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Chapter I Introduction

This chapter serves to introduce the background to the “Macao Special Education Curriculum Design Project”, illustrating new trends and concepts in special education, and explaining the positioning and usage of the “Supplementary Curriculum Guide (Special Education)” (hereafter referred to as “Supplementary Guide”).

The “Supplementary Guide”, a core document to the “Macao Special Education Curriculum Design Project”, aims to inform schools and teachers of the philosophy, positioning, and implementation mode of the plan as they carry out Macao’s special education curriculum in practice.

A. Origin and rationale for the Supplementary Guide

1. The latest trend in special education

Over the past three decades, the international community has witnessed transformative changes in the concepts and practice in special education. Since the publication of the Salamanca Statement by UNESCO in 1994, inclusive education (or integrated education) has become the dominant educational model for students with disabilities around the world. The Salamanca Statement emphasizes the concept of Education for ALL and holds that students with disabilities should have access to equal educational opportunities as ordinary students. This concept is applied to the domain of curriculum design and leads to the inclusive curriculum model (One Curriculum for All).

2. The growing trend in the promotion of inclusive curriculum

The fundamental ethos of inclusive education is that all students should have equal rights to education, and one exemplification of which is to the right to study according to the same curriculum. Therefore, special education curriculum must be guided by the principle of “inclusion”---the curriculum is considered “One Curriculum for All” only when it caters to students of different abilities (including students with serious or severe intellectual disabilities).

The General Assembly of the United Nations passed the Convention on the Rights of Persons with Disabilities (CRPD) (hereafter referred to as the Convention) in 2006 to promote and protect the rights of all persons with disabilities. The Convention states that necessary adjustments should be made under certain circumstances to ensure that persons with disabilities have equal access to their rights and the exercise thereof. The People’s Republic of China signed the Convention in 2007 which was later passed and approved by the Standing Committee of the National People’s Congress in 2008. This means that China has the obligation to implement the Convention and must take appropriate measures to this end.

The curriculum policies adopted by countries around the world in the practice of inclusive education share the common feature of establishing standards or goals that cover the capabilities of all students. It is important that these standard areas are all derived from the central curriculum of formal education and that they can also include the abilities of all students, including those with serious to severe intellectual disabilities.

3. Development and current situation of special school curriculum in Macao

For years the development of special education curriculum in Macao has been reliant upon the research and initiatives of individual schools themselves. Although there have been exchanges and mutual consultations among the schools in this process, there is still the lack of a unified curriculum structure, module contents, and assessment criteria. Also, the curriculum leans heavily towards catering to the needs arising from the weaker capabilities of students. The reference to the formal education curriculum in special education curriculum is limited to selecting contents from textbooks used in formal education and revising them to form the main body of the special education curriculum.

The Macao SAR government began to legalize the formal education curriculum in 2014, and has successively promulgated the Administrative Regulation No. 15/2014, “Curriculum Framework for Formal Education of Local Education System” (hereafter referred to as “Curriculum Framework”) and Administrative Regulation No. 10/2015, the “Basic Academic Attainment Requirement of Local Education System” (hereafter referred to as “The Requirements of Basic Academic Attainments”). “The Requirements of Basic Academic Attainments” for Early Childhood Education, Primary Education, Junior Secondary School Education and Senior Secondary School Education have also been implemented year by year since the academic year 2015/2016. This means that the formal education curriculum in Macao is proceeding to standardization and unification in a programmatic fashion. The legislation of formal education curriculum in the territory can be regarded as the most appropriate time for Macao to design its special education curriculum, because the purposes, subject structure, and learning units of the formal education curriculum under the principle of equal educational opportunities should be applicable to students with special educational needs. The key is that teachers need to have a set of guidelines to supplement or adapt the formal education curriculum according to the learning abilities and learning modes of students with special educational needs. Therefore, the Macao Education and Youth Affairs Bureau (hereafter referred to as the DSEJ) invited the Centre for Advancement in Inclusive and Special Education (CAISE) of The University of Hong Kong, together with special education teachers from nine public and private schools in Macao, to initiate a three-year plan, namely, the Macao Special Education Curriculum Design Project. The core tasks of the plan include:

- 1) Developing and drafting the Learning Ability Progress Level (hereafter referred to as the Level) for six subjects (Chinese, Mathematics, General Studies, Science and Humanities, Arts, and Information Technology, Sports, and Health);
- 2) Compiling the “Supplementary Curriculum Guide (Special Education)”.

The emphasis of the plan is that the compilation of the special education curriculum should be based on the formal education curriculum, which is the future direction for special education development in Macao and also the purpose of this plan. This direction not only guarantees

students the right to study according to the same curriculum, but also ensures that the educational elements of the curriculum will not be compromised due to excessive emphasis on skill training. In addition, teachers can build a community with affiliated schools and reach consensus on the assessment criteria when formulating the same curriculum structure. The plan also emphasizes that the Level and the Supplementary Guide should be compiled with special education teachers in Macao as the main contributors. The process of writing the Level and the “Supplementary Guide” involved gathering the fruits of specialist teachers’ professional knowledge and years of accumulated teaching experience in each subject, which enabled the final writing to possess unique Macao characteristics.

B. Objectives of the Supplementary Guide

The purpose of the “Supplementary Guide” is to provide support for teachers in planning, developing and formulating curriculum for students with special educational needs. Teachers can make references to and combine the use of the guideline from the formal education curriculum, the “Curriculum Framework” and “The Requirements of Basic Academic Attainments”. In general, the “Supplementary Guide” can help schools to develop an inclusive education system (Special education curriculum system) from the following aspects:

- Review and revise the present directions in special education and lay the foundation for developing a new special education system;
- Link up with Macao’s formal education curriculum and identify priorities appropriate for the special education curriculum;
- Respond to students’ diverse learning needs;
- Overcome barriers to teaching and assessment for full inclusion of all students.

C. Functions of the Supplementary Guide

The functions of the Supplementary Guide are provided in the following aspects:

- Provide information to help teachers plan, prepare, develop and design courses catered to students with different learning needs according to the characteristics of each subject; illustrate how to adjust the course contents so that all students can have the opportunity to study formal education courses according to their own abilities;
- Provide a spectrum of learning ability descriptors to demonstrate the levels of learning ability and learning outcomes;
- Establish the relationship between “The Requirements of Basic Academic Attainments” and the special education curriculum;
- Provide a coordination mechanism of learning assessment, with the emphasis on the principle of comprehensive judgment;
- Provide sample classroom activities, stimulate students’ curiosity, teach students in accordance with their aptitude, and practice the important educational principle of teaching tailored to the individual students’ abilities.

D. Characteristics of the Supplementary Guide

1. Designing inspiring learning activities

Chapter III of the Supplementary Guide shows relevant learning areas of various subjects and their importance to students with special educational needs. Teachers may have the impression that some of the complicated and abstract topics in certain subjects are beyond the understanding of students with special educational needs; some examples of teaching activities are demonstrated in Chapter V of the Supplementary Guide for teachers to adjust the teaching scenarios and goals. This ensures that even students with lower ability levels can study the contents of related subjects.

2. Adaptable to different learning needs with the formal education curriculum as its basis

Chapter IV of the Supplementary Guide, in conjunction with the “Curriculum Framework” and “The Requirements of Basic Academic Attainments”, retains as many relevant contents within the learning area of each subject as possible. The curriculum objectives and learning outcomes are based on the formal education curriculum and can be adjusted according to the differences in learning.

3. Easy to identify students’ abilities with the continuous description of various levels of learning abilities in the learning areas of each subject

To enable every student with special educational needs to find their entry point in each learning area of various subjects, the spectrum of learning ability level descriptors for each subject is provided in Chapter VII of the Supplementary Guide, covering learning abilities from the lowest level (or those appearing the earliest) to the highest level (or those compatible to be admitted to ordinary schools), for teachers to clearly identify the levels of students’ learning ability in each learning area, which is the core element of the Learning Ability Progress Level.

4. Easy to know the progress of the teaching priorities in major education stages

In order to show clearly the levels of learning ability of students with special educational needs at different age groups, the Learning Ability Progress Level is divided into four phases according to the age of students. In these four phases, students are expected to make progress not only in learning experience in line with their age and social development, but also in subject knowledge so that they can accumulate knowledge and experience in the learning process. Teachers can also avoid unnecessary repetition to improve educational efficacy.

5. Uniform terms to describe different groups of students

We use “students with special educational needs” to replace terms which have been used to describe different groups of students, such as the hearing impaired students, visually impaired students, physically impaired students, slow learners, or students with mild, moderate, or severe intellectual disabilities. We believe that each student is on the same route of learning progress, with different needs in education. We do not explicitly classify students in the psychological and medical systems, because we design students’ learning objectives mainly

based on their ability levels in different subject areas. For example, a student who is classified as suffering from “cerebral palsy” in the psychological and medical system may have an average level of intelligence even if he or she cannot speak or can only sit in a wheelchair, or with relatively weak motor sensory ability. Based on the concept proposed in the Learning Ability Progress Level, a student’s learning ability in Physical Education may be only at level L3, while his or her learning ability in Chinese "listening" may have reached level L10.

This method of describing the levels of students’ learning ability can change the perception of students’ learning potential among teachers or other stakeholders. At the same time, teachers can refer to different ability levels to set more suitable learning goals for students so as to raise their expectations of the students’ learning ability.

E. How to Interpret the Supplementary Guide

The Supplementary Guide is designed to cover students with special educational needs aged between 3 to 21, including students in special education class sections and in special education small classes, as well as inclusive students in regular classes. Students enrolled in various special education classes are the focus of the Supplementary Guide, since most of the students in the above mentioned classes are at notably different levels of learning ability in different subjects. Nevertheless, teachers who teach students of different gender and ethnic, cultural, religious, and family backgrounds can all use the Supplementary Guide as a teaching reference.

In the Supplementary Guide, the term “teacher” may include homeroom teacher, teachers of various subjects, subject directors, teaching assistants, parents, therapists, counselors, social workers, psychologists, principals and all others who take care of students with special educational needs. When using the Supplementary Guide, teachers should refer to the curriculum guides of the DSEJ and school-based curriculum materials, for planning and compiling the teaching contents, according to different levels of education, as well as the learning ability level of students with special educational needs. The Learning Ability Progress Level also provides an accurate description of students’ learning performance and ability.

2

Chapter II

Objectives, Curriculum Framework and Teaching Principles of General Studies, Science and Humanities Education

This chapter is compiled with reference to the curriculum guidelines related to General Studies, Science and Humanities in Macao's formal education system. The objective is to state that under the principle of the same curriculum framework, the General Studies, Science and Humanities curriculum for students with special educational needs originates from the formal education curriculum, giving them the same learning opportunities as average students.

(A) Objectives of General Studies, Science and Humanities Education

The General Studies, Science and Humanities curriculum is designed to provide a holistic rather than fragmented learning experience that allows students to get to know people and things related to life from near and far, and help them understand the meaning of individuals, society and nature and the correlation between them. The curriculum also equips students with preliminary understanding of humanities, society and natural sciences, let them master a variety of learning skills, cultivate their literacy in Science and Humanities and lay the foundation for their whole-person development and lifelong learning. In addition, the curriculum can help improve students' lives and broaden their horizons, enable them to live in harmony with the natural environment and to better adapt to social development. The supplementary guide to this curriculum embraces the following directions:

1. Focus on life and development needs as the foundation, pay attention to the balanced and holistic development of students

Human beings' exploration of knowledge derives from the needs for real life and future development. The curriculum focuses on guiding students to learn from life experiences and understand the relationship between individuals, society and the natural environment through topics closely related to life. It also enables students to master the knowledge and skills needed for life and future development, cultivate proper values and attitudes and thus promote a balanced and holistic development.

2. Pay attention to the connection between people and the social environment, inherit historical traditions and social culture

The curriculum focuses on establishing connections between students and the social environment, allowing them to understand local traditions and current situations of the society, as well as the prevailing social issues in Macao and around the world, which help foster their spirit of humanistic thinking and care. Through learning the history and culture of China and foreign countries that have made an impact on the social development of Macao, students will increase their awareness of respecting and inheriting history and culture, as well as their sense of responsibility and belonging to Macao and the country.

3. Advocate harmony between people and the natural environment, promote students’ spirit of inquiry and innovation

The curriculum focuses on the harmonious relationship between people and the natural environment, allowing students to pay attention to local, regional and global environmental issues, cultivating their awareness and habits of protecting the environment and cherishing resources, and thus developing a preliminary concept of sustainable development. A variety of learning activities will stimulate students’ curiosity and spirit of inquiry towards the natural environment and the scientific world and help develop their imagination and creativity.

4. Focus on multi-integrated learning experience and develop students’ ability for lifelong learning

The curriculum promotes a diverse and integrated learning experience. By combining different learning experiences, it helps to improve students’ ability to integrate knowledge. A variety of learning contexts guide students to make good use of different learning resources and learning methods, grasp the ability to obtain and analyse information, and develop the fundamental ability for and attitude towards lifelong learning.

