Chief Executive's Award for Teaching Excellence (2024/2025)
Excellence Indicators for Teaching Practices
Mathematics Education Key Learning Area

Foreword

The *Excellence Indicators for Teaching Practices for the Mathematics Education Key Learning Area* compiled in this document serve as a reference for assessing nominations for the Chief Executive's Award for Teaching Excellence (CEATE) (2024/2025).

In drafting the Indicators, we have consulted a number of references, including curriculum documents (see References on pages 12 and 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 CEATE, teaching excellence refers to teaching practices that are:

(i) outstanding and/or innovative, with proven effectiveness 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, exhibiting reflective elements;

(iii) inspiring and can be shared with colleagues, resulting in improved quality of education; and

(iv) instrumental in achieving the learning targets of the Mathematics Education Key Learning Area (i.e. developing students' integrative abilities and skills for solving problems by applications of Mathematics; 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 in 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 exemplary and effective teaching practices that are innovative, inspiring and can be shared with colleagues. In assessing group nominations, we will also consider the contribution of each group member, collaboration among group members, and how their joint efforts have contributed to the desired outcomes.

Assessment Working Group
Chief Executive's Award for Teaching Excellence (2024/2025)
October 2024

Excellence Indicators for Teaching Practices
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 the 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 by aligning with the school contexts and resources; • proactively adopt relevant curriculum strategies and support measures in line with the school contexts, such as adapting the curriculum and teaching methods, optimising school assessment and assignment policies, and allocating and planning students' learning time flexibly so as to create space for students and to cater for learner diversity, with a view to offering more diversified learning experiences to students and fostering their whole-person development; • flexibly incorporate the updated Four Key Tasks into the school-based curriculum with a view to enhancing students' capabilities for constructing knowledge, while also promoting the development and the application of generic skills in an integrative manner and nurturing the positive and proper values and attitudes; • 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; • plan appropriate learning contents and activities that enable students to connect their learning experiences of the Mathematics Education KLA with those of other disciplines, mathematics in real life and the cultural aspects of mathematics; • provide mathematics reading materials systematically to promote "Reading across the Curriculum" and help students achieve "Reading to Learn" to enrich their learning experiences;

Area	Performance Indicator	Examples of Excellence
		• strengthen students' capability in the application of Mathematics as well as their skills for integrative learning and application of mathematics; enable students to make use of information technology (IT) to acquire and construct knowledge so that they can engage in effective, interactive and self-directed learning, thereby fostering their generic skills with the aim of achieving the goals of learning to learn and lifelong learning; and • strengthen STEAM education to develop students' capability to solve everyday problems, by applying mathematical knowledge and skills as well as making good use of mathematical modelling, in an integrative and innovative manner.
	1.2 Curriculum Management	The teacher is able to: • establish a well-articulated mechanism to monitor and evaluate the implementation of the 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 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, 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, thereby ensuring a comprehensive introduction of mathematical concepts; and help students develop e-learning strategies to facilitate self-directed learning and strengthen the cultivation of media and information literacy among them; • adopt a student-centred approach in designing diversified learning experiences related to students' daily life, arrange cross-learning unit content flexibly, and provide cross-KLA activities based on Mathematics topics in the curriculum, thereby enabling students to discover and construct knowledge and enhancing their motivation in learning mathematics; • suitably adapt or adopt innovative and effective teaching strategies and plan holistically learning and teaching activities, thereby helping 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 IT; and carry out interactive learning and exploratory activities with multimedia teaching resources, authentic data, application software, communication or sharing platforms and other e-resources, thereby 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, thereby enabling students of different abilities to progress at their own pace and encouraging them to strive for excellence in learning; • offer STEAM learning activities, for example, by infusing modelling activities, that suit students' interests and abilities and integrate elements from the KLAs of Science Education and Technology Education, thereby enabling students to apply mathematics in real-life situations; • assign a variety of quality assessment tasks 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; • cultivate mathematics-related values and attitudes within and beyond the classroom through diversified strategies; and

