COLLEGE OF CHARLESTON
Department of Teacher Education
EDEE 323: Development of Mathematical Thinking
Section 001: Monday & Wednesday, 8-9:15 am, ECTR 215
Fall 2015

Instructor: Nenad Radakovic, Ph.D.
Office: School of Education, Health, and Human Performance, Room 222
Office Phone: 953-4837
Email: radakovicn@cofc.edu (Best way to contact me)
Office Hours: Mon: 10-12; Tue: 10-12; Wed: 4-5; or by appointment
Email Hours: On weekdays (Mon-Fri): latest check and response 5 pm; Sun: 1-5 pm

Course Description:
This course focuses on the alliance of factual knowledge, procedural proficiency, and conceptual understanding. The parallels of learner development and the progressive nature of mathematics content standards are explored. Teacher candidates will study the elements necessary to help P-8 students achieve high-quality mathematics instruction.

More specifically, in accordance with SC State and National Standards, teacher candidates will explore numbers and operations, geometry, measurement, data analysis and probability, and algebra. Problem solving, reasoning, multiple representations, connections, and communication are stressed throughout the course coverage of these content areas, facilitating the development of deep conceptual understanding, within each of the five aforementioned mathematical content areas.

At the successful completion of the course, teacher candidates will be better equipped to teach their future elementary- and middle-school students in a variety of ways, such that their future students understand mathematics procedures and why mathematics concepts make sense. In addition, teacher candidates will have a better understanding of how mathematical understanding develops for children as they progress from preschool through middle school.

Required Text:


Additional Sources: I will draw from additional texts and curricula during the semester. They will be cited appropriately when utilized. Two of which are the following:


Class Resources:
Common Core Standards for mathematics K-8 (online http://www.corestandards.org/Math)
NCTM Standards (both process & content) for K-8 (online [http://nctm.org/standards](http://nctm.org/standards) if a member or in your textbook)


**Course Requirements:**

**Demonstration of SOE Dispositions**

Examples of how dispositions are evident are provided in italics:

- Belief that all students can learn, *participation and attitudes expressed about students and learning*
- Value and respect for individual differences, *interactions in class discussions and participation in group work*
- Value of positive human interactions, *participation in class and in group work*
- Exhibition and encouragement of intellectual curiosity, enthusiasm about learning, and willingness to learn new ideas, *participation in class and group discussions and performance on assessments*
- Dedication to inquiry, reflection, and self-assessment, *participation in class and group discussions, performance on assessments (especially the reading and course reflections assignments)*
- Value of collaborative and cooperative work, *thoughtful, constructive critiques of others’ work, participation in class activities*
- Sensitivity toward community and cultural contexts, *participation in class and group discussions, tolerating, discussing, and respectfully listening to differing points of views*
- Engagement in responsible and ethical practice, *performance on assessments, class attendance, and participation in group activities*
- Development of professional mastery over time, *performance over time in writing, thinking, and expression of knowledge*

Utilization of Computer Applications (Available in the CofC managed computer labs located in JC Long, Library, and other campus sites. If unfamiliar with these applications, set up a time for tutoring with me.)

- Internet
- Word processing
- OAKS

Completion of All Assigned Readings and Assignments **ON TIME**

See Course Assignments below for detailed descriptions.

Responsibility for **ALL** Course Content **AND** Responsibility for Keeping up with Grades and Attendance

Including lecture, text, outside reading, handouts, research, etc.

If you miss a class, ask a classmate for the missed assignments and notes.

**Course Assignments:**

Due dates for course assignments, as well as scheduled exams, are listed in the tentative schedule at the end of the syllabus. Any changes will be announced in class or on the class news page on OAKS. All assignments must be completed on time for any credit to be received. If, for medical or serious personal reasons, an assignment
is late the instructor should be informed of the reasons and the potential for late submission and credit may be considered. Please DO NOT give assignments to School of Education personnel. Assignments will NOT be accepted via email (unless specified explicitly).

