

B.Ed. Kindergarten and Elementary Education  
**EDEE-230 Elementary School Mathematics 1**  
 (3 credits)

Fall 2017

Location: Room 436 (Math Lab)

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| Tuesday 8:35 AM – 11:25 AM<br>EDEE 230-001<br><b>Dominic Manuel, Ph.D. Candidate</b><br>Course Lecturer<br>Office: 424<br><a href="mailto:dominic.manuel@mcgill.ca">dominic.manuel@mcgill.ca</a>                                                                                                                                                                                                                                              | Wednesday 8:35 AM – 11:25 AM<br>EDEE 230-002<br><b>Annie Savard, Ph.D.</b><br>Associate Professor<br>Office: 309 Education<br>Phone: 514-398-4527 Ext. 094455<br><a href="mailto:annie.savard@mcgill.ca">annie.savard@mcgill.ca</a> |
| Thursday 8:35 AM – 11:25 AM<br>EDEE 230-003<br><b>Noor Affana, M.A. Student</b><br>Course Lecturer<br>Office: 424<br><a href="mailto:noor.affana@mcgill.ca">noor.affana@mcgill.ca</a>                                                                                                                                                                                                                                                         | Thursday 2:35 PM – 5:25 PM<br>EDEE 230-004<br><b>Alexandre Cavalcante, Ph.D. Student</b><br>Course Lecturer<br>Office: 424<br><a href="mailto:alexandre.cavalcante@mcgill.ca">alexandre.cavalcante@mcgill.ca</a>                    |
| <b>For All Sections:</b><br>Office hours: By appointment.<br>Email is the best way to contact your instructor.                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                     |
| Alexa Desrochers, M.A. Student<br><a href="mailto:alexa.desrochers@mail.mcgill.ca">alexa.desrochers@mail.mcgill.ca</a><br><br><i>Alexa will be a Teaching Assistant for all sections of EDEE 230. Her role will be to help lead our in-class rehearsals. Each time we have rehearsals, we will split the class. Half will rehearse with the instructor and half with the T.A.</i><br><b>The T.A. will not be responsible for any grading.</b> |                                                                                                                                                                                                                                     |

## Syllabus

### 1. Purposes of the Course

This course is a required course in the Bachelor of Education (kindergarten and elementary) program. It is the first course in a two-course sequence designed to help you learn to teach mathematics. One primary goal of this course is to deepen your knowledge of mathematics necessary for teaching (specifically in the domain of arithmetic). The course features an investigative approach to mathematics with opportunities to explore the conceptual underpinnings of mathematical ideas typically encountered in elementary education (K-6). You will have opportunities to engage with mathematics in ways that may be very different from your previous experiences with the subject. It is our hope that these experiences will deepen your own mathematical understanding while providing

insight into how children tend to learn big mathematical ideas over time: what strategies they typically use, what they find challenging, and why.

A second primary goal of this course is to develop your competency in specific teaching practices that are likely to support students to develop enduring understandings of mathematics as well as productive dispositions toward mathematics. In this course, we will specifically focus on setting and maintaining expectations for students' participation, and anticipating, eliciting, representing, analyzing, and building upon student thinking. You will engage in at least one cycle of enactment and investigation, in which you will practice implementing an instructional activity focused on the practices listed above in front of your course instructor and peers, receive feedback, revise your instruction, implement and video-record the same activity with "students" outside of class time, and analyze your practice. We will also analyze artifacts (video and written cases) of teaching, focusing on the role of mathematical tasks, tools, and the teacher in developing students' mathematical proficiency.

## 2. Professional Competencies & Principles and Practices of High-Quality Mathematics Teaching

The course is designed to help you develop the following **professional competencies** specified by the Ministère de l'Éducation et de l'Enseignement supérieur (numbers 1, 4, 5, & 11).