Area	Performance Indicator	Examples of Excellence
		• help students explore information literacy topics tailored for different learning stages, thereby gaining a more comprehensive understanding of the importance of cyber security and the impact of disinformation on individuals, society and national security.
	1.4 Professional Knowledge and Attitudes	The teacher is able to: • understand thoroughly the curriculum aims, learning targets and objectives of the Mathematics Education KLA, as well as the prevailing trends in curriculum development and the entire philosophy of mathematics education; have a good mastery of mathematical knowledge and pedagogies, demonstrate profound professional knowledge of the curriculum, and apply this knowledge effectively in learning and teaching; • assume the role of a reflective practitioner who effectively combines theory and practice in Mathematics teaching and learning; • fulfil multiple roles of a teacher, varying from transmitter, facilitator, resource person, to counsellor, assessor, leader, co-learner and consultant, thereby enhancing students' learning effectiveness; • 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 care and respect for students, recognise and value students' talents and achievements, have appropriate expectations of students, 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 to improve learning and teaching, keep in view students' learning progress, 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 identify their own strengths and weaknesses for improving mathematics learning; • capitalise on students' self-assessment and peer assessment to facilitate their self-reflection and relevant discussion, thereby reinforcing and enhancing students' 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: • bolster students' confidence in applying mathematics in daily life, and foster in them positive and proper values and attitudes for whole-person development; • create a friendly and inclusive environment and atmosphere conducive to learning, understand the learning interests, abilities and needs of students with different backgrounds and potential, and encourage students' active participation in mathematics learning activities, thereby enhancing their confidence in learning mathematics as well as their willingness to take up challenges, ultimately nurturing their perseverance in solving problems; • help students develop effective learning habits, listen attentively, unafraid to ask questions, eager to express views and responding to teachers' questions; • encourage students to remain open-minded in the discussion of mathematical problems, respect others' viewpoints, embrace collaboration and share their views with others; • guide students to use media and information technology (including artificial intelligence technology) ethically, carefully and cautiously, and foster students' sense of responsibility in safeguarding national security, with the aim of preparing them for the challenges posed by innovative technologies; and • design appropriate learning activities to cultivate students' appreciation for the preciseness of, the aesthetics in and the cultural contribution 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 offering appropriate and diversified learning experiences for students, make appropriate curriculum adaptations in meeting the school or students' needs, and use the curriculum space flexibly to consolidate and enrich students' learning thereby helping them construct mathematical knowledge effectively; • develop in students the 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 their number sense, spatial sense and measurement sense, and enhance their capacity to appreciate structures and patterns; • enhance students' ability to integrate and apply the knowledge and skills of Science, Technology and Mathematics through STEAM education with effective utilisation of internal and external resources, and help students develop a solid foundation of knowledge to nurture their creativity and competence in innovation, collaboration and problem-solving, in order to identify and nurture local STEAM elites; and • enhance students' data literacy as well as media and information literacy, strengthen their capability to collect, evaluate and use data and information, thereby enabling students analyse objectively and make reasonable judgements, with a view to fostering students' critical thinking for manipulating the information in a flexible and effective manner.

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: • demonstrate good moral character and proper values, observe rules and the law, and serve as a role model by setting a good example for others; • perform the three professional roles of a teacher, namely a "caring cultivator" who supports students' all-round growth, an "inspirational co-constructor" who constructs knowledge together with students, and a "committed role model" in teaching profession who shows his/her professionalism; • keep abreast of the trends in the curriculum development and actively participate in training to pursue continuous self-improvement and strive for professional development; • be conversant with the latest developments in education policies and teaching practices, and offer suggestions on issues related to Mathematics Education; • strive for excellence in learning and teaching by taking the initiative to produce innovative and exemplary teaching materials, and actively sharing experiences in curriculum development with the profession; • actively participate in educational research in mathematics or publish articles on mathematics teaching; • promote the culture of educational research by effectively adopting new ideas and teaching practices with reference to prevailing education or learning theories, actively supporting teachers' professional development, eagerly sharing teaching experiences, and joining or establishing professional learning communities of Mathematics Education, thereby making contributions to the teaching profession; • Support other teachers, such as providing mentorship for novice teachers, and promote professional development of teachers; • actively participate in professional exchanges with teachers at other key stages, such as inter-school visits and lesson observations, to deepen mutual understanding of curriculum design and modes of teaching, with a view to preparing students for progression to the next learning stage; and • actively contribute to the community and the 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 and foster a culture of collaboration among peers through demonstrations and experience sharing, and enhance teachers' professional capacity through lesson observation, collaborative lesson preparation and discussion, with a view to developing the school into a community of practice and promoting teachers' professional development; • actively promote collegial exchange and close collaboration within the Mathematics Panel and across various subjects/ KLAs, plan school-based STEAM education systematically with a view to promoting the school development; • inspire peers and other stakeholders to work together to improve the learning and teaching in Mathematics Education; • take a leadership role in motivating peers to recognise and realise the school's vision and mission through 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 various channels; • actively promote home-school collaboration and support school development through concerted efforts; • strive to establish close liaison with the community and stakeholders on behalf of the school to support students' learning and contribute to school development; • flexibly introduce and deploy community and external resources, and engage stakeholders to facilitate the continuous school development; and • promote a sharing and collaborative culture to create a harmonious campus and a professional learning community.

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