Reading Comprehension Checks: Looking Back (3)
To maximize the development of how to teach mathematics, it is imperative that TCs engage in their readings. Some of the readings will be addressed in class, but due to the vast body of pertinent literature in this field, some of the topics covered in the out-of-class readings will not. Therefore, to ensure active engagement with the readings and maximum knowledge gained from this course, TCs are encouraged to take notes and complete problems in the text as they read. TCs’ understanding of the readings will be assessed in a variety of ways, including specific pre-classwork activities and through the observation of peer discussions and/or collection of the “Looking back” questions assigned for specified chapters (noted on the tentative schedule).

Classroom Explorations (7)
Throughout the semester, TCs will be asked to participate in and complete classroom explorations related to the content of that day’s class. These explorations will help deepen TCs’ understanding of the given content by way of problem-based, peer-scaffolded learning opportunities, rather than traditional, didactic instruction. Additionally, they will help TCs learn to communicate mathematical ideas, areas of confusion, etc. As these explorations depend upon peer scaffolding and communication, to receive credit, TCs must be present.

Pre-Classwork Assignments (9)
Throughout the semester, TCs will be asked to complete assignments related to the upcoming class content and discussion. Each assignment is indicated on the daily schedule. If materials are required for completing the assignments, they will be given the class prior to the assignment’s due date or posted on OAKS.

Exams: Midterm & Final
TCs will be expected to complete two tests: a midterm and a final. Material on these summative assessments comes from (1) in class lectures, discussions, and explorations/activities and (2) out of class readings and pre-classwork assignments. Exam dates are indicated on the schedule.

Standards Project
In groups, depending on the size of the class, TCs will sign up to examine one of the five NCTM Content Standards (number & operations, measurement, geometry, data analysis & probability, and algebraic thinking) throughout the first three NCTM grade bands (Early Childhood Grade Band, covering PK-2; Elementary Grade Band, grades 3-5; Middle Grade Band, covering grades 6-8). TCs will also examine the Common Core Standards and the 2015 SC Mathematics Standards that align with their NCTM Content Standard. In order to fully examine their content standard, I expect each group to:

- Become familiar with the NCTM, CCSS, and SC Standards, understanding the expectations, objectives, indicators, etc. for each grade or grade band. (The language and breakdown is different for each set of standards.)
- Articulate how children develop their mathematical thinking from kindergarten through eighth grade with regard to the specified content standard. This can be done by completing a timeline or some other progression document. This is a vertical look at the standards within a given content strand.
- Describe clearly how the standard translates into classroom practice and develops throughout the grades. This will be done by finding and modifying appropriately five lesson activities that build on the same content strand, one activity for second, third, fourth, fifth, and sixth grade. Each lesson activity will be appropriately aligned with the content standards.
- As “the mathematical Content and Process Standards…are inextricably linked,” describe how the NCTM and SC Process Standards and CCSS Mathematical Practice Standards are integrated into implementations
of the content standard (NCTM, 2000, p. 7). This will be done by aligning each of the five lesson activities with the process/practice standards, as well as the content standards.

These are to be achieved in three ways:

1. Reading *Principles and standards* and reviewing the Common Core and SC Standards
2. Reviewing and obtaining appropriate activities from the journal *Teaching children mathematics (TCM)*, the journal *Mathematics Teaching in the Middle School (MTMS)*, the NCTM website Illuminations (http://illuminations.nctm.org) and possibly
3. Obtaining appropriate, well-constructed activities from practicing teachers. (THIS DOES NOT INCLUDE TEACHERS PAY TEACHERS or other non-NCTM sites on the internet.)

**FINAL WRITE-UP:** Each person in the group will be responsible for obtaining one activity that is part of a set of interrelated activities that show the development of a particular mathematical idea within the given content standard. Each person will be in charge of their own dialogue and write up of the activity. However, all members of the group should be present in the discussion about each of the activities, including how to improve upon the directions of the activity (as needed and reflected in the final write up), the prior knowledge students must have to complete the activity, what foundation this activity sets for future learning, how the activity fits in the development of students’ understanding of a particular concept, and how the activity aligns with the three sets of standards (both content and practice/process). **There must be at least one PK-2nd activity, two 3rd-5th activities, and one 6th-8th activity.**

**PRESENTATION:** At the completion of our class coverage of a given content standard (number & operations, measurement, geometry, data analysis & probability, and algebraic thinking), the group assigned to that content area will have an entire class session to:

- Teach a lesson on the development of student thinking from K-8 in that given area. (In teaching this, they may consider having the class attempt to order particular expectations/indicators, ask questions about what classmates think fall within the content standard, provide a timeline of what is covered in each grade, etc.). **TCs are expected to reveal how the NCTM, CCSS, and SC Standards differ** in their descriptions of the development of mathematical thinking. Last semester, a group used a Venn diagram to convey this. It was excellent. **Standards should not be cut and pasted into PPT slides.** In teaching this, presenting TCs should supply the class with some sort of progression document – again, this is not a cut and paste of the standards word for word. (One to two people should take the lead on this portion of the presentation, depending on the size of the group.)

- Demonstrate two activities from two different grade bands. Prior to teaching each activity, the TCs will explain to the class where the activity fits on the progression document and what children are expected to have learned earlier and what they will be expected to learn later that relates to the activities content. (Two people should lead each activity; others should assist.)

- Conclude the presentation. (All should assist in this conclusion.)

The grading criterion is provided on OAKS for the specific breakdown of how TCs will be assessed on this project. Each group member will have the opportunity to assess the contributions of the other group members. Both the demonstration and peer assessment will be figured into each TC’s Standards Project grade.

Note that, while not indicated on the schedule, TCs should (1) work on this project throughout the semester and (2) read chapters three through six in the *Principles and standards for school mathematics.*
The intent of this project is to familiarize TCs with the Standards, to help them understand how to implement standards into classroom practice (better understanding what makes a good standards-based, well-aligned assignment), and to help them understand how children develop their mathematical thinking from PK through grade eight. Pragmatically, I want TCs to begin collecting detailed activities that span the Content Standards and grade bands so when they leave my class, they do not have to start from scratch.

Persistent links to the most current May issues of both TCM and MTMS (the May issues each have a classified index that will be extremely helpful in finding the articles needed for your projects):

Classified Index, Aug. 2014–May 2015

Classified Index, Aug. 2013–May 2014

Classified Index, Aug. 2012–May 2013

Classified Index, Aug. 2011–May 2012

Participation and Attendance

Participation
During class, there will be a number of activities in addition to the explorations and review of some of the pre-classwork. TCs will be expected to participate in these activities and in general class discussions. In order to earn credit for classwork activities and discussions, TCs must be present. There are 28 scheduled class sessions, excluding the final exam session: 7 of those sessions are devoted to Explorations for which TCs will earn course points; 2 of those sessions is devoted to reviewing pre-classwork material for which TCs will earn course points; and 1 is devoted to taking the midterm; for the remaining 18 sessions, general participation will be assessed at ¾ point each session.

Participation points will be deducted for cell phone use in class and disrespectful conduct. If an emergency, TCs may be excused to the hallway to talk or text. Otherwise, I should not see fingers typing on phones underneath tables.

TEDU Attendance Policy:
Excessive absences (i.e., more than 15% - approximately 5 hours/4 classes) may result in receiving a “WA/F”. TCs will be late if they arrive 10 minutes after class has started, affecting their participation scores. Three lates results in one absence. TCs will be absent if they arrive after 20 minutes or if they leave class early. In terms of being late or having to leave class early, exceptions will be made on an individual basis, but TCs must speak with me about extenuating circumstances for such exceptions. Regarding absences, if a TC exceeds allowable absences due to extenuating circumstances beyond the TC’s control, a panel of professors from that semester will review the circumstances and make a final decision.

If you are a SNAP students and require accommodations, please see me within the first two weeks of the course or as soon as you find out about potential accommodations if determined mid semester. Athletes who will miss
class due to athletic events must see me within the first two weeks of the course and submit an athletic schedule for the semester, identifying classes that will be missed. No other absences will be allowed for athletes who miss the maximum allowable absences due to athletic events.

Written and Oral Communication:
TCs are expected to use correct grammar at all times. Points will be deducted on written assignments for grammatical errors. All references must follow the American Psychological Association (APA) Guidelines for Term Papers. For assistance with APA, guidelines and examples can easily be found on the web. The Writing Lab is located on the first floor of Addlestone Library (Monday through Thursday 9:00 am to 9:00 pm and Friday 9:00 am to noon). Additionally, it is imperative that TCs use correct grammar in all oral communication, especially during field experiences. Classroom teachers, student peers, and I will collaborate to eliminate all oral grammatical errors, using an approach of constructive criticism.

