss and list ways in which their community can utilise renewable energy sources to promote sustainability.
Closure (7 mins)	• Invite students to share one new thing they have learned about today's lesson (exit ticket) • Invite students to reflect how they can go green in their daily lives • Assign Homework (Worksheet on renewable energy)
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to think of ways to implement sustainable energy consumption in their community. • Use Real-World Examples: Use objects and videos to introduce the topic. • Promote Collaboration: Create opportunities for students to work together in small groups to research, discuss, organise and present their ideas
References & useful website	Renewable energy source https://www.youtube.com/watch?v=Giek094C_l4

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook □ Worksheet □ Graphic organiser □ Chart/ Table/ Diagram □ Map □ Media projector ■ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion ■ Independent seat work ■ Group work □ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test ■ Open-ended questions ■ Observation □ Self-assessment ■ Peer-assessment □ Reflection □ Classroom assessment technique □ Others: ___

5.4 Activity: Comparison of renewable & non-renewable energy

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Comparison of Renewable & Non-renewable Energies	**Lesson**	4

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Explain the difference between non-renewable and renewable energy sources.
• Compare the advantages and disadvantages of using renewable and non-renewable energy sources.

Requirements of Basic Academic Attainments:
• C-2-19
• C-2-20</td><td>Bloom's Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
□ Creating
■ Evaluating
■ Analysing
■ Applying
□ Understanding
□ Remembering

5 E's Framework
□ Engage
□ Explore
□ Explain
□ Elaborate
■ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may have difficulties organizing their ideas.
• Students may not be familiar with scientific comparative writing.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Students know what non-renewable and renewable energy sources are.</td></tr>
</table>

Instructional Procedures	
Introduction (8 mins)	• <u>*Engage*</u>: Begin by asking students to recall words that they can immediately think of about the topic 'energy'. • <u>*Connect*</u>: Recap the key points of the previous lessons and have a short class discussion. (e.g., which types of energy seem to last longer or be used more often?) • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (25 mins)	<u>Sharing</u> • Ask each pair/ group to organise their findings on their assigned specific energy source (from homework/ pre-task). • Share their findings with the class/ another pair/ group. <u>Discussion</u> • Illustrate the differences and similarities of renewable and non-renewable energy using a Venn diagram. • Introduce a writing assignment and provide a graphic organiser to help them organise their thoughts (compare the advantages and disadvantages of renewable and non-renewable energy sources).

Development (25 mins)	Writing • Students will use their findings and the graphic organiser to write a comparative essay with information searched online • The writing should include: (a) introduction, (b) advantages & disadvantages of renewable energy sources, (c) advantages & disadvantages of non-renewable energy sources and (d) a conclusion to decide which type of energy sources is better for the environment. • Teacher will provide guided worksheets to assist students finishing their first draft.
Closure (7 mins)	• Invite students to share one new idea or concept they have learned from their classmates (exit ticket) • Assign Homework (Finish the writing)
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: This writing can provide an opportunity for students to think about their future applying data researching skills. • Use Real-World Examples: Research and preparation before the writing.

Instructional Materials	Instructional Strategies	Assessment
■ Text/textbook □ Worksheet ■ Graphic organiser ■ Chart/ Table/ Diagram ■ Map □ Media projector ■ Video ■ Computer □ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work ■ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test □ Open-ended questions ■ Observation □ Self-assessment ■ Peer-assessment ■ Reflection □ Classroom assessment technique □ Others: ___

5.5 Sources of Electricity in Macau / Power Generation in Macau

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Sources of Electricity in Macau/ Power Generation in Macau	**Lesson**	5

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Identify the sources of electricity in Macau
• Explain the environmental impact brought by the energy sources

Requirements of Basic Academic Attainments:
• D-2-7</td><td>Bloom's Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
□ Creating
□ Evaluating
■ Analysing
■ Applying
■ Understanding
□ Remembering

5 E's Framework
□ Engage
□ Explore
■ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may have difficulties organizing their ideas.
• Students may not be familiar with scientific comparative writing.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Students know what non-renewable and renewable energy sources are.</td></tr>
</table>

Instructional Procedures	
Introduction (8 mins)	• <u>*Engage*</u>: Begin by asking students to brainstorm how can we get energy in Macau. • <u>*Connect*</u>: Present a picture of power plants in Macau. Facilitate a class discussion on the importance of power generation and the impact it has on our daily lives. • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (25 mins)	<u>Sharing</u> • Divide students into small groups and provide them with research materials on different power generation methods used in Macau. • Each group will research a specific method and share with the class.. <u>Discussion</u> • Discuss on the different power generation methods in Macau and their advantages and disadvantages, and environmental impacts.

Development (25 mins)	Activity • In pairs or group, students will create a news report/ talk show pretending to be reporters/ scholars investigating a new power plant or other power generation facilities in Macau. • Teacher will provide a guided worksheet and help with the script-writing about how the new power plant will work and its potential impact to the city.
Closure (7 mins)	• Summarise the key points of the lesson • Invite students to share a new idea/ concept they have learned from their classmates (exit ticket)
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to reflect on their daily energy consumption. • Use Real-World Examples: Use objects and videos to introduce the topic. • Promote Collaboration: Create opportunities for students to work together in small groups to research, discuss, organise and present their ideas.
References & useful website	Electricity in Macau SAR in 2022 https://lowcarbonpower.org/region/Macao_SAR_China CEM official website https://www.cem-macau.com/zh/

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook ■ Worksheet ■ Graphic organiser ■ Chart/ Table/ Diagram ■ Map □ Media projector ■ Video ■ Computer ■ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work ■ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test □ Open-ended questions ■ Observation □ Self-assessment ■ Peer-assessment ■ Reflection □ Classroom assessment technique □ Others: ___

5.6 Energy Demand and Consumption in Macau

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Energy Demand and Consumption in Macau	**Lesson**	6

Learning Objectives	*By the end of this lesson, students should be able to:* • Identify factors of energy demand and consumption in Macau • Analyse reasons of global warming and its impact to our daily lives • List ways to save energy Requirements of Basic Academic Attainments: • C-2-21 • D-2-7	**Bloom's Taxonomy** This lesson provides opportunities for: □ Creating □ Evaluating ■ Analysing ■ Applying ■ Understanding ■ Remembering **5 E's Framework** □ Engage □ Explore ■ Explain □ Elaborate □ Evaluation
Challenges for Learners	• Students may underestimate the amount of energy the whole city needs to sustain her operation. • Students may find the concept of carbon footprint difficult to understand.	
Links to Prior Learning	Students know what non-renewable and renewable energy sources are.	

Instructional Procedures	
Introduction (7 mins)	• <u>*Engage*</u>: Begin by showing students a short video about Macau's daily activities and energy consumption. • <u>*Connect*</u>: Facilitate a class discussion on the impact of energy consumption to Macau. • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (30 mins)	<u>Sharing</u> • Divide students into small groups and assign each group to collect data different energy sources used in Macau. • Each group will create a chart about their assigned energy source, (benefits, disadvantages, and environmental impact) • Ask students to discuss about the assigned energy source and make a poster introducing the energy source (power generation, positive / negative impact to the environment). <u>Discussion</u> • Discuss and summarise different power generation methods in Macau and the advantages and disadvantages of each method, as well as the environmental impact. • Compare the energy consumption between Macau with another city and introduce the concept of global warming.

Development (25 mins)	Research and presentation: My City • Invite students to research on how much energy is consumed for different types of building. • Draw a city map and use different objects to represent different buildings and their energy consumptions. • With this information, ask students to estimate and measure how much energy each building would use (e.g., school vs. residential building) in a day • Facilitate discussion on the similarities and differences in energy sources and their impacts on the environment and present their ideas and findings. • Discuss the importance of energy conservation and how students can contribute to reducing energy consumption in their daily life and protect the earth. • Teacher should provide a guided worksheet to help with student presenting their ideas and findings.
Closure (7 mins)	Students reflect and write down what they have learned about energy demand and consumption and how it affects the world.
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to observe and connect with their community and city. • Use Real-World Examples: Use objects and videos to introduce the topic. • Promote Collaboration: Create opportunities for students to work together in small groups to research, discuss, organise and present their ideas.
References & useful website	統計數據庫 https://www.dsec.gov.mo/zh-MO/Statistic/Database CEM official website https://www.cem-macau.com/zh/ Global Warming https://www.youtube.com/watch?v=Pqx-MzKLYrZ4

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook ■ Worksheet ■ Graphic organiser ■ Chart/ Table/ Diagram □ Map □ Media projector ■ Video ■ Computer □ Visual aids ■ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work ■ Group work ■ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test □ Open-ended questions ■ Observation □ Self-assessment ■ Peer-assessment ■ Reflection □ Classroom assessment technique □ Others: ___

5.7 Activity: Compare students' household bills

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Compare Students' Household Bills	**Lesson**	7

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• analyse their own household energy consumption patterns by comparing their electricity bills.
• identify factors influencing energy consumption in different households. discuss strategies for reducing energy consumption at home.

Requirements of Basic Academic Attainments:
• D-2-7</td><td>Bloom's Taxonomy
This lesson provides opportunities for:
□ Creating
■ Evaluating
■ Analysing
□ Applying
□ Understanding
□ Remembering</td></tr>
<tr><td>5 E's Framework
□ Engage
□ Explore
□ Explain
■ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may feel uncomfortable sharing personal information about their household energy bills.
• Students may have difficulty understanding complex data and interpreting graphs.
• Students may lack prior knowledge about energy-saving strategies.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">• Students have a basic understanding of electricity and energy consumption.
• Students are familiar with reading and interpreting graphs and charts and have experience with data analysis and comparison.</td></tr>
</table>

Instructional Procedures	
Introduction (8 mins)	• <u>*Engage*</u>: Begin by asking students to brainstorm a list of factors that might influence energy consumption in a household. • <u>*Connect*</u>: Explain to students that today's activity will involve comparing students' household electricity bills to analyse their energy consumption patterns and identify ways to reduce energy usage. • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (25 mins)	• Provide each student with a blank data table to record information from their electricity bill. • Guide students to locate and record relevant information from their bills, such as energy consumption in kilowatt-hours (kWh), billing period, and total cost. • Once students have collected their data, guide them to calculate their average daily energy consumption by dividing the total kWh by the number of days in the billing period. • Have students organise their data into a bar graph or other visual representation to compare their energy consumption patterns.