(B) Adjustment to the General Studies, Science and Humanities Curriculum Framework

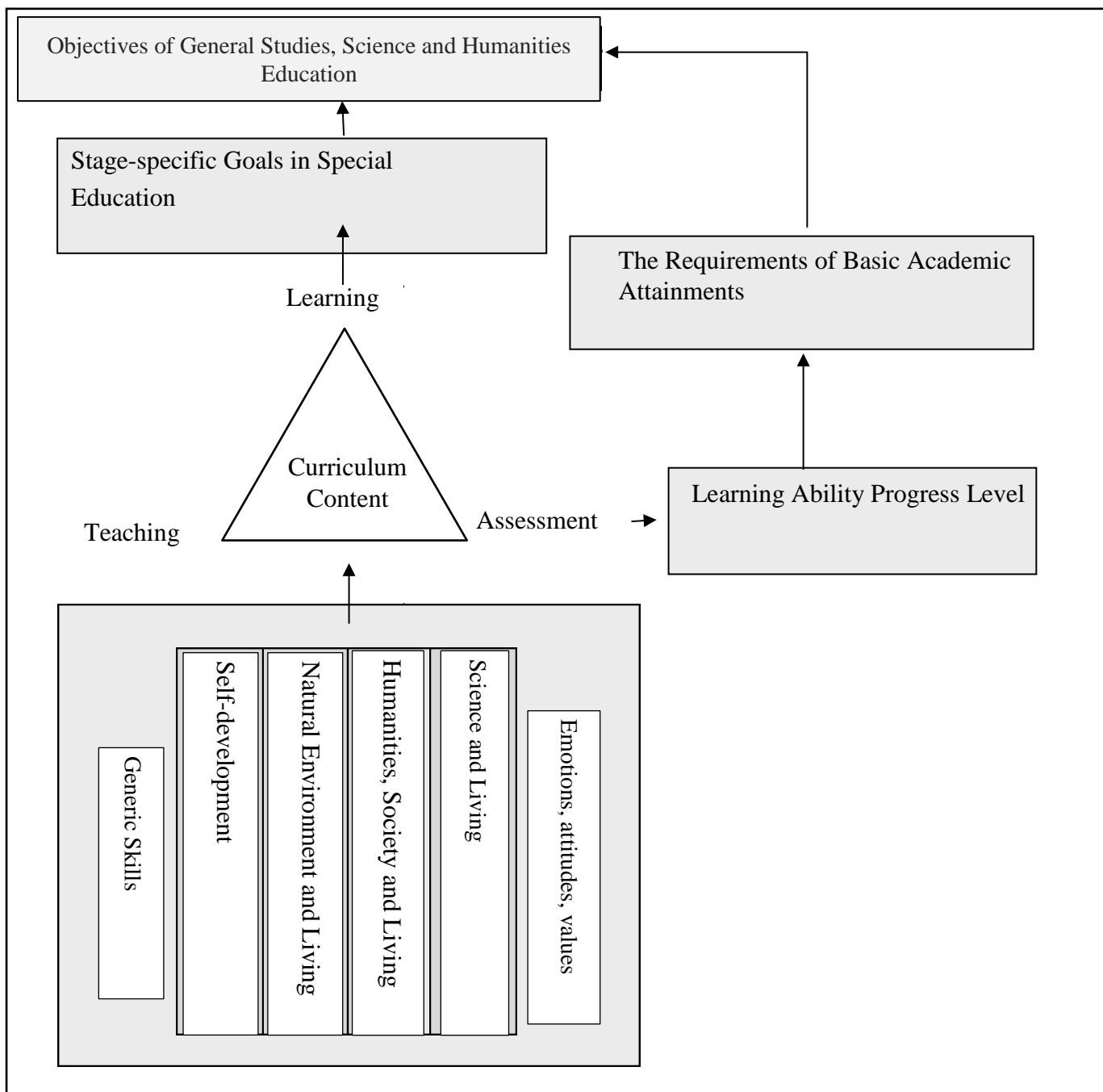
The basic academic requirements of formal education curriculum at different education levels have different titles and areas, and “The Requirements of Basic Academic Attainments” related to General Studies, Science and Humanities include the following:

Education Level	Learning Areas
“The Requirements of Basic Academic Attainments” for early childhood education Learning area A : Health and Sports	1.Knowing Their Bodies 2.Self-protection 3.Mental Health
Learning area C : Individuals, Society and Humanities	1.Self 2.Self and Others Self and Social Organisation – Family, School and Community Self and the Environment
Learning area D : Mathematics and Science	4.Scientific Attitude 5.Scientific Skills 6.Scientific Phenomenon
“The Requirements of Basic Academic Attainments” for primary education (4) Moral and Civic Education	A. About Oneself B. Me and My Family, C. Me and School D. Me and the Society E. Me and the Country F. Me and the World G. Me and the Environment
(5) General Studies	A. Healthy Living, B. Humanities, Society and Living, C. Natural Environment and Living, D. Science and Living

“The Requirements of Basic Academic Attainments” for junior secondary education (4) Moral and Civic Education	A. Self-development B. Group Activities C. Social Participation D. International Perspective
(5) Society and Humanities	A. Human Beings and Time B. Human Beings and the Environment C. Cultural Origins and Social Development
(6) Natural Sciences	D. Regional Economy and Development A. Scientific Investigations B. Material Science C. Life Science D. Earth and Space Science

According to the general situation of students with special educational needs, the curriculum guide is designed according to the structure of General Studies of formal education and primary education under the “The Requirements of Basic Academic Attainments”, namely Healthy Living, Humanities, Society and Living, Natural Environment and Living, and Science and Living. It has been revised into four learning areas, namely “Self-development”, “Humanities, Society and Living”, “Natural Environment and Living” and “Science and Living”. However, we also make important references to “The Requirements of Basic Academic Attainments” in other subjects.

Curriculum Framework of General Studies, Science and Humanities Education (Special Education):



(C) Course Positioning of General Studies, Science and Humanities Education

By integrating the educational objectives of General Studies, Natural Sciences, Society and Humanities, the curriculum aims to broaden Students’ knowledge areas, cultivate students’ curiosity about world affairs, develop their scientific thinking, spirit of inquiry and problem-solving skills through investigation and experimentation. Students will also be able to explore the relationship between their own lives and the environment, learn to protect the environment, cherish resources, protect life and cultivate a healthy lifestyle. Through Humanities education, students learn about the relationship between themselves, the society

and the world, understand traditions and the present situation, cultivate their ability to live in the society and the habit of lifelong learning, establish a sense of responsibility and belonging to Macao and the country, so that they can face the world and become citizens of the world.

The curriculum covers the learning content of General Studies, Natural Sciences, Society and Humanities of the formal curriculum in Macao. As the coverage ranges from early childhood education to senior secondary school education, the curriculum orientation is basically divided into four main areas of study: “Self-development”, “Humanities, Society and Living”, “Natural Environment and Living” and “Science and Living”, so that students with special educational needs can enjoy learning opportunities suited to their age and ability through systematic learning.

(D) Teaching Principles of General Studies, Science and Humanities Education

In view of the integrated nature of this curriculum, teachers should focus on the characteristics of the relevant learning areas when they teach. Students with special educational needs have to know their needs and room for development at different stages of development. For example, “Self-development” focuses on students’ understanding of themselves and the development of proper values; whereas for “Humanities, Society and Living”, it focuses more on developing students’ ability to interact with each other and to understand the development of social affairs. As for “Natural Environment and Living”, it focuses on cultivating students’ understanding of the natural environment and the spirit of nature protection; while “Science and Living” focuses on cultivating students’ ability in scientific investigation and on how to improve their quality of life through science. In general, the curriculum is characterised by students’ understanding of themselves, the family, the society and the world from the exploration of daily life. It also encourages students to explore things with a scientific spirit and enhances their curiosity about scientific learning, which helps them acquire scientific knowledge and skills needed for their educational stage.

Teachers can actively take the following teaching approach and strategies to inspire students to learn:

- Appreciate efforts made by students and create a supportive learning environment;
- Make good use of student’s acquired knowledge and organise learning activities that are diverse and challenging;
- Provide a learning environment that caters for students with individual learning diversity;
- Use experiments to encourage students to discuss, express their opinions and views through different levels of exploration activities, and learn to respect each other and make response with patience;
- Use open questions to stimulate students to think;
- Give appropriate guidance and encouragement based on the individual needs of students;
- Provide a variety of teaching materials to stimulate students’ curiosity;
- Promote inquiry-based learning, cultivate students’ inquiring mind in science and develop a proper attitude towards science learning;
- Use a variety of assessment methods to evaluate students’ learning performance to promote learning and teaching.

3

Chapter III

Responding to Students' Learning Needs in General Studies, Science and Humanities Education

This chapter discusses the basic characteristics of General Studies, Science, and Humanities education and its importance to students with special educational needs and proposes to adjust the learning content and curriculum implementation to ensure that all students have the opportunity to learn in all fields.

(A) Importance of General Studies, Science and Humanities Education to Students with Special Educational Needs

General Studies, Science, and Humanities curriculum focuses on how students construct knowledge from activities and practical experiences, while the teachers' role is more about giving guidance and assistance. For students with special educational needs, the curriculum can stimulate students' reaction to and cognition in the external environment, enhance their adaptability, let them understand their own bodies, their growth and development, and explore the relationship between themselves and the environment through thinking and learning. In addition, learning related to science can stimulate students to think, explore and develop curiosity. Through scientific experiments or interaction with the natural environment, students can get in touch with new things and get new stimulation which promote their spirit of inquiry and curiosity for different matters and phenomena. Consequently, students will develop a positive attitude and ability towards scientific investigation. Through Humanities, students with special educational needs learn how to respond to the surrounding environment. It also cultivates their self-awareness, communication skills, social skills and interpersonal relationships and makes them become good citizens. Therefore, teachers should adopt a student-oriented mode of teaching which inspires them to actively participate in learning.

(B) Learning Content of General Studies, Science and Humanities Education

Self-development

It aims at arousing students' awareness of their growth and development, as well as helping them to develop a healthy lifestyle. Students are expected to have a basic understanding of physical, psychological and social health, possess a positive attitude towards their personal growth and development, and be able to make appropriate decisions and choices related to their personal health and safety.

Humanities, Society and Living

The curriculum allows students to understand local traditions and current situations of the society, as well as the prevailing social issues in China and around the world, which help foster their spirit of humanistic care. Through learning the history and culture of China and

foreign countries that have made an impact on the social development of Macao, students will learn to respect history and culture, and thus increase their sense of responsibility and belonging to Macao and the country.

Natural Environment and Living

The curriculum focuses on the harmonious relationship between people and the natural environment, allowing students to pay attention to local, regional and global environmental issues, cultivating their awareness and habits of protecting the environment and cherishing resources, and also their attitude of environmental protection.

Science and Living

Various learning activities promote students' curiosity and spirit of inquiry in the natural environment and the scientific world, while diverse learning cultivates their imagination and creativity. Students are expected to have an interest in observing things around them and be willing to ask questions, while having a basic understanding of nature and some simple natural phenomena. In addition, students will try to connect science and technology with their daily life which helps them solve everyday life problems in a safe way.

(C) Curriculum Adjustment of General Studies, Science and Humanities Education

Teachers should take care of students' learning differences and let them enjoy equal opportunities for learning and developing their potentials. Teachers should make adjustments to the course content at various stages of learning according to the situation of students with learning difficulties, so that the knowledge, skills and attitudes that they teach are more suited to their age and capability. As a result, it helps develop their experience, curiosity, spirit of inquiry and skills.

Teachers can make appropriate adjustments to the course content of General Studies, Science and Humanities so that students can learn appropriately.

(D) Enhancing the Effectiveness of General Studies, Science and Humanities Education

Effective learning should be comprehensive with multiple perspectives and student-oriented. In the process of teaching, teachers act as guides who create the conducive environment with the use of effective teaching strategies to enhance students' learning effectiveness. However, when making adjustment to the courses, teachers must pay extra attention to different types of students with special educational needs so that they can achieve the greatest benefit. For students with different learning disabilities, teachers can refer to the following suggestions to enhance learning effectiveness of General Studies, Science and Humanities education:

1. Students with hearing impairments:
 - Provide visual teaching materials and teaching aids such as handouts, videos, pictures, objects, and subtitles to help students with their understanding;
 - Allow students to use different tools to record classroom content;

- In the course of teaching, try to use gestures, expressions and sign language to help students with their understanding;
 - Teachers should clearly signal to the students when changing topics;
 - Teachers should avoid standing with their back to the light or with their back to the students.
2. Students with visual impairments:
- Try to employ the sense of hearing, touch and implementation as a way of learning;
 - Enlarge teaching materials and use bright-coloured images for presentation;
 - Allow students to use recorders or mobile recording apps to record the lecture or to complete their assignments;
 - Replace paper tests with oral answers;
 - Provide teaching aids such as objects, specimens, models, and stereoscopic charts as much as possible;
 - Provide appropriate auxiliary tools and try to involve students in scientific experiments. For example, use a touch timer, an audio digital scale or a point ruler to assist students in making measurements. For phenomena such as colour changes, sediment formation, etc. that happen during experiments, teachers can use colour detectors or electrical detectors as teaching aids.
3. Students with physical disabilities:
- Reduce the amount of homework for students with slow writing speed;
 - Students who are not flexible with their hands should not be given excessive copying tasks;
 - Provide a barrier-free teaching environment.
4. Students with speech impairments:
- Provide visual teaching materials and teaching aids such as handouts, videos, pictures, objects, and subtitles to help students with their understanding;
 - For assignments which involve listening, teachers should pay attention to the length, speed, and level of difficulty of the subject and make proper adjustment;
 - Give extra hints or guidance (verbal or non-verbal hints) when necessary to encourage students to give verbal feedback. Teachers can try to add additional information or correct students' sentences during a conversation to make the response more complete.
5. Students with autism spectrum disorder:
- Simplify teaching materials such as listing points according to their priorities, enlarging or distinguishing them by colour, using images to emphasise important points;
 - Provide visual teaching materials and teaching aids such as handouts, videos, pictures, objects, and subtitles to help students with their understanding;
 - Use the method of Treatment and Education of Autistic and Communication Handicapped Children for teaching, for example: put up flow charts, timetables, etc. in the classroom so that students can have work to do and instructions to follow;

- When teaching students to understand a question, teachers should first read out the question with the students, teach them to circle the key points in the question, use demonstration or drawing to bring out the meaning of the question so that students can better understand it;
 - Help students understand abstract concepts by using images, charts, timelines, flowcharts or examples.
6. Students with attention-deficit/hyperactivity disorder:
- Teachers can use diverse and specific teaching methods to guide students to focus on learning certain topics;
 - Use the method of Treatment and Education of Autistic and Communication Handicapped Children, for example: put up flow charts, timetables, etc. in the classroom so that students can have work to do and instructions to follow;
 - Use task analysis method by breaking down learning into several stages to shorten the activity time (less than 20 minutes each time) so as to increase the number of times for the learning process;
 - Use visual cues such as enlarged fonts, different types and colours of fonts to highlight the important points;
 - Raise more questions to enhance students' concentration;
 - Implement an incentive programme to help students complete their work; cultivate students' good classroom behaviour and give them appropriate rewards.
7. Cross-disciplinary collaboration
- In General Studies, Science and Humanities education, teaching efficiency can be improved by establishing cross-disciplinary cooperation. Cross-disciplinary teams include psychological counsellors, occupational therapists, speech therapists and physiotherapists, etc. Collaboration of these professionals can draw up personalised teaching plans (IEP) according to the individual situation of students, and take on collaborative classroom learning, individual or group training accordingly. For example, teachers of General Studies, Science and Humanities can invite occupational therapists to assist students in self-care training in the classroom according to the students' situation. Teachers can help students learn effectively and promote learning efficiency through cooperation with parents and professional teams.

4

Chapter IV

Learning Ability Progress Level and Requirements of Basic Academic Attainments

Since the 2015/2016 academic year, “The Requirements of Basic Academic Attainments for Local Formal Education” have been gradually implemented year by year across the education levels in Macao. This chapter elaborates on the connection between the Learning Ability Progress Level and “The Requirements of Basic Academic Attainments”, and further explains the function and application of the Learning Ability Progress Level.

