Chief Executive's Award for Teaching Excellence (2015/2016)
Excellence Indicators for Teaching Practices for the
Mathematics Education Key Learning Area

Foreword

The *Excellence Indicators 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) (2015/2016).

In drafting the Indicators, we have consulted a number of references, including curriculum documents (see References on page 11). 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 in learning and/or in helping students to achieve the desired learning outcomes; or

creatively adapted from exemplary teaching practices from 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 (KLA) (i.e. to develop students' abilities and skills to solve problems and make inquiries in a logical, creative, critical and mathematical way; to strengthen their integrative learning and application skills; and to foster their appreciation of the application of Mathematics).

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. We hope that the Indicators will not only be used 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 loving concern for students. Every nomination will be assessed according to the four domains mentioned above by adopting a **holistic approach** based on professional knowledge and judgement. However, as the focus of CEATE is on learning and teaching, we are looking for exemplary and effective teaching practices that are inspiring and can be shared. 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 <u>Mathematics Education Key Learning Area</u>

1. Professional Competence Domain

Area	Performance Indicator	Examples of Excellence
Curriculum	1.1 Curriculum Planning and Organisation	The teacher is able to: 1.1.1 achieve the curriculum aims of the Mathematics Education KLA; formulate appropriate learning objectives and develop a coherent, balanced, prioritised and flexible school-based curriculum based on the curriculum framework and learning targets in light of the school's contexts and resources; allocate learning time flexibly through curriculum adaptation and relevant support measures to cater for students' diversity or special educational needs and enable effective learning; 1.1.2 infuse into the curriculum elements of the Four Key Tasks to develop students' generic skills, independent learning capabilities, and positive values and attitudes for whole-person development; 1.1.3 take into consideration vertical development and the interfaces between different Key Stages of the curriculum, connect learning to students' daily life, and provide and arrange diversified mathematics learning experiences for them so as to effectively cater for their learning motivation, interests and abilities, and to promote self-directed learning and life-wide learning; and 1.1.4 strengthen cross-curricular links between Mathematics and other KLAs, and develop various learning and teaching activities to enable students to apply their mathematical knowledge in different contexts, thereby enriching their learning experiences.
	1.2 Curriculum Management	The teacher is able to: 1.2.1 formulate a well-articulated monitoring mechanism to evaluate curriculum implementation and review the effectiveness of the implementation, and take forward concrete follow-up measures to obtain feedback on curriculum planning and learning and teaching strategies for effective enhancement of the quality of learning and teaching;

Area	Performance Indicator	Examples of Excellence
		1.2.2 actively share and exchange with peers curriculum and teaching content to enable teachers to have a clear understanding of the effectiveness of curriculum development and of learning and teaching for the purpose of professional development; and 1.2.3 collaborate closely with peers to assess carefully students' strengths, weaknesses and needs in learning, and review and improve the school-based curriculum in light of the existing learning and teaching resources, thereby promoting the sustainable development of the Mathematics curriculum.
Teaching	1.3 Strategies and Skills	The teacher is able to: 1.3.1 plan, organise and take forward effective learning and teaching activities, formulate appropriate teaching strategies and use suitable teaching skills to ensure students' attainment of the expected learning targets in light of students' varied abilities and needs; 1.3.2 adopt a student-centred approach in designing learning activities that are relevant to students' daily life, and provide students with diversified learning experiences so as to strengthen their motivation in learning mathematics, enable them to construct knowledge, and develop positive values and attitudes; 1.3.3 suitably adapt or adopt innovative and effective teaching strategies that enhance students' learning interest and learning effectiveness, and enhance their abilities to think critically and creatively, to conceptualise, inquire and reason logically, and to use mathematics to formulate and solve problems in daily life as well as in mathematical or other contexts; 1.3.4 demonstrate good classroom presentation and communication skills, make effective use of learning and teaching resources as well as information technology to provide a favourable learning environment, and create and maintain an inspiring and harmonious learning atmosphere for students to learn mathematics happily and effectively; and 1.3.5 provide different opportunities for classroom interaction and adjust the teaching pace and strategies to cater for students' learning needs, ensure students with different abilities to make progress, and encourage them to strive for excellence in learning.