Development (25 mins)	• Facilitate a class discussion to analyse the data and identify factors that might explain differences in energy consumption between households. • Introduce the concept of "phantom energy" and discuss strategies for reducing it. • Provide students with a list of tips for saving energy at home and encourage them to discuss how they can implement these strategies in their own lives. <u>Differentiated materials</u> • For students who need additional support, provide them with a template or worksheet to help them organise their data. • For advanced students, challenge them to research and present on specific energy-saving technologies or practices.
Closure (7 mins)	• Summarise: Briefly review the key points from the activity. • Reflect: Ask students to reflect on their own energy consumption habits and identify areas where they can make changes to reduce their energy usage. • Extend: Encourage students to share their energy-saving strategies with their families and friends and to continue monitoring their energy consumption over time.
Differentiated Strategies	■ Multiple intelligences ■ Peer tutoring ■ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to share their own experiences and perspectives on energy consumption in their homes. • Use Real-World Examples: Use examples from the local community to illustrate the impact of energy consumption on the environment and economy. • Promote Collaboration: Create opportunities for students to work together in small groups to analyse data and discuss solutions.
References & useful website	How to Read an Energy Bill & Save Money: https://www.youtube.com/watch?v=hw5x0CDHUqo

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook ■ Worksheet □ Graphic organiser ■ Chart/ Table/ Diagram □ Map ■ Media projector ■ Video ■ Computer □ Visual aids □ Dictionary/Thesaurus □ Calculator □ Others: ___	■ Direct instruction ■ Board work ■ Questioning □ Think-pair-share □ Summary reflection ■ Class discussion □ Independent seat work □ Group work □ Pair work □ Experiment □ Others: ___	■ Performance task □ Quiz/Test □ Open-ended questions □ Observation □ Self-assessment □ Peer-assessment □ Reflection □ Classroom assessment technique □ Others: ___

5.8 Green Initiatives and Policies in China

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Green Initiatives and Policies in China	**Lesson**	8

Learning Objectives	*By the end of this lesson, students should be able to:* • Explain China's "dual carbon" target and its implications for energy policy. • Analyse different green initiatives implemented in China, such as renewable energy subsidies and carbon trading schemes. • Discuss the challenges and opportunities for China to achieve its sustainability goals. Requirements of Basic Academic Attainments: • D-2-7	**Bloom's Taxonomy** This lesson provides opportunities for: □ Creating □ Evaluating □ Analysing □ Applying ■ Understanding □ Remembering **5 E's Framework** □ Engage □ Explore ■ Explain □ Elaborate □ Evaluation
Challenges for Learners	• Students may have limited prior knowledge about China's environmental policies and initiatives. • Students may find it challenging to understand complex concepts such as carbon trading and renewable energy subsidies. • Students may have difficulty evaluating the effectiveness of different green initiatives.	
Links to Prior Learning	• Students have a basic understanding of climate change and its impact on the environment. • Students are familiar with different types of renewable energy sources and their potential. • Students should have prior experience with analysing data and drawing conclusions.	

Instructional Procedures	
Introduction (7 mins)	• <u>*Engage*</u>: Begin by asking students to brainstorm a list of challenges that China faces in terms of environmental sustainability. • <u>*Connect*</u>:Explain that today's lesson will focus on China's "dual carbon" target and the various green initiatives and policies implemented to achieve this ambitious goal. • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (30 mins)	• Provide students with a brief overview of China's "dual carbon" target, which aims to achieve peak carbon emissions by 2030 and carbon neutrality by 2060. • Discuss the rationale behind this target and its significance for global climate change miti gation efforts.

Development
(30 mins)
	• Introduce different green initiatives implemented in China, like:
	  • Renewable energy subsidies: Explain how the government supports the development of renewable energy sources through financial incentives.
	  • Carbon trading schemes: Discuss how carbon trading allows companies to buy and sell carbon emission permits, creating a market-based mechanism to reduce emissions.
	  • Energy efficiency standards: Explain how the government sets standards for energy efficiency in buildings, appliances, and industries.
	  • Green finance: Discuss the role of financial institutions in supporting sustainable development projects.
	
	<u>Analysis</u>
	• Divide students into small groups and assign each group a specific green initiative to research in more detail.
	• Provide students with resources such as government websites, news articles, and academic papers to support their research.
	• Guide students to analyse the effectiveness of their assigned initiative, considering its impact on reducing emissions, promoting sustainable development, and addressing social and economic concerns.
	• Invite each group to present their findings and facilitate a discussion about the strengths and weaknesses of different green initiatives.
	
	<u>Discussion</u>
	• Lead a class discussion about the challenges and opportunities for China to achieve its "dual carbon" target.
	• Encourage students to consider factors such as technological advancements, economic development, and public awareness.
	• Discuss the role of international cooperation in supporting China's sustainability goals.

Closure (3 mins)	• Summarise: Briefly review the key learning points of the lesson. • Reflect: Ask students to reflect on the importance of China's green initiatives and policies for achieving a sustainable future. • Extend: Encourage students to stay informed about China's progress towards its "dual carbon" target and to explore ways they can contribute to global sustainability efforts.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring □ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to consider how China's green initiatives might impact their own lives and the lives of people around the world. • Use Real-World Examples: Use case studies and examples from China to illustrate the impact of green initiatives on local communities and the environment. • Promote Collaboration: Create opportunities for students to work together in small groups to research and analyse different green initiatives.

Culturally Responsive Teaching Strategy	• Promote Collaboration: Create opportunities for students to work together in small groups to research and analyse different green initiatives.
References & useful website	China's Next Economic Transformation: Going Carbon Neutral by 2060: https://www.youtube.com/watch?v=tGQQ8fyWJi4

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	■ Direct instruction	■ Performance task
□ Worksheet	■ Board work	□ Quiz/Test
□ Graphic organiser	■ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	■ Observation
□ Map	□ Summary reflection	□ Self-assessment
■ Media projector	■ Class discussion	□ Peer-assessment
■ Video	□ Independent seat work	□ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
■ Visual aids	□ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

5.9 Future Prospects and Sustainability

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Future Prospects and Sustainability	**Lesson**	9

Learning Objectives	*By the end of this lesson, students should be able to:* • Discuss the role of technological advancements in developing new and efficient energy sources. • Analyse the importance of sustainable energy practices for achieving the UN Sustainable Development Goals (SDGs). • Discuss the individual and collective actions needed to transition towards a sustainable energy future. Requirements of Basic Academic Attainments: • D-2-7	**Bloom's Taxonomy** This lesson provides opportunities for: □ Creating □ Evaluating ■ Analysing □ Applying □ Understanding □ Remembering **5 E's Framework** □ Engage □ Explore ■ Explain □ Elaborate □ Evaluation
Challenges for Learners	• Students may have limited knowledge about emerging energy technologies and their potential impact. • Students may find it challenging to understand the complex interrelationships between energy, environment, and sustainable development. • Students may feel overwhelmed by the scale of the challenges associated with achieving a sustainable energy future.	
Links to Prior Learning	• Students have a basic understanding of different energy sources and their environmental impact. • Students are familiar with the concept of sustainable development and the SDGs.	

Instructional Procedures	
Introduction (5 mins)	• *Engage*: Begin by asking students to brainstorm a list of challenges that humanity faces in terms of ensuring a sustainable energy future. • *Connect*:Explain that today's lesson will focus on exploring the role of technology, sustainable practices, and individual actions in achieving a future powered by clean and renewable energy. • *Set expectations:* Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (30 mins)	• Introduce the concept of emerging energy technologies, such as advanced solar cells, wind turbines, and energy storage solutions. • Discuss the potential of these technologies to revolutionise the energy sector and contribute to a significant reduction in greenhouse gas emissions.

Development (30 mins)	• Provide examples of how these technologies are being implemented in different parts of the world. <u>Discussion</u> • Lead a class discussion about the importance of sustainable energy practices for achieving the UN SDGs. • Focus on goals related to affordable and clean energy, climate action, and responsible consumption and production. • Encourage students to consider the interconnections between these goals and the role of energy in achieving sustainable development. • Discuss the individual and collective actions that are needed to transition towards a sustainable energy future. • Encourage students to brainstorm specific actions they can take in their daily lives to reduce their energy consumption and promote sustainable practices. <u>Activity</u> • Divide students into small groups and assign each group a specific SDG related to energy and sustainability. • Provide each group with resources such as UN reports, news articles, and case studies to support their research. • Guide students to develop a short presentation or infographic that outlines the key aspects of their assigned SDG, its relevance to achieving a sustainable energy future, and specific actions individuals can take to contribute to its achievement. • Have each group present their findings to the class and facilitate a discussion about the interconnectedness of the SDGs and the importance of collective action.
Closure (5 mins)	• Summarise: Briefly review the key learning points of the lesson. • Reflect: Ask students to reflect on the importance of embracing technological advancements, adopting sustainable practices, and taking individual action to ensure a sustainable energy future. • Extend: Encourage students to stay informed about the latest developments in energy technology and sustainable practices. • Challenge students to identify opportunities to promote sustainable energy solutions in their communities and beyond.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring □ Differentiated instructional materials □ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___

Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to consider how technological advancements and sustainable energy practices can impact their own lives and the lives of people around the world. • Use Real-World Examples: Use case studies and examples from different cultures and communities to illustrate the diverse ways in which people are working towards a sustainable energy future. • Promote Collaboration: Create opportunities for students to work together in small groups to research, discuss, and present their ideas about sustainable energy solutions.
References & useful website	United Nations Sustainable Development Goals https://sdgs.un.org/goals

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	■ Direct instruction	■ Performance task
□ Worksheet	□ Board work	□ Quiz/Test
□ Graphic organiser	■ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	■ Observation
□ Map	□ Summary reflection	□ Self-assessment
□ Media projector	■ Class discussion	□ Peer-assessment
□ Video	□ Independent seat work	□ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
□ Visual aids	□ Pair work	□ Others: ___
□ Dictionary/Thesaurus	□ Experiment	
□ Calculator	□ Others: ___	
□ Others: ___		

5.10 Ways to save power

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Ways to Save Power	**Lesson**	10

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Identify different ways to save power at home and in their daily lives.
• Explain the concept of “phantom energy” and strategies to minimise it.
• Analyse the potential impact of individual actions on reducing community energy consumption.

Requirements of Basic Academic Attainments:
• D-2-7</td><td>Bloom’s Taxonomy
This lesson provides opportunities for:
□ Creating
□ Evaluating
■ Analysing
□ Applying
■ Understanding
□ Remembering</td></tr>
<tr><td>5 E’s Framework
□ Engage
■ Explore
□ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may have limited knowledge about specific energy-saving practices.
• Students may find it difficult to change their ingrained habits and behaviours.
• Students may lack motivation to take action if they cannot see immediate results.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">Students have a basic understanding of electricity and energy consumption and are familiar with the concept of energy conservation..</td></tr>
</table>

Instructional Procedures	
Introduction (4 mins)	• <u>*Engage*</u>: Begin by asking students to brainstorm a list of activities that consume a lot of energy in their daily lives. • <u>*Connect*</u>: Explain that today’s lesson will focus on exploring practical ways to save power at home and in our communities. • <u>*Set expectations:*</u> Outline the learning objectives for the activity and explain the procedures that will be followed.
Development (30 mins)	• Introduce the concept of “phantom energy,” which refers to the energy consumed by electronic devices even when they are turned off or in standby mode. • Discuss the significant contribution of phantom energy to overall energy consumption and its impact on the environment. • Provide students with a list of common electronic devices that consume phantom energy, such as TVs, computers, game consoles, and chargers. • Explain simple strategies to minimise phantom energy consumption, such as unplugging devices when not in use, using power strips with on/off switches, and enabling energy-saving settings on devices.