Evaluation:
It will be possible to earn 200 points during the semester. They will be distributed as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open-reading-notes Quizzes (3)</td>
<td>12 points total (6%)</td>
</tr>
<tr>
<td>Classroom Explorations (7)</td>
<td>28 points total (14%)</td>
</tr>
<tr>
<td>Pre-classwork Assignments (9)</td>
<td>36 points total (18%)</td>
</tr>
<tr>
<td>Midterm</td>
<td>30 points (15%)</td>
</tr>
<tr>
<td>Standards Project</td>
<td>40 points (20%)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30 points (15%)</td>
</tr>
<tr>
<td>Participation and Attendance</td>
<td>24 points (12%)</td>
</tr>
</tbody>
</table>

Letter Grades | Percentage Range | Grade Points |
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>91-92%</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>89-90%</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>86-88%</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>84-85%</td>
<td>2.7</td>
</tr>
<tr>
<td>C+</td>
<td>82-83%</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>79-81%</td>
<td>2.0</td>
</tr>
<tr>
<td>C-</td>
<td>77-78%</td>
<td>1.7</td>
</tr>
<tr>
<td>D+</td>
<td>75-76%</td>
<td>1.3</td>
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<tr>
<td>D</td>
<td>72-74%</td>
<td>1.0</td>
</tr>
<tr>
<td>D-</td>
<td>70-71%</td>
<td>0.7</td>
</tr>
<tr>
<td>F</td>
<td>≤ 69%</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Respectful Conduct:
TCs are expected to be respectful and considerate of one another. Cell phones should be turned off while in class. Laptops should only be used in class if they are facilitating the development of mathematical thinking; if they appear to be a distraction, I will ask that they be put away. Disrespectful conduct will result in a loss of participation points.

CofC Honor System:
Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved. Incidents where the instructor determines the student’s actions are related more to a misunderstanding will be handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed by both the instructor and the student, will be forwarded to the Dean of Students and placed in the student’s file.
Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student’s transcript for two years after which the student may petition for the X to be expunged. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students should be aware that unauthorized collaboration - working together without permission - is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others’ exams, fabricating data, and giving unauthorized assistance. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor.

Students can find the complete Honor Code and all related processes in the Student Handbook at http://studentaffairs.cofc.edu/honor-system/studenthandbook/2015-2016-student-handbook.pdf

ADA Accommodations:
In compliance with the Americans Disabilities Act (ADA), all qualified students are entitled to “reasonable accommodations.” Any students requiring accommodations should contact the Center for Disability Services (953-1431) and provide me with documentation of the needed accommodations within the first two weeks of the course or as soon as they find out about potential accommodations if determined mid semester.

Course Objectives:
All teacher preparation programs in the College of Charleston’s School of Education, Health, and Human Performance (SOEHHP) are guided by a commitment to the conceptual framework of “Making the Teaching and Learning Connection.” Three elements of teacher competency (ETC) are fundamental to this framework. Teachers must:
(1) understand and value the learner, 
(2) know what and how to teach and assess within a conducive learning environment, and
(3) understand themselves as professionals.
In addition, these competencies are foundational to the learning and assessments within this course, facilitating the development of knowledge, skills, and dispositions necessary for becoming an effective teacher.

Below are the specific end-of-course outcomes related to these teacher competencies. They are derived from the standards set forth by the National Council of Measurement in Education (NCME) and relate to those of the (1) SOEHHP, (2) CAEP (1.1 relates to the 10 InTASC standards), (3) National Association for the Education of Young Children (NAEYC), (4) National Middle School Association (NMSA), and (5) State Standards for Teacher Education (SC). They, therefore, indicate the expectations for teacher candidates within the SOEHHP, early childhood teachers, elementary-grades teachers, and middle-grades teachers.

