

Ordre des enseignantes et des enseignants de l'Ontario

## Additional Qualification Course Guideline Mathematics Primary, Junior Specialist

## Schedule D Teachers' Qualifications Regulation

**July 2011** 

Ce document est disponible en français sous le titre *Ligne directrice du* cours menant à la qualification additionnelle, Mathématiques (cycles primaire et moyen), Spécialiste, juillet 2011.

## Additional Qualification Course Guideline Mathematics, Primary and Junior Specialist

#### 1. Introduction

Three-session specialist additional qualification courses identified in Schedule D (Teachers' Qualifications Regulation) are intended to:

- enhance professional practice, and extend knowledge and skills in the delivery of Mathematics Primary and Junior courses(Part I)
- enhance professional practice, and extend and apply knowledge and skills in the design and delivery of Mathematics Primary and Junior courses (Part II)
- enhance professional practice, and extend and apply knowledge and skills in the curriculum leadership of Mathematics Primary and Junior courses (Specialist).

The Additional Qualification Course: Mathematics Primary and Junior, Specialist explores the theoretical foundations, the development of learners, program planning and implementation, assessment, the learning environment and ethical considerations related to teaching and learning across the divisions.

Critical to the implementation of this course is the modeling of a positive learning environment that reflects care, professional knowledge, ethical practice, leadership and ongoing learning.

The Ontario College of Teachers recognizes that candidates working in the publicly funded school system, independent/private institutions or First Nations schools will have a need to explore in an integrated delivery model, topics and issues of particular relevance to the context in which they work or may work.

### 2. Regulatory Context

The College is the self-regulating body for the teaching profession in Ontario. The College's responsibility related to courses leading to additional qualifications includes the following:

- to establish and enforce professional standards and ethical standards applicable to members of the College
- to provide for the ongoing education of members of the College

 to accredit additional qualification courses or programs and more specifically,

The program content and expected achievement of persons enrolled in the program match the skills and knowledge reflected in the College's "Standards of Practice for the Teaching Profession" and the "Ethical Standards for the Teaching Profession" and in the program guidelines issued by the College. (Regulation 347/02, Accreditation of Teacher Education Programs, Part IV Subsection 24).

Additional qualifications for teachers are identified in the Teachers' Qualifications Regulation. This regulation includes courses that lead to Additional Qualifications, Additional Basic Qualifications, the Principal's Qualifications and the Supervisory Officer's Qualifications. A session of a course leading to an additional qualification shall consist of a minimum of 125 hours of work that is approved by the Registrar. Accredited additional qualification courses reflect the *Ethical Standards for the Teaching Profession*, the *Standards of Practice for the Teaching Profession* and the *Professional Learning Framework for the Teaching Profession*.

The course developed from this guideline is open to candidates who meet the entry requirements identified in the Teachers' Qualifications Regulation.

Successful completion of the course leading to the Additional Qualification: Mathematics Primary and Junior Specialist, listed in Schedule D of the Teachers' Qualifications Regulation is recorded on the Certificate of Qualification and Registration issued to the members of the College.

In this document, all references to candidates are to teachers enrolled in the additional qualification course. References to students indicate those in school programs.

# 3. The Ethical Standards and the Standards of Practice for the Teaching Profession

A commitment to a clear vision of what it means to be a teacher is at the core of teacher professionalism. The *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* (Appendix 1) provide the focus for ongoing professional learning and are the foundation for the development of the Additional Qualification Course: Mathematics Primary and

Junior Specialist. In addition, the *Professional Learning Framework for the Teaching Profession* is underpinned by the standards, articulates the principles on which effective teacher learning is based and acknowledges a range of options that promote continuous professional learning.

#### **Standards Resources**

The College has developed resources to support the effective integration of the standards within additional qualification courses. These resources explore the integration of the standards through a variety of educative and inquiry-based processes. A list of these resources can be found in Appendix 2 and are available through the College web site (www.oct.ca). This guideline has been designed to reflect the *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession*.

### 4. Course Components

The design, course content and implementation of the Additional Qualification Course Guideline: Mathematics Primary Junior Specialist support effective teacher education practices. The following course components of this guideline support and inform effective professional knowledge and practice within the Additional Qualification Course: Mathematics Primary and Junior Specialist.

The Ethical Standards for the Teaching Profession and the Standards of Practice for the Teaching Profession are embedded within the overall expectations of this guideline.