Development (30 mins)	Discussion • Lead a class discussion about different ways to save power at home, focusing on areas such as lighting, appliances, heating and cooling, and transportation. • Encourage students to share their own experiences and ideas for reducing energy consumption. • Discuss the potential impact of individual actions on reducing community energy consumption and the importance of collective efforts. Activity • Divide students into small groups and assign each group a specific area of focus for saving power (e.g., lighting, appliances, heating/cooling, transportation). • Provide each group with resources such as energy-saving tips, case studies, and online tools to support their research. • Guide students to develop a short presentation or infographic that outlines the key ways to save power in their assigned area, including practical tips, potential cost savings, and environmental benefits. • Have each group present their findings to the class and facilitate a discussion about the feasibility and effectiveness of different energy-saving strategies.
Closure (5 mins)	• Summarise: Briefly review the key learning points of the lesson. • Reflect: Ask students to reflect on the importance of adopting energy-saving habits and the positive impact they can have on the environment and their community. • Extend: Encourage students to implement the energy-saving strategies they learned in their own homes and to share their knowledge with others. • Challenge students to identify additional ways to save power and to explore innovative solutions for promoting energy efficiency in their communities.
Differentiated Strategies	□ Multiple intelligences ■ Peer tutoring □ Differentiated instructional materials □ Differentiated assignments □ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to consider the cultural context of energy consumption and identify ways to adapt energy-saving practices to their own lifestyles. • Use Real-World Examples: Use case studies and examples from local communities to illustrate the effectiveness of different energy-saving strategies. • Promote Collaboration: Create opportunities for students to work together in small groups to research, discuss, and present their ideas about energy-saving solutions.
References & useful website	20 Ways to Save Electricity at Home https://www.youtube.com/watch?v=EB9I2Wp7stg

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	■ Direct instruction	■ Performance task
□ Worksheet	□ Board work	□ Quiz/Test
□ Graphic organiser	■ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	■ Observation
□ Map	□ Summary reflection	□ Self-assessment
□ Media projector	■ Class discussion	■ Peer-assessment
□ Video	□ Independent seat work	□ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
□ Visual aids	□ Pair work	
□ Dictionary/Thesaurus	□ Experiment	□ Others: ___
□ Calculator	□ Others: ___	
□ Others: ___		

5.11 Activity: what do you do to save energy at home?

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	What do you do to save energy at home?	**Lesson**	11

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Develop an action plan for saving energy at home.
• Identify specific goals and strategies for reducing their energy consumption.
• Share their action plans with others and encourage collective action.

Requirements of Basic Academic Attainments:
• D-2-7</td><td>Bloom's Taxonomy</td></tr>
<tr><td>This lesson provides opportunities for:
■ Creating
□ Evaluating
□ Analysing
□ Applying
□ Understanding
□ Remembering

5 E's Framework
□ Engage
■ Explore
□ Explain
□ Elaborate
□ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may find it difficult to come up with specific and measurable goals for saving energy.
• Students may lack the motivation to implement their action plans.
• Students may not have access to the resources or technology needed to achieve their energy-saving goals.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">• Students have a basic understanding of different ways to save power at home.
• Students are familiar with the concept of goal setting and action planning, self-reflection and self-assessment.</td></tr>
</table>

Instructional Procedures	
Introduction (5 mins)	• <u>*Engage*</u>: ask students to a list of specific actions they can take to save energy at home, based on what they have learned in previous lessons and their own experiences. • <u>*Connect*</u>: Encourage students to consider different areas of energy consumption at home, such as lighting, appliances, heating and cooling, and transportation. • Provide students with a worksheet or template to help them organise their ideas.

Development (30 mins)	<u>Goal-setting</u>
	• Guide students to set specific, measurable, achievable, relevant, and time-bound (SMART) goals for reducing their energy consumption.
	• Encourage students to consider their own circumstances, resources, and limitations when setting their goals.
	• Provide examples of SMART goals for saving energy, such as:
	  • Replace all incandescent light bulbs with LED bulbs
	  • Unplug unused electronic devices at least once a day.

Development (30 mins)	• Reduce shower time by two minutes every day. • Walk or bike to school or work at least three times a week. <u>Action-planning</u> • Guide students to develop a detailed action plan for achieving their energy-saving goals. • Encourage students to identify specific strategies, resources, and support systems they will need to implement their plan. • Provide students with a template or checklist to help them structure their action plan. <u>Sharing and support</u> • Students share their action plans in class or in small groups. • Encourage students to provide feedback and support to each other's plans. • Discuss ways to hold each other accountable and track progress.
Closure (5 mins)	• Summarise: Briefly review the key steps involved in creating an action plan for saving energy at home. • Reflect: Ask students to reflect on the importance of setting goals, acting, and supporting each other in achieving a sustainable future. • Extend: Encourage students to implement their action plans and monitor their progress over time. • Challenge students to share their energy-saving successes and inspire others to act in their own homes and communities.
Differentiated Strategies	■ Multiple intelligences □ Peer tutoring ■ Differentiated instructional materials ■ Differentiated assignments ■ Extension activities □ Test accommodations ■ Instructional assistance □ Priority seating □ Others: ___
Culturally Responsive Teaching Strategy	• Connect to Students' Lives: Encourage students to consider the cultural context of energy consumption and adapt their action plans to their own lifestyles and values. • Use Real-World Examples: Share success stories of individuals and families who have made significant changes to reduce their energy consumption. • Promote Collaboration: Create opportunities for students to work together in groups to develop and support each other's action plans.
References & useful website	Five Simple Ways to Save Energy at Home: https://www.youtube.com/watch?v=mGDtHYfAxRM

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	■ Direct instruction	■ Performance task
□ Worksheet	□ Board work	□ Quiz/Test
□ Graphic organiser	□ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	□ Observation
□ Map	□ Summary reflection	□ Self-assessment
□ Media projector	■ Class discussion	□ Peer-assessment
□ Video	■ Independent seat work	□ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
□ Visual aids	□ Pair work	
□ Dictionary/Thesaurus	□ Experiment	□ Others: ___
□ Calculator	□ Others: ___	
□ Others: ___		

5.12 Presentation: students present what they did to save energy

Designed Lesson Plan from School			
Subject	General Studies	**Intended Grade**	6
Unit Title	Student present what they did to save energy	**Lesson**	12

<table>
<tr><td rowspan="2">Learning Objectives</td><td rowspan="2">By the end of this lesson, students should be able to:
• Present their experiences and results of implementing their action plans for saving energy at home.
• Analyse the challenges and successes they encountered while trying to save energy.
• Reflect on the importance of individual actions in contributing to a more sustainable community.

Requirements of Basic Academic Attainments:
• D-2-7</td><td>Bloom's Taxonomy
This lesson provides opportunities for:
■ Creating
■ Evaluating
□ Analysing
□ Applying
□ Understanding
□ Remembering</td></tr>
<tr><td>5 E's Framework
□ Engage
□ Explore
□ Explain
□ Elaborate
■ Evaluation</td></tr>
<tr><td>Challenges for Learners</td><td colspan="2">• Students may feel nervous or uncomfortable presenting in front of their peers.
• Students may struggle to articulate their experiences and findings in a clear and concise manner.
• Students may find it difficult to reflect on the broader implications of their individual actions.</td></tr>
<tr><td>Links to Prior Learning</td><td colspan="2">• Students should have completed Lesson 11 and developed an action plan for saving energy at home.
• Students are familiar with the concept of reflection and self-assessment and have prior experience doing public speaking.</td></tr>
</table>

Instructional Procedures	
Introduction (3 mins)	• <u>*Engage*</u>: Begin by reviewing the key steps involved in creating an action plan for saving energy at home. • <u>*Connect*</u>: Explain that today's lesson will focus on students presenting their experiences and results of implementing their action plans. • <u>*Set expectationst*</u>: Outline the learning objectives for the presentations and explain the evaluation criteria.
Development (30 mins)	<u>Presentation</u> • Provide students with an opportunity to present their experiences and findings to the class. • Encourage students to use visual aids, such as graphs, charts, or photographs, to enhance their presentations. • Guide students to focus on the following aspects in their presentations:

<table>
<tr><td>Development
(30 mins)</td><td>

A brief overview of their action plan and the specific goals they set.
The strategies they implemented to achieve their goals.
The challenges they encountered and how they overcome.
The results they achieved in terms of reducing their energy consumption.
Their reflections on the importance of individual actions in contributing to a more sustainable community.

Provide constructive feedback to students on their presentations, focusing on their content, delivery, and overall effectiveness.

<u>Discussion</u>

After all presentations have been completed, lead a class discussion about the overall findings and insights gained from the activity.
Encourage students to share their perspectives on the challenges and successes of saving energy at home.
Discuss the importance of collective action and the potential impact of individual efforts on reducing community energy consumption.
Brainstorm additional strategies and resources that could support students in their ongoing efforts to save energy.

</td></tr>
<tr><td>Closure
(5 mins)</td><td>

Summarise: Briefly review the key steps involved in creating an action plan for saving energy at home.
Reflect: Ask students to reflect on the importance of setting goals, acting, and supporting each other in achieving a sustainable future.
Extend: Encourage students to implement their action plans and monitor their progress over time.
Challenge students to share their energy-saving successes and inspire others to act in their own homes and communities.

</td></tr>
<tr><td>Differentiated Strategies</td><td>
□ Multiple intelligences
□ Peer tutoring
□ Differentiated instructional materials
□ Differentiated assignments
■ Extension activities
□ Test accommodations
■ Instructional assistance
□ Priority seating
□ Others: ___
</td></tr>
<tr><td>Culturally Responsive Teaching Strategy</td><td>

Create a Safe and Supportive Environment: Foster a classroom environment where students feel comfortable sharing their experiences and perspectives without judgment.
Use Inclusive Language: Use language that is respectful of all students' backgrounds and experiences.
Connect to Students' Lives: Encourage students to draw connections between their individual actions and the broader implications for their families, communities, and the environment.

</td></tr>
</table>

Instructional Materials	Instructional Strategies	Assessment
□ Text/textbook	□ Direct instruction	□ Performance task
□ Worksheet	□ Board work	□ Quiz/Test
□ Graphic organiser	□ Questioning	□ Open-ended questions
□ Chart/ Table/ Diagram	□ Think-pair-share	■ Observation
□ Map	□ Summary reflection	■ Self-assessment
□ Media projector	□ Class discussion	■ Peer-assessment
□ Video	■ Independent seat work	□ Reflection
■ Computer	□ Group work	□ Classroom assessment technique
□ Visual aids	□ Pair work	
□ Dictionary/Thesaurus	□ Experiment	□ Others: ___
□ Calculator	□ Others: ___	
□ Others: ___		

Chapter 6
Assessments for General Studies

6.1 Background on the Implementation of Assessment Policy in Macau

Macau has been actively reforming its education system to improve the quality and equity of non-tertiary education. The first decade of reforms laid the groundwork with the introduction of a comprehensive curriculum framework and the Basic Academic Attainment (BAA) requirement, which aimed to standardize educational practices. This movement sought to foster equality across different demographics, ensuring that all students had access to a consistent educational experience (Chan & Lee, 2019; Lam, 2021).

In 2020, the second decade of reforms initiated a new assessment policy. This policy emphasizes the importance of fair and effective evaluation methods, aiming to provide all students with equal opportunities to demonstrate their knowledge and skills (DSEDJ, 2020). Within this framework, multiple assessment methods, including formative and summative assessments, are highlighted as essential tools for gaining a holistic view of student performance and progress (Harris & Brown, 2018; Biggs & Tang, 2011).

Multiple Assessments

The concept of multiple assessments emerged in response to the limitations of traditional standardized testing, which often failed to capture a comprehensive picture of student learning. Educators began recognizing the need for a broader range of assessment methods that could evaluate critical competencies like critical thinking, creativity, and problem-solving (Black & Wiliam, 1998). By the late 1990s, there was a shift towards holistic assessment methods, advocating for a combination of tests, assignments, projects, and observations to gain a more nuanced understanding of student performance (Wiggins, 1998).

Summative Assessments

Summative assessments, defined as evaluations conducted at the end of an instructional period, serve the purpose of assessing cumulative student learning. These assessments, such as end-of-term exams or standardized tests, are high-stakes and are used for reporting student performance against established standards (National Research Council, 2001). However, critics argue that summative assessments can limit the learning process, as they provide little feedback for improvement and often emphasize content recall over deeper understanding (Gardner, 2010).