A. Relationship between the Learning Ability Progress Level and the Requirements of Basic Academic Attainments

1. The Requirements of Basic Academic Attainments

The Macao Special Administrative Region promulgated “The Requirements of Basic Academic Attainments” in 2015, which set out the basic academic attainment expectations for all levels of formal education in Macao, including early childhood education, primary education, junior secondary school and senior secondary school education. “The Requirements of Basic Academic Attainments” aim to provide specific requirements on the fundamental qualities expected for students upon completing various education levels, including basic knowledge, skills, ability, emotion, attitude and values. It also provides standards to guide and regulate teaching practice, and to assess teaching quality.

2. The Learning Ability Progress Level

In principle, the content of “The Requirements of Basic Academic Attainments” should cover all students. However, each student with special educational needs features differences in learning ability and learning progress, while “The Requirements of Basic Academic Attainments” designed and formulated based on various education levels fail to give an effective demonstration of their learning outcome. Students learn through a continuous process and make progress step by step. A progressing level design which covers the entire learning journey may better reflect the learning outcomes of students with special educational needs. Therefore, the Learning Ability Progress Level refers to a set of systematic descriptions of performance indicators, where, starting from the very basic reflective act and the motor sensory perception, several progress levels are set to describe the ability of students, and demonstrate the learning progress of students with special educational needs within each learning area, and thus give a better exemplar of the uniqueness of special education.

3. The connection between “The Requirements of Basic Academic Attainments” and the Learning Ability Progress Level

“The Requirements of Basic Academic Attainments” and the Learning Ability Progress Level are both performance indicators within the subject area. “The Requirements of Basic Academic Attainments” describe the basic ability of the whole student community

upon completion of a specific education level in the formal school; while the progress level refers to a continuously developing spectrum of learning processes for an individual, targeted at the learning ability of each student with special educational needs. In line with the curriculum regulations, the Progress Level refers to the descriptions of learning performance from the “Requirements of Basic Academic Attainments” at each education level to the greatest extent, illustrating students’ learning efficacy.

B. Structure and Connotation of the Learning Ability Progress Level

1. Structure of the Learning Ability Progress Level

The Progress Level is a system composed of different levels, where different levels of learning ability are arranged in a progressive order. For the structure of the Learning Ability Progress Level, one may refer to the Learning Ability Progress Level Chart:

- In correspondence with the ability of students with special educational needs in Macao, the Learning Ability Progress Level is divided into 18 levels, which describes the features of motor sensory development of early-stage infants, and the learning ability of ordinary students in early childhood period, lower primary school period, higher primary school period and junior secondary school period.
- The levels are represented by the Letter “L”, which is taken from its English translation (Learning Ability Progress **Level**).
- Progress level for each subject is composed of two major parts, “the sensorimotor development stage” and the “curriculum subjects’ stage”. Progress level of both parts, based on learning development, is divided into different “levels”, from the learning model of the earliest stage (L1-1 to L3-2), to levels related to each subject (L4 to L18).
- The ability level at each stage during sensorimotor development is further divided into two sublevels to enable a better mastery of the learning progress by teachers and stakeholders, as the sensorimotor stage is based on the cognitive development of infants in the early stage which requires more detailed description. The ability descriptions from L1 to L3 are applicable to all subjects and learning areas. Subject related examples are provided to demonstrate the specific learning scenarios and experiences related to each subject.
- Descriptions regarding learning performance follow closely the contents of “The Requirements of Basic Academic Attainments” at each educational level, with appropriate modifications in accordance with the characteristics of students’ learning performance at each level.
- The progress level is classified into several areas based on the priorities in each subject:
 - ✧ Chinese: “listening”, “speaking”, “reading”, and “writing”;
 - ✧ Mathematics: “Numbers and Algebra”, “Measurement, Graphics and Space”, and “Statistics and Probability”;
 - ✧ Common knowledge, General Studies, Science and Humanities Education: “self-development”, “humanistic society and life”, “natural environment and life”, and “science and life”;
 - ✧ Physical Education and health: “sports skills”, “sports and fitness”, “sports and

- physical/mental health”, and “sports and social adaptability”;
- ✧ Information technology: “communication and cooperation”, “application and creation”, and “concept and perception”;
- ✧ Art: “developmental skills and process”, “artistic circumstances”, “creativity and imagination”, and “arts appreciation”.

Chart of the Learning Ability Progress Level

Senior secondary education level	Junior secondary education level	Primary education level	Infant education level				
Scope of learning ability for students with special educational needs				Learning Ability Progress Level	Learning ability for ordinary students	Special education levels	
Minority				L18	Junior secondary school	Senior secondary level	
				L17			
				L16			
Part of students	Minority			L15	Higher primary school	Junior secondary level	
				L14			
				L13			
Majority	Part of students	Minority		L12	Lower primary school	Primary level	
				L11			
	Majority	Majority		Part of students	L10		Early childhood period
					L9		
					L8		
					L7		
All	All	Majority		L6	Motor sensory development stage	Infant level	
				L5			
		Majority		All			L4
							L3-2
All	All	All	All	L3-1			
				L2-2			
				L2-1			
All	All	All	All	L1-2			
				L1-1			

2. Connotation of the Learning Ability Progress Level

- The scope of learning ability for students with special educational needs at each education level is assessed and evaluated based on the experience and observations of professional special-education teachers. In line with their growth and development, students with special educational needs are expected to reach L6 level to the utmost in the early childhood education stage, while students with special educational needs in senior secondary school stage rarely exceed L18. It should be pointed out that students with special educational needs do have the potential to demonstrate learning ability exceeding the estimated scope at certain education levels. For example, a student with special educational need in the early childhood stage may exceed the L6 level, and a student with special educational needs in the senior secondary school stage may outperform L18 level. In these scenarios, the same curriculum structure should apply to the students to extend his/her learning level to L7 or the level of the formal senior secondary school education.
- The Learning Ability Progress Level describes the abilities of students demonstrated in the learning experience, arranged in a progressive learning process. The Learning Ability Progress Level only represents the significant indicators at each educational level for each subject, which shall not be considered as representations of the overall learning content, nor the specific curriculum. Therefore, descriptions of the Learning Ability Progress Level should not be considered as equal to the curriculum content or learning objectives.

C. Learning Development Stages

1. Sensorimotor Development Stage

Human development in (at) the infant stage is mostly reflected by the sensorimotor development. Motor sensory training plays an important role in fundamental education. All learning acts and cognitive behaviors of students start with information collection and analysis by effectively utilizing the motor sensory ability, followed by systematic processing of the information. The process of information selection highlights a sound rapport among the acute sensory motors and accurate sensory coordination, motors and technics. Therefore, whether students can receive and analyze information, extract and store knowledge in memory, and utilize knowledge in the proper time and condition is subject to his/her acute sensory ability, appropriate selection and react, and long term memory.

All children go through the sensorimotor development stage. Most children pick up these skills in a natural manner in daily life without taking specific courses; however, students with special educational needs are restricted to various extent by a slower development in intelligence and learning progress, therefore students with special educational needs require special training and study to master relative skills.

Uzgiris & Hunt (1975) proposed the six scales of sensorimotor and cognitive foundations in early developmental stage, including:

- The development of visual pursuit and the permanence of objects
- The development of means for obtaining desired environmental events
- The development of vocal imitation and gestural imitation
- The development of operational causality
- The construction of object relations in space
- The development of schemes for relating to objects

The above mentioned six scales, universally applicable to all learning fields, constitute the foundation for cognitive development for infants. In other words, these abilities are the foundations for all subjects; students with special educational needs, especially students with severe learning disorder, develop quite slowly in the early stage. Therefore, these students may not be able to surpass L3-2 level within the complete special education learning stages. Under such circumstances, a broad and balanced curriculum system within their capability is of great significance as it enables the opportunity to get access to rich learning experience.

2. Early childhood stage

The early childhood stage, as the starting point of formal education, is recognized as an important stage to lay the foundation for lifelong learning and whole person development. The early childhood growth and development is a continuous spectrum with established sequences. Generally speaking, children reaching a certain age or developmental stage demonstrate corresponding changes in their physical ability, cognition, language, behavior and social interaction patterns. These developments are subject to predetermined genetic factors as well as to acquired experiences and educational environment.

Though students with special educational needs fail to develop at the speed of ordinary children, their developmental process demonstrate(s) the same patterns. For example, a student learns to walk before mastering running, and learns to speak individual words before speaking full sentences. Thus, the purpose of establishing the Learning Ability Progress Level is to provide a stage-based reference for teachers and stake holders, so that the teachers can develop a better idea of the status quo of students and learning targets (direction). In compilation of descriptions on the level L4 to L9, special reference is taken from the materials regarding characteristics of early childhood development to include the developmental milestones in the description.

3. The stage of cognition and skill development

While students grow, they continue to make progress in physical ability, knowledge and skills on the basis of early childhood development. In accordance with the cognitive development theory proposed by Piaget, students reaching the mental age of six have entered the period of concrete operations. In this period, students are able to solve issues based on concrete experience and logical thinking, utilize specific objects to assist

thinking, and better understand the principle of reversibility and conservation. They are fairly good at the use of inductive logic, and handling issues involving complicated and abstract standards.

As mentioned above, students with special educational needs are not different from ordinary children regarding the cognitive development process. If the mental age of students with special educational needs can reach the period of concrete operation, it is possible for them to learn more complicated and abstract content. However, due to the diverse and complicated patterns of students with special educational needs, their developmental process may not be the same as ordinary children. For example, they may not complete learning contents within one year that ordinary children are able to complete within one year. Therefore, the descriptions on ability and performance based on different levels enable teachers and stake holders to recognize the cognitive ability of students with special educational needs and their developmental curves. Starting from L10, each level is approximately equal to the learning content of the average child within one academic year.

4. The stage of higher-order thinking development

The recent decades witness a widely supported proposal on reforming the curriculum and teaching paradigms in the international community, which strongly calls for equipping students with higher-order thinking to cope with the ever-changing world. Yeung (2012) elaborated on the connotations of higher-order thinking, including four dimensions as below:

- Traditional thinking strategies
- Core thinking skills
- Integrated thinking models
- Thinking dispositions

Some students with special educational needs, especially those with severe learning disorders, may not be able to reach the stage of higher-order thinking regarding cognitive development, but this shall not rule out the possibility that they can cultivate (obtain) higher-order thinking upon abundant learning experience. Therefore, providing a broad range of balanced courses for students with special educational needs can help them to broaden their experience and enhance their abilities, which is also the duty of teachers.

D. Application of the Learning Ability Progress Level in Learning and Teaching

1. The Learning Ability Progress Level has the following advantages :

- The Learning Ability Progress Level provides a systematic and clear description concerning the learning performance of students at each level, enabling the school, teachers, parents and other stake holders to better understand the learning ability of students and communicate with among stake holders;
- The Learning Ability Progress Level provides details on the assessment of learning progress, a framework for teachers to refer to in the process of identifying and reporting learning outcomes. The Learning Ability Progress Level can also provide

assistance to formulation and modification of future learning objectives and plans to promote the learning outcome;

- Teachers need to collect massive data on the learning performance as evidence of learning outcome; Teachers should carefully observe the learning performance of students, enhance knowledge of students, which is conducive to adjust the teaching strategy;
- In collection of performance evidence, teachers should discuss on “evaluation coordination” to reach common consensus on student evaluation, which is conducive to enhancing teacher’s understanding of the Level principles and their professional development.

2. Applying the Learning Ability Progress Level to promote learning

It is commonly believed that the subject area of formal education curriculum is too challenging, abstract and out of reach for students with special educational needs. The reason for this widely held perception lies in the current practice of prescribing levels of ability for each subject unit, which requires students to reach certain learning level at specific learning stages. For example, only students reaching primary school level are allowed to learn Tang poetry. As a matter of fact, the learning content should be considered as the vehicle of learning, while the core of learning should be put on the objective and the individual growth of students in each subject area, including knowledge, skills and attitude; Therefore, the method of establishing curriculum based on the framework and foundation of formal education in accordance with the ability level of students, can ensure that all students make balanced and extensive development. The level-based special education featuring high efficacy is also the foundation of inclusive education which can improve the students’ ability via the learning content.

The textbook in each subject is the learning vehicle. The guiding principle for curriculum design is to broaden students’ life experience, enable them access to objects at different levels and develop knowledge together with individual experience and understanding. Students with severe learning disorders, due to genetic limitation, may not exceed the motor sensory development stage even with years of learning. However, learning that connects multiple subjects provides students with an extensive perspective, which is also the principle of depth and scope in curriculum design.

Students with special educational needs should adopt the same teaching topics and modules as those of the ordinary students to ensure the scope and balance of curriculum, though teachers with professional experience can exercise discretion to adjust the contents based on the learning ability of the students. This practice may properly address the lack of proper teaching textbooks for classes or students with special educational needs. When the teachers get hold of the learning progress of students, they should adjust the learning contents on the basis of regular curriculum, and design learning experience attending to the students with special educational needs. Schools should hold “learning units” for each level, each subject and each area, to satisfy the learning requirements of students at each educational stage, so that they won’t be exposed to the same teaching units repeatedly.

3. Applying the Learning Ability Progress Level to assess learning efficacy

To enable students with special educational needs to learn under the curriculum framework of formal education, the key lies in designing a set of progress level that includes the fundamental abilities within the scope of each subject. We believe that all students, irrespective of their ability level, have the ability to learn, though to different degrees of development and progress. Therefore, the Level start(s) from the motor sensory development stage of infants; each student (including a student with severe learning disorder), in principle, could demonstrate their learning ability within the scope of each subject. In this way, teachers can set goals, design activities and set out expected outcomes in each subject area in line with the learning content. The learning experience of students is based on his/her performance within individual ability, thus the teachers may effectively cater to the differences among students based on their learning ability.

The Learning Ability Progress Level is also a tool to assess learning progress, and should not be used as part of the teaching content. Students with special educational needs may not make learning progress as expected, with fluctuations from time to time, thus the Learning Ability Progress Level shall not be applied to daily progress assessment, but rather the learning outcome of students upon a period of study.

Data on the Learning Ability Progress Level of each school should be collected and uploaded to the data processing platform., where the system, with a certain amount of data accumulated, can conduct data analysis for the purpose of teaching feedback and improving teaching efficacy, including analysis on the cross-school, cross-subject, cross-area and cross-year performance report, as well as the annual progress for certain students.