➤ **Professional Competency 1**

To act as a professional inheritor, critic, and interpreter of knowledge or culture when teaching students. *Through all of our coursework, you will develop an understanding of key mathematical ideas and benchmarks of students' understandings (specific to arithmetic); you will develop a critical approach to the discipline of mathematics (i.e., you will develop a stance on what counts as "understanding" mathematics); and you will deliberate on the teacher's role in supporting students' understandings of mathematics.*

➤ **Professional Competency 4**

To pilot teaching/learning situations that are appropriate to the students concerned and to the subject content with a view to developing the competencies targeted in the program of study. *Through the Cycle of Enactment and Investigation (see Evaluation), you will focus on specific practices of high-quality mathematics teaching (see below).*

➤ **Professional Competency 5**

To evaluate student progress in learning the subject content and mastering the related competencies. *Through our coursework and through the Mathematical Knowledge for Teaching Assignment, Flexible Interview on Fractions, and the final exam (see Evaluation), you will learn to assess students' mathematical understandings in terms of their sophistication, and make informed decisions regarding reasonable "next steps" for students.*

➤ **Professional Competency 11**

To engage in professional development individually and with others. *Throughout all the activities in the course, you will be expected to reflect on and assess your development as a mathematics teacher and identify areas and specific steps for improvement. You will also be expected to discuss your pedagogical choices with your instructor and colleagues, and work collaboratively with your peers and instructor to improve your practice.*

In developing these competencies, we will take as a guide the following **principles** of high-quality teaching. We will be working on developing your proficiency in the following **practices** of high-quality teaching throughout this course.

| Principles of High-Quality Teaching <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Cross-Disciplinary Practices of High-Quality Teaching                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Children are sensemakers.</li> <li>• Ambitious instruction requires clear instructional goals.</li> <li>• Teachers must know their students as individuals and as learners.</li> <li>• Teachers must design instruction and a learning environment that supports <i>all</i> children to do rigorous academic work in school and to have equitable access to learning.</li> <li>• Teachers must be responsive to the requirements of the school environment. At the same time, teachers should consider why schools function as they do and how schools might improve.</li> </ul> | <ul style="list-style-type: none"> <li>• Teaching toward an instructional goal</li> <li>• Eliciting and responding to student thinking               <ul style="list-style-type: none"> <li>○ Pressing on student thinking</li> <li>○ Revoicing student thinking</li> </ul> </li> <li>• Orienting students to each other’s ideas</li> <li>• Positioning students competently</li> <li>• Establishing and maintaining expectations for student participation</li> <li>• Representing student thinking and key ideas</li> <li>• Using a public record of student thinking</li> </ul> |

### 3. Course Preparation, Participation, and Attendance

This class is designed to be a **learning community**, in which each of you will be supported to develop understandings and practices central to high-quality mathematics teaching. As such, it requires effort on the part of all involved. Your participation is important not only for your own learning but also for the learning of others. One aspect of participating in a learning community is **preparing ahead of time**. You are expected to complete the readings and class assignments prior to each class. We will provide you with guiding reading questions prior to each week’s class. Although we will not collect written responses to the questions, we expect that you will have thought carefully through your responses (and questions you may have), and thus, will be in a position to contribute to class discussion. In addition, we will periodically assign “problems of the week” for you to complete ahead of class. We expect that you will bring written documentation of your attempts at solving the problem and/or a

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<sup>1</sup> We have borrowed (and in some cases, adapted) these principles and practices from the Learning Teaching in, from, and for Practice Project (<http://sitemaker.umich.edu/ltp/home>).

written solution (including a justification of your solution method). We will discuss your solutions in class.

A second aspect of participating in a learning community entails your **engagement** in our class activities and discussions. Class sessions will consist of three main types of activities: doing mathematics together, teaching performances, and discussions of readings/video/activities. Your full participation in all activities is essential for our class to learn more deeply together. If you find you are struggling with a particular concept, we expect that you will inform your instructor so that you can set up a time to work together on the concept. Over the course of the semester, each of you will be expected to make your mathematics work and your teaching public. It is important that we, as a group, create an environment in which it is comfortable to share our mathematics and teaching. We will work together to learn how to effectively communicate with and support one another by listening generously and patiently and speaking sensitively and honestly.