This additional qualification course has the following overall learning expectations for candidates:

- providing leadership in the implementation of Ontario Ministry of Education curriculum, policies and guidelines
- modelling the integration of First Nations, Métis and Inuit (Aboriginal) ways of knowing and perspectives
- supporting others to apply the theoretical understanding necessary to implement and assess programs and/or practices at the local and district level
- modelling and providing leadership regarding expectations, strategies and assessment practices in response to the individual needs of students, and the promotion of student success

- providing leadership in the creation of learning environments conducive to the intellectual, social, emotional, physical, environmental, linguistic, cultural, spiritual and moral development of students
- providing leadership to foster collaboration with in-school personnel, parents/guardians and the community
- assisting others in using a variety of current resources, including technological, communication and concrete manipulative resources, to enhance professional knowledge in support of student learning
- supporting others to enhance professional practice through ongoing inquiry, dialogue and reflection
- providing leadership in support of ethical practices
- providing leadership to facilitate the development of professional learning communities to enhance professional knowledge and support student learning
- modeling environmentally respectful perspectives and practices
- providing leadership for sustaining safe, healthy, equitable and inclusive learning environments that honour and respect diversity

Candidates will explore and deepen their understanding of the following:

#### A. Ontario Curriculum and Policies

The Additional Qualification Course: Mathematics Primary and Junior Specialist is aligned with current Ontario curriculum, relevant legislation, government policies, and resources. These documents inform the development and implementation of the Additional Qualification Course: Mathematics Primary and Junior, Specialist. These resources can be viewed at www.edu.gov.on.ca.

# B. The Ethical Standards for the Teaching Profession and the Standards of Practice for the Teaching Profession:

- understanding and embodying care, trust, respect and integrity
- demonstrating commitment to students and student learning
- integrating professional knowledge
- enriching and developing professional practice
- supporting leadership in learning communities

• engaging in ongoing professional learning.

### C. Theoretical Foundations of Mathematics Primary and Junior Specialist

- demonstrating leadership in the application of theories of child and adolescent development
- providing leadership in the understanding and application of conceptual frameworks for Mathematics, Primary and Junior
- demonstrating leadership in implementing current Ontario curriculum and government policies relevant to the teaching and learning of Mathematics, Primary and Junior
- assisting colleagues to reflect on teaching practice and to engage in professional dialogue on the relationship of theory and practice in the teaching of Mathematics, Primary and Junior
- modeling teacher professionalism reflective of the Ethical Standards for the Teaching Profession and the Standards of Practice for the Teaching Profession within the context of the Additional Qualification: Mathematics, Primary and Junior Specialist
- facilitating understanding and application of the role of metacognition in mathematics
- providing leadership in the application of the theory of constructivism as it relates to the teaching of mathematics
- facilitating the exploration of factors that influence changes in the teaching of mathematics
- facilitating the exploration of the interconnection of big ideas, key concepts, overall expectations, and enduring understandings in mathematics education
- providing leadership in the application of instructional strategies to respond to math anxiety, avoidance, and phobia
- sharing with others the knowledge and application of current research (for example, knowledge of mathematics-for-teaching, knowing the possible range of student responses to problems, error analysis, choosing effective models for specific instructional purposes and developmental levels).

### D. Program Planning, Development and Implementation

- assisting others to create and sustain positive, equitable, accepting and safe learning communities
- providing leadership in exploring and developing program planning frameworks that reflect the *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession*
- providing leadership in the development and implementation of programs that are sensitive to society's diverse and changing nature and its influence on students
- providing leadership to integrate knowledge about students' real life experiences into program planning and development
- providing leadership in curriculum planning, development, implementation strategies and frameworks related to Mathematics Primary and Junior
- providing leadership in differentiating instruction and applying universal design in the planning, development and implementation of learning experiences in Mathematics Primary and Junior
- offering leadership in identifying, accessing, integrating and assessing community, print, electronic and collegial resources related to Mathematics Primary and Junior
- providing leadership to others in professional collaborative inquiry and planning processes (for example, "What's the math behind the problem?", anticipating student responses, developing probing questions, analyzing student responses, and reflecting upon and making changes to lessons) for teaching mathematics
- assisting others in the integration of the five strands in the mathematics curriculum
- facilitating others in an understanding of cross-curricular connections in teaching primary and junior mathematics.

### E. Leadership in the Instructional Setting

- providing leadership in building and sustaining collaborative communities
- providing leadership in the relevant use of information and communication technology to support student learning in Mathematics Primary and Junior

- providing leadership in adopting and developing a variety of instructional strategies to support the teaching of Mathematics Primary and Junior
- providing leadership in the application of strategies for adapting, modifying and accommodating instruction to meet the needs of all learners
- providing leadership in the implementation of strategies for the creation of a learning environment that reflects the ethical standards and the standards of practice and affirms the need to respect and conserve resources in the environment
- using pedagogies that reflect the professional identity of educators as described in the ethical standards, the standards of practice and in the *Foundations of Professional Practice*
- assisting others in applying the central role of mathematics process expectations and embedding them in instruction
- providing leadership to support teaching through problem solving that utilizes multiple entry points that allow for a variety of solutions
- assisting others in applying strategies of representation to communicate thinking through the use of models (for example, concrete, visual, and abstract)
- assisting others in applying communication strategies to consolidate mathematical understandings.