4. Applying the levels to promote professional development

The Learning Ability Progress Level provides teachers with a set of language to describe the learning performance of students. It not only can strengthen professional communications among teachers working in the same and different schools, but also help to establish the special education culture within a school. The set of language can also play a role in home-schooling practice, enabling parents to better understand the students and their learning performance.

When applying the Learning Ability Progress Level to identify the level of students' learning ability, teachers should collect examples of students' learning performance, which may include photos, videos and audios. Teachers should organize an "assessment coordination" meeting to discuss the learning level of the student concerned. These processes help teachers to have a more thorough understanding of the status of the student and design more relevant learning activities.

When teachers describe or interpret the Learning Ability Progress Level, they can experience the multiple feasibility of special education, and understand the concept of the same curriculum framework; within the appropriate curriculum framework, it is possible and necessary to provide formal education opportunities to all students (including students with special educational needs). Schools should develop common consensus on this perspective, which may help to consolidate the professional foundation for special

education, and improve professional development of teachers in special education schools.

5. The Learning Ability Progress Level is not designed for the following purposes:

- × to demonstrate the learning ability of students on a daily basis;
- × to conduct progress assessment on a daily basis;
- × to specify the learning content or to be used as a concrete development curriculum list;
- × to assume the same levels for students in each learning area or teaching unit;
- × to assume that the performance of students at a specific subject topic equals their annual progress, and form individual learning objectives on such basis;
- × to be the label to describe students;
- × to identify and recognize students with special educational needs.

5

Chapter V

Opportunities and Activities

This chapter focuses on illustrating the learning opportunities and teaching activities feasible for students with various learning needs and in different educational stages, within the realm of General Studies, Science and Humanities education.

General Studies, Science and Humanities are all content-based subjects which encompass a wide range of topics. Therefore, in order to provide a broad and balanced range of teaching content while optimising the effectiveness of learning, teachers should take into consideration the distinctive quality of each discipline when selecting the teaching units so that their students can acquire a broad range of knowledge in various areas. Both General Studies and Science put their emphasis on cultivating students' curiosity while developing their scientific mind-set (mind set) and spirit of enquiry. On the other hand, Humanities education aims to help students get a better understanding of themselves, their society and the world around them while equipping them with the social skills and abilities they need. These are the distinctive elements of General Studies, Science and Humanities education.

This chapter provides examples of teaching activities in four educational levels respectively. Each example takes into account the age, maturity and ability level of students, and lists the expected learning outcomes of students with different ability levels. The scheme of work demonstrates that students with different learning abilities can have different performances in different learning areas. In order to show the differences of students' abilities more concisely, only three levels with significant differences in each educational level are selected for illustration, and the actual teaching should be adjusted according to the students' actual abilities. The following examples provide practical suggestions for teaching contents and activities and serve as models for future schemes of work. Please refer to Appendix IV.2 for the table.

(A) Example of Teaching Activity in Early Childhood Education

Subject:	General Studies, Science and Humanities	Learning Areas:	Self- Development	Stage:	Preschools
Duration of Learning:	8 lessons				

Unit Name:	It is good to grow up
Formal Teaching Goal:	Understand and accept the changes of (self-) growing up
Teaching Objectives:	Through this unit, students can (should be able to): <ul style="list-style-type: none"> • have a preliminary understanding of their own image; • know that they keep growing up (e.g. outlook, ability).
Keywords:	BB, I, grow up

Teaching Objectives	Examples of Feasible Teaching and Learning Activities and Experience	Performance Descriptors	
Have a preliminary understanding of their own image	<p>After watching a short video of a new-born baby crying, students are asked to complete different tasks:</p> <ul style="list-style-type: none"> • Touch different baby products (e.g. feeding bottle, rattle, etc.) while the teacher observes their reaction; • Observe the image of themselves through the mirror and react; • Observe and compare the differences between themselves and their peers (e.g. their appearance, height, the size of their palms, etc.); • Find a recent photo of themselves; • Able to react when hearing their names. 	L2-1	Able to engage in the activities to explore and understand themselves; Able to imitate certain sounds or actions
		L3-2	Able to give the baby products to the teacher; Able to imitate and make the sound of ‘T’
		L5	Able to point out their five sense organs and four limbs; Able to find their own photo; Able to identify and compare the differences between themselves and their peers
Know that they keep growing up (e.g. outlook, ability)	<p>Go through the following activities and let students make a comparison of themselves through their growth:</p> <ul style="list-style-type: none"> • Compare their current appearance with how they looked like when they were babies through looking at the photos; • Simulate taking care of a baby by touching or trying on baby clothes; • Try on adults’ clothes and shoes; • Complete certain tasks in simulation activities (e.g. packing up toys, throwing away rubbish, putting on shoes, etc.) 	L2-1	Able to look at different photos intentionally; Able to find the clothes when they (the cloths) are completely hidden;
		L3-2	Try to play with baby objects in new way and for a longer time; Able to find their clothes back when the clothes are put in one of the three layers of objects
		L5	Able to identify the photos of themselves at different ages according to instructions; Able to engage in the simulation activities in turns

(B) Example of Teaching Activity in Primary Education

Subject:	General Studies, Science and Humanities	Learning Areas:	Natural Environment and Living	Stage:	Primary Schools
Duration of Learning:	8 lessons				

Unit Name:	The growth of plants
Formal Teaching Goal:	Learn about the features and growth of certain common plants
Teaching Objectives:	Through this unit, students can: <ul style="list-style-type: none"> • Identify the major parts that constitute a plant • Learn about what is needed for a plant to grow
Keywords:	Plant, root, stem, leaf

Teaching Objectives	Examples of Feasible Teaching and Learning Activities and Experience	Performance Descriptors	
Able to identify the major parts that constitute a plant	<p>In the school garden, students are asked to observe different plants and complete different tasks:</p> <ul style="list-style-type: none"> • Touch different plants; • Look at the photos and find out the corresponding plants; • Compare the features of different plants from their outlook; • Go through the puzzle game that involve the major parts of a plant and complete activity of matching words with pictures. 	L3-2	Able to request to touch the plants actively (on their own initiative)
		L5	Able to observe the features of the plants from their outlook
		L9	Able to name the different parts that constitute the plants
Able to learn about what is needed for a plant to grow	<p>Students are asked to grow a plant in the classroom and complete different tasks:</p> <ul style="list-style-type: none"> • Water the plant regularly; • Observe the changes of the plant at different stages and put them into chronological order; • Understand what is needed for a plant to grow and note down briefly the process of growing a plant. 	L3-2	Able to spend a relatively long time exploring the different parts of a plant, e.g. rubbing the leaves with one another; Able to imitate the action of watering the plant(plants)
		L5	Able to put the pictures of a plant in different stages into chronological order and show the changes of the plant as it grows
		L9	Able to note down briefly the process of growing a plant

(C) Example of Teaching Activity in Junior Secondary Education

Subject:	General Studies, Science and Humanistic Education	Learning Areas:	Science and Living	Stage:	Junior Secondary Schools
Duration of Learning:	6 lessons				

Unit Name:	The transmission and reflection of light
Formal Teaching Goal:	Learn about some characteristics of light
Teaching Objectives:	Through this unit, students can: <ul style="list-style-type: none"> • Learn that light travels in straight lines • Learn about the refraction of light
Keywords:	Light, refraction

Teaching Objectives	Examples of Feasible Teaching and Learning Activities and Experience	Performance Descriptors	
		Level	Description
Able to learn that light travels in straight lines	<p>Students are asked to conduct different experiments related to light:</p> <ul style="list-style-type: none"> • Find the luminous and non-luminous objects in daily life; • Find the indicated objects in the dark; • Shine the torch into a bent tube and a straight tube respectively. Look at the illuminating torch from one end of the tube and identify in which situation one can see the light of the torch; • Shine the torch at an object against a wall. When the shadow of the object appears on the wall, ask students to observe the situation after moving the object away. 	L5	Able to name the objects that can illuminate other objects
		L9	Able to engage in different scientific activities actively, while sharing their own experience in the process of discovery and the results they find
		L12	Able to tell that light travels in straight lines through the experiment
Able to learn about the refraction of light	<p>Students are asked to conduct different experiments related to the refraction of light:</p> <ul style="list-style-type: none"> • Experience the effect of refraction by using different light-refracting objects; look for some light-refracting objects at home; • Observe a coin and a pair of chopsticks in a cup of water respectively. Learn about different examples of refraction; • Learn about how the phenomenon of refraction is applied in daily life. Find the common objects that employ the use of refraction (e.g. magnifier, glasses); • Make a microscope with the use of a light box, a convex lens with lens holder and a translucent screen. Experience the refraction of light through it. 	L5	Able to find light-refracting objects
		L9	Able to name the light-refracting objects in daily life
		L12	Able to tell that there are different results when light shines onto the surface of different mirrors through the experiment; Able to explain the phenomenon (of) light refraction

(D) Example of Teaching Activity in Senior Secondary Education

Subject:	General Studies, Science and Humanities	Learning Areas:	Humanities and Living	Stage:	Senior Secondary Schools
Duration of Learning:	12 lessons				

Unit Name:	Macao as a cultural city
Formal Teaching Goal:	Learn about the rich blend of Chinese and European cultures in Macao
Teaching Objectives:	Through this unit, students can: <ul style="list-style-type: none"> • Learn about different ethnic groups in Macao • Learn about the characteristics of the architecture in Macao which encompass(es) a mix of Chinese and European influences(culture)
Keywords:	Macao, ethnic groups, characteristics of architecture

Teaching Objectives	Examples of Feasible Teaching and Learning Activities and Experience	Performance Descriptors	
Able to learn about different ethnic groups in Macao	Students are asked to research about different ethnic groups in Macao online, including their photos, costumes and cuisines. They are then assigned with different tasks according to their capacity: <ul style="list-style-type: none"> • Identify different ethnic groups in Macao from their photos, costumes and cuisines. Briefly describe the lifestyle of different ethnic groups; • Design a questionnaire and conduct interviews with people on the street. Collect statistics of the nationalities and living habits of the interviewees; • Organise the data collected from the questionnaires and interviews. Report and discuss the reasons behind the multi-cultural background of Macao in class. 	L9	Able to briefly describe the living habits of different ethnic groups
		L12	Able to identify the cultural difference(s) among various countries with relevant examples
		L15	Outline the reasons why there are different ethnic groups in Macao
Able to learn about the characteristics of the architecture in Macao which encompass a mix of Chinese and European influences	Students are separated into groups and asked to research about different architecture in Macao online. They are then assigned with different tasks according to their capacity: <ul style="list-style-type: none"> • Find the historical sites and landmarks of Macao that encompass both Chinese and European characteristics; • Identify the differences between European and Chinese architecture; research about the Chinese and European architectural styles and conduct a discussion; • Design two sight-seeing routes that cover Chinese or European architectures respectively; Conduct a field trip and take photos along the route as reference for a presentation in class. 	L9	Able to identify the major historical sites and landmarks of Macao that encompass both Chinese and European characteristics from their photos
		L12	Able to differentiate the style of Chinese and European architecture
		L15	Outline the features of Chinese and European architectures respectively

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Chapter VI

Assessment and Rating Coordination Mechanism

This chapter explicates the methods to apply the Learning Ability Progress Level to student's assessment, putting the emphasis on professional consultation. In daily teaching practice, teachers are encouraged to observe the learning performance of students, collect examples and identify the learning outcome. It is suggested to read this chapter together with Section 4 in Chapter IV on the application of the Learning Ability Progress Level in teaching and learning.

A. Need for Rating Coordination

It is inadequate and unreliable to judge the students' ability level based on the observation of one single learning event. Examples for student assessment should be accumulated from multiple learning scenarios over months. Teachers, based on the examples collected from different learning opportunities and scenarios, can make professional decisions concerning the students' ability to proceed to learning in a new level.

Teachers should adopt the principle of "comprehensive judgment", based on the data and results of school assessment, to determine the appropriate level when judging the level of students' ability. However, different opinions may arise among teachers on the performance for some students. In order to reach valid and consistent judgment, it is necessary to develop a rating coordination mechanism within the same school or among schools.

"Comprehensive judgement", as is indicated by the name, refers to the practice of determining the ability level of students through multiple examples. It is not compulsory for students to obtain the learning outcomes fitting all the descriptions for the level concerned, yet they do need to fit a majority of the descriptions to be qualified for the level considered. To be more specific, among the 6 described items in the specific level, the student should fit 4 or 5 items and demonstrate potential in the remaining items for which he/she may temporarily fail to meet the standard due to environmental factors or physical disability. In other words, more rigorous standards should be adopted to determine student performance.

The "rating coordination" mechanism, which enables teachers and stake holders to review, revise and determine the descriptions concerning rating judgments of students' ability, is initiated to help schools to achieve reliability and consistency in student performance assessment. A solid assessment procedure can thus be established via regular "adjustment" practice. An effective adjustment cycle starts from a team of teachers launching the assessment project, followed by the whole school participation which helps to enhance the skills and confidence on assessment validity, and finally develops into a robust assessment procedure with cross-school identification.

Conducting “rating coordination” among teachers within one school can generate the following effects:

- To have focus group meetings to discuss student ability;
- To familiarize teachers with the application of the Learning Ability Progress Level;
- To consolidate the teachers’ understanding on descriptions of levels;
- To promote teachers’ understanding of the assessment and promote their professionalism;
- To enable dialogues among teachers, staff and professionals for the purpose of reaching proper judgment based on personal observation and experience.

Schools can also improve the quality of “rating coordination” via discussions with students and their family. The teachers should realize that:

- discussion with students on their homework and sharing with student their progress contributes to student’s perception of their own study and ability;
- discussion on student progress with people who interact with the students at various environments is beneficial to decide the most appropriate “ability and performance” of students;
- Informal discussions among teachers could offer important insights into the student development in other areas, which is conducive to enhance all the teaching staff’s recognition and perception of the students’ ability.

B. Practice of Rating Coordination

The rating coordination mechanism is a simple process designed to ensure the reliability and adequacy of the assessment approaches teachers adopt. Participants in rating coordination can be teachers and other professionals within the same school, or teachers from other schools. Teachers firstly conduct preliminary rating for an individual student in accordance with the levels on the basis of the collected examples for students’ performance. Teachers should share their assessment decision and supporting examples on the rating coordination meeting, and discuss with colleagues to reach consensus on the reliability of the judgment. In this process, teachers will discuss the examples of performance for students of similar levels on the same subject to reach judgment consistency. The rating result should be recorded in the table provided in Appendix 4.1.