1. Teacher candidates (TCs) will develop the understanding of how students learn to construct mathematical ideas from the concrete early childhood experiences through the development of thinking abilities in middle grades. SOE I; NAEYC, 1c; InTASC 1 (CAEP 1.1)

2. TCs will articulate a vision of school mathematics that supports access of all students to a curriculum that emphasizes important mathematical concepts; effective and engaging research-based instructional practices; and high expectations with appropriate accompanying accommodations. SOE II, III; NAEYC 4b, 5a, 1c; InTASC 2, 4, & 8 (CAEP 1.1)
3. TCs will convey an **appreciation for the discipline of mathematics** including its history and the **contributions of diverse cultures to the field.**  
SOE II, VII; SC 4 (contextual teaching and diverse learning styles); related to NAEYC 4a; InTASC 2 (CAEP 1.1)

4. TCs will articulate the knowledge that mathematics curriculum must be coherent and focused on important **useful concepts that are connected within the discipline and across disciplines.**  
SOE II; NAEYC 5a; NMSA 4.K2, SC 4 (contextual teaching); InTASC 4 (CAEP 1.1)

5. TCs will recognize the importance of the **role of student ideas**, interests, and needs in the design, implementation, and evaluation of mathematically-based learning experiences.  
SOE I; NAEYC 1a, 5c; NMSA 3.K5, 3.D4, 4.P3; SC 4 (diverse learning styles; cooperative teaching); InTASC 1, 5, & 7 (CAEP 1.1)

6. TCs will demonstrate an understanding of the need for a **variety of instructional strategies to effectively address developmental, ability and learning style needs of PK-8 students exhibiting diversity in its many forms.**  
SOE III; NAEYC 1c, 4b; NMSA 1.P5, 1.P10, 4.K3, 5.K2; SC 4 (diverse learning styles); InTASC 1, 2, & 8 (CAEP 1.1)

7. TCs will develop the knowledge of, and dispositions that value, ongoing, systematic, formal, and informal assessment as an integral part of instruction that guides and enhances learning.  
SOE VI; NMSA 1.P6, 5.K8, 5.D5, 5.P4, 6(all) NAEYC 6d and/or 4d (related to self assessment to inform future instruction by being reflective and critical); InTASC 6 & 9 (CAEP 1.1)

8. TCs will communicate about and through mathematics verbally and in writing using both everyday language and mathematical representations.  
SOE II; NAEYC 4c, 5a; NMSA 4.K4, 4.D4, 4.P5; InTASC 3 & 4 (CAEP 1.1)

9. TCs will demonstrate knowledge of the organization of the content standard areas of number and operations, algebra, geometry, measurement, data analysis, and probability within the PK-8 mathematics curriculum as prescribed by the NCTM, Common Core State Standards, and the SC Standards.  
SOE II; NAEYC 5b; NMSA 4, 6.K5; SC 7; InTASC 4 (CAEP 1.1)

10. TCs will demonstrate the value and integrative nature of the process standards of problem solving, reasoning, communication, connections, and representations within the PK-8 mathematics curriculum as prescribed by the NCTM and reflected in the Common Core State Standards for Mathematical Practices and the SC Standards.  
SOE II; NAEYC 5b, 4c, 5c; NMSA 4, 5.K3, 5.P2, 6.K5; SC 4 (contextual teaching); SC 7; InTASC 3, 4, 5, & 8 (CAEP 1.1)

11. TCs will demonstrate competency in, and an understanding of the value of, a breadth and depth of mathematical knowledge and skills that extend beyond the level for which the TC is preparing.  
SOE II; NAEYC 5a, 5c; InTASC 4 (CAEP 1.1)

**Course Alignment with Common Core Standards:**  
College and Career Readiness Mathematics Practice Standards  
1. Make sense of problems and persevere in solving them.  
2. Reason abstractly and quantitatively.  
3. Construct viable arguments and critique the reasoning of others.  
4. Model with mathematics.  
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

College and Career Readiness ELA Standards

Reading

Key ideas and details
1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

Craft and structure
4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

Integration of knowledge and ideas
7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

Range of reading level and text complexity
10. Read and comprehend complex literary and informational texts independently and proficiently.

Writing

Text types and purposes
1. Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.

Production and distribution of writing
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
6. Use technology, including the internet, to produce and publish writing and to interact and collaborate with others.