Formative Assessments

Formative assessments are designed to monitor student learning continuously and provide feedback aimed at improving student performance (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education [AERA, APA & NCME], 2014). Examples include quizzes, oral presentations, and projects. Unlike summative assessments, formative assessments are generally low-stakes and focus on understanding student progress during the learning process (Stiggins, 1994).

Distinction and Overlap

While summative and formative assessments serve different purposes, the distinction between them is not always clear-cut. Many assessments designed for formative purposes can also be used summatively and vice versa. The increased focus on testing and accountability in education has blurred the lines between these assessment types, suggesting that they should complement each other. Formative assessments can assist learning during instruction, while summative assessments can evaluate retained knowledge at the end of a unit or term (Dixson & Worrell, 2016).

6.2 The Importance of Multiple Assessments in General Studies

In the rapidly evolving educational landscape of Macau, effective teaching resources are essential for fostering student engagement and promoting academic success. The supplementary notes for General Studies are designed to support educators by providing a comprehensive framework tailored to the unique cultural and contextual needs of Macau. By aligning with the Basic Academic Attainment Requirements and the Curriculum Framework outlined by the Education and Youth Development Bureau (DSEDJ), the notes emphasize the importance of diverse assessment strategies.

Implementing multiple assessments in General Studies is particularly beneficial as it allows for a more holistic evaluation of student learning. Traditional assessments often focus on rote memorization, which may not accurately reflect a student's understanding or abilities. In contrast, multiple assessment methods—such as projects, presentations, and observations—enable teachers to gauge students' comprehension, critical thinking, and creativity, which are vital skills in today's educational context (Harris & Brown, 2018).

The three main themes of the General Studies curriculum—Cultural Heritage and Identity, Environmental Dynamics and Urban Development, and Sustainable Community Infrastructure—lend themselves well to varied assessment approaches. For instance, projects that involve designing heritage routes or planning future urban developments can be assessed through both formative and summative methods, providing insights into students' learning processes and growth (Lam, 2021).

Additionally, the use of formative assessments, such as ongoing feedback during group projects or class discussions, allows educators to understand better the conditions and environments affecting student performance. This aligns with the DSEDJ policy on assessment, which stresses the importance of focusing on students' learning processes.

By integrating multiple assessments into the General Studies curriculum, educators can create a more engaging and supportive learning environment that not only meets educational standards but also inspires students to achieve their fullest potential. Ultimately, this approach enhances both teaching effectiveness and student learning outcomes, making it a vital component of Macau's educational reforms.

6.3 Implementation of Formative assessments

To enhance the implementation of formative assessments in Macau's General Studies curriculum, several types can be introduced for a more in-depth exploration of student learning. Here are some key types:

1. Quizzes and Polls

- Purpose: Short quizzes can be administered at the end of lessons to gauge understanding of key concepts.
- Benefits: They provide immediate feedback to both teachers and students, helping identify areas that need reinforcement.

2. Peer Assessments

- Purpose: Students evaluate each other's work based on specific criteria.
- Benefits: This encourages collaboration and critical thinking, as students learn to articulate their understanding and provide constructive feedback.

3. Reflective Journals

- Purpose: Students maintain journals where they reflect on their learning experiences, challenges, and insights.
- Benefits: This promotes self-assessment and metacognition, allowing students to track their progress and articulate their learning journey.

4. Project-Based Assessments

- Purpose: Assigning projects that require research, creativity, and application of knowledge.
- Benefits: Projects allow for a deeper exploration of topics and can be assessed at various stages (planning, implementation, and presentation) to provide ongoing feedback.

5. Exit Tickets

- Purpose: At the end of a lesson, students write down one or two things they learned and any questions they still have.
- Benefits: This quick assessment gives teachers insight into student comprehension and areas that may require further instruction.

6. Observation Checklists

- Purpose: Teachers use checklists to observe specific student behaviours or skills during activities.
- Benefits: This method allows for targeted feedback on student participation and application of skills within group work or projects.

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Chapter 7
Formative Assessment Guidelines and Examples

7.1 Quizzes and polls

Preparing effective quizzes and polls involves following specific guidelines to ensure they are beneficial for student learning and assessment. Here are some key guidelines:

1. Define clear objectives

- Guideline: Clearly outline what you want to assess. Each quiz or poll question should align with specific learning objectives or outcomes.
- Example: If the objective is to assess understanding of a historical event, questions should focus on key facts, causes, and impacts related to that event.

2. Use varied question types

- Guideline: Incorporate different types of questions (e.g., multiple-choice, true/false, short answer) to assess different levels of understanding.
- Example: Use multiple-choice questions for recall and short answer questions for deeper critical thinking.

3. Ensure Clarity and Precision

- Guideline: Write questions that are clear and unambiguous. Avoid complex language or jargon that may confuse students.
- Example: Instead of asking, "What factors contributed to the decline of the Qing Dynasty?" you might ask, "List two reasons for the decline of the Qing Dynasty."

4. Limit the Number of Questions

- Guideline: Keep quizzes short to maintain engagement and focus. Aim for 5-10 questions for quick assessments.
- Example: For a quick review, a 5-question quiz can effectively gauge understanding without overwhelming students

5. Provide immediate feedback

- Guideline: Design quizzes that allow for immediate feedback. This helps students understand their mistakes and learn from them.
- Example: Use online quiz platforms that provide instant grading and explanations for answers.

6. **Incorporate real-world applications**

- Guideline: Use scenarios that relate to real-world applications of the content. This helps students see the relevance of what they are learning.
- Example: In a science quiz, include questions that relate to environmental issues or current events.

7. **Use randomization**

- Guideline: If using online quizzes, randomize questions and answer choices to minimize the chance of cheating and to provide a unique experience for each student.
- Example: Many online platforms allow you to shuffle questions automatically.

8. **Review and revise**

- Guideline: After administering quizzes, review their effectiveness. Gather feedback from students and revise questions or formats as needed for future assessments.
- Example: If several students struggled with a particular question, consider rephrasing or providing more context in future quizzes.

9. **Encourage participation**

- Guideline: Ensure quizzes are seen as a learning tool rather than just an assessment. Encourage a positive attitude toward participation.
- Example: Explain the purpose of quizzes as a means to enhance understanding, not just to assign grades.

10. **Plan for accessibility**

- Guideline: Make sure quizzes are accessible to all students, including those with disabilities. Provide accommodations as necessary.
- Example: Offer alternative formats for questions (e.g., audio for visually impaired students) or additional time for those who need it.

By following these guidelines, teachers can create effective quizzes and polls that enhance student learning and provide valuable insights into their understanding of the material.

7.2 Peer assessments

Preparing effective peer assessments involves careful planning and clear guidelines to ensure that the process is constructive and beneficial for all students. Here are some key guidelines:

1. Establish clear objectives

- Guideline: Clearly define the goals of the peer assessment. Ensure that students understand what they are assessing and why it matters.
- Example: Specify whether the focus is on content quality, presentation skills, or collaboration.

2. Provide detailed rubrics

- Guideline: Create a clear, detailed rubric that outlines the criteria for evaluation. This helps standardize assessments and provides students with a framework for feedback.
- Example: Include categories such as clarity, organization, creativity, and adherence to guidelines, with specific descriptors for each level of performance.

3. Train students on assessment criteria

- Guideline: Before conducting the assessment, provide training on how to use the rubric and give constructive feedback.
- Example: Engage students in practice assessments, discussing examples of high-quality and low-quality work.

Peer Assessment Rubric Example

Criteria	**1 - Poor**	**2 - Fair**	**3 - Good**	**4 - Excellent**
Clarity	The work is unclear and difficult to understand.	The work is somewhat clear, but key points are vague or confusing.	The work is mostly clear, with minor ambiguities.	The work is very clear, with all points easily understood.
Organisation	The work is poorly organized, making it hard to follow.	The work has some organization, but ideas are scattered.	The work is mostly organized, with clear sections and flow.	The work is very well organized, with a logical and coherent structure.
Creativity	The work lacks creativity and originality.	The work shows some creativity, but it is limited or common.	The work demonstrates good creativity and original ideas.	The work is highly creative and presents unique insights or approaches.
Adherence	The work does not meet the assignment guidelines.	The work partially meets the guidelines, but key elements are missing.	The work mostly adheres to the guidelines with minor deviations.	The work fully adheres to all assignment guidelines.

4. **Foster a positive environment**

- Guideline: Create a culture of trust and respect where students feel safe to give and receive feedback. Emphasize the importance of constructive criticism.
- Example: Encourage students to frame their feedback positively, focusing on strengths and areas for improvement.

5. **Reflect on the process**

- Guideline: After the peer assessment, engage students in a reflection session to discuss what they learned from the experience and how they can apply it in the future.
- Example: Facilitate a class discussion on the effectiveness of peer feedback and areas for improvement in future assessments.

6. **Monitor and support**

- Guideline: Actively monitor the peer assessment process, providing support and guidance as needed. Be available to address any concerns or questions.
- Example: Check in with groups during the assessment period to ensure they are on track and understand the process.

By following these guidelines, teachers can create a structured peer assessment process that enhances learning, fosters collaboration, and develops critical thinking skills among students.

7.3 Reflective journals

When preparing reflective journals, it is essential to establish a clear framework to guide students in their reflections. Start by defining the purpose of the journals, emphasizing the importance of personal insights and critical thinking about their learning experiences. Encourage students to write regularly, suggesting a specific frequency (e.g., weekly entries) to promote consistency. Provide prompts or guiding questions to help them focus their reflections, such as "What did I learn this week?" or "How can I apply this knowledge in the future?" Emphasize that honesty and depth of thought are more valuable than simply summarizing content. Additionally, remind students to consider both successes and challenges, fostering a balanced perspective. Finally, establish a system for feedback, where students can receive constructive comments on their reflections to guide their ongoing learning.

An example here on how the assessment criteria for reflective journals can be tailored using the example of observing the growth of the Macau lotus flower, which symbolizes resilience and beauty in adversity.

Rubric Example on Reflective Journals: Observation of Macau Lotus Flower

Criteria	**1 - Poor**	**2 - Fair**	**3 - Good**	**4 - Excellent**
Depth of Reflection	Lacks meaningful insights about the lotus flower; superficial observations about its environment.	Some reflection on the lotus flower, but insights are shallow or lack critical thought.	Good level of reflection, demonstrating understanding of the lotus flower's symbolism and its relation to resilience.	Highly insightful reflections that show deep understanding of the lotus flower's growth, symbolism, and its connection to the people of Macau.
Connection to Learning	Fails to connect reflections to the characteristics of the lotus flower or the culture of Macau.	Makes minimal connections to the growth of the lotus flower and its significance to the people of Macau.	Good connections to the lotus flower's symbolism of beauty in adversity and its relevance to Macao's culture.	Excellent connections illustrating how the lotus flower's growth in sludge parallels the resilience of Macao's people, with relevant personal insights.
Consistency	Rarely writes; entries about the lotus flower are sporadic or missing.	Inconsistent writing; entries on the lotus flower are infrequent or lacking detail.	Writes regularly but may miss some important observations about the lotus flower.	Writes consistently and regularly, documenting observations and reflections on the lotus flower throughout the growing season.
Organization and Clarity	Unorganized entries that do not clearly convey observations of the lotus flower.	Some organization, but entries may be unclear or difficult to follow regarding the flower's growth.	Mostly organized and clear, with a logical flow that describes observations of the lotus flower.	Well-organized, clear, and coherent entries that effectively convey insights about the lotus flower and its significance.