Area	Performance Indicator	Examples of Excellence
	1.4 Professional Knowledge and Attitude	The teacher is able to: 1.4.1 have good mastery of mathematical knowledge and teaching strategies, be aware of and understand fully the current curriculum aims, learning targets and objectives; 1.4.2 promote self-improvement through frequent collaboration and exchange of ideas with peers, practices and reflection; 1.4.3 fulfil different roles of a teacher, varying from transmitter, facilitator, resource person, to counsellor, assessor, leader, co-learner and consultant, so as to enhance the effectiveness of students' learning; 1.4.4 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 1.4.5 demonstrate genuine care and respect for students, recognise and value students' potentials 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: 1.5.1 work out a school-based assessment mechanism; make effective use of a wide repertoire of assessment modes and tools systematically, and align them with curriculum planning, teaching schedules and other student-based or school-based factors to allow comprehensive assessment of all students; 1.5.2 record assessment results systematically and use them effectively to improve learning and teaching, monitor students' learning progress, cater for their diversity and review pedagogical practices with a view to informing school-based curriculum planning and enhancing the effectiveness of mathematics teaching; 1.5.3 give students timely and concrete feedback, encouragement and support to help them sustain the drive to learn, identify their strengths and weaknesses and improve mathematics learning; 1.5.4 capitalise on students' self-assessment and peer assessment to engage them in reflection and discussion, thereby consolidating and enhancing their learning; and 1.5.5 demonstrate reflective practices in regular reviews of the assessment mechanism and relate the information collected to the effectiveness of learning and teaching, thereby developing action plans to improve the assessment modes, enhance the effectiveness of "assessment for learning" and develop "assessment as learning", with the aim of enabling students to connect learning and assessment, and strengthening their abilities in self-directed learning.

2. Student Development Domain

Area	Performance Indicator	Examples of Excellence
Student Development	2.1 Values and Attitude	The teacher is able to: 2.1.1 nurture students' positive values and attitudes through Mathematics Education for promoting whole-person development; 2.1.2 stimulate the learning interest and motivation of students of different backgrounds and abilities, care for and establish mutual trust and rapport with students to enable them to take part in mathematics learning activities readily and have confidence in learning mathematics; 2.1.3 help students develop good learning habits and proactive attitudes towards learning so that they are capable of self-learning, being attentive in class and active in raising questions, expressing views and responding to teachers' questions; 2.1.4 encourage students to remain open-minded in the discussion of mathematical problems, respect others' views, and collaborate and share ideas with others readily; 2.1.5 strengthen students' sensitivity and confidence in applying mathematical knowledge in daily life, thus helping them develop persistence in solving problems; and 2.1.6 design appropriate learning activities to enable students to appreciate the aesthetic and cultural aspects of mathematics.

Area	Performance Indicator	Examples of Excellence
	2.2 Knowledge and Skills	The teacher is able to: 2.2.1 provide students with various mathematical modelling or learning experiences, and make appropriate curriculum adaptation to suit school-based or student-based needs in order to help students construct mathematical knowledge effectively; 2.2.2 develop in students the ability to think critically and creatively, to conceptualise, inquire and reason logically, and to use mathematics to formulate and solve problems in daily life as well as in mathematical contexts; 2.2.3 develop in students the ability to express their views and communicate with others clearly and logically in mathematical language; 2.2.4 develop in students the ability to manipulate numbers, symbols and other mathematical objects; develop their number sense, spatial sense and measurement sense; strengthen their ability to explore and appreciate structures and patterns; and 2.2.5 enhance students' integrative learning and application skills and develop their generic skills to enable them to make use of information technology to acquire and construct knowledge, with the aim of achieving the objectives of learning to learn and life-long learning.

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 : 3.1.1 set himself/herself as a role model; 3.1.2 pursue continuous self-improvement and strive for professional development; 3.1.3 demonstrate good understanding and knowledge of recent development in education policies and teaching practices, and offer suggestions on issues related to Mathematics Education; 3.1.4 produce exemplary teaching materials in mathematics; involve in educational research in mathematics and/or publish articles on mathematics teaching; 3.1.5 introduce effectively new ideas and teaching practices, with regard to contemporary education or learning theories, to improve and promote the learning of mathematics; 3.1.6 provide mentorship for novice teachers and contribute to school-based or community professional development; 3.1.7 actively support other teachers, promoting collaboration and a sharing culture among peers; and 3.1.8 provide contribution to the teaching profession and the community, such as participating in professional exchange activities, sharing good practices and taking 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: 4.1.1 inspire peers and other stakeholders to work together to improve the learning and teaching in Mathematics Education; 4.1.2 promote a sharing and collaborative culture with a view to developing the school as a harmonious and professional learning community; 4.1.3 help the school establish close links with the community and stakeholders to support students' learning and contribute to school development; 4.1.4 give active support to home-school collaboration; and 4.1.5 take a leadership role in promoting peers to support and realise 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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