Chief Executive's Award for Teaching Excellence (2020/2021)
Excellence Indicators for Teaching Practices for the
Mathematics Education Key Learning Area

Foreword

The *Excellence Indicators for Teaching Practices for the Mathematics Education Key Learning Area* are compiled for use as reference in assessing nominations for the Chief Executive's Award for Teaching Excellence (CEATE) (2020/2021).

In drafting the Indicators, we have consulted a number of references, including school curriculum documents (see References on pages 12-13). The Indicators have been formulated and structured in a way that reflects the complexities of teachers' work and the diverse nature of teachers' competencies.

For the purposes of the CEATE, teaching excellence means teaching practices that are:

(i) outstanding and/or innovative and proven to be effective in enhancing students' motivation and/or in helping students achieve the desired learning outcomes; or
creatively adapted from exemplary teaching practices elsewhere to suit the local (i.e. school-based and/or student-based) context, with proven effectiveness in enhancing students' learning outcomes;

(ii) based on a coherent conceptual framework, showing reflective practices;

(iii) inspiring and can be shared with colleagues to improve the quality of education; and

(iv) instrumental in achieving the learning targets of the Mathematics Education Key Learning Area (i.e. developing students' abilities and skills for solving problems by integrative application of mathematical knowledge; strengthening their abilities to inquire in a

logical, creative, critical and mathematical way; and fostering their appreciation of mathematics and its applications).

The Indicators fall within four domains, namely (1) Professional Competence, (2) Student Development, (3) Professionalism and Commitment to the Community, and (4) School Development. The first two domains focus on recognising teaching excellence and the other two on fostering teachers' professional development and building a culture of teaching excellence.

The Indicators are to be used only as a framework for recognising excellent teaching practices; they are not intended to prescribe a rigid model of excellence for every teacher. The examples of excellence cited for each Indicator are provided for illustration only and should not be regarded as a checklist. We hope that the Indicators will not only serve as an assessment tool, but may also highlight the qualities of an accomplished teacher in the area of Mathematics Education, so as to motivate teachers to pursue professional excellence.

All awardees must possess the essential qualities of a professional teacher, such as professionalism and a loving concern for students. Each nomination will be assessed according to the four domains mentioned above by adopting a **holistic approach** based on professional knowledge and judgment. However, as the focus of CEATE is on learning and teaching, we are looking for inspiring, exemplary and effective teaching practices that can be shared with colleagues. In assessing group nominations, we will also consider the effectiveness of teamwork as measured by the contribution of each group member, interactions among group members, and how the concerted efforts of group members have contributed to the desired outcomes.

The Assessment Working Group
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Excellence Indicators for Teaching Practices for the Mathematics Education Key Learning Area

1. Professional Competence Domain

Area	Performance Indicator	Examples of Excellence
Curriculum	1.1 Curriculum Planning and Organisation	The teacher is able to: • achieve the curriculum aims of the Mathematics Education Key Learning Area (KLA) and the major renewed emphases (MRE) of the ongoing renewal of school curriculum; formulate appropriate learning objectives and develop a coherent, balanced, prioritised and flexible school-based curriculum according to the curriculum framework and learning targets, and aligning with the school contexts and resources; allocate learning time flexibly through curriculum adaptation and relevant support measures to cater for the diversity or special educational needs of students and promote effective learning; • take into consideration the vertical development and the interfaces between different Key Stages of the curriculum, connect learning to students' daily life, provide and arrange diversified experiences in mathematics learning, cater effectively for students' learning motivation, interests and abilities, and promote self-directed learning and life-wide learning; • flexibly incorporate the updated Four Key Tasks into the school-based curriculum with a view to enhancing students' capabilities for constructing knowledge, promoting the development and applications of generic skills in an integrative manner and nurturing positive values and attitudes; • plan appropriate learning contents and activities to enable students to connect their learning experiences of mathematics with those of other disciplines, mathematics in real life and the cultural aspects of mathematics; • provide students with mathematics reading materials systematically to promote "Reading across the Curriculum", help students achieve "Reading to Learn" and enrich their learning experiences; and