One important aspect of both doing mathematics and teaching mathematics is communicating your mathematical thinking through writing and representations (e.g., drawings, diagrams). Because of this, we strongly encourage you to have a **notebook** in which you can record your thinking and practice representing during class.

**Attendance.** Attendance is important. You are expected to arrive on time, remain for the full class period and actively participate. Attendance requirements are in keeping with the Ministry of Education's Core Professional Competencies #11 and #12 (to engage in professional development individually and with others, and to demonstrate ethical and responsible professional behaviour in the performance of his or her duties). If for some reason you cannot attend a class session, you are expected to contact your instructor as soon as possible (preferably before, if you know ahead of time you will miss a session). Your instructor will confer with you on whether and how you can make up the work you have missed.

**Late Assignments.** We reserve the right to penalize late work unless you have discussed it with your instructor at least 48 hours ahead of time. If a previous arrangement has not been made, your grade may be lowered by 10% for each day it is late (including weekend days).

**Note on the Classroom Etiquette.** In keeping with the professional culture of teaching and learning, the Faculty of Education community believes that our teaching and learning spaces should model such professional environments. As a community, we are committed to creating authentic opportunities where understanding of teaching and learning is co-constructed between instructors and students. In order for us to create these learning environments, we are expected to demonstrate awareness of, respect for and commitment to the behaviours and actions of professionals. As members of the Faculty of Education community, we are expected to be accountable to ourselves and others and to be engaged, collegial and accessible. By doing so, we are more fully able to share together in the types of critical dialogue, creative thinking and reflective practice expected of professionals.

We urge you not to use your laptop (or other mobile devices) during class. Given the course's focus on doing mathematics, discussion, rehearsals of teaching, and reflection, the use of laptops in class tends to be more of a distraction than a useful pedagogical tool. If you must use your laptop for note taking please let your instructor know.

## 4. Sections

There are several sections of this course. Please note that you are **not** permitted to attend any section other than the one in which you are registered.

## 5. Required Readings

Small, M. (2017). **Making Math Meaningful**. Third Edition. Nelson Education.

*\*\*You will use this text again in EDEE 332. The book comes with an online companion. We strongly advise that you purchase the online companion, for it provides access to the content of the book and extra materials that you may find helpful for your course assignments and professional practices. You may choose to purchase the online companion only from NelsonBrain.com. However, the licence will expire before you take EDEE 332.*

*There are two ways to purchase Making Math Meaningful and MindTap (9780176815844).*

1. The McGill Bookstore
2. NelsonBrain.com: [www.nelsonbrain.com/micro/MGU/EDEE230/332](http://www.nelsonbrain.com/micro/MGU/EDEE230/332)

**Both options will get you the same thing:**

- Loose-leaf copy of the entire textbook, *Making Math Meaningful*
- 2 access cards for MindTap for a total of 5 years access!

*Why can't I find it online or search for a cheaper option?*

*Your instructors have created this resource specifically to fit your needs as teachers-in-training. MindTap, which you will use for reading and videos during the term, includes many more resources that you will use during your in-service teaching between terms like:*

- Lesson plan building activities
- Collection of online resources and activities for use in the classroom
- Free apps and interactive websites to share with your students

*Only through this bundle can you receive discounted access for the entire length of your education and teacher training.*

*Want more information about MindTap? Check out the user guides here:*

<http://www.nelsonbrain.com/shop/helpwithdigital.html>.