The rating coordination mechanism is based on professional dialogue. Teachers can adjust their judgment and reach consensus in the rating coordination process, to reach an agreement on the reliable examples that can powerfully support the level of ability students have achieved. The rating coordination mechanism aims to ensure the effectiveness and consistency of the teacher’s judgement, and to promote teachers’ professional development. Subject directors as well as other professionals also play an important role in the process of rating coordination.

A school should conduct rating coordination activity within the school each academic year, to ensure a unified judgement of teachers on the understanding and learning outcomes of the assessment principles; the following approaches are suggested for rating coordination activity:

- Teachers collect examples regarding the learning performance of students via various learning opportunities and scenarios.

- Teachers apply the principle of “comprehensive judgment” to decide the levels of students’ ability based on the collected examples and other materials.
- The school should hold rating coordination meeting to discuss the students’ learning ability and reach consensus.
- Teachers discuss the learning ability of other students based on the principle and examples in the first discussion.
- It may be necessary to revise the results achieved in the first discussion to keep the consistency of judgment.
- The school should design a specific system to appropriately save the records of performance examples for each individual student and upload the rating level into the level database for further analysis.
- The assessment based on the levels and rating coordination meetings is suggested to be conducted once each academic year.

After the rating coordination meeting, teachers can save the examples supporting the level judgements as part of the school assessment framework, and discussion materials for joint activities among schools (if applicable) concerning the rating coordination mechanisms.

C. Notes on Example Collection

It is very important for teachers to collect multiple learning examples to support the judgment. Examples and evidence can be from various sources in diversified forms, including:

- Pictures and video clips
- Observation records
- Class quiz
- Anecdotes
- Reports
- Self-evaluation of students
- Peer review
- Students’ works
- Other forms of works and practices

Teachers can keep records based on their own observation, or the observation reported by other people, to assist and support judgment on students reaching a certain level of learning ability. The providers may include:

- Other teachers
- Teaching assistants
- School staff
- Speech therapist
- Physiotherapist
- Occupational therapist
- Social worker
- Parents
- Siblings
- Classmates
- Peers, etc.

Learning environment has a significant impact on students' behaviour. Factors in the learning environment, such as lack of experience, limited opportunities, overly low or high expectations, and inappropriate teaching practice, may become obstacles to learning and hinder the students from understanding their potential. When students get along with strangers in an unfamiliar environment or a formal learning environment, they will feel great pressure, and thus fail to learn or demonstrate their ability in an effective manner. In other words, students, in familiar surroundings and accompanied by trusted teachers, can reliably repeat some reactions. However, students should be able to transfer what they have learned to new scenarios or generalize for similar situations.

Teachers can observe the performance and reaction of students outside the classrooms, to develop a more thorough understanding of the students' ability to apply the learned knowledge to the new scenario. In addition, it is also crucial to record the response of students at home, in the community, different classrooms and other learning opportunities and activities. Scenarios outside the classroom can provide a good opportunity to judge the performance and ability of students in applying the communication skills, literacy, social interaction and computation.

No matter what kind of examples teacher collect, they should provide background information for record and supporting judgement. Relevant background information includes:

- Date and time of the performance recorded;
- The scenario. For example: in class, in the community, or at home;
- The people with the students, such as therapist, teaching assistant or peers;
- Related resources used, such as the computer or teaching equipment;
- Whether the response is "new" (first time), "manifesting" (new but unstable response), or "established" (expected response of students under certain occasions and conditions);
- Degree of guidance, support or prompts offered to the students in making the responses, such as demonstration, imitation or verbal prompts;
- Usage of communication assisting tools (reasonable assistance);
- Whether the teacher has made adjustments or revisions to demonstrate the learning process, such as the learning outcomes to be replaced, or specific examples recorded.

Most importantly, teacher can develop a clear understanding of the current ability of students and their expected learning progress in the process of collecting examples. The examples of learning performance include:

- Examples of what students "are capable of";
- Evidence collected over a long period from different learning situations;
- Works of students completed without assistance (the degree of assistance also need to be recorded. The gradually declining assistance is also a recognition of progress);
- Learning outcomes that fit the level, but not included in the descriptions;
- Reasonable usage of assisting tools to help students achieve learning outcome;
- Exemption of learning performance due to special needs of students;
- Non-monolithic learning event;
- Learning outcomes beyond the descriptions;
- Example of students' interest in looking for content they have not yet mastered.

Chapter VII

Attainment Level Descriptors of Learning Ability Progress Levels in General Studies, Science and Humanities Education

This Chapter is composed by “Seed Teachers” with reference to curriculum guides, “The Requirements of Basic Academic Attainments”, and textbooks, and in combination with their teaching experience. The levels are divided into two parts: motor sensory development stage and disciplinary development stage, covering learning performances from early childhood education to senior secondary education. The motor sensory development stage applies in all learning areas, and the disciplinary development stage has four learning areas: “Self-development”, “Humanities, Society and Living”, “Natural Environment and Living”, as well as “Science and Living”.

(A) Motor Sensory Development Stage (applicable in all learning areas)

L1-1 : Students start to engage in the activity and gather experiences.

- Students start to trace slow-moving objects by sight with uncertainty, e.g. the student attempts to keep track on an apple moving in front of his/ her eyes.
- Attempt to connect with objects by sight, e.g. when an object that the student likes comes into his/ her view, he/ she will look at that object.
- Make sounds apart from crying or laughing, e.g. grunting.
- Perform some simple hand gestures randomly without trying to imitate others, e.g. waving.
- Start to notice the activity is going on, e.g. when the teacher is holding an object that the student likes and shifts it from one hand to another, the student gazes at the teacher occasionally.
- Observe two objects in turns, e.g. place an apple and an orange in front of the student. When the fruits exchange their positions, the student gazes at them occasionally.
- Able to perform reflexive reaction, e.g. the student blinks his/ her eyes when the teacher touches his or her face with a feather.

L1-2 : Students gradually become aware of the activities and learn from them

- Notice the disappearance of a slow-moving object, e.g. the student gazes at the direction from which an apple disappears.
- Attempt to reach an object while gazing at it under the teacher’s guidance, e.g. the student tries to reach an object he/ she likes with hands when the teacher shows it to him/her.
- Able to react to familiar sounds, e.g. when the student hears the voice of a teacher he/ she is familiar with, he/ she looks at the teacher.
- Attempt to imitate a simple and familiar gesture, e.g. head shake.

- Produce interesting results with repeated gestures, e.g. the student makes sound out of rattle a by shaking it with hands repeatedly.
- Reach an object placed within their view(s), e.g. the student reaches out to touch or grasp an object that interests him/ her when it is placed within his/ her view.
- Explore objects with their sensory organs, e.g. when the teacher put an apple into the student's hands, he/ she is able to hold it and put it into his/ her mouth.

L2-1 : Students start to have a relatively consistent reaction to the people, incidents and objects that they are familiar with.

- Able to find an object that is completely hidden, e.g. place a fruit that the student likes within his/ her view and cover it up completely with a cloth. The student is then able to pull the cloth away and take the fruit.
- Able to repeat an arm (or body) gesture until another object that interests them appears. In addition, the student will give up the object in hands in order to get another object.
- Able to react to familiar sounds and attempt to imitate them, e.g. when the student hears the sound of “Baba”, he/ she is able to imitate it and make a sound similar to “Baba”, even though it does not resemble the original sound very much.
- Able to imitate familiar gesture instantly, e.g. when the teacher performs the gesture of “BYE BYE”, the student is able to imitate it instantly even though it does not resemble the original gesture very much.
- Accept and join the team-building activities, e.g. the student is willing to play the toys with his/ her classmates.
- Able to trace fast-moving objects with their eyes, e.g. when an object falls to the ground within the student's view, he/ she will fix their eyes on it.
- Glance through several objects at the same time and attempt to trigger feedbacks or interactions, e.g. place several toys in front of the student. When the student wants to get the toy he/ she likes, he/ she will bang the table or wave his/ her hands to catch adults' attention.

L2-2 : Students start to have proactive performances in interactive activities.

- Able to find an object that is completely hidden from one out of three different locations, e.g. When the teacher puts an apple into one of the three boxes within the student's view, the student is able to locate the box precisely and find the apple.
- Take action proactively in interactive activities, e.g. the student moves his/ her body proactively in order to get the rattle.
- Imitate the pronunciation of familiar vocabularies, e.g. the student imitates the teachers' pronunciation of “ball”.
- Attempt to imitate unfamiliar gestures, e.g. when the teacher pretends a rabbit by putting his/ her hands by the side of the head, the student tries to imitate the gesture.
- Co-operate with others in collective or team-building activities, e.g. when the student takes part in collective activities, he/ she is able to wait for his/ her turn.
- Able to explore different objects with an experimental approach and have short-term memory of the result, e.g. the student is able to put a candy into a container and also get the candy out by putting the container upside down.

- Able to express their emotions in their own way consistently, e.g. the student is able to express his/ her request for toys in a consistent way.

L3-1 : Students start to communicate with people consciously.

- Able to keep their attention in a short period of time and find a specific object under three layers of things, e.g. when the student notices that teacher hides an apple in a box and covers the box up with two pieces of cloth in different colours, the student is able to observe and find the apple from the box under his/ her observation.
- Able to memorise the things they have learnt, e.g. according to his/ her previous experience, the student is able to pull up his/her favourite object which is tied to a rope.
- Able to imitate unfamiliar sounds without high accuracy, e.g. when the teacher pushes a toy car forward and produces the sound of “Bubu”, the student is able to imitate it and make a sound that is not too similar to it.
- Able to imitate unfamiliar actions without high accuracy, e.g. when the teacher performs the action of driving a car, the students is able to imitate it but not very accurately.
- Able to engage in team-building activities with less support while having a relatively consistent reaction to a specific incident or context, e.g. during the activity, the student will take the initiative to hold his/ her classmate’s hand. And when the activity finishes, he/ she will clap his/ her hands.
- Able to communicate with others consciously in order to ask for help to perform certain actions or to make certain event incidents happen, e.g. when the teacher puts some food at a high place, the student is able to pat at the teacher softly in order to get the food.
- Able to explore an object in a more sophisticated approach, and change the method of experimentation depending on the nature of the object, e.g. the student is able to explore different ways of playing a toy car, from pushing it back and forward, rolling it up and down a slope to pulling it along while he/ she walks.

L3-2 : Students gradually employ common ways of communication.

- Able to find an object hidden in one of three layers of things, e.g. holding a candy in hand, the teacher moves his/ her hand under three layers of things from left to right (or from right to left) and hides the candy in one of the layers. The teacher then shows the student the hand without candy. The student is able to find the candy from the layers.
- Able to retain the memory of the things they have learned for a longer period of time, e.g. the student is able to stack the food pyramid model up in the correct order even without watching the teacher’s demonstration.
- Able to imitate the pronunciation of some simple and new vocabularies, e.g. the student is able to imitate the teachers’ singing the “Wash Your Hand Song”.
- Able to observe and imitate unfamiliar actions at the same time. The action has to be invisible to students themselves, e.g. drawing circles on the face with fingers.
- Learn to ask for assistance when they attempt to turn on certain objects, e.g. the student gives the electronic toy to the teacher and signals that he/ she needs

assistance to turn it on.

- Able to predict the consequence of certain events, e.g. pushing down the stacking blocks will result in an outburst of sound.
- Able to spend longer time on exploring an object, e.g. the student is able to play with a robot with movable joints for a longer period of time.

(B) Disciplinary Development Stage (divided into four disciplines, including “Self-development”, “Humanities, Society and Living”, “Natural Environment and Living”, and “Science and Living”):

L4 : Self-development

- Able to imitate the action of pointing at their eyes, ears, mouths and four limbs.
- Able to try eating with a spoon and drinking from a cup by themselves.
- Able to tell others when they need to go to the toilet.
- Able to point out a picture of someone who needs to take medicines as he/ she is ill.
- Able to response to questions regarding their positive or negative emotions, e.g. response to the teacher’s question: are you happy/ angry/ sad?
- Able to take the initiative to share toys or food with adults or children, e.g. the student plays toys with others or share his/ her food with others.

L5 : Self-Development

- Able to point out their eyes, ears, mouth, nose and four limbs according to instructions.
- Able to eat with a spoon.
- Able to brush their teeth with a toothbrush roughly and wash their face.
- When they feel sick, they are able to tell the adults whom they are close to about the situation, such as the teacher and their parents.
- Able to try eating different types of food.
- Able to take the initiative to express their emotional state, e.g. I am very happy, I don’t like it, I am afraid.
- Able to identify others’ emotional state, e.g. connecting a smile with being happy.
- Willing to wait for their turns and follow the rules of a game, e.g. the student is able to carry on doing the original activity even when the teacher is away.

L6 : Self-Development

- Able to tell the functions of the five sensory organs and four limbs.
- Able to tell the change of a body, e.g. from being fat to getting thin.
- Able to identify their own gender and others’.
- Able to put on long trousers, shoes and undo the buttons on their own.
- Understand that they can ask adults for help when they encounter difficulties, e.g. they can find the police when they get lost.
- Able to follow the rules of using various public facilities, e.g. keep quiet at the library.
- Able to outline the procedure of seeing the doctors from looking at the pictures.

- Able to notice other children's emotional responses and give them comfort, e.g. when the student sees another child is crying in class, he/ she will tell the child, "don't cry!" and give the child a toy as an act of consolation.

L7 : Self-Development

- Able to describe some good habits of a healthy routine briefly, e.g. sleeping and getting up early.
- Able to indicate or say that they should brush their teeth after eating and before going to bed.
- Understand that they should love and protect their bodies, e.g. telling their family when they get hurt.
- Able to wear the appropriate clothes according to a specific occasion, e.g. wearing sportswear at PE lessons.
- Able to put three cards that depict the procedure of seeing a doctor in chronological order, and explain the whole process according to the cards.
- Able to try participating in new activities, e.g. being enthusiastic about taking part in new outdoor activities and willing to take up challenge(s).

L8 : Self-Development

- Able to outline the advantages of having good habits, e.g. sleeping and getting up early is good for health.
- Able to explain the reasons why they should brush their teeth after eating and before going to bed.
- Able to name one solution when they have minor injuries, e.g. apply medical plasters.
- Able to outline the procedure of seeing the doctor.
- Able to describe the different clothes they would wear in different seasons.
- Able to name one emergency measure, e.g. calling the emergency hotline 999.
- Able to tell the predicted emotional states one may have according to different scenarios, e.g. the student understands that one will look excited or happy after watching a comedy.