7.4 Project-based assessments

Here are some guidelines for preparing successful project-based assessments specifically within the context of a General Studies topic, such as exploring cultural diversity, environmental issues, or historical events.

1. Define clear learning objectives

- Guideline: Establish specific learning outcomes related to cultural understanding, environmental awareness, or historical analysis. Ensure these align with broader curriculum goals.
- Example: Objectives could include analysing the impact of cultural diversity on society or evaluating solutions to local environmental challenges.

2. Choose relevant and engaging topics

- Guideline: Select topics that resonate with students' interests and current global or local issues, encouraging them to explore real-world implications.
- Example: Topics could include "The Influence of Immigration on Local Culture" or "Sustainable Practices in Our Community."

3. Provide structured guidelines and expectations

- Guideline: Clearly outline the project requirements, including expected deliverables, formats (e.g., presentations, reports), deadlines, and assessment criteria.
- Example: Include a rubric that specifies criteria such as research depth, creativity, and collaboration.

4. Encourage collaboration and teamwork

- Guideline: Design projects that require students to work in groups, fostering teamwork and communication skills. Assign roles to ensure equal participation.
- Example: Groups could research different cultural influences within the community and present their findings collectively.

5. Incorporate research and inquiry

- Guideline: Encourage students to conduct thorough research on their chosen topics, utilizing a variety of primary and secondary sources, including interviews and local resources.
- Example: Provide guidance on how to access local cultural institutions, libraries, and online databases.

6. Foster creativity and critical thinking

- Guideline: Allow flexibility in how students approach their projects, encouraging creative presentations and critical analysis of their findings.
- Example: Students could create a multimedia presentation, a documentary, or an interactive

exhibit that explores their topic.

7. Implement milestones and checkpoints

- Guideline: Break the project into smaller milestones with deadlines to help students manage their time effectively and track their progress.
- Example: Schedule check-in meetings to discuss research findings, project development, and any challenges faced.

8. Assess holistically

- Guideline: Use a comprehensive rubric that evaluates various aspects of the project, including content knowledge, creativity, collaboration, and presentation effectiveness.
- Example: Include peer assessments where students evaluate each other's contributions, fostering accountability and teamwork.

By following these guidelines, teachers can create impactful project-based assessments in General Studies that promote critical thinking, collaboration, and a deeper understanding of cultural and environmental issues.

Project-Based Assessment Rubric on Holistic Assessing

Criteria	**1 - Poor**	**2 - Fair**	**3 - Good**	**4 - Excellent**
Content Knowledge	Limited understanding of the topic; many inaccuracies.	Basic understanding; some key concepts are missing or inaccurate.	Good understanding; most key concepts are covered accurately.	Thorough understanding; all key concepts are clear and accurately conveyed.
Creativity	Lacks originality; minimal effort in presentation.	Some creative elements, but overall presentation is basic.	Good creativity; presentation includes original ideas, engaging elements.	Highly creative; presentation is innovative and captivates the audience.
Collaboration	Little to no teamwork; group members rarely contribute.	Some collaboration; uneven participation among group members.	Good collaboration; most group members contribute effectively.	Excellent collaboration; all members actively participate and support each other.
Presentation Effectiveness	Presentation is unclear and difficult to follow; poor engagement with the audience.	Some clarity; engages the audience occasionally but lacks flow.	Mostly clear and organized; engages the audience well.	Exceptionally clear and organized; fully engages and captivates the audience.

7.5 Exit tickets

Here are tailored guidelines for preparing exit tickets specifically for primary students in a General Studies context, along with child-friendly questions:

1. Define clear learning objectives

- Guideline: Simplify the key concepts of the lesson to ensure they are understandable for young learners.
- Example: If the lesson is about different cultures, clarify that students should think about what makes each culture special.

2. Keep it simple

- Guideline: Use straightforward language and prompts that are easy for primary students to understand and respond to.
- Example: Limit prompts to one or two questions that require short answers.

3. Encourage specificity

- Guideline: Guide students to provide specific details in their responses, promoting deeper thinking.
- Example: Ask them to name one thing they learned about a culture or a historical figure.

4. Use varied formats

- Guideline: Incorporate different formats for exit tickets that engage young learners, such as drawing or using stickers.
- Example: Allow students to draw a picture of something they learned or use smiley faces to show how they felt about the lesson.

5. Allocate time for completion

- Guideline: Give students enough time to complete their exit tickets without feeling rushed.
- Example: Allow 5 minutes at the end of the lesson for reflection and writing or drawing.

6. Create a routine

- Guideline: Establish a consistent routine for submitting exit tickets, making it a fun part of the lesson closure.
- Example: Have a "ticket box" where students can drop their exit tickets as they leave.

7. Review and analyse responses

- Guideline: Regularly check exit tickets to understand student learning and address any common questions or misunderstandings.
- Example: Use their responses to inform future lessons or activities.

8. Provide feedback

- Guideline: Offer simple feedback on exit tickets, celebrating their insights and addressing any confusion.
- Example: Acknowledge their drawings or ideas in the next lesson, reinforcing their contributions.

Sample Exit Ticket Questions for Primary Students

Learning reflection	• *"What is one new thing you learned today about animals in different countries?"* • *"Can you tell me one fun fact about the way people celebrate holidays in another culture?"* • *"What is something interesting you learned about a famous historical figure?"* • *"What was one new word you learned today, and what does it mean?"*
Personal connection	• *"How does 'what you learned about different countries' help you understand your friends better?"* • *"What would you like to tell your family about how people live in another part of the world?"* • *"Can you think of a time when you experienced something similar to what we learned today?"* • *"How can you use what you learned about teamwork in your own activities?"*
Questions and curiosity	• *"What question do you still have about the environment or how we can protect it?"* • *"Is there something you want to learn more about regarding animals or their habitats?"* • *"What is one thing you would like to explore further about the history of your community?"* • *"Do you have a question about a culture we discussed today that you want to know more about?"*
Feelings about learning	• *"How do you feel about what you learned today? (Excited, surprised, interested, etc.)"* • *"Draw a picture that shows how you felt about learning new things today."* • *"What was your favourite part of today's lesson, and how did it make you feel?"* • *"If you could share one feeling about today's lesson, what would it be and why?"*

By following these guidelines and using these questions, teachers can effectively implement exit tickets that are engaging and appropriate for primary students in a General Studies context.

7.6 Observation checklist

Here are guidelines for creating and using observation checklists, along with a sample rubric for assessing student behaviours and skills during activities.

1. Define specific objectives

- Guideline: Clearly outline the behaviours or skills you want to observe, aligning them with learning objectives.
- Example: Focus on collaboration, communication, and critical thinking skills during group projects.

2. Keep it clear and concise

- Guideline: Use straightforward language and avoid jargon to ensure the checklist is easy to understand and use.
- Example: Use bullet points or short phrases for behaviours (e.g., "listens to others", "shares ideas").

3. Include measurable indicators

- Guideline: Ensure that the behaviours or skills listed can be easily observed and measured.
- Example: Use a scale (e.g., always, sometimes, never) to rate each behaviour.

4. Focus on key skills and behaviours

- Guideline: Prioritize the most important skills or behaviours relevant to the activity or lesson.
- Example: Include skills like teamwork, problem-solving, and respect for others' opinions.

5. Plan for regular use

- Guideline: Schedule regular observations to monitor progress over time and provide ongoing feedback.
- Example: Use the checklist during different activities throughout the term to track development.

6. Provide space for comments

- Guideline: Leave room for additional comments or notes to capture specific observations or examples.
- Example: Include a section for notes on strengths or areas for improvement related to each behaviour.

Using these guidelines and the sample checklist, teachers can effectively observe and assess student behaviours during activities, enabling targeted feedback and support for skill development.

Sample Observation Checklist

Behaviour/Skill	Always (3)	Sometimes (2)	Never (1)	Comments*
Listens to others				
Shares ideas and opinions				
Collaborates with team members				
Completes assigned tasks				
Shows respect for differing views				
Contributes to group discussions				
Demonstrates problem-solving skills				

*Comments: Provide feedback on strengths, areas for improvement, and strategies for enhancing collaboration and participation.

Total Score:

- 15-18: Excellent collaboration and participation
- 10-14: Good participation with room for improvement
- 6-9: Fair participation; needs encouragement
- 5 or below: Limited participation; significant support needed

Sample Observation Checklist for a 40-Minute Class

Behaviour/Skill	Introduction (0-10 min)	Group work (10-30 min)	Conclusion (30-40 min	Comments
Listens attentively to instructions				
Engages with peers				
Contributes ideas				
Follows group roles				
Respects others' opinions				
Demonstrates problem-solving skills				
Summarizes key points				

*Comments: Provide specific feedback on strengths, areas for improvement, and suggestions for enhancing engage-

ment during future.

Scoring System

- 3 - Always: Consistently demonstrates behaviour
- 2 - Sometimes: Occasionally demonstrates behaviour
- 1 - Never: Does not demonstrate behaviour

Total Score:

- 18-21: Excellent participation and engagement
- 12-17: Good participation with some areas for improvement
- 6-11: Fair participation; needs encouragement
- 5 or below: Limited participation; significant support needed

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Appendix i Sample rubrics for formative assessment

1. Creativity	
Component	**Measurement**
Think out of the box 5 = The idea is original, spontaneous and outstanding. 4 = The idea is original and spontaneous. 3 = The idea is generated with a little bit of suggestion. 2 = The idea is mostly generated by the teacher. 1 = Unable to generate any ideas at all.	__ / 5
Usefulness of creativity 5 = The original idea is a effective solution to the current problem 4 = The original idea is a somewhat useful to the current problem 3 = The original idea is related to the current problem but offer no solution 2 = The idea needs to be guided towards the problem with help 1 = The idea is not related to the problem at all	__ / 5
Total ___ / 10	

2. Collaboration	
Component	**Measurement**
Leadership / Team Spirit 5 = Demonstrated outstanding leadership. 4 = Able to lead or follow one's role independently. 3 = Able to show initiative to lead or follow one's role with help. 2 = Struggles to lead or follow one's role even with help. 1 = Unable to perform one's duty at all.	__ / 5
Conflict resolution 5 = Able to solve conflict peacefully and independently. 4 = Able to solve conflict peacefully with help. 3 = Able to solve conflicts with help but need more practice. 2 = Struggles solve conflicts even with help. 1 = Unable to resolve conflict in a civilised manner.	__ / 5
Total ___ / 10	

3. Critical Thinking	
Component	**Measurement**
Problem solving 5 = Able to identify and understand the main problem independently. 4 = Able to identify and understand the main problem with help. 3 = Able to identify the main problem with constant supervision. 2 = Struggles to identify the main problem with constant supervision. 1 = Unable to identify the main problem at all.	__ / 5
Use of resources 5 = Able to utilise the provided resources independently. 4 = Able to utilise the provided resources with help. 3 = Able to use the provided resources with constant supervision. 2 = Struggles to use the resources with constant supervision. 1 = Unable to use the provided resources at all.	__ / 5
Total ___ / 10	

4. Communication skill	
Component	**Measurement**
Expressive communication 5 = Able to share opinions independently and politely. 4 = Able to share opinions independently. 3 = Able to share opinions with help. 2 = Struggles to share opinions even with help. 1 = Unable to share any thoughts.	__ / 5
Receptive communication 5 = Able to listen without interruption and offer constructive feedback 4 = Able to listen without interruption 3 = Able to listen without interruption with the help of the teacher 2 = Willing to listen without interruption only under supervision 1 = Unable to listen without interruption even under supervision	__ / 5
Total ___ / 10	

A 10-point scale to convert the measurement to grades.