**Québec Education Program** Approved version. *Preschool Education, Elementary Education*. (2001). Gouvernement du Québec, Ministère de l'Éducation. You can find it in both English and French on myCourses or download it at:

[http://www1.education.gouv.qc.ca/sections/programmeFormation/primaire/index\\_en.asp](http://www1.education.gouv.qc.ca/sections/programmeFormation/primaire/index_en.asp)

**Québec Education Program** *Progression of learning in Elementary School: Mathematics*. (2009). Gouvernement du Québec, Ministère de l'Éducation. You can find it in both English and French on myCourses or download it at:

[http://www1.education.gouv.qc.ca/progressionPrimaire/index\\_en.asp](http://www1.education.gouv.qc.ca/progressionPrimaire/index_en.asp).

*In the list of subjects on the left, click on "Mathematics." Then you can click on the mathematics domain in which you are interested (for this course: Arithmetic).*

Additional required readings will be posted on MyCourses (see syllabus).

## 6. Recommended Readings

Chapin, S.H. & Johnson, A. (2006). ***Math Matters: Understanding the Math You Teach***. Sausalito, CA: Math Solutions Publications.

*This book offers in-depth discussion of key mathematical ideas. Three (3) copies are on reserve in the Education Library. It is also available in the McGill Bookstore for purchase, and in e-book format on the McGill Library website.*

Great Source Publications. (2003). ***Math on Call: A Mathematics Handbook***.

*This book serves as a quick reference guide for mathematics. It is available in the McGill Bookstore for purchase.*

Lampert, M. (2001). ***Teaching Problems and the Problems of Teaching***. Michigan: Yale University Press.

Kilpatrick, J., Swafford, J., & Findell, B. (Eds.). (2001). ***Adding it up: Helping children learn mathematics***. Washington, DC: National Academy Press.

National Council of Teachers of Mathematics (NCTM). (2000). ***Principles and Standards for School Mathematics***. Reston, VA: NCTM.

**We also recommend membership in the National Council of Teachers of Mathematics (NCTM; [www.nctm.org](http://www.nctm.org)) See myCourses for details.**

## 7. Evaluation

The evaluation of your professional competencies will be based on the following assessment situations: Mathematical Knowledge for Teaching: Whole Number Addition and Subtraction, Flexible Interview on Fractions, a Cycle of Enactment and Investigation, and a Final Exam. Each of these

assessment situations is designed to develop and assess certain professional competencies specified by the Ministère de l'Éducation et de l'Enseignement supérieur, numbers 1, 4, 5, & 11).

**1) Mathematical Knowledge for Teaching: Whole Number Addition and Subtraction (10%)**

*Due Week 8 of the course. Exact date varies by section. To be completed with a partner.*

The goal of this assignment is for you to develop your “mathematical knowledge for teaching,” or in other words, your ability to analyze students’ thinking to determine the nature of their current understandings and to identify next steps for supporting them to develop more sophisticated understandings. Using a template provided, you will answer a set of prompts focused on a set of students’ solutions to the same mathematical problem. This assignment aims at developing and evaluating your performance with respect to Professional Competency 5. Detailed information for this assignment will be provided to you in class.

**2) Flexible Interview on Fractions (15%)**

*Due Week 9 of the course. Exact date varies by section.*

The goals of this assignment are for you to develop: a) your skills in eliciting what children are thinking and how they are making sense of problems; and b) your “mathematical knowledge for teaching,” and, in particular, your ability to notice and describe children’s thinking to determine the nature of their current understandings. The assignment will have two parts. For the first part, you will interview a child using a fractions protocol that is provided, audio-record the interview, transcribe the interview, and prepare a response to a set of prompts. You will turn in a pamphlet (during Week 10) that will display your child’s work and your responses to the prompts. For the second part of the assignment, you will work with a group in class (during Week 11 or 12) to compare each other’s pamphlet and submit responses to a set of prompts. This will connect to our work in fractions. This assignment aims at developing and evaluating your performance with respect to Professional Competency 5. Detailed information for this assignment will be provided to you in class