L9 : Self-Development

- Able to tell the consequences of not brushing their teeth.
- Able to tell the things they should be cautious of when they take part in certain activities, e.g. they should not eat too full before swimming.
- Able to name common safety signs according to the particular circumstances, e.g. emergency exit, the prohibition signs for swimming.
- Able to tidy up their own personal items.
- Able to take the initiative to resolve and apologise for their mistakes.
- Able to take the initiative to phone others when they need help.
- Able to find the solution to their problems in order to soothe emotion, e.g. the student is able to say "if you hit me again, I will tell the teacher."

L10 : Self-Development

- Able to identify different objects in the external world with their sensory organs, e.g. identify the sound produced at different scenes by using their sense of hearing.
- Able to describe the changes in weight and height during the process of growing up.
- Able to outline the good hygiene habits, e.g. take showers daily, change their clothes and clip their nails regularly.
- Understand that they should love and protect their bodies, e.g. maintain good personal hygiene in order to prevent illnesses.
- Able to describe pleasant experiences they had in life.
- Able to observe a picture and outline the reasons behind the accidents happen at school and at home.
- Able to describe a residency, including the setting, facilities and their usages.

L11 : Self-Development

- Able to list three steps in the procedure of cleaning their bodies correctly, e.g. wet the body first, get the right amount of shower gel, scrub it over the body and then rinse it away.
- Able to check the hygiene level of their bodies and do the cleaning.
- Able to classify categories of the food pyramid.
- Able to tell two negative consequences to their bodies if they are picky eaters, e.g. being too thin, feeling weak and tired.
- Able to name three examples of nutrient-dense food.
- Able to tell the things they should be cautious of when taking part in extra-curricular activities with an example, e.g. the student is able to tell that they have to beware of safety when he/ she goes swimming. For example, he/ she should be accompanied by an adult and wear swimming glasses.

L12 : Self-Development

- Able to tell the physical differences between males and females, e.g. boys have penises and girls have breasts.
- Able to outline the proper ways of medication consumption, e.g. take the medicines on time and swallow with water.
- Able to outline the proper ways of medication storage.
- Able to tell the preventive measures against seasonal influenza through the news, e.g. wash hands regularly and wear surgical masks.
- Able to tell the measures for home safety, e.g. one should not play on a bunk-bed, dry up the stagnant water on the floor.
- Able to explain the procedure of an injury treatment with an example, e.g. if one cuts his/her finger, the wound will start bleeding.
- Able to beware of how environmental hygiene could affect one's health, e.g. remove stagnant water and tie the rubbish bags up properly to eliminate mosquito breeding.

L13 : Self- Development

- Able to name three important organ systems of the human body, e.g. the skeletal system, respiratory system and cardiovascular system.

- Able to outline the components of the main organ systems of the human body, e.g. the skull, bronchus and blood vessels.
- Able to describe the functions of the main organ systems of the human body.
- Able to describe the common nutrients, e.g. carbohydrates, protein and fat.
- Able to observe the nutrition facts label and explore the nutrients contained in the food they always consume, e.g. carbohydrates, protein and fat.
- Able to design a healthy and balanced diet for themselves.

L14 : Self-Development

- Able to outline the physical changes during puberty, e.g. boys will start to have beard; girls will start to have menstruation.
- Able to name two ways to protect themselves, e.g. keep distance from strangers, say “no” loudly when someone forces them to do something they don’t want to.
- Able to describe the process of childbirth, e.g. during the human reproduction process, a sperm fertilises an ovum, which turns into a zygote. The zygote then develops into a foetus.
- Able to outline the negative consequences of under-age sexual activities, e.g. commit a crime, get pregnant or get sexually-transmitted diseases etc.
- Able to predict the hidden danger in the environment, e.g. touching electric appliances or switches with a wet hand or while standing on a wet floor can result in an electric shock.
- Able to outline what to do in case of an emergency, e.g. simple first-aid.

L15 : Self-Development

- Able to take medications according to the medication label.
- Able to list two drawbacks of drug abuse.
- Able to describe the common infectious diseases in Macao, e.g. Hepatitis B.
- Able to list examples of the government measures in the prevention of infectious diseases.
- Able to list two drawbacks of alcohol abuse.
- Able to list three harmful chemicals in cigarettes, e.g. nicotine, tar and carbon monoxide.

L16 : Self-Development

- Able to evaluate and understand their own values and moral behaviours, e.g. the importance of integrity.
- Able to evaluate the characteristics of their way of doing things, e.g. being responsible, able to keep their promises.
- Able to draft two proposals to improve their weaknesses.
- Able to describe their view and emotional changes towards the opposite sex and same sex respectively.
- Able to manage their time effectively, e.g. design and arrange their own daily schedule.
- Equipped with a sensible attitude towards spending and preliminary financial skills, e.g. to buy what they “need” rather than what they “want”.

L17 : Self-Development

- Able to evaluate and understand their own values, moral behaviours, and what positive or negative influences they will bring to others or the society.
- Able to comment on the impacts of teenagers’ fanatic behaviours of worshipping their idols.
- Able to suggest solutions to deal with their negative emotions, e.g. change of thoughts, be proactive.
- Able to analyse the reasons behind their failures and difficulties, and look for solutions.
- Able to analyse the factors that may affect their directions in future education and career while paying attention to their own development in future.

L18 : Self-Development

- Able to evaluate what can be called as failures and difficulties, and infer possible solutions.
- Able to evaluate the value of life, e.g. able to have positive and proactive thoughts on their own lives.
- Able to treasure life and raise two negative impacts that might be brought about if someone commits suicide.
- Able to evaluate the characteristics in different phases of life and have a proper attitude towards the course of human life, from birth, old age, illness to death.
- Able to evaluate the dangers and negative effects of drugs, alcohol abuse and smoking.
- Able to try to evaluate how the gaming industry in Macao has affected the daily life of citizens.

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L4 : Humanities, Society and Living

- Able to express their pleasant feeling when they hear others’ compliments.
- Able to complete simple tasks under the teacher’s guidance, e.g. passing the play-doh to their classmates.
- Able to show their interest in joining the activities that attract them, e.g. be happy to make friends with others.
- Able to greet others politely.
- Able to notice others’ need, e.g. notice that a classmate’s seat is taken by others.
- Able to share toys or food with their peers, e.g. share their toys with other classmates or give their food to other classmates.
- Able to show their care to their family, e.g. take the initiative to say “good bye” when their family members are going out.
- Able to take part in group activities with their peers, e.g. playing the play-doh together.

L5 : Humanities, Society and Living

- Able to complete simple tasks by themselves, e.g. putting objects back to their original position after using them.
- Able to express “Please”, “Thank you” and “Sorry” through body language, sign language or sound.
- Able to take part in the regular learning activities in class consistently.
- Able to be quiet when watching videos or listening to music.
- Able to help others according to the instructions, e.g. the student follows the teacher’s instructions and take(s)his/ her peers back to their seats.
- Able to take part in some simple games with their peers, e.g. play the same toy with a classmate.
- Able to observe the environment and carry out a designated activity at a specific place, e.g. eat their snack at the table, use the loo at the toilet.
- Able to express their gratitude after receiving someone’s help.

L6 : Humanities, Society and Living

- Able to name the things they like, e.g. food, toys etc.
- Able to admire their own appearance and build up confidence, e.g. after getting up, the student is able to observe himself/ herself from the mirror and comb his/ her hair.
- Attempt to manage be responsible for the things they like, e.g. pens, toys.
- Able to help their classmates proactively, e.g. when the student sees his/ her classmate gets hurt, he/ she proactively asks teachers for help.
- Able to identify what is right or wrong in simple actions, e.g. pointing out that littering on the street is not right.
- Able to talk about what other classmates have done well.
- Able to name two public facilities in their own community, e.g. parks, supermarkets.

L7 : Humanities, Society and Living

- Able to describe the mistakes or unreasonable parts of an event , e.g. it is not reasonable to wear raincoats on a sunny day.
- Able to complete simple self-care tasks by themselves, e.g. going to the toilet.
- Able to describe the course of events, e.g. recognising the people and objects that is involved.
- Able to collaborate with other classmates in certain activities or when playing toys, e.g. building toy blocks together, throwing a ball to one another.
- Able to name or indicate the public facilities according to their functions, e.g. knowing that they go to a supermarket for shopping.
- Able to name the city they live in and their addresses.
- Able to name the important festivals according to the pictures, e.g. Chinese New Year, Dragon Boat Festival.
- Able to raise five examples of common occupations.

L8 : Humanities, Society and Living

- Able to explain the relationship between objects, e.g. toothbrush and toothpaste are used for brushing teeth.
- Able to play with a toy in different ways, e.g. use the toy food for playing some cooking games and other role-playing games, such as shopping at the supermarket.
- Able to come up with solutions to problems, e.g. the student learns to use a pencil sharpener to sharpen the pencil when it becomes blunt.
- Able to express their will to the adults proactively.
- Able to act properly in different scenarios in daily life, e.g. not picking the flowers in a park.
- Able to name a ritual for celebrating an important festival, e.g. having moon cakes at Mid-Autumn Festival.
- Able to explain the duty of common occupations, e.g. the duty of firemen is firefighting.
- Able to admit their faults.

L9 : Humanities, Society and Living

- Able to illustrate the possible outcome of an incident according to its cause-effect relationship, e.g. if they get up late, they will be late for school.
- Able to outline the content of a story after listening to it, e.g. describe briefly the origin of Mid-Autumn festival.
- Able to solve problems through the use of replacement, e.g. the student knows to find a similar item to replace the original part of a toy and keep playing with it.
- Able to take part in relatively complex role-playing or simulation games with peers.
- Able to express their love to their family with words or actions.
- Able to explain the help and convenience that different occupations bring to people's daily life.
- Able to identify the major landmarks of Macao in pictures, e.g. The Ruins of St. Paul, A-Ma Temple, The Guia Fortress and Lighthouse.

L10 : Humanities, Society and Living

- Able to compare the rituals among those relatively important festivals, e.g. preaching at Christmas, tomb-sweeping at Ching-Ming Festival.
- Able to tell the Commemorative Day of the Establishment of the Macao Special Administrative Region.
- Able to explain what facilities there are in a park and their usages.
- Able to follow the rules of using public facilities according to the signs.
- Able to name the classroom objects they should bring to school as a student.
- Able to tell the usage of currencies.
- Able to illustrate the major industries in Macao by observing the pictures provided, e.g. service industry.

L11 : Humanities, Society and Living

- Able to outline the major components of Macao as well as the features and characteristics of the streets in Macao.
- Able to name the common community facilities in Macao and the services they provide.
- Able to name different types of extra-curricular activities that employ the community resources, e.g. personal and group activities, static and dynamic activities.
- Able to name the organisations that arrange extra-curricular activities.
- Able to outline the advantages of taking part in extra-curricular activities.
- Able to illustrate the attitude they should have when they take part in the activities.
- Able to list examples of the activities that the school organised recently.

L12 : Humanities, Society and Living

- Able to differentiate the currencies of neighbouring countries.
- Able to outline the channels where they can attain information of community services, e.g. reading at posters, surfing the internet.
- Able to name the common transportations in Macao and their characteristics.
- Able to name the four great inventions of ancient China.
- Able to differentiate the architecture, food, languages and costumes etc. between Chinese and Western cultures.
- Able to explain the origin of certain festivals.
- Able to explain the cultural difference among different countries with examples.

L13 : Humanities, Society and Living

- Able to explain the symbolic meaning of the regional flag of Macao.
- Able to compare the differences before and after Portuguese settled in Macao.
- Able to outline how the infusion of Chinese and Western cultures influences Macao residents' lifestyle(s) in different aspects, such as their (diet) culinary cultures, costumes, festivals and architecture.
- Able to illustrate the social welfares enjoyed by Macao residents and explain the reasons why –Macao government provides relevant welfares.
- Able to outline which government departments and independent organisations are responsible for maintaining law and order, as well as investigate their scope of work.
- Able to outline their identities and responsibilities in different groups, e.g. their identities at school are students while their responsibilities are studying hard and listening to the teachers.
- Able to outline the major religions that Macao resident believe in.

L14 : Humanities, Society and Living

- Able to explain the rights and responsibilities of Macao residents according to the Basic Law.
- Able to outline the population distribution in Macao and the possible problems derived from it according to the census data.

- Able to find out solutions to the economic and livelihood issues that Macao residents encounter due to the tourism and gaming industry in Macao.
- Able to outline various cultural events that take place in Macao, and indicate the reasons why Macao organises these events every year.

L15 : Able to list examples of Macao residents' daily life and the development of economy in collaboration with neighbouring districts L15 : Humanities, Society and Living

- Able to explain the contributions of the four great ancient civilisations to the progression of human civilisation.
- Able to illustrate how the countries that encounter food crisis solve the problem.
- Able to analyse the impacts of air pollution to the Earth.
- Able to delineate how the important events in modern history or a specific historical event influence China, e.g. the Opium Wars.
- Able to name the important events in the modern history of China and express their thoughts on it.
- Able to analyse the impacts of global warming on human life, e.g. crop losses.

L16 : Humanities, Society and Living

- Able to describe briefly the archaeological development and discovery of Stone Age.
- Able to evaluate the influences of Mr. Sun Yat-sen on China, e.g. social changes and development.
- Able to indicate the locations of the seven continents and five oceans on a map.
- Able to explain briefly the definitions of landlocked countries, coastal countries and island countries.
- Able to illustrate the distribution of the world population.
- Able to analyse the basic characteristics and differences between the development in cities and villages.

L17 : Humanities, Society and Living

- Able to analyse the impacts of livestock and agricultural development on human society and living.
- Able to indicate the locations of the major countries across different continents on a map.
- Able to analyse the topography and climate characteristics of landlocked countries, coastal countries and island countries respectively.
- Able to describe briefly the relationship between the archaeological discoveries in China and Chinese civilisation, e.g. the invention of agriculture.
- Able to analyse the relationship between the religions and ideologies of different countries or ethnic groups around the world.
- Able to compare the differences of the population distribution situations in different natural environments.

- Able to comment on the social impacts of over-population and population aging.

L18 : Humanities, Society and Living

- Able to comment on the changes in livelihood and economy before and after Macao returned to China.
- Able to compare the characteristics of the four regions in China in terms of their climate, topography and hydrology etc.
- Able to evaluate the impacts of the growth in Macao land area on its social development.
- Able to propose feasible plans and advices on the preservation of the Historical Centre of Macao.
- Able to infer the problems that might arise in the process of urbanisation in Macao and propose measures that can improve the situation.
- Able to infer the impacts of the advance in transport system among Hong Kong, Zhuhai and Macao on the economic development.