Range of writing
10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

Speaking and Listening

Comprehension and collaboration
1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
3. Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric.

Presentation of knowledge and ideas
4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

Language

Conventions of Standard English
1.Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings &amp; assignments to be completed for the given class</th>
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<tbody>
<tr>
<td>Wed 8/26</td>
<td>Introduction; Opening activity: Triangle art; Course overview;</td>
<td>Read the Syllabus.</td>
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<tr>
<td></td>
<td>Accessing all three sets of standards; Pre-classwork 1 explanation.</td>
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<tr>
<td>Mon 8/31</td>
<td>Beliefs and attitudes towards mathematics; Standards: NCTM, CC, and SC;</td>
<td>Pre-classwork assignment 1: Beliefs and attitudes towards mathematics; NCTM, CC, &amp; SC practice/process and content standards: Access &amp; review; Bassarear: Read pp. 1-3.</td>
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<tr>
<td></td>
<td>Standards Project sign-up and explanation.</td>
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<tr>
<td>Wed 9/2</td>
<td>Problem solving; Exploration 1: Pizza cutting; Importance of multiple representations; Communication; Pre-classwork 2 explanation.</td>
<td>Bassarear: read the remainder of ch. 1.</td>
</tr>
<tr>
<td>Mon 9/7</td>
<td>Sets; Venn diagrams; Cardinality; Whole numbers.</td>
<td>Bassarear: 2.1; Pre-classwork assignment 2.</td>
</tr>
<tr>
<td>Wed 9/9</td>
<td>Finish sets; Whole numbers; Operations on the whole numbers: introduction; Addition of whole numbers; Pre-classwork 3 explanation: Assign operations (not due until 9/21).</td>
<td>Bassarear: 3.1</td>
</tr>
<tr>
<td>Mon 9/14</td>
<td>Subtraction of whole numbers; Begin multiplication.</td>
<td>Bassarear: 3.2-3.3</td>
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<tr>
<td>Wed 9/16</td>
<td>Finish multiplication of whole numbers; Begin division of whole numbers.</td>
<td>Bassarear: 3.4</td>
</tr>
<tr>
<td>Mon 9/21</td>
<td>Conclude division of whole numbers; Pre-classwork 3 sharing of different whole number operation algorithms; Independently: Mental math and estimation (in ch. 3; included on midterm/final).</td>
<td>Pre-classwork 3: Read “Multicultural Mathematics;” take notes on and be prepared to explain the procedures/algorithms for your assigned operation (May also use YouTube; internet; can come up with additional algorithms for your assigned operations)</td>
</tr>
<tr>
<td>Wed 9/23</td>
<td>Numeration; Looking Back (1) reflections with peers on chs. 1-3;</td>
<td>Bassarear: 2.2; Be prepared for peer discussion on Looking Back (1) questions for Chs. 1-3.</td>
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<tr>
<td></td>
<td>Pre-classwork explanation.</td>
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<tr>
<td>Mon 9/28</td>
<td>Factors and divisibility; Prime and composite numbers; GCF and LCM; Exploration 2.</td>
<td>O’Daffer: ch. 4 (on OAKS) Pre-classwork 4.</td>
</tr>
<tr>
<td>W 9/30</td>
<td>Finish discussion of number theory; Begin discussion of rational numbers.</td>
<td>Bassarear: 4.2</td>
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<tr>
<td>Date</td>
<td>Topic</td>
<td>Notes</td>
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<tr>
<td>M 10/5</td>
<td>Fractions operations; Exploration 3; Explain pre-classwork 5.</td>
<td>Bassarear: 4.3</td>
</tr>
<tr>
<td>W 10/7</td>
<td>Fraction operations.</td>
<td>Bassarear: 4.4 Pre-classwork 5.</td>
</tr>
<tr>
<td>M 10/12</td>
<td>Fraction operations cont. Looking Back (2) reflections with peers on rational numbers and midterm content.</td>
<td>Be prepared for peer discussion on Looking Back (2) questions for 4.2-4.4</td>
</tr>
<tr>
<td>W 10/14</td>
<td>Midterm</td>
<td>Review for midterm</td>
</tr>
<tr>
<td>M 10/19</td>
<td>FALL BREAK 2015 – NO CLASS</td>
<td>Have fun!</td>
</tr>
<tr>
<td>W 10/21</td>
<td>Integers.</td>
<td>Bassarear: 4.1</td>
</tr>
<tr>
<td>M 10/26</td>
<td>Proportional reasoning, ratio, and percent; Exploration 4.</td>
<td>Bassarear: Ch. 5 Pre-classwork 6.</td>
</tr>
<tr>
<td>M 11/2</td>
<td>The Development of “Number and Operations” Thinking.</td>
<td>Number and Operations presentation.</td>
</tr>
<tr>
<td>M 11/16</td>
<td>Geometry and measurement.</td>
<td>Bassarear: Ch. 8</td>
</tr>
<tr>
<td>W 11/18</td>
<td>The Development of “Geometric” Thinking.</td>
<td>Bassarear: Ch. 9 Geometry Presentations</td>
</tr>
<tr>
<td>M 11/23</td>
<td>Looking Back (3) reflections with peers on chs. 8-10; Exploration 6.</td>
<td>Bassarear: Ch. 10 Be prepared for peer discussion on Looking Back (3) questions for chs. 8-10</td>
</tr>
<tr>
<td>W 11/25</td>
<td>Thanksgiving Break</td>
<td>Be safe!</td>
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<tr>
<td>M 11/30</td>
<td>The Development of “Measurement” Thinking.</td>
<td>Measurement Presentations</td>
</tr>
<tr>
<td>W 12/2</td>
<td>Algebra; Exploration 7.</td>
<td>Bassarear: Ch. 6</td>
</tr>
<tr>
<td>M 12/7</td>
<td>The Development of “Algebraic” Thinking.</td>
<td>Algebra Presentations</td>
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<tr>
<td>W 12/9</td>
<td>NO CLASS</td>
<td>Standards project due in my mailbox by NOON</td>
</tr>
<tr>
<td>M12/14</td>
<td>Final Exam</td>
<td>Study ☺</td>
</tr>
<tr>
<td>8-11am</td>
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</tbody>
</table>
Pre-classwork and Classroom Exploration Completion Sheet