**3) Cycle of Enactment and Investigation (35%)**

*Due dates vary depending on the activity you choose and depending on your section. See the Schedule of Course Activities for more information.*

In this class, you will participate in a Cycle of Enactment and Investigation to work on several key practices of high-quality mathematics teaching, including: *setting and maintaining expectations for participation, eliciting and responding to student thinking, orienting students to each others’ ideas, and using mathematical representations*. With a group, you will select one of four possible activities to engage in: a) Quick Images, b) Story Problem, c) String, or d) Choral Counting. Each activity is designed to support students to develop procedural and conceptual understandings of key concepts in number and operations, to develop their ability to communicate about their ideas, and to engage in mathematical explanation. We have selected these activities because they can be adapted for various grade levels and topics, so that they can become activities that you can use regularly in your own classroom. This assignment will provide you with structured opportunities to plan, rehearse your activity in class, enact the activity with students outside of class, analyze your

practice, and improve upon your teaching practice. This assignment aims at developing and evaluating your performance with respect to Professional Competencies 4 and 11. Detailed information for this assignment will be provided to you in class.

#### 4) Final Take-home Exam (40%)

You will have a written final exam done in groups of 2 or 3, focusing on the mathematical concepts and mathematical knowledge for teaching discussed and explored throughout the course. This exam is meant to be integrative and will be worth 40% of your final grade. Final letter grades will be assigned in accordance with McGill University regulations. The final exam aims at evaluating your performance with respect to Professional Competencies 1 and 5.

**Marks will be earned for individual assignments as follows:**

|                                                                               |            |
|-------------------------------------------------------------------------------|------------|
| 1) Mathematical Knowledge for Teaching: Whole Number Addition and Subtraction | 10         |
| 2) Flexible Interview on Fractions                                            | 15         |
| 3) Cycle of Enactment and Investigation                                       | 35         |
| 4) Final Take-home Exam                                                       | 40         |
| <b>TOTAL</b>                                                                  | <b>100</b> |

## 8. Additional Requirements

**Resources:** You should become familiar with the library resources that are relevant to elementary school mathematics teaching. The journals *Teaching Children Mathematics* and *Mathematics Teaching in the Middle School* will be of particular interest. Also, check the books in the QA135.5 section of the Library. The Reference Shelves in the Math Lab house several elementary school mathematics textbook series. *Nelson Mathematics*, *Math Makes Sense*, *Challenging Mathematics*, *Interactions*, and *Quest 2000* are available for examination. Other resources are to be found in the Curriculum Lab.

**All material posted, whether it be in Discussion or elsewhere on MyCourses, forms part of the substance of this course.**

## 9. Rights and Responsibilities

You are reminded that your conduct and the conduct of the instructor are governed by the Handbook on Student Rights and Responsibilities. The full text of the Handbook is available at: <http://www.mcgill.ca/secretariat/policies/students/handbook-student-rights-and-responsibilitiesle-recueil-des-droits-et-obligations-d>.

### **Academic Integrity:**

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student



Conduct and Disciplinary Procedures (see [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/) for more information).  
(Approved by Senate on 29 January 2003)

L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/)).

#### **Language:**

*In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded. This does not apply to courses in which acquiring proficiency in a language is one of the objectives.*

*Conformément à la Charte des droits de l'étudiant de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l'un des objets est la maîtrise d'une langue).*

***DISE amendment to Language of Assessment Policy:*** *To develop Professional Competency #2 (To communicate clearly in the language of instruction, both orally and in writing, using correct grammar, in various contexts related to teaching.)– all B.Ed. and MATL courses can fall under exception (ii), above. DISE policy is that this exception can be applied at each individual instructor's discretion – and can be applied at the course or assignment level. **Les étudiants du programme d'immersion en français doivent soumettre leurs travaux écrits en français.***

#### **Safe Space:**

Safe Space Statement [approved by the Department of Integrated Studies Diversity and Equity Committee on 21 January 2014]:

*We are committed to nurturing a space where students, teaching assistants, lecturers, and professors can all engage in the exchange of ideas and dialogue, without fear of being made to feel unwelcome or unsafe on account of biological sex, sexual orientation, gender identity or expression, race/ethnicity, religion, linguistic and cultural background, age, physical or mental ability, or any other aspect integral to one's personhood. We therefore recognize our responsibility, both individual and collective, to strive to establish and maintain an environment wherein all interactions are based on empathy and mutual respect for the person, acknowledging differences of perspectives, free from judgment, censure, and/or stigma.*

## **10. Academic Support Services**

Office for Students with Disabilities (<http://www.mcgill.ca/osd/>):

*If you need support for difficulties or impairments hindering your academic performance, please contact your instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 514-398-6009 before you do this.*

McGill Writing Centre (<http://www.mcgill.ca/mwc/>):

*The McGill Writing Centre offers support for written communication through credit courses in academic and professional writing and a tutorial service open to all McGill students and postdocs.*

International Student Services (<http://www.mcgill.ca/internationalstudents/>):

*The mission of the International Student Services (ISS) is to support the growth, progress, and success of international students at McGill, and aims to ease their transition to a new school, a new home and a new country.*

First Peoples' House (<http://www.mcgill.ca/fph/>):

*The mission of the First Peoples' House is to provide First Nations, Inuit and Métis students attending McGill with a "home away from home", where they can find support and encouragement to succeed in their studies and remain connected to their culture.*

Student Services (<http://www.mcgill.ca/student-services/>):

*The mission of the McGill Student Services is to promote and support student success and well-being. They offer services to facilitate the transition or re-entry to university life, progress through one's studies, and to help overcome obstacles that may impede students' successful and enjoyable student experience.*

***\*\*In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.\*\****

## Tentative Schedule of Course Activities

\*\*\* Please note that the course outline and schedule are subject to change as it will be adapted to meet students' needs. \*\*\*

|   | <b>Week of</b> | <b>Topic and Activities</b>                                                                                                                                                                                                                                                                             | <b>Assignments Due</b><br>*Due at the <i>beginning</i> of class, unless otherwise directed | <b>Readings</b><br>*Prepare <i>before</i> class<br><i>All readings are required (unless otherwise indicated). Recommended Readings are strongly suggested but not required</i>                                                                                                                                                                                                                |
|---|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Sept. 5-7      | <ul style="list-style-type: none"> <li>• Doing Mathematics Together</li> <li>• Introduction to the Instructional Activity of Story Problems</li> <li>• Introduction to Number/Numeral, Young Children's Conceptions of Number</li> <li>• The Instructional Activity of Quick Images</li> </ul>          |                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                               |
| 2 | Sept. 12-14    | <ul style="list-style-type: none"> <li>• Introducing the Instructional Activity of a Choral Count</li> <li>• Conceptual/Procedural Understanding</li> <li>• Number/Numeral (Base-10 Understanding, Place Value)</li> <li>• Overview of the Cycle of Enactment &amp; Investigation Assignment</li> </ul> | Math Autobiography                                                                         | Required: <ul style="list-style-type: none"> <li>• Small: Ch. 7 &amp; Ch. 10</li> <li>• Kilpatrick et al. (2001) - Strands of Mathematical Proficiency, pp. 115-124 (on myCourses)</li> <li>• <i>Cycle of Enactment &amp; Investigation</i> Assignment Description (on MyCourses)</li> </ul> Recommended: <ul style="list-style-type: none"> <li>• Small Ch. 1</li> <li>• MM Ch. 1</li> </ul> |
| 3 | Sept. 29-31    | <ul style="list-style-type: none"> <li>• Equality</li> <li>• Talk Moves</li> <li>• Introducing the Instructional Activity of a String</li> <li>• Number/Numeral (Base-10 Understanding, Place Value) (continued)</li> </ul>                                                                             | Sign up for Rehearsal Groups in class today.                                               | Required: <ul style="list-style-type: none"> <li>• Chapin et al (2001) on <i>Math Talk</i> (on MyCourses)</li> <li>• Small: Ch. 6</li> <li>• Small: Ch. 16 (372-376)</li> </ul>                                                                                                                                                                                                               |