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L4 : Natural Environment and Living

- Able to express interest in nature.
- Able to imitate the ways their teacher touches small animals and plants.
- Able to notice the beings that produce a sound or an odour in the natural environment.
- Able to notice weather changes, e.g. sunny days and rainy days.
- Able to react to the movements of animals, e.g. when they see a cat jumping, running or purring, they look delighted.
- Able to be curious about the living environment of animals.
- Able to gaze on different parts of plants and notice their characteristics.
- Able to observe the process of taking care of plants.

L5 : Natural Environment and Living

- Able to observe characteristics of animals' outlook.
- Able to observe changes of plants, e.g. budding, growing.
- Able to indicate the beings that produce a sound or an odour in the natural environment.
- Able to identify the characteristics of the environment where commonly-seen animals dwell in, e.g. fish lives in water.
- Able to simply identify different types of plants, e.g. flowers, grasses, trees.
- Attempt to learn about how to take care of small animals.

L6 : Natural Environment and Living

- Able to indicate or name the physical characteristics of common animals.
- Able to indicate or name the changes of plants as it grows, e.g. some plants blossom with flowers.

- Able to distinguish between natural and artificial items, e.g. real flowers and artificial flowers.
- Able to list examples of two animals according to the specific environment they live in, e.g. both fish and shrimp live in the sea.
- Able to indicate or name different parts of a monotypic plant, e.g. flowers, leaves.
- Able to provide their pets with daily necessities, e.g. fodder.

L7 : Natural Environment and Living

- Able to indicate or name a specific physical characteristic of common animals and its usage, e.g. birds have wings which are used for flying.
- Able to indicate or name the consequences if plants lack water and sunlight, e.g. the plant will wither.
- Able to identify the specific odour of different objects, e.g. the scent of flowers and the smell of car exhaust gas.
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- Able to name the physical characteristics of animals that live in different environment(s), e.g. fish have scales, birds have wings.
- Able to indicate or name the difference(s) among the appearances of common plants, e.g. the colour or size of flowers.
- Able to indicate or name the hygiene condition of daily necessities for pets.

L8 : Natural Environment and Living

- Able to compare different weather conditions, e.g. sunny, cloudy and rainy.
- Able to describe the difference between the same part of common poultries, e.g. the feet of chickens are different from the feet of ducks.
- Able to arrange the pictures that outline the growth of plants in the correct order, e.g. from seed, budding to growing green leaves.
- Able to compare two animals that share similar physical characteristics, e.g. pigeons and bats.
- Able to indicate or name the different living environment for plants, e.g. aquatic plants live in water; terrestrial plants live on land.
- Able to explain how they can maintain a good hygiene condition for pets.

L9 : Natural Environment and Living

- Able to name or indicate how the weather changes, e.g. it is hot in summer and cold in winter.
- Able to name or indicate the characteristics of different fruits, e.g. the size, the colour.
- Able to tell the differences and similarities between healthy and unhealthy animals.
- Able to name the food for various common animals, e.g. rabbits eat vegetables, cats eat fish.
- Able to indicate or name different marine species.
- Able to note down common practices of taking care of little animals.

L10 : Natural Environment and Living

- Able to explain the differences between living and non-living things.
- Able to classify the living environment for different animals from the pictures.
- Able to identify the sex of animals from their physical characteristics.
- Able to explain the functions of the physical characteristics of certain animals, e.g. turtles use their shells to protect their bodies.
- Able to explain the changes of an organism (creature) as it grows.
- Able to compare the activities of animals and plants, e.g. plants will only move if the wind sweeps across them.
- Able to differentiate plants from animals through the use of their sensory organs as well as knowing their names, e.g. the student is able to identify mint through the sense of touch and smell.
- Able to name different parts of plants, e.g. root, stem and leaf.

L11 : Natural Environment and Living

- Able to identify the physical characteristics of various animals.
- Able to identify animals that live in groups from the pictures.
- Able to explain the routine of certain animals.
- Able to differentiate herbivorous animals from carnivorous animals.
- Able to name three vital elements that organisms need in order to stay alive.
- Able to name two responsibilities of looking after the animals.
- Able to explain the proper approaches of looking after the animals.
- Able to enact the appropriate measures according to the weather conditions, e.g. close the windows when it is raining.

L12 : Natural Environment and Living

- Able to list two examples of the animals that can survive with the lack of water, e.g. camels, lizards.
- Able to tell the contributions of animals to human beings, e.g. guide dogs, bees.
- Able to tell the functions of root, stem and leaf.
- Able to name the edible parts of plants, e.g. apples are the fruits of plants.
- Able to name two daily necessities that are made of plants, e.g. paper, wooden chopsticks.
- Able to name two measures to protect the plants.
- Able to name three environmentally-friendly principles that can enhance the effective use of resources, e.g. reduce, reuse, and recycle.
- Able to be pay attention to two common types of energy used in daily life and the measures to save energy.

L13 : Natural Environment and Living

- Able to illustrate how the three states of water transform from one to another.
- Able to explain the relationship between air and the growth of plants.

- Able to name the components of the physical appearance of the Earth, e.g. land, ocean.
- Able to name the different natural environment existed on the surface of the Earth, e.g. tropical forests, glaciers, deserts etc.
- Able to outline the construction of the Earth.
- Able to indicate the disasters caused by crustal movements.

L14 : Natural Environment and Living

- Able to tell the interrelations between water and various natural phenomenon, such as rain, cloud, fog and snow.
- Able to indicate the reproduction systems and characteristics of viviparous and oviparous animals.
- Able to distinguish among different animal species, such as reptiles, birds, fish and mammals.
- Able to name the different forms of reproduction and pollination for plants, e.g. anemophily (by wind), hydrophilic (by water) and biotic pollination.
- Able to outline the causes and impacts of environmental pollution, e.g. industrial manufacturing produces wastewater, which flows into the river and kills the fish.
- Able to explore various measures to improve environmental pollution.

L15 : Natural Environment and Living

- Able to outline the composition of solar system and the features of its principle components.
- Able to name the common astronomical phenomenon caused by the relative positions of the sun, the moon and the Earth, e.g. solar and lunar eclipses.
- Able to name the structural characteristics of plants that help them to adapt to the natural environment they live in.
- Able to explain the ways of living and physical characteristics that animals employ in order to adapt to the natural environment they dwell in.
- Able to raise two examples of global environmental problems, e.g. the melting of glaciers, greenhouse effect.
- Able to examine how global warming affects the climate changes on the Earth, e.g. changes in seawater temperature results in typhoons; changes in the level of rainfall results in droughts and floods.

L16 : Natural Environment and Living

- Able to examine the interrelations and impacts of major geographic elements, such as terrain, climate and hydrology.
- Able to compare the climate features in various countries and regions.
- Able to analyse the weather conditions and their changes of certain places.
- Able to analyse the hydrological characteristics of rivers and lakes.
- Able to analyse the causes of natural disasters.
- Able to delineate the conditions for the formation of grasslands and tropical rainforests.

L17 : Natural Environment and Living

- Able to infer how the characteristics in temperature and rainfall across four seasons can affect the production and living of mankind in China.
- Able to comment on the climate features of Macao and summarise its causes.
- Able to comment on and explain how natural disasters affect the living of mankind.

- Able to infer the preventive and emergency measures that deal with different natural disasters.
- Able to comment on how human activities result in the desertification of grasslands and reduction of rainforests while suggesting feasible solutions to the problems.

L18 : Natural Environment and Living

- Able to comment on how the exploitation and utilisation of rivers and lakes affect the production and living of the residents.
- Able to comment on how mankind exploit and utilise the resources in various terrains according to their distinctive characteristics.
- Able to comment on the causes and emergency measures of natural disasters that occur in Macao, such as typhoon and salt tide.
- Able to comment on the causes of global warming, acid rain and heat island effect while outlining their relationships with human activities.
- Able to comment on how the pollutions caused by urbanisation and industrialisation have affected the survival and living of mankind.
- Able to evaluate the basic situation of waste management in Macao, including the disposal of flue gas, liquid waste and solid rubbish.

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L4 : Science and Living

- Able to notice how different objects can produce different sounds.
- Able to use their five senses consciously to explore different objects and their characteristics, e.g. soft and hard.
- Able to notice the temperature of an object, e.g. cold and hot.
- Able to take part in simple scientific experiments, e.g. notice how the ice melt in their hands.
- Able to explore rolling objects, e.g. a ball.
- Able to explore reflective objects, e.g. mirror, glass and metal surface.

L5 : Science and Living

- Able to identify the different sounds produced by different objects.
- Able to indicate the characteristics of an object, e.g. dry and wet.
- Able to indicate objects that has the characteristics of being cold or hot in daily life, e.g. ice and fire.
- Able to differentiate light from darkness.
- Able to make an object roll.
- Able to see an object through the reflection of a mirror.

L6 : Science and Living

- Able to identify different sounds in their daily life.
- Able to change the characteristics of an object through certain methods, e.g. wetting a dry towel.
- Able to turn on the electric appliances by turning the power on.
- Able to name the objects that can illuminate other objects, e.g. a candle, a torch.
- Able to make an object roll and make it stop rolling.
- Able to use a tool to pull an object.

L7 : Science and Living

- Able to take part in different scientific activities proactively.
- Able to use simple tools properly, e.g. cutting a piece of paper with scissors.
- Able to identify the different materials found in daily life, e.g. plastic bottles, metal can and paper.
- Able to use simple methods to preserve food, e.g. putting food in a container and place it into the fridge.
- Able to describe the characteristics of magnets.
- Able to indicate or name the home appliances that are powered by electricity.

L8 : Science and Living

- Able to experience the changes of materials, e.g. wrapping the hot food in tissue paper and towels respectively and compare their effectiveness in heat preservation.
- Able to pay close attention to an experiment and note down one of the changes that occurred, e.g. documenting the growth of a seed.
- Able to identify the usage of different home appliances, e.g. fridge is used for freezing and preserving food.
- Able to identify the differences in the appearance of raw and cooked food.
- Able to identify the different levels of wind force produced by different objects, e.g. electric fan produces stronger wind than paper fan.
- Able to use multiple sensory organs to identify whether the food is edible or not.

L9 : Science and Living

- Able to participate in various scientific activities proactively and talk about their experience in the exploration as well as its results, e.g. explore the different outcomes when they push a toy car on different surfaces.
- Able to name the objects that are attracted to magnets.
- Able to explain briefly the environmentally-friendly measures that can be applied in daily life.
- Able to classify and recycle different objects according to the materials they are made of.
- Able to name the simple methods of preserving food properly, e.g. using salt to preserve food.
- Able to attempt to make small objects related to science, e.g. a small windmill.

L10 : Science and Living

- Able to explore different ways to make a balloon expand through an activity.
- Able to explore the existence of air through an experiment, e.g. with the use of air-freshener or steam.
- Able to name the natural and artificial light sources that are commonly seen in daily life, e.g. the sun, lightning, torch and lamp.
- Able to name transparent and non-transparent objects.
- Able to distinguish between noise and pleasant sounds through an activity, e.g. the sound of piling at a construction site and the sound of music.
- Able to experience the vibration of sound through an experiment, e.g. conduct an experiment that shows how small beans on a plate jump because of the vibration of sound.
- Able to explore the characteristics of magnets, e.g. magnets are able to attract and attach to metallic objects.
- Able to make toys with the use of magnets, e.g. magnetic fishing toy.

L11 : Science and Living

- Able to outline the characteristics of magnets through an experiment, e.g. like poles repel; unlike poles attract.
- Able to name the major sources of heat energy, its usage and importance.
- Able to measure the temperature through different methods.
- Able to compare the speed of heat transfer through different materials.
- Able to indicate that objects expand as the temperature goes up and contract as it goes down through an experiment.
- Able to put the battery into an electronic toy with its positive and negative terminals fitting in accordingly and turn on the toy.
- Able to name the precaution and safety guidelines when using electricity, the reasons and consequences behind it.
- Able to name two functions of magnets, e.g. fixing the door at its opening and closing positions, collecting iron objects more conveniently.

L12 : Science and Living

- Able to tell that air will rise when it is heated up through an experiment.
- Able to outline the characteristics of air through an experiment.
- Able to tell that light travels in a straight line through an experiment.
- Able to explain the causes of the formation of a shadow through an experiment.
- Able to tell that there are different results when light shines onto the surface of different mirrors through an experiment.
- Able to explain the phenomenon of the refraction of light.
- Able to explain the appropriate ways of using electric devices, e.g. using the correct switches to turn on and off its power.

L13 : Science and Living

- Able to name the basic properties of air.
- Able to name the characteristics of air, e.g. air helps burning.
- Able to name different ways of isolating burning objects from air.
- Able to outline how air results in rust.
- Able to explore how electricity can generate light, heat, sound and power.
- Able to outline the conductors and insulators in daily life.

L14 : Science and Living

- Able to name the components that constitute an electric circuit.
- Able to outline the theory behind the flow of electric circuit.
- Able to explore various forms of energy transformation, e.g. electric fans transform electricity into kinetic energy.
- Able to outline various methods of generating electricity, e.g. by water power, wind power and solar power.
- Able to explore methods of saving electricity.
- Able to tell that the electricity generating system employed in Macao relies primarily on diesel generator sets, with natural air generator sets as a support.
- Able to explain how electricity has made life more convenient with various examples, e.g. electricity is used to power the elevators.

L15 : Science and Living

- Able to outline the utility of force, e.g. maglev train.
- Able to analyse how force can manipulate the states of an object, e.g. direction, speed and shape.
- Able to explain briefly the theories of machine and (manipulates) applies it, e.g. operating levers and pulleys.
- Able to outline the theory of simple mechanical operations and how it is applied in daily life.
- Able to learn about how the inventions by famous scientists have contributed to human (life).

L16 : Science and Living

- Able to name the major components of air as well as explaining the main properties and usages of oxygen and carbon dioxide.
- Able to name the features and usages of common metal, such as iron, bronze and aluminium while outlining how metal smelting has influenced human civilisation.
- Able to describe the main properties and usages of acid and alkali while listing examples of the common forms of acid, alkali and salt.
- Able to determine the acidity and alkalinity of the solution with the use of an indicator and a pH test paper.
- Able to infer the requirements of fire and the common self-rescue methods in an emergency of a fire.
- Able to explain briefly the important role of catalyst in a chemical reaction.

L17 : Science and Living

- Able to delineate the methods of water purification, e.g. adsorption, filtration, sedimentation and distillation.
- Able to distinguish between pure substance and mixture, element and compound.
- Able to analyse the physical properties of various materials and their application in daily life, e.g. elasticity, hardness, basic thermal conductivity and electrical conductivity.
- Able to explain certain phenomenon, such as air pressure, objects expand as the temperature goes up and contract as it goes down with particle theory.
- Able to tell the names and symbols of some common elements, such as hydrogen, carbon, oxygen and nitrogen, as well as having a concise understanding of the periodic table.
- Able to explain briefly the characteristics of light when it travels in homogeneous mediums.
- Able to delineate the theory of light reflection and refraction as well as explaining their practical application in real life.