#### F. Assessment and Evaluation

- providing leadership in the development and implementation of fair and equitable assessment and evaluation methods that honour the dignity, emotional wellness and cognitive development of all students
- providing leadership in the development and implementation of methodologies that support a formative and summative assessment (for example, assessment as learning, assessment for learning and assessment of learning) strategy for the study of Mathematics Primary and Junior

### **G.** Shared Support for Learning

 providing leadership in implementing effective strategies for continuous, meaningful, detailed and supportive communication with parents/guardians and the community

- providing leadership in implementing and affirming professional collaboration that supports student learning
- providing leadership in the development of shared responsibility and partnership as conveyed in the *Foundations of Professional Practice*.

# 5. Instructional Practice in the Additional Qualification Course: Mathematics Primary and Junior Specialist

In the implementation of this additional qualification course, instructors use strategies that are relevant, meaningful and practical in providing candidates with learning experiences about program, instruction, pedagogy and assessment and evaluation. These include but are not limited to: small group interaction; action research; presentations; independent inquiry; problem solving; collaborative learning and direct instruction.

Instructors model the standards, honour the principles of adult learning, recognize candidates' experience and prior learning and respond to individual needs. Important to the course are opportunities for candidates to create support networks and receive feedback from colleagues and instructors and share the products of their learning with others. Opportunities for professional reading, reflection, dialogue and expression are also integral parts of the course.

Where possible, the course includes experiential learning and authentic school-based experiences such as: classroom observations, practicum experiences and action research projects. Instructors model effective instructional strategies and formative and summative assessment that can be replicated or adapted in the candidate's classroom.

### 6. Assessment and Evaluation of Candidates

At the beginning of the course, candidates are provided with the specific learning expectations and forms of assessment and evaluation that will be used throughout the course. Instructors will provide opportunities for regular feedback regarding candidates' progress throughout the course.

A balanced approach to candidate assessment and evaluation is used. It includes the combination of self and peer assessment and instructor evaluation, and models effective practices. A variety of assessment approaches will be used that enable candidates to convey their learning related to course expectations. The course provides opportunities for both formative and summative assessment and evaluation.

Central to teachers enrolled in additional qualification courses is the opportunity to be engaged in relevant and meaningful work. Assignments, artefacts and projects enable candidates to make connections between theory and practice. At the same time, assignments must allow candidates flexibility, choice, and individual inquiry opportunities.

Part of the evaluation process may include a major independent project or action research component over the duration of the course. This project is an opportunity for candidates to illustrate a high level of professional knowledge, communication skills, pedagogy, ethical practices and instructional leadership. Similarly, if a portfolio assignment is used, it will also include reflections and analysis of a candidate's learning over time.

A final culminating experience in the course is recommended. This experience may take the form of a written assessment, a research paper, a performance, an inquiry project or a product that is genuinely new, meaningful and practical.

The following list of assessment strategies is not exhaustive; it is intended to serve as a guide only.

- a) Performance assessment: designing a sample unit which includes a culminating activity and appropriate assessment and evaluation tools, incorporates a variety of technologies and resources relevant to the study of Mathematics Primary and Junior and is based on Ministry of Education curriculum expectations
- b) Written assignment: reflecting critically on issues arising from articles, publications, research and/or other resources related to the teaching or practice of Mathematics Primary and Junior
- c) Presentation: developing a digital story, presenting an issue related to the teaching and learning of Mathematics Primary and Junior
- d) Portfolio: creating a portfolio of practical resources, artefacts, photographs and recording critical reflections for each component related to Mathematics Primary and Junior
- e) Action research: engaging in action research by reflecting and acting upon a specific inquiry into teaching practice related to Mathematics Primary and Junior

- f) Independent project: addressing any aspect of the course that is approved by the instructor
- g) Instructional resource: developing a meaningful resource that will support instruction and pedagogy related to the teaching and learning of Mathematics Primary and Junior
- h) Reflective writing: reflecting on professional practice through journal-writing, or writing a case or vignette that will support instruction and pedagogy related to the teaching and learning of Mathematics Primary and Junior.

## Appendix 1

## The Ethical Standards for the Teaching Profession

The *Ethical Standards for the Teaching Profession* represent a vision of professional practice. At the heart of a strong and effective teaching profession is a commitment to students and their learning. Members of the Ontario College of Teachers, in their position of trust, demonstrate responsibility in their relationships with students, parents, guardians, colleagues, educational partners, other professionals, the environment and the public.