A+	A	A-	B+	B	B-	C+	C	C-	D
10	9	8	7	6	5	4	3	2	1

Appendix ii Supplementary notes - Temples and Churches

General Studies Supplementary Notes

Temples and Churches

Think about

1. Sketch two simple diagrams on temple and church.

Temple	Church

2. Do you know some common temples and churches in Macau? Where are they located? Fill in the table below.

Name of the temples and churches in Macau. (You may paste pictures of the respective temples or churches.)	**Where are they located?** (The Macau Peninsula, Taipa Island, Coloane Island or Cotai)

A. The three major ancient Chinese temples of Macau

1. A-Ma Temple

- A-Ma Temple, also known as Ma Kok Miu, was first built in 1488 and is one of the three major ancient Chinese temples in Macau.
- It is dedicated to the goddess A-Ma, also known as Tianhou, the protector of seafarers and fishermen. The temple is considered the birthplace of Macau.
- Visitors can observe traditional Taoist rituals and ceremonies, such as the offering of incense and prayers, as well as the burning of joss paper money.

2. Lin Fong Temple

- Lin Fong Temple, believed to have been built around 1573, is one of the three major ancient

Chinese temples in Macau. In 1839, Lin Zexu, a high-ranking official of the Qing Dynasty, held a meeting with Portuguese officials inside the Lin Fong Temple.

- Inside the temple, visitors can see the main altar dedicated to Wenchang, as well as numerous other altars and shrines to various Taoist deities.
- The temple is a popular site for students and scholars, who come to pray for academic achievements and career advancement.

3. Kun Iam Tong

- Kun Iam Tong is one of the three major ancient Chinese temples in Macau. On 3 July, 1844, the Qing government and the United States signed the Treaty of Wangxia in Kun Iam Tong.
- Visitors can participate in Buddhist ceremonies, such as the chanting of sutras, or simply meditate and appreciate the serene atmosphere of the temple.
- Kun Iam Tong is a testament to the strong Buddhist tradition that has been an integral part of Macau's cultural heritage.

Which temples above you like the most? Share your ideas below.

I like _____. It is because _____

_____

_____

Note: *A-Ma Temple*, *Lin Fong Temple*, and *Kun Iam Tong* are the three major ancient Chinese temples in Macau.

B. The three oldest churches of Macau

1. St. Lawrence's Church

- St. Lawrence's Church, also known as Feng Shun Tong as the church was situated at the coast at that time, it attracted a large number of the Portuguese community and they would gather along its long staircase awaiting family members that were fishermen. The Chinese name Feng Shun Tong carries the meaning of "church of the favourable winds", symbolising peaceful return of the fishermen.
- It is located in the Macau Peninsula and was built between 1558 and 1600.
- It has a beautiful façade with two tall belfries (bell towers).
- Inside, there are many amazing carvings, paintings, and altars.
- It is an important part of Macau's Catholic history.

2. St. Anthony's Church

- St. Anthony's Church, also known as Fa Vong Tong or "Church of Flowers", was built between 1558 and 1560.
- The church has a unique Baroque-style design with intricate stone carvings.
- Inside, you can see beautiful altars, stained glass windows, and religious art.
- This church was very important for the Portuguese community in Macau.

3. St. Lazarus' Church

- St. Lazarus' Church is one of the oldest churches in Macau. It was built between 1557 and 1560.
- The church identifies the fusion of Chinese and Portuguese architectural structures.
- It has a tall bell tower and is decorated with carvings, altars, and paintings.
- This church served both the Portuguese and local Chinese people in Macau.

Which church above you like the most? Share your ideas below.

I like _____. It is because _____

_____

_____

Note: *St. Lawrence's Church*, *St. Anthony's Church*, and *St. Lazarus' Church* are the three oldest churches in Macau.

C. The Ruins of St. Paul's

The Ruins of St. Paul's is the front façade of the Church of Mater Dei and the Ruins of St. Paul's College. Unfortunately, in 1835, a big fire destroyed both, leaving only the front façade, some foundations, and the stone steps of the church.

Summary

- Macau is a multicultural city. It is known for its Chinese and Western designs on buildings.
- The A-Ma Temple, Lin Fong Temple, and Kun Iam Tong are the three major Chinese ancient temples in Macau. St. Lawrence's Church, St. Anthony's Church, and St. Lazarus' Church are three oldest churches in Macau. The A-Ma Temple and the Ruins of St. Paul's are famous landmarks of Macau.
- Some churches and temples in Macau are unique. Their design has high artistic values. It is important for us to protect them.

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Appendix iii Supplementary notes - Introduction of Civilization

General Studies Supplementary Notes

Introduction of Civilization

A. What are the features of the four great ancient civilisations? Choose the word/ words to complete the comparison table below.

Great Pyramid	Sumerians	Cuneiform	Sanskrit	Egypt
ancestors	Hieroglyphics	Gardens of Babylon	Huanghe	Oracle bone
Tigris	Ancient	pharaoh	Shang	Great Sphinx

	Mesopotamia	**Ancient Egypt**	**Ancient India**	**Ancient China**[3]
When civilization started and ended	Around 4000 BC - 539 BC	Around 3500 BC - 305 BC	Around 2600 BC - 1500 BC	Around 2070 BC - 256 BC
Origin of civilization	The land between the Euphrates and the (a); in present-day Iraq.	The lower Nile region; in present day (b).	Middle and lower regions of the Indus River; in present-day Pakistan.	Middle and lower regions of the (c), in present-day China's Shanxi and Henan provinces.
Who represented the civilization	(d)	The (e) Egyptians	Dravidians	The (f) people
Writing(s)	(g)	(h)	(i)	(j) scripts
Religious beliefs	The Sumerians believed in many gods.	Believed in many gods and the (k) was regarded as a living god.	Worshipped many gods (like nature worship)	Believed in many gods, such as Tian Di and (l).
Important legacies	Writing, law, libraries, calendar, tools for counting time, transportation vehicles, famous building and the Hanging (m).	Writing, farming tools, transportation vehicles, tools for counting time and measurement, famous buildings including the (n) and (o).	Writing, games, transportation, sanitary system, religious beliefs and activities.	Writing, numerals, calendar, ancestral worship, bronze vessels.

B. River Valley Civilisations

The four centres of early civilisations were all located in river valleys. What would be the reasons why the early civilization began in river valleys?

3 Ancient China under the rule of Xia, Shang and Zhou dynasties.

Major ancient civilisations	Rivers
Ancient Egypt	River Nile
Mesopotamia	River Euphrates and River Tigris
Ancient India	River Indus
China	The Yellow River (Huanghe)

Note: In primitive societies where production technology was limited, most people would live near sources of water. A reliable source of water made it possible for early people to develop agriculture and commerce. This is why ancient civilisations first emerged in valleys of large rivers.

C. Landmarks of the four great ancient civilisations

Guess the landmarks of the great ancient civilisations. Choose the landmarks and put them in the space provided below.

The Hanging Gardens of Babylon	The Ancient Indian Cities	The Egyptian Pyramids and the Sphinx	The Great Wall of China

Mesopotamia	Ancient Egypt
This was one of the Seven Wonders of the Ancient World. King Nebuchadnezzar II built these on roof-tops. They looked like gardens floating in the air.	These buildings are the symbol of Egyptian civilization. It was built with large blocks of stone. Next to it according to the legend, its face is modelled on one of the pharaohs in ancient Egypt.
Ans:	Ans:
Ancient India	**China**
Historians believe that towns in the Indus Valley were very well planned. Each of them had grain stores, public baths and drains.	This was built to keep out the barbarians from the north.
Ans:	Ans:

Note: China is the only one of the four ancient civilisations that has survived to this day, due to unique historical reasons. Mesopotamia, Ancient Egypt, Ancient India and China are collectively known as the four ancient civilisations. They correspond to the four cradles of civilization, namely the Tigris-Euphrates Valley, the Nile Valley, the Indus Valley, and the Huanghe (Yellow River) Valley, respectively. These ancient civilisations are the foundations of our modern human civilization. They have contributed to our knowledge in areas ranging from philosophy, science, astronomy,

mathematics, and art.

D. Mysterious ancient writings

Research and draw samples of the following ancient writings in the boxes below.

Cuneiform writing of Mesopotamia	Hieroglyphs of the Nile Valley Civilization
Sanskrit writing of the Indus Valley Civilization	Oracle Bone writing of the Huanghe Valley Civilization

Note: The emergence of early civilisations is marked by the invention of writing. The Sumerian people of Mesopotamia developed cuneiform writing, the ancient Egyptians developed hieroglyphs, the ancient Indians invented Sanskrit, and the ancient Chinese invented oracle bone writing. The numerical symbols that were developed by ancient Indians with a decimal counting base were brought to Europe by the Arab people, and they came to be known as the Arabic numerals.

E. Ancient Greek Civilization and Ancient Roman Civilization

Name the important contributions of the Greek Civilization and Ancient Roman Civilization by choosing the correct word/ words in the box.

The Ruins of the Colosseum in Rome	The Twelve Tables	The Ancient Greek Philosopher Aristotle	Acropolis of Athens

Ancient temples located on a flat-topped rock that towers above the city of Athens, Greece.	This is the iconic Roman structure located in the heart of Rome, Italy. It was constructed in the 1st century AD and could hold an estimated 50,000 to 80,000 spectators.
Ans:	Ans:
He was a renowned ancient Greek philosopher. He once said, “I love my teacher, but my love for truth is greater”.	This was the first written legislation (laws) in ancient Rome.
Ans:	Ans:

	Ancient Greeks	**Ancient Romans**
Art	The Greeks wanted perfection in their depiction of people. Their statues were made based on perfect people.	The Romans wanted real life people. Their statues contained all the flaws of real people.
Expansion	The Greeks colonised. They established some colonies on the coastline around the Mediterranean Sea.	The Romans conquered and ruled all over the Mediterranean.

	Ancient Greeks	**Ancient Romans**
Connection	The Greeks built roads to connect two specific cities.	The Romans built roads that connected their empire to Rome.
Government	The Greek civilization was a collection of city-states, and were not united under one central government until they were conquered by Alexander the Great.	The Romans created an empire that lasted 500 years.
Language	The Greeks spoke Greek.	The Romans spoke Latin.
Women	In Ancient Greece women had no rights. They were property.	During the Republic era, women were not treated as properties, but they had no rights. During the Empire, women had quite a few rights, but were still not considered as citizens.
Religion	Had gods and goddesses	Had gods and goddesses, but emphasised on state worship.

Note: Ancient Greek Civilization and Ancient Roman Civilization are the cradle of Western Civilization.