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| 4 | Sept. 26-28 | <ul style="list-style-type: none"> <li>• QEP &amp; Competency 3: To Communicate by Using Mathematical Language (Discourse in the Math Classroom)</li> <li>• Assessing Student Thinking through Flexible Interviewing</li> <li>• Overview of Flexible Interview Assignment</li> <li>• Operating on Counting Numbers: Early Addition, &amp; Subtraction</li> </ul> |                                                                                                                                      | <p>Required:</p> <ul style="list-style-type: none"> <li>• QEP, Ch. 6.1 (Mathematics), pp. 148-149; 150-157 (on myCourses)</li> <li>• PL (Mathematics, Arithmetic), pp. 1-13, pp. 23-24</li> <li>• Flexible Interview Assignment Description (on myCourses)</li> </ul> <p>Recommended:</p> <ul style="list-style-type: none"> <li>• If you have not read the QEP before, read the introduction</li> <li>• Ginsburg Flexible Interviewing, Ch. 1, 2, &amp; 3 (on MyCourses)</li> </ul> |
| 5 | Oct. 3-5    | <ul style="list-style-type: none"> <li>• Collective Planning for Quick Images Rehearsals</li> <li>• Operating on Counting Numbers: Early Addition, &amp; Subtraction (continued)</li> <li>• Overview of Mathematical Knowledge for Teaching Assignment</li> <li>• QEP Competency 2: To reason Using Mathematical Concepts and Processes</li> </ul>               |                                                                                                                                      | <p>Required:</p> <ul style="list-style-type: none"> <li>• Small: Ch. 8, pp. 157-166</li> <li>• QEP, Ch. 6.1 (Mathematics), pp. 144-147 (on myCourses)</li> <li>• MKT Assignment Description (on MyCourses)</li> </ul> <p>Recommended:</p> <ul style="list-style-type: none"> <li>• MM Ch. 3 pp. 55-67;</li> </ul>                                                                                                                                                                    |
| 6 | Oct. 10-12  | <ul style="list-style-type: none"> <li>• <b>Rehearsals:</b> Quick Images</li> <li>• Collective Planning for Choral Count Rehearsals</li> <li>• Operating on Counting Numbers: Multi-digit Addition</li> </ul>                                                                                                                                                    | Quick Images Groups: Prepare for In-Class Rehearsal                                                                                  | <p>Required:</p> <ul style="list-style-type: none"> <li>• Small: Ch. 9 &amp; Ch.11 pp. 220-234</li> </ul>                                                                                                                                                                                                                                                                                                                                                                            |
| 7 | Oct. 17-19  | <ul style="list-style-type: none"> <li>• <b>Rehearsals:</b> Choral Count</li> <li>• Collective Planning for Story Problems Rehearsals</li> <li>• Operating on Counting Numbers: Multi-digit Subtraction</li> </ul>                                                                                                                                               | <p>Quick Images Groups: Rehearsal Reflections due (post on myCourses)</p> <p>Choral Count groups: Prepare for In-Class Rehearsal</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|    |                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                |
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| 8  | Oct. 24-26         | <ul style="list-style-type: none"> <li>• <b>Rehearsals:</b> Story Problems</li> <li>• Collective Planning for Choral Counts Rehearsals</li> <li>• Operating on Counting Numbers: Early Multiplication</li> </ul>                                             | <p><b>Mathematical Knowledge for Teaching Assignment due</b></p> <p>Choral Count Groups: Rehearsal Reflections due (post on myCourses)</p> <p>Story Problems: Prepare for In-Class Rehearsal</p>                                                                 | <p>Required:</p> <ul style="list-style-type: none"> <li>• Small: Ch. 8, pp. 166-183</li> </ul> <p>Recommended:</p> <ul style="list-style-type: none"> <li>• MM Ch. 4 pp. 76-95</li> </ul>                                                      |