# The Purposes of the Ethical Standards for the Teaching Profession are:

- to inspire members to reflect and uphold the honour and dignity of the teaching profession
- to identify the ethical responsibilities and commitments in the teaching profession
- to guide ethical decisions and actions in the teaching profession
- to promote public trust and confidence in the teaching profession.

### The Ethical Standards for the Teaching Profession are:

#### Care

The ethical standard of *Care* includes compassion, acceptance, interest and insight for developing students' potential. Members express their commitment to students' wellbeing and learning through positive influence, professional judgment and empathy in practice.

### Respect

Intrinsic to the ethical standard of *Respect* are trust and fair-mindedness. Members honour human dignity, emotional wellness and cognitive development. In their professional practice, they model respect for spiritual and cultural values, social justice, confidentiality, freedom, democracy and the environment.

#### **Trust**

The ethical standard of *Trust* embodies fairness, openness and honesty. Members' professional relationships with students, colleagues, parents, guardians and the public are based on trust.

### **Integrity**

Honesty, reliability and moral action are embodied in the ethical standard of *Integrity*. Continual reflection assists members in exercising integrity in their professional commitments and responsibilities.

## The Standards of Practice for the Teaching Profession

The *Standards of Practice for the Teaching Profession* provide a framework of principles that describes the knowledge, skills, and values inherent in Ontario's teaching profession. These standards articulate the goals and aspirations of the profession. These standards convey a collective vision of professionalism that guides the daily practices of members of the Ontario College of Teachers.

# The Purposes of the Standards of Practice for the Teaching Profession are:

- to inspire a shared vision for the teaching profession
- to identify the values, knowledge and skills that are distinctive to the teaching profession
- to guide the professional judgment and actions of the teaching profession
- to promote a common language that fosters an understanding of what it means to be a member of the teaching profession.

### The Standards of Practice for the Teaching Profession are:

# Commitment to Students and Student Learning

Members are dedicated in their care and commitment to students. They treat students equitably and with respect and are sensitive to factors that influence individual student learning. Members facilitate the development of students as contributing citizens of Canadian society.

#### **Professional Knowledge**

Members strive to be current in their professional knowledge and recognize its relationship to practice. They understand and reflect on student development, learning theory, pedagogy, curriculum, ethics, educational research and related policies and legislation to inform professional judgment in practice.

### **Professional Practice**

Members apply professional knowledge and experience to promote student learning. They use appropriate pedagogy, assessment and evaluation, resources and technology in planning for and responding to the needs of individual students and learning communities. Members refine their professional practice through ongoing inquiry, dialogue and reflection.

### **Leadership in Learning Communities**

Members promote and participate in the creation of collaborative, safe and supportive learning communities. They recognize their shared responsibilities and their leadership roles in order to facilitate student success. Members maintain and uphold the principles of the ethical standards in these learning communities.

### **Ongoing Professional Learning**

Members recognize that a commitment to ongoing professional learning is integral to effective practice and to student learning. Professional practice and self-directed learning are informed by experience, research, collaboration and knowledge.

### Appendix 2

### **Standards Resources**

Information pertaining to the following standards resources is available through the College web site at www.oct.ca.

Allard, C.C., Goldblatt, P.F., Kemball, J.I., Kendrick, S.A., Millen, K.J., & Smith, D.M. (2007). Becoming a reflective community of practice. *Reflective Practice* (8)3, 299-314.

Goldblatt, P.F., & Smith, D. (2004). Illuminating and facilitating professional knowledge through casework. *European Journal of Teacher Education* (27)3, 334-354.

Goldblatt, P.F., & Smith, D. (2005). (Eds.). *Cases for teacher development: Preparing for the classroom*. Thousand Oaks, CA: Sage Publications.

Ontario College of Teachers. (2003). *Standards in practice: Fostering professional inquiry*. [Resource kit 1]. Toronto, ON: Author.

Ontario College of Teachers. (2006). *Foundations of professional practice*. Toronto, ON: Author.

Ontario College of Teachers. (2008). *Living the standards*. [Resource kit 2]. Toronto, ON: Author.

Ontario College of Teachers. (2010). *A self-reflective professional learning tool*. Toronto, ON: Author.

Ontario College of Teachers. (2010). *Voices of wisdom* [DVD]. Toronto, ON: Author.

Smith, D., & Goldblatt, P.F. (Eds.). (2006). *Casebook guide for teacher education*. Toronto, ON: Ontario College of Teachers.

Smith, D., & Goldblatt, P.F. (Eds.). (2009). *Exploring leadership and ethical practice through professional inquiry*. Québec City, QC: Les Presses de l'Université Laval.

Smith, D. (2010). Developing leaders using case inquiry. *School-Practitioner Quarterly*, 4(2), 105-123.

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