Summary

- Mesopotamia, Ancient Egypt, Ancient India, and China are the four ancient civilisations that originate human civilization today. These ancient civilisations have laid the foundations for modern philosophy, science, astronomy, mathematics, art and other fields.
- Mesopotamia, which developed in the Tigris-Euphrates Valley, is known for the invention of the world's first form of writing known as cuneiform writing. Ancient Egypt, which developed in the Nile Valley, is well-known for constructing pyramids and developing techniques for making mummies.
- In ancient India, which developed in the Indus Valley, a numeral system was invented. The numeral system was later spread to Europe by the Arab people and is now known as the Arabic Numerals.
- China, one of the four ancient civilisations, is responsible for some of the greatest inventions in history. The four great inventions of ancient China, namely paper-making, the compass, gun-powder, and printing have spread to the West and are significant contribution to world civilization.
- Ancient Greek Civilization and Ancient Roman Civilization are the cradle of Western Civilization.

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Appendix iv Supplementary notes - The World's Major Religions

General Studies Supplementary Notes

The World's Major Religions

A. Guess some of the world's religions using the following description cards. Do you know their names?

In 6th century BC, it began in India and was founded by an individual known as Siddhartha Gautama.

It originated in the Arabian Peninsula in the 7th century AD with the teachings of the prophet Muhammad.

It originated in China in the 4th century BC with the writings of the founder Laozi.

It originated in Palestine in the 1st century AD and was founded by Galilean Jew Jesus of Nazareth.

B. Research and complete the following comparison table about the major religions in the world.

	Buddhism	Islam	Taoism	Christianity
Practices or rituals				
Name of believers				
House of worship				
Sacred book				
Religious symbol				

Note:

- Buddhism was introduced to China over two thousand years ago and has greatly absorbed thoughts from Taoism and Confucianism. The religion has integrated Chinese culture in its evolution and has had a significant influence on the development of society.
- Christianity originated in the region of Palestine in the 1st century AD and spread globally from Antioch in Syria (St. Paul). It is a collective term for various denominations that believe in Jesus Christ as the (true) Jewish Messiah and Lord. The three main branches of Christianity are Roman Catholicism, Eastern Orthodoxy, and Protestantism, which are united in "one Lord, one faith, and one baptism" (Ephesians 4:5), and differ in beliefs, liturgy, and discipline. All Christians (catholic, orthodox, or protestant) believe in the existence of only one God, with Jesus Christ as His Son, and the Holy Spirit as the Third Divine Person, thus in the Holy Trinity: One God in Three Persons (Father, Son, Holy Spirit). Christians closely comply with the Ten Commandments of the Jewish Scripture (Old Testament) and the teachings of Jesus of Nazareth (New Testament), who founded the Church, and instituted the apostles (today bishops) and sacraments. The Christian religion has been present in Macau in its catholic form for over 450 years, and in its protestant form for over 200 years, and has actively participated in community work, including education, healthcare, elderly care, and poverty alleviation. The religion has had a profound impact on the history and social development of Macau.

- Islam originated in the Arabian Peninsula and was founded by Muhammad in the 7th century AD. Its followers, called Muslims, believe that there is only one God, Allah. They follow the teachings of their holy book, the Qur'an.
- Taoism is a religion and philosophy that originated in China around two thousand years ago. It emphasizes living in harmony with the way of ultimate reality (Tao) and all beings and practicing kindness. Followers of Taoism are taught to do good, respect the elderly, care for the young, follow moral conventions, improve themselves, cherish life, and love nature. Taoism has had a significant impact on Chinese culture and tradition, influencing people's way of thinking, cultural life, behaviour, and habits.

Can you name some other religions in the world? Search online and write something about them.

Hinduism	Sikhism	Judaism

Summary

- Religions are systems of beliefs and moral standards that have originated from different ethnic groups and regions. Christianity, Islam, and Buddhism are the three major religions in the world.
- Christianity was founded by Jesus, who lived in the Roman province of Judea, which was renamed Palestine well after His death, likely in 139 AD. The holy book of Christianity, the Bible, is the most published and globally distributed book which has been translated into numerous languages.
- Islam, originated in Mecca in 610 AD, follows the teaching of Muhammad, who proclaimed there was only one god, Allah. It is believed the holy book, Qur'an, was orally revealed by Allah to Muhammad, as the last prophet of divine revelation, which started with Abraham.
- Buddhism, which was founded by Siddhartha Gautama in ancient India, teaches its beliefs through Buddhist scriptures.

Reference

《小學常識(六年級上冊)》。澳門:教育及青年發展局、澳門科學技術協進會、澳門啓元出版社。

New General Studies Information Era Primary 6.6 Educational Publishing House Ltd

Appendix v Supplementary notes - Geographical location of Macau

General Studies Supplementary Notes

Geographical Location of Macau

Think about

1. What are the main parts of Macau?

Macau Peninsula	• This is the oldest, most crowded part of Macau. • It has famous sights like the Ruins of St. Paul's.
Taipa Island	• This is where lots of big hotels and casinos are. • It is connected to the Macau Peninsula.
Coloane Island	• This is the southern, quieter part of Macau. • It has nice beaches and parks.
Cotai	• This is a new area between Taipa and Coloane. • It has big resort hotels and entertainment.

2. The land area of Macau is 33.3 km2. Based on your experience living in Macau, please estimate the areas of the different parts of Macau.

Different parts of Macau	Area estimation
Macau Peninsula	_____ km2
Taipa Island	_____ km2
Coloane Island	_____ km2
Cotai	_____ km2

3. Is your estimation accurate? Visit the Cartography and Cadastre Bureau website and check your estimation.

https://www.dscc.gov.mo/zh-hant/home.html

(Select "Statistics" → "Land area")

A. The geographical features of Macau

1. Why do students often need to go up and down hills when passing through Macau?

The land in Macau is very uneven, with hills, valleys, and areas that were made by people. This means there are many steep slopes and changes in height all over the city. Because Macau was built on this hilly, uneven land, people walking around have to keep going up and down hills, stairs, and slopes. The hills and mountains are a big part of what makes Macau look the way it does. The city was built over a long time, fitting buildings and roads into the bumpy, hilly landscape.
So, when you walk around Macau, be ready to do a lot of climbing up and down the hills!

2. the geographical features of Macau. Visit the Cartography and Cadastre Bureau website and find out the highest hills in the Macau Peninsula, Taipa and Coloane.

https://www.dscc.gov.mo/zh-hant/home.html

The geographical features of Macau:

- Macau has numerous hills distributed across the region.
- The flat, low-lying parts are concentrated on the Macau Peninsula and Taipa Island.
- The overall topography slopes downwards from the southern to northern areas.

The highest hills in Macau Peninsula, Taipa and Coloane:

Guia Hill	Height: 91 meters This is the highest point on the Macau Peninsula.
Taipa Grande	Height: 172 meters This is the tallest hill on Taipa Island.
Alto de Coloane	Height: 170 meters (558 feet) This is the highest point in the Coloane Island.

3. What are the uses of the hills in Macau?

It is a place where citizens can engage in sports, recreation, and hiking.

4. What are the characteristics of Macau's coastline? Why?

The coastline is relatively straight. Because much of the coastal land is reclaimed

B. Parishes in Macau

1. In which parish are your home and school located?

Home: _____ School: _____

2. Seven Parishes

The Macau Special Administrative Region is divided into seven parishes. Each parish is named after a church in the area.

3. Visit https://macaostreets.iam.gov.mo/zh_mo/freguesiaindex.html to find some featured streets that are located in different parishes.

Parishes in Macau		
Macau	Cathedral	大堂區
	St. Lazarus	望德堂區
	St. Lawrence	風順堂區
	Our Lady of Fatima	花地瑪堂區
	St. Anthony	花王堂區
Taipa	Our Lady of Carmel	嘉模堂區
Coloane	St. Francis Xavier	聖方濟各堂區

Summary

- Macau has been a territory of China since ancient times. Macau, located at the southwest end of the Pearl River Delta, has land that is higher in the south and lower in the north.
- The Macau Special Administrative Region includes the Macau Peninsula, Taipa Island, and Coloane Island. Due to large-scale reclamation in recent years, Taipa Island and Coloane Island have been integrated into one, forming the Cotai City.
- The Macau Special Administrative Region is divided into seven parishes, each of which is named after the church in the area.

Reference

《小學常識(四年級上冊)》。澳門:教育及青年發展局、澳門科學技術協進會、澳門啓元出版社。

《澳門常識與生活(四上)》。香港:教育出版社有限公司。

Appendix vi Supplementary notes - Historical Heritages

General Studies Supplementary Notes

Historical Heritages

Think about

- Have you seen any World Heritage-related signs or symbols in Macau? Where in Macau can you see this sign? Try to draw the sign that you saw in the space provided below.

A. The process of applying for World Heritage

In 2001, the government of Macau started the process of getting the Historic Centre of Macau recognised as a World Heritage site. They did many things to show how important Macau's history is, like:

- Having special programs to teach people about Macau's cultural heritage
- Organising exhibitions about the old buildings in Macau
- Choosing "ambassadors" to help promote Macau's cultural heritage
- Getting young reporters to talk about Macau's history
- Running a competition to design fun tourist routes

These activities helped get the local community interested and proud of Macau's heritage. The "ambassadors" also helped spread the word about how special Macau history is, both in Macau and around the world.

After putting Macau's Historic Centre on UNESCO's list of tentative World Heritage sites, the Macau government worked closely with experts from ICOMOS to prepare the final application. ICOMOS then sent people to visit Macau to make sure the site was authentic, well-protected, and properly managed.

On July 15, 2005, the Historic Centre of Macau was officially recognised as a UNESCO World Heritage site. This was a big achievement for Macau and made people around the world appreciate how unique and important Macau's history is. Being a UNESCO World Heritage site also helps bringing more tourists to Macau and provides money to help preserving the old buildings.

B. The Historic Centre of Macau

1. Go to the website to learn more about the Historic Centre of Macau.
   https://www.macaotourism.gov.mo/en/sightseeing/macao-world-heritage
2. How many World Heritage buildings and squares are there?
3. How many names of buildings or squares can you list?
4. Can you introduce the World Heritage buildings in the Historic Centre of Macau?

The followings are some examples of the World Heritage buildings and squares in the Historic Centre of Macau. Paste photos or draw pictures to show the respective World Heritage buildings and squares.

Examples	Something about it	Pictures/ Photos
A-Ma Temple	Built in 1488, is one of the most famous and important buildings in the southwestern part of the Macau Peninsula. It is one of the oldest temples in Macau.	
Lilau Square	Located to the north of Penha Hill in Macau. In the early days of Macau, many Portuguese people lived there.	
The Leal Senado Building	Formerly known as the City Hall, is located in the Senado Square. It was built in 1784 and has undergone multiple renovations.	
The Guia Fortress	Also known as the Guia Fort, is an old fortress located on the highest point of Guia Hill in the Macau Peninsula.	
The Ruins of St. Paul's	Also known as the "Ruins of St. Paul's Cathedral," it is the remains of the façade of the Mater Dei Church of the Virgin Mary (St. Paul's Church) in Macau.	
Dom Pedro V Theatre	The first Western-style theatre in China. In 1860, the local Portuguese community raised funds to build it as a tribute to King Dom Pedro V of Portugal.	

C. Conservation and promotion of cultural heritage

1. How does the government work to conserve and promote cultural heritage?

The Macau government has taken several key steps to conserve and promote the cultural heritage of the Historic Centre of Macau.