| 9  | Oct. 31-<br>Nov. 2 | <ul style="list-style-type: none"> <li>• <b>Rehearsals:</b> Strings</li> <li>• Operating on Counting Numbers: Multi-digit Multiplication</li> </ul>                                                                                                          | <p><b>Flexible Interview Assignments Due</b><br/><i>(note that the other part of the assignment will be done in class)</i></p> <p>Story Problems Groups: Rehearsal Reflections Due (post on myCourses)</p> <p>Strings groups: Prepare for In-Class Rehearsal</p> | <p>Required:</p> <ul style="list-style-type: none"> <li>• Small: Ch. 11, pp. 235-254</li> </ul>                                                                                                                                                |
| 10 | Nov. 7-9           | <ul style="list-style-type: none"> <li>• Operating on Counting Numbers: Early Division</li> <li>• Introduction to fractions</li> <li>• Representations of Fractions</li> </ul>                                                                               | <p>Strings Groups: Rehearsal Reflections due (post on myCourses)</p> <p><b>Quick Images Groups: Cycle of Enact/Invest Assignment due</b></p>                                                                                                                     | <p>Required:</p> <ul style="list-style-type: none"> <li>• Small: Ch. 12, 256-272;</li> </ul> <p>Recommended:</p> <ul style="list-style-type: none"> <li>• MM Ch. 5 pp. 99-121</li> </ul>                                                       |
| 11 | Nov. 14-16         | <ul style="list-style-type: none"> <li>• Exploring Students' Thinking of Representations of Fractions</li> <li>• Big Ideas in Fractions</li> <li>• Operating on Fractions: Addition &amp; Subtraction</li> <li>• Manipulatives in Math Classrooms</li> </ul> | <p><b>Choral Count Groups: Cycle of Enact/Invest Assignment due</b></p>                                                                                                                                                                                          | <p>Required:</p> <ul style="list-style-type: none"> <li>• Small: Ch. 12, 272-288</li> <li>• Ball (1992) – Magical Hopes (on myCourses)</li> </ul> <p>Recommended:</p> <ul style="list-style-type: none"> <li>• MM Ch. 5 pp. 121-125</li> </ul> |
| 12 | Nov. 21-23         | <ul style="list-style-type: none"> <li>• Operating on Fractions: Multiplication</li> <li>• Equivalent fractions</li> <li>• Decimals</li> <li>• Overview of the Final Exam</li> </ul>                                                                         | <p><b>Story Problems Groups: Cycle of Enact/Invest Assignment due</b></p>                                                                                                                                                                                        | <p>Recommended:</p> <ul style="list-style-type: none"> <li>• MM Ch. 5 pp. 125-129;</li> <li>• Small: Ch. 14</li> </ul>                                                                                                                         |
| 13 | Nov. 28-29         | <ul style="list-style-type: none"> <li>• QEP Competency 1: To solve a situational problem</li> <li>• Integers</li> <li>• Number Line Representation</li> <li>• Reflecting back on our learning and planning ahead</li> </ul>                                 | <p><b>Strings Groups: Cycle of Enact/Invest Assignment due</b></p>                                                                                                                                                                                               | <p>Required:</p> <ul style="list-style-type: none"> <li>• Small: Ch. 13; Ch.15</li> <li>• QEP, Ch. 6.1 (Mathematics), pp. 137-143 (on myCourses)</li> </ul> <p>Recommended:</p> <ul style="list-style-type: none"> <li>• MM Ch. 6</li> </ul>   |

**Small** refers to the Small textbook; **MM** refers to *Math Matters*; **QEP** refers to the Québec Education Program; **PL** refers to the Progression of Learning.