Please retain this until end of the semester. 64 points (32%) of your grade rely on this document.

<table>
<thead>
<tr>
<th>Date</th>
<th>Assignment</th>
<th>Initialed for Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/31</td>
<td>Pre-Classwork 1</td>
<td>v</td>
</tr>
<tr>
<td>9/2</td>
<td>Exploration 1</td>
<td>v</td>
</tr>
<tr>
<td>9/7</td>
<td>Pre-Classwork 2</td>
<td>v</td>
</tr>
<tr>
<td>9/21</td>
<td>Pre-Classwork 3</td>
<td>v</td>
</tr>
<tr>
<td>9/28</td>
<td>Pre-Classwork 4</td>
<td>v</td>
</tr>
<tr>
<td>9/28</td>
<td>Exploration 2</td>
<td>v</td>
</tr>
<tr>
<td>10/5</td>
<td>Exploration 3</td>
<td>v</td>
</tr>
<tr>
<td>10/7</td>
<td>Pre-Classwork 5</td>
<td>v</td>
</tr>
</tbody>
</table>

Total Number of Completed Pre-Classwork Assignments and Classroom Explorations at Midterm /8

TOTAL COMBINED POINTS for Pre-Classwork Assignments (5) and Classroom Explorations (3) – Each worth 4 points ABOVE x 4/4 = /32 points

10/26  | Pre-Classwork 6  | v                        |
10/26  | Exploration 4    | v                        |
10/28  | Pre-Classwork 7  | v                        |
11/4   | Pre-Classwork 8  | v                        |
11/9   | Pre-Classwork 9  | v                        |
11/9   | Exploration 5    | v                        |
11/23  | Exploration 6    | v                        |
12/2   | Exploration 7    | v                        |

Total Number of Completed Pre-Classwork Assignments and Classroom Explorations after Midterm /8

TOTAL COMBINED POINTS for Pre-Classwork Assignments (4) and Classroom Explorations (4) – Each worth 4 points ABOVE x 4/4 = /32 points