Area	Performance Indicator	Examples of Excellence
		• enhance students' integrative learning and their skills in applying mathematics; enable students to make use of information technology to acquire and construct knowledge so that they can engage in effective, interactive and self-directed learning, thereby fostering their generic skills with an aim of achieving the goals of learning to learn and lifelong learning.
	1.2 Curriculum Management	The teacher is able to: • formulate a well-articulated mechanism to monitor and evaluate the implementation of curriculum, review its effectiveness in a timely manner, and take forward concrete follow-up measures to gather feedback on curriculum planning as well as learning and teaching strategies in order to enhance effectively the quality of learning and teaching; • actively share and exchange curriculum and teaching contents with peers to enable them to have a clear understanding of curriculum development and the effectiveness of learning and teaching for the purpose of promoting professional development; and • closely collaborate with peers to assess carefully students' strengths, weaknesses and needs in learning, and review and improve the school-based curriculum in view of existing learning and teaching resources, including e-resources and community resources, in order to promote the sustainable development of the Mathematics curriculum.

Area	Performance Indicator	Examples of Excellence
Teaching	1.3 Strategies and Skills	The teacher is able to: • plan, organise and carry out effective learning and teaching activities depending on students' different abilities and needs; formulate teaching strategies and apply teaching skills appropriately as complementary measures for e-learning materials used, with a view to ensuring a comprehensive introduction of mathematical concepts; and help students develop e-learning strategies to facilitate self-directed learning; • adopt a student-centred approach in designing diversified learning experiences related to students' daily life; flexibly arrange cross-learning unit contents; and provide cross-KLA activities based on topics in the Mathematics curriculum, so as to enable students to discover and construct knowledge and enhance their motivation in learning mathematics; • suitably adapt or adopt innovative and effective teaching strategies and to plan holistically learning and teaching activities so as to help students effectively develop and apply generic skills in an integrative manner; • demonstrate excellent skills in classroom presentation and communication; make effective use of learning and teaching resources as well as information technology; and carry out interactive learning and exploratory activities with multimedia resources, authentic data, application software packages, communication or sharing platforms and other e-resources, with a view to creating and maintaining an inspiring and harmonious learning atmosphere that enables students to learn mathematics happily and effectively; • provide different opportunities for classroom interaction and adjust the teaching pace and strategies to cater for students' learning needs, with a view to enabling students with different abilities to develop progressively and encouraging them to strive for excellence in learning; • offer STEM learning activities that suit students' interests and abilities and integrate elements from the KLAs of Science Education and Technology Education, to enable students applying mathematics in real-life situations; and

Area	Performance Indicator	Examples of Excellence
		• assign quality classwork and homework set at a suitable level of difficulty with specific learning objectives to reinforce students' mathematical concepts and enable teachers to collect evidence of student learning with a view to making adjustments to teaching plans and strategies.
	1.4 Professional Knowledge and Attitude	The teacher is able to: • assume the role of a reflective practitioner who effectively combines theory and practice; • assume the role of an Inspirational Co-constructor who constructs knowledge together with students; • assume the role of a Caring Cultivator who supports students' whole-person growth; • fulfill multiple roles of a teacher, varying from transmitter, facilitator, resource person, to counsellor, assessor, leader, co-learner and consultant, so as to enhance students' learning effectiveness; • have a good mastery of mathematical knowledge and teaching strategies, and be aware of and understand fully the current curriculum aims, learning targets and objectives; • serve as a role model for students in learning mathematics by being a conscientious teacher who prepares lessons well, shows enthusiasm, a keen interest in mathematics and a sense of responsibility, and adapts promptly to changes; and • demonstrate genuine care and respect for students, recognise and value students' talents and achievements with appropriate expectations, and establish mutual trust and rapport with students.