L18 : Science and Living

- Able to outline the basic first-aid treatment of carbon monoxide poisoning.
- Able to explain the effect of force, e.g. action and reaction force, friction.
- Able to explain common phenomenon with the concept of inertia, e.g. force can manipulate the state of motion of an object.
- Able to explain briefly the concept of pressure and understand the methods of manipulating pressure.
- Able to explain concisely the heating effect of electric current and the application of fuse.
- Able to understand the differences between semiconductors and superconductors as well as the social impacts of their applications.
- Able to explain concisely the usage of electromagnetic wave as well as its impacts on human living and social development.

Appendix 1

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Key words

Curriculum Framework for Formal Education of Local Education System

- It refers to a set of curriculum framework formulated by the government to apply to ordinary schools. The content of the framework generally includes the aim, objective and development principle of the curriculum framework, classification of the subjects, arrangement of educational activity period, as well as the learning contents for major subjects at each education level. The formal curriculum in Macao is determined through legislative process.

The Requirements of Basic Academic Attainments

- The Requirements of Basic Academic Attainments refer to the basic qualities that students should possess upon completion of the education levels including the early childhood period, primary school, junior secondary school and senior secondary school education, covering progress in basic knowledge, skills and competence, as well as development in emotion, attitude and values.

Formal Education Curriculum

- The Formal Education Curriculum refers to the curriculum suggested by the government towards all schools, including a series of curriculum documents which specify the curriculum objective and target, learning objective, structure of the subjects, generic skills, values, attitudes and subject instructions.

School-based Curriculum

- The School-based Curriculum refers to the curriculum developed by the school and teachers, in line with the learning status quo of students for the purpose of helping students to realize the educational aim and objective. School-based Curriculum is the balanced outcome between the central curriculum guidance and the professional autonomy of the school and teachers.

Learning Ability Progress Level

- The Learning Ability Progress Level refers to a set of descriptions regarding performance indicators, which are used to express the learning level of students in a progressive manner. The Learning Ability Progress Level of Macao is divided into 18 levels (from L1 to L18), which correspond to the motor sensory development in infancy period, and the learning abilities of students in early childhood, lower primary school, higher primary school and junior secondary school period. Therefore, the Learning Ability Progress Level serves as a shared framework for reference for teachers to assess and report the learning outcome of students.

Attainment Level Descriptors

- The Attainment Level Descriptors, corresponding to the Learning Ability Progress Level, are the textual descriptions on the learning ability of students at each level. The Attainment Level Descriptors apply to all students, including students in formal schools or students with special educational needs in special education schools. Each

descriptor provides reference on the ability level of students within the learning area. The contents of the Attainment Level Descriptors do not represent the whole curriculum nor the learning outcome.

Education Level

- The Education and Youth Affairs Bureau of Macao classifies formal education in Macao into four different educational levels, the early childhood education (3 years), primary education (3 years), junior secondary education (3 years), and senior secondary school education (3 years). Each education level has its own special curriculum framework and requirement for basic academic attainments.

Learning Stage

- The Learning Stage refers to different learning periods for a student in the whole learning process. Generally speaking, a three-year learning period is defined to be a learning stage. The learning stages in Macao include the early childhood stage, lower primary school stage, upper primary school stage, junior secondary stage, and the senior secondary school stage. The learning stage carries slight difference compared to the education level formulated by the Education and Youth Affairs Bureau of Macao.

Students with Special Educational Needs

- Students with Special Educational Needs usually carry one or multiple features of learning difficulty, thus they are in need of special education service. The primary categories of learning difficulty include, listening disorder, visual disorder, physical disorder, mental disorder, learning disorder, emotional and behavioral issues, attention-deficit/hyperactivity disorder, autism, dyslexia, and education for intellectually gifted students.

Motor Sensory Training

- Motor Sensory Training plays a significant role in fundamental education. To learn or to engage in cognitive behaviour of any kind, students first need to effectively appropriate and perceive, to collect and analyse data or materials. All students need to receive motor sensory training. While most students have naturally mastered the skill in daily life, some students with special educational needs need to enhance and grasp this skill via special motor sensory training experience.

Scheme of Work

- Scheme of Work is the template for the learning units in each subject. Every Scheme of Work specifies the teaching objective of the unit, students' ability level and learning activities, while providing an enumeration of the expected performance for students of different ability levels.

Learning Outcome

- The Learning Outcome refers to the expected learning performance of students upon completion of a course or a certain learning stage. The learning outcome is devised based on the learning objective and learning focus. Therefore, the learning outcome could promote learning by serving as the basis for learning performance assessment

and by reflecting the expected learning performance of students upon completion of a course.

Learning Focus

- The Learning Focus refers to the key contents developed in accordance with the learning objective, providing reference to schools in curriculum design and teaching. The learning focus provides a detailed description on the knowledge and ability to be mastered, as well as the interest, attitude and habits to be cultivated in different learning areas and various learning stages.

Learning Diversity

- The Learning Diversity refers to the learning differences among students in the learning process. In teaching practice, we should cherish the unique talents of each student, attend to their diversified learning needs, adapt teaching methods based on individual needs, help students to discover their aptitude and talents, and provide opportunities for students to create and release their potential towards obtaining appropriate achievements.

Frequently Asked Questions

1. Is the Learning Ability Progress Level equal to the curriculum? If not, what is the relation between the Learning Ability Progress Level and the curriculum?

The Learning Ability Progress Level refers to a set of systematically progressive Attainment Level Descriptors. The Learning Ability Progress Level, composed of selected indicative contents from the Curriculum Framework for Formal Education of Local Education System and the Requirements of Basic Academic Attainments, serves the function of assessing the learning ability and learning progress of students. Teachers can refer to the assessment results based on the Learning Ability Progress Level so as to adjust the learning objectives and activities, and to determine the expected learning outcome. However, the Learning Ability Progress Level does not represent the overall content of what ought to be a broader curriculum.

2. Why “The Requirements of Basic Academic Attainments” cannot be directly used to describe learning ability and learning performance?

“The Requirements of Basic Academic Attainments” refer to the basic qualities that students should possess upon completion of the education levels including the early childhood, primary school, junior secondary school and senior secondary school education. The philosophy behind this concept is based on the generalized performance of the targeted population. For students with special educational needs, designing or formulating learning ability objective merely on the basis of education levels may not adequately reflect their learning process. Therefore, introducing the Learning Ability Progress Level enables full display of the ability level for students with special educational needs at the Progress Level for each learning area, attending to individual differences while improving the step-by-step learning progress.

3. What is the relationship among “The Requirements of Basic Academic Attainments”, the Learning Ability Progress Level, and classroom teaching?

“The Requirements of Basic Academic Attainments” are targeted at students who have completed a certain educational level; the Learning Ability Progress Level refers to the level of learning performance and ability at a certain process, which is aimed at individual students. The former refers to the requirement on learning outcome, while the latter focuses on the learning process. In class teaching, a teacher should always examine students’ learning outcome based on “The Requirements of Basic Academic Attainments”, and adjust expected learning performance in accordance with their ability level. It should be noted that neither “The Requirements of Basic Academic Attainments” nor the Learning Ability Progress Level constitutes part of the teaching content.

4. When should rating be conducted? Do students all advance by one ability level each year?

Rating for the purpose of ascertaining learning performance baseline for reference can be conducted at the beginning or at the end of each academic year, or conducted every two years depending on different school conditions. However, rating more than once each year is not recommended. Students with special educational needs exhibit ability diversity. Some students may advance by one or two ability levels within one year, while others may improve one ability level every few years. There are also cases where students with severe learning disorder stay at one certain ability level or even regress due to various physical conditions within more than 10 years of learning experience.

5. As the fundamental stage for the learning area of each subject starts with the motor sensory development stage, will a student with severe learning disorder stay in the initial motor sensory development stage from early childhood period to senior secondary school period, without making progress to learn proper subject knowledge? If so, what is the point of dividing into six subjects?

Textbook content for each subject is the carrier of learning. The principle for curriculum design is to expand the students' learning experience. The six subjects expose students to different learning situations and objects of different levels, enabling them to develop individual cognition combining their personal experience and perception. Though it is possible that students with severe disorder may stay at the motor sensory development stage even after years of learning, the linked subjects will broaden and enhance student's learning experience. This is the concrete practice of the principle of width and depth in curriculum design. Otherwise, students with severe learning disorder will be exposed to repeated motor sensory trainings over a long time, which goes against the principle of integrated education, or the special education we aspire to achieve.

6. A student starts receiving education at 3 and completes education at 21. If the curriculum is not compiled based on education level, or even if the ability level of students is specified based on a region in the Learning Ability Progress Level, does it mean that students without making improvement in learning ability for over 10 years have to learn the same content from 3 to 21? How are the operational specifications explained?

The purpose of designing the Learning Ability Progress Level for six subjects is to make it a tool to assess the learning process, rather than to define it as the teaching content. Teachers should adjust the learning content and design the learning experience for individual students on the basis of the regular curriculum. The school should prepare sufficient Scheme of Work for each grade and each subject within each area to cover each learning level, so that students will not learn the same unit repeatedly.

7. Why is the peak level of learning ability set at Form 3 of formal education for special education curriculum in Macao?

Based on past experience, when highly competent students with special educational needs reach Form 6, their learning performance is similar to formal education students at Form 3. Therefore, we made reference to the learning outcome at junior secondary school in formal education curriculum to describe the levels in senior secondary school (L16-L18) in the Learning Ability Progress Level. If a student's learning performance reaches the level of Form 3 in formal education curriculum, it is not necessary for the student to study in a special education class.

8. Is the teacher for special education required to use the textbooks prepared for the educational level of the students and design the teaching content in accordance with the level of the students' learning ability? Do students learn the same content at different education level?

The answer is yes. The learning topics/units for students with special educational needs should be the same as students in regular schools, to keep the breath and balance of the curriculum. The age and learning experience of students with special educational need should be taken into consideration by teachers who are specialized in adjusting the teaching content based on the learning ability of students.

9. Currently, most teaching materials for special education class are compiled by the teachers. How will the issue of students' use of textbook in special education class be tackled?

All teachers should design adequate teaching materials for students. Schools with special education classes may consider forming a network to compile and share the Scheme of Work, which is ideally the long-term development objective for special education in Macao.

10. When the Learning Ability Progress Level and the Curriculum Supplements are completed, how should teachers apply them to teaching practice? What else should be used together with the Learning Ability Progress Level and the Supplementary Guide? How can they benefit the teachers in teaching practice?

The Learning Ability Progress Level is used to identify indicators of students' learning performance, serving as the shared language for teachers to describe learning performance, which enables teachers to master the learning progress of students. Teachers should not consider the Learning Ability Progress Level to be formal teaching content. The Supplementary Guide serves as guiding documents for special education curriculum, to supplement the formal education curriculum document with special education descriptions. The Supplementary Guide specifies the principles, forms and direction for special education curriculum development. The Learning Ability Progress Level and the Supplementary Guide combined will benefit teacher to understand the ability of students and decide appropriate teaching content.

Appendix 4

Forms

The appendices provide useful documents for teachers to develop the Learning Ability Progress Level. Depending on their concrete situations, schools may adapt these forms accordingly.

1. Record of examples of students' learning performance

This form is used for the rating coordination mechanism. Schools may use this form to record the collected examples and contents, or to reassess students' learning performance. Details on how to use this form is provided in chapter VI: Rating coordination mechanism and example collection.

2. Scheme of Work

The Scheme of Work presents the opportunities and feasible practices for students with special educational needs to be educated according to the formal curriculum. The form lists the learning performances of students with different learning ability under different learning areas and objectives. The Scheme of Work can also provide practical suggestions to the teacher to design and improve the teaching plan, teaching contents and activities.

Appendix 4-1

XXX School

Record of examples on student learning performance

Subject:	Learning Areas:	Learning Stage:
Name of Student :	Learning Diversity:	
Unit Name:		Date:
Teaching Activity:		
<u>Types of Learning Performance Examples:</u> performance in class activity homework assessment/test case exploration/ case study multimedia files(videos/pictures/audios) self-evaluation peer review others		
Content and description of the examples-initial learning performance:		Content and description of the examples-review learning performance:
Initial Rating:		Review Rating:
Comprehensive Rating:		
Rating Director: Rater/Subject Teacher:		Date:

Appendix 4-2

Annual Scheme of Work of XXX school in xxx Year

Subject:		Learning Areas:		Stage:	
Duration of Learning:					

Unit Name:	
Formal Teaching Goal:	
Teaching Objectives:	Through this unit, students can:
Keywords:	

Teaching Objectives	Examples of Feasible Teaching and Learning Activities and Experience	Performance Descriptors	

Item description:

Item	Description
Unit Name	<ul style="list-style-type: none"> • selected from the formal curriculum • a common topic that helps to broaden students' learning experience • could inspire students' learning interest
Formal Teaching Goal	<ul style="list-style-type: none"> • selected from the formal curriculum, specifying that the teaching content originates from the formal curriculum • have enough content for a given teaching session • include the basic knowledge that most students are able to master in this teaching unit
Teaching Objectives	<ul style="list-style-type: none"> • divide the formal teaching goal into three to four tasks to reach formal learning goal of the teaching unit • outline the learning objectives within the reach of the students' ability through a given teaching unit, with a precise description of the learning areas for students with special educational needs at various learning levels • use assessable descriptions and encourage students to get involved. For example, students should be able to tell/differentiate/apply the formats of letter writing .
Keywords	<ul style="list-style-type: none"> • list the vocabulary (around 10 words would be sufficient) students need to use for learning the teaching unit • include keywords that are important and relevant to the subject, so as to enrich the students' ability to express ideas in relation to the subject • place important keywords in prominent locations in the classroom
Examples of Feasible Teaching and Learning Activities and Experience	<ul style="list-style-type: none"> • adopt student-centered teaching • describe the activities carried out by students • make reference to the formal curriculum when designing activities, adding local cultural elements • design activities targeting the whole class participation in large scale activities to motivate and enhance learning experience • specify activity requirements for students with different learning abilities • nature of activities in line with the age and social experience of students
Performance Descriptors	<ul style="list-style-type: none"> • describe the performance with reference to the targeted teaching objectives, not the activity performance • refer to the descriptions on the progress level • specify observable learning performance

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In case of any discrepancy between the English version and the Chinese version,
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