Creating Laws and Regulations	• The Macau government has special rules and laws to protect the historic buildings, monuments, and other important parts of the Historic Centre. • These rules help make sure the old buildings are kept safe and not changed too much. • The government also gives special tax benefits or money to owners of historic buildings to help them take care of the buildings.
Promotion and Education	• The government organises fun activities and programs to teach people, especially kids, about Macau's history and culture. • They set up exhibitions to show people the beautiful old buildings and tell stories about them. • The government also chooses "ambassadors" who help spread the word about how special Macau's heritage is, both in Macau and other places.
Cultural Heritage Restoration	• The government regularly checks on the historic buildings and monuments to make sure they are well-maintained. • When a building needs repairs, the government hires experts to carefully fix it using the right materials and methods. • The government also trains people to become skilled at restoring old buildings, so they can keep Macau's heritage safe for a long time.

2. As a resident of Macau, how would you promote the historic centre of Macau?

3. Are the following behaviours correct when visiting the historic centre of Macau? Put a "√" in the bracket if it is correct and a "×" if it is incorrect. Discuss with your classmates what you should perform when visiting the Historic Centre of Macau.

	While touring the Ruins of St. Paul's, a 10-year-old repeatedly climbs on the stone stairs and facade, ignoring the tour guide's warnings about the fragility of the historic structure.
	Inside the Mandarin's House, a 12-year-old repeatedly touches the delicate wooden carvings and antique furniture, setting off alarms and leading to a stern reprimand from the museum staff.
	Inside the Mandarin's House, a 7-year-old walks slowly and carefully, admiring the intricate woodwork and ancient furnishings without touching any of the delicate artifacts.
	At the A-Ma Temple, a 9-year-old observes the worshippers quietly, taking care not to disturb the sacred rituals, and listens attentively as the tour guide explains the cultural significance of the temple.
	At the Senado Square, a 7-year-old runs through the intricate cobblestone patterns, nearly colliding with other tourists admiring the historic architecture and streetscape.

Summary

- On 15 July, 2005, the Historic Centre of Macau was enlisted in the "UNESCO World Heritage List". It attracts tourists, supports the local tourism industry, and raises awareness among residents about Macau's cultural heritage.
- The Historic Centre of Macau is a collection of 22 buildings, 8 squares and connecting streets that reflects over 400 years of Macau's history and the blending of Eastern and Western cultures. It includes diverse structures like Chinese temples, Western churches, and residential buildings.
- The government has implemented conservation and promotion policies to preserve and protect this valuable heritage. When visiting the Historic Centre of Macau, it is important to appreciate its beauty and ensure the preservation of its cultural treasures for future generations.

Reference

《小學常識(四年級上冊)》澳門:教育及青年發展局、澳門科學技術協進會、澳門啓元出版社

《澳門常識與生活(四下)》香港:教育出版社有限公司

Appendix vii Supplementary notes - Introduction to International Cultural Events

General Studies Supplementary Notes

Introduction to International Cultural Events

Think about

1. What are some international cultural events that have been held in Macau? Try to name them below.

International cultural events in Macau that I know
• _____
• _____
• _____
• _____
• _____

2. Have you ever attended an international cultural event held in Macau?

3. What comes to your mind when you encounter this topic, international cultural event?

We can first dissect this topic into what each individual word means.

- International, is an adjective that defines as “relating to more than one country”.
- Cultural, should be a word that most of you are familiar with by now. Since it encircles you every day. Culture, is everything that relates to a particular society and its ideas, customs, and art.
- Events, are anything that happens, especially something important or unusual.

In combination, ICE or International Cultural Events refer to a significant happening or occurrence that has a profound impact on the culture and society of countries worldwide.

Provided below are some examples. Find pictures about the events and paste in the boxes below.

A. Macau Grand Prix

The Macau Grand Prix, which started in 1954, is an important international event held in Macau. It takes place annually in November.

Capture the Moment!

B. Macau International Firework Display Contest

The Macau International Fireworks Display Contest takes place annually between September and October. It attracts teams from around the world to participate in the event and showcase their beautiful fireworks performances.

Capture the Moment!

C. Lusofonia Festival and Arts and Cultural Festival between China and the Portuguese-speaking Countries

Macau hosts the Lusofonia Festival and Arts and Cultural Festival between China and the Portuguese-speaking Countries annually in October.

Capture the Moment!

Task 1

Aside from the three international cultural events given above, complete the table below by listing some international cultural events held in Macau and the month of celebration.

International Cultural Events	Month of Celebration

Task 2

A point of reflection - Write three to four sentences about your experience and the importance of attending one of the international cultural events held in Macau.

_____

_____

_____

_____

Summary

- Macau is a multicultural city which hosts various kinds of international cultural events annually. Participating in these international cultural events offers every resident and tourist enjoyable moment and unique experience.
- When we participate in different events, we should follow the government regulations and pay attention to safety.

Reference

《小學常識(二年級下冊)》。澳門:教育及青年發展局、澳門科學技術協進會、澳門啓元出版社。

Appendix viii Supplementary notes - Eastern and Western Cultures

General Studies Supplementary Notes

Eastern and Western Cultures

Think about

1. Name one Eastern country and one Western country.

_____

2. Draw, colour and label two countries that are represented by the specific costume.

Name of the country	
Costume	

3. How does culture play a significant role in shaping the society?

_____

_____

_____

_____

Note: We live in a world where the way people live, think, eat, act, do are influenced by one's own culture. Culture is the driving force that shapes our society and our individual selves. A person devoid of "culture" will find it difficult to find membership or a sense of belonging in this world.

Task 1

The table below shows the examples of the fusion between the Eastern and Western cultures in Macau.

Examples of Fusion of Eastern and Western cultures in Macau	
Architecture	Pastel-coloured buildings, churches, and cobblestone streets
Cuisine	Combination of Chinese ingredients and cooking techniques with Portuguese flavours and influences.
Festivals and celebrations	Events such as Chinese New Year, Dragon Boat Festival, and Christmas are widely observed and celebrated throughout the city.
Lifestyle and customs	It is common for Macau residents to practice Chinese traditions like Feng Shui alongside Western customs such as celebrating Halloween.
Entertainment and arts	World-class casinos, which draw inspiration from Las Vegas. Macau arts scene combines traditional Chinese performing arts like Cantonese opera with contemporary Western performances.

Task 2

Look at the comparison table below and describe the Eastern and Western food culture.

	Eastern culture	**Western culture**
Culinary techniques	Stir-frying, steaming, deep-frying methods	Roasting, baking, grilling
Staple grains	Rice	Wheat-based products, like bread, pasta, etc.)
Dining philosophy	Sharing dishes	Individual portions are more common
Beverages	Tea, herbal drinks, sake, etc.	Coffee, wine, soft drinks, etc.

Macau, also known as the Las Vegas of China, is home to a widely celebrated fusion of the Eastern and Western culture. Growing up in Macau, locals are pulled into a strong force of diverse festivals, cuisine, architecture, norms and practices influenced by the Chinese and Portuguese.

Since Macau was once a colony of Portugal, the official languages of Macau are Chinese and Portuguese. Mandarin, Cantonese and Portuguese are three languages that are widely taught in schools. However, English has also become a common language in Macau. Students are required to learn how to speak, write and understand at least one of the official languages. This linguistic diversity is an example of the cultural effects of the East and West as it strongly helps locals to facilitate communication and allows people to understand each other in a deeper level.

Furthermore, locals of Macau celebrate numerous festivals that are influenced by the East and the West. Such as Chinese New Year, Dragon boat festival while Lusofonia is a festival inspired by the Portuguese.

In terms of Macau's architectural cultural features, there are a lot of buildings with stone carvings, temples that are features of the East. Arches, cobblestoned grounds, church windows such as those in Senado square are all embodiments of Western architecture.

In terms of lifestyle, Macau is relatively slow paced than Hong Kong. Shops open at around 10 a.m., banks are closed in the weekends, locals enjoy a life less stressful. All these resonate into the Western way of life.

All the above examples play a harmonious effect to the people's linguistic proficiency, spirituality, taste in food palette and many more. Even though Macau is just a small city, the Eastern and Western culture still prevails and stay vibrant.

Task 3

Look at the comparison table below and describe the Eastern and Western food culture.

_____

_____

_____

_____

Summary

The presence of culture enriches our lives by shaping the way we communicate, think, do, act and eat. It is the leading factor that shapes our identities in society. Macau is a small city that reflects the unique fusion of the Eastern and Western culture. Food, art, buildings and festivals are some of the things that reflect the diverse culture of Macau.

Reference

New General Studies New Curriculum Book 4.1 Wonderful World.

Appendix ix Project: Future Urban Development Plan for Macau

Expert groups: 4 groups or 8 groups

Each group will choose one of the four topics - Geography, Climate, Demography, or Economy - to play the role of an expert in that area, and explore the future development directions for Macau.

The areas to consider are:

- What things are worth changing now?
- What things are worth preserving?
- What can we do?
- What is controllable and what is uncontrollable? If something is uncontrollable, from what angle can we approach it?
- If you approach it from your main topic, how will your plan affect the other three main topics? For example, if you choose Geography as your topic, what things you do will impact the other three topics? Or what can the other three topics do to assist your topic?

Expert groups: 6 groups or 12 groups

Each group will choose to focus on the connections and mutual impacts between two of the four main topics. For example, if students choose Economy and Demography, they will focus on these two topics and plan the future direction for Macau from the perspectives of these two topics.

The areas to consider are:

- In Macau, what is the biggest connection between these two main topics?
- What things are worth changing now?
- What things are worth preserving?
- What can be done?
- From which topic will you start to influence the other topic?
- What is controllable and what is uncontrollable? If something is uncontrollable, from what angle can we approach it?

Appendix x Project: Phantom Energy Awareness in Macau

Project: Phantom Energy Awareness in Macau

Requirements of Basic Academic Attainment assessed:	• B-2-8 Be able to conduct simple social surveys; • C-2-21 Be able to collect and organise information about natural phenomena and environment issues, and discuss and exchange opinions with classmates. • D-2-4 Be able to tell the power generation methods in Macau, and develop the habit of saving power;

PROJECT DESCRIPTION	
Part 1 **Research**	• Please do research on (1) what phantom energy is and (2) give at least 3 common examples of phantom energy. • Summarise your findings.
Part 2 **Conduct simple social surveys**	• Interview 15 people and complete the interview form (avoid repeat interviewees and ensure voluntary participation).
Part 3 **Information analysis**	• Summarise your findings (e.g., table/ graphic/ chart/ figure). • Analyse the data and provide your own insights/solutions on how to reduce phantom energy (e.g. at home/ school/ office/ library) to make Macau a more sustainable living place.
Part 4 **Report (video)**	• Report your findings like a news reporter in a formal and informative manner. • Please upload your video (~2 mins.) in PL2.
MATERIALS FOR STUDENTS	
• Interview form • Project rubric	

Interview form:

	(1) Do you know what phantom energy is? Can you explain?	(2) Are you going to make some changes to save energy? Why? How?	Interviewee's Signature
1			
2			
3			
4			
5			
6			
7			

	Item/ Description	Missing	Incomplete	Completed but inaccurate	Basic	Accurate	Insightful and accurate
Subject skills & knowledge	clearly defines phantom energy with relevant examples	0	1	2	3	4	5
	insights / solutions on phantom energy	0	1	2	3	4	5
Generic skills & knowledge	information management (conduct simple social surveys)	0 interview <5 participant	1 interview <7 participants	2 interview <9 participants	3 interview <11 participants	4 interview <13 participants	5 interview 15 participants
	information analysis (figures)	0	1	2	3	4	5
Process	Poster (correct format and includes all the requirements)	0	1	2	3	4	5
	Video Report (on time & is of general good quality)	0	1	2	3	4	5
	Score: _____ / 30		Comments:				