Area	Performance Indicator	Examples of Excellence
Performance Assessment	1.5 Assessment Planning and Use of Information	The teacher is able to: • establish a school-based assessment mechanism, make effective use of a wide repertoire of assessment modes and tools in a systematic manner, and align them with curriculum planning, teaching schedules and other student-based or school-based factors to allow comprehensive assessment of all students; • record systematically the assessment results and make good use of them so as to improve learning and teaching, collect ongoing information about the progress of student learning, cater for learner diversity, and evaluate teaching practices for enhancing the effectiveness of mathematics teaching; • give students timely and quality feedback, encouragement and support to help them sustain the drive to learn and to identify their own strengths and weaknesses for improving mathematics learning; • capitalise on conducting self-assessment and peer assessment of students to facilitate self-reflection and relevant discussion, thereby reinforcing and enhancing their learning; • put in place the reflective review of the assessment mechanism on a regular basis, and relate the data to the effectiveness of learning and teaching, thereby formulating action plans to improve the modes of assessment and facilitate the implementation of “assessment for learning” and “assessment as learning”, thus enabling students to connect learning to assessment and enhancing their capability for self-directed learning; and • make good use of e-assessment platforms for collecting evidence of student learning, and enhance learning and teaching by providing instant feedback to cater for learner diversity.

2. Student Development Domain

Area	Performance Indicator	Examples of Excellence
Student Development	2.1 Values and Attitude	The teacher is able to: • strengthen students' confidence in applying mathematics in daily life, and nurture their positive values and attitudes for whole-person development; • create an open atmosphere to enhance the learning interests and motivation of students with different backgrounds and abilities and to enable them to proactively and vigorously participate in mathematics learning activities; develop their confidence in learning mathematics and enhance their willingness to take up challenges, thus nurturing perseverance in solving problems; • help students develop effective learning habits so that they are capable of being attentive and eager to raise questions, express views and respond to teachers' questions; • encourage students to remain open-minded in the discussion of mathematical problems, respect others' viewpoints, collaborate and share ideas with others; • develop students' information literacy through enhancing their ability and attitude to use information and IT ethically, flexibly and effectively as responsible citizens and lifelong learners; and • design appropriate learning activities to enable students to appreciate the preciseness, aesthetic and cultural aspects of mathematics.

Area	Performance Indicator	Examples of Excellence
	2.2 Knowledge and Skills	The teacher is able to: • cater for learner diversity by selecting and providing students with appropriate and diversified learning experiences, and make appropriate curriculum adaptation to meet school-based or student-based needs, and use the curriculum space flexibly for consolidation and enrichment with a view to helping students construct mathematical knowledge effectively; • develop students' ability to think critically and creatively, to conceptualise, inquire and reason mathematically, and to use mathematics to formulate and solve problems in daily life as well as in mathematical contexts and other disciplines; • develop in students the ability to express their views and communicate with others clearly and logically in mathematical language and the ability to manipulate numbers, symbols and other mathematical objects, foster students' number sense, spatial sense and measurement sense, and enhance their capacity to appreciate structures and patterns; and • enhance students' ability to integrate and apply the knowledge and skills of Science, Technology and Mathematics through STEM education, and develop among students a strong base of knowledge to nurture their creativity, innovation, collaboration and problem solving skills.

3. Professionalism and Commitment to the Community Domain

Area	Performance Indicator	Examples of Excellence
Professionalism and Commitment to the Community	3.1 Contribution to the Teaching Profession and the Community	The teacher is able to: • serve as a Committed Role Model of professionalism; • pursue continuous self-improvement and strive for professional development; • be conversant with the latest development in education policies and teaching practices, and offer suggestions on issues related to Mathematics Education; • share quality mathematics teaching materials, participate in educational research in mathematics or publish articles on mathematics teaching; • effectively adopt new ideas and teaching practices with reference to the contemporary education or learning theories with a view to enhancing and promoting mathematics learning; • provide mentorship for novice teachers and contribute to school-based or community professional development; • actively support other teachers and promote collaboration and a sharing culture among peers; and • actively contribute to the community and teaching profession, participate in professional exchange activities to share good practices, and take part in community services or voluntary work.

4. School Development Domain

Area	Performance Indicator	Examples of Excellence
School Development	4.1 Support to School Development	The teacher is able to: • inspire peers and other stakeholders to work together to improve the learning and teaching in Mathematics Education; • promote a sharing and collaborative culture with a view to creating a harmonious campus and professional learning community; • strive to help the school establish close liaison with the community and stakeholders so as to support students' learning and contribute to school development; • actively support home-school collaboration; and • take a leadership role in promoting peers to support and realize the school's vision and mission through own exemplary practices and sharing of experiences so that concerted efforts can be made to foster continuous school development; display the essence of the school culture and ethos through a variety of channels.

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