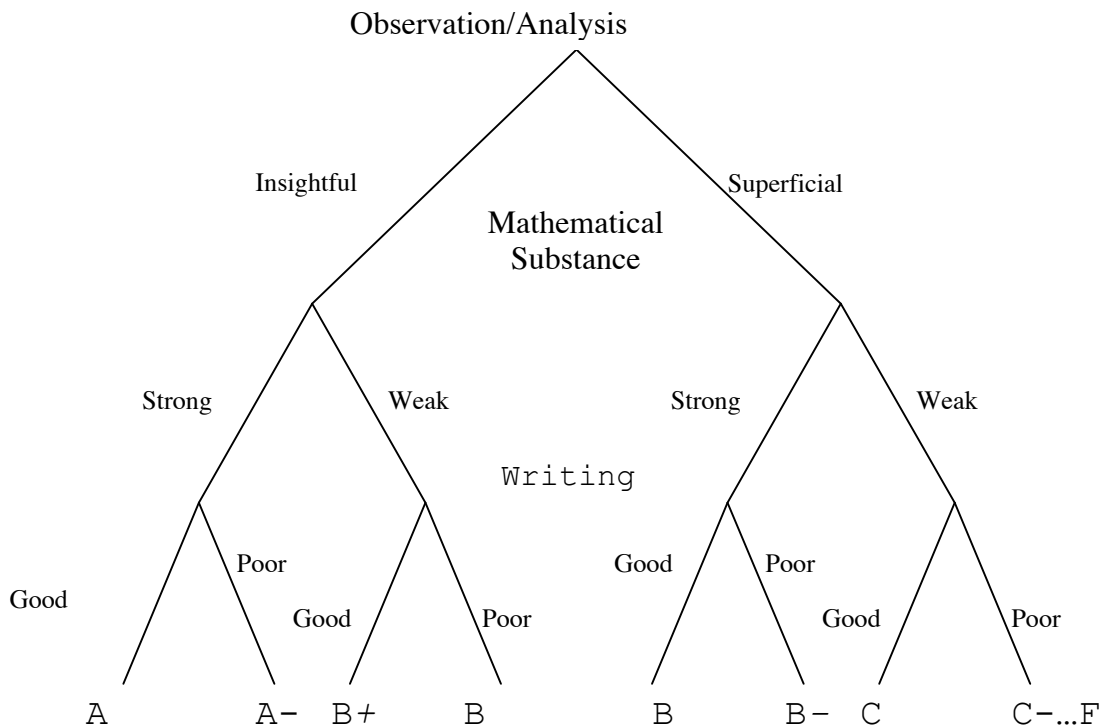


I would prefer that you send me your assignments as an e-mail attachment. Label each assignment with your last name and the assignment number from the syllabus. For example, to turn in the children’s literature lesson plan, Tom Cruise would name the file “Cruise2.” If you don’t know how to do this, please ask a peer or ask me. I can read almost any kind of word processing file *except* Works. If you use Works, please save your file in Rich Text Format before you send it. Again, if you don’t know how to do this, just ask.

Course grades will be based on total points earned, and a 90-80-70-60 scale will be used to assign final grades. Grades will be based on the following:

Assignments (see following pages)	190 points
<u>Professionalism</u>	<u>20 points</u>
TOTAL	210 points

Your grade for Professionalism will be based on arriving on time and prepared for class (having read the assigned text), class participation (which includes both your contributions and your reactions to the contributions of others), your response to constructive feedback in the classroom and on written work, and exhibiting a professional demeanor (language, attitude) toward others (professors, classroom teachers, peers, children). Written work will be assessed on the quality of your writing as well as your interpretation and understanding of course content using the following rubric:



University policies: All university policies with regard to withdrawals, early final exams, academic honesty, etc. will be strictly followed. It is your responsibility to be familiar with these policies.

Tentative Schedule

Date	Topic	Read	Assignment due
Jan. 12	Introduction, Time		
Jan. 14	Money	341-342, 194, 283-284	
Jan. 19	No Class–MLK Day		
Jan. 21	Measurement	316-335	Time or Money case
Jan. 26	Measurement		
Jan. 27	Meet Your Teacher Day 1:30-3:30		
Jan. 28	Measurement		
Jan. 30	1/2 day in schools		
Feb. 2	Assessment, Testing	Ch. 5	Spaghetti & Meatballs
Feb. 4	Assessment, Testing		
Feb. 6	1/2 day in schools		
Feb. 9	Fractions, Decimals, Percents	Ch. 15, 16, 17	
Feb. 11	Fractions, Decimals, Percents		Assessment items
Feb. 13	1/2 day in schools		
February 17-March 5 Field Experience			
March 8-12 No Class-Spring Break			
March 15-19 Field Experience			
Mar. 22	Field Debrief, Textbooks, Curriculum		Field lesson plan
Mar. 24	Textbooks, Curriculum		Pedagogical case
Mar. 29	Geometry	Ch. 20	Post-field reflection
Mar. 31	Geometry		
Apr. 5	Geometry		Feedback on peer cases
Apr. 7	Geometry		
Apr. 12	Data Analysis	386-402	Geometry tasks
Apr. 14	Data Analysis		
Apr. 19	Data Analysis		
Apr. 21	Probability	405-409	Video analysis
Apr. 26	Probability		
Apr. 28	Algebra	Ch. 22	Probability game
Apr. 29	Block IV student panel		
May 3	Final Reflection Paper due		

Assignment Overview

Assignment	Points	Date Due
1. Time or Money case	10	Jan. 21
2. Spaghetti & Meatballs for All lesson plan	20	Feb. 2
3. Assessment items	20	Feb. 11
4. Field lesson plan & reflection	20	Mar. 22
5. Pedagogical case	10	Mar. 24
6. Post-field reflection	10	Mar. 29
7. Feedback on peer cases	20 (10 each)	Apr. 5
8. Geometry tasks	20	Apr. 12
9. Data analysis video tape	20	Apr. 21
10. Probability game	20	Apr. 28
11. Final reflection paper	20	May 3

TIME & MONEY

Read the case “What time is it?” OR the case “Zeroes aren’t important” and write a 2-3 page response to the case.

MEASUREMENT

I will read the book *Spaghetti and Meatballs for All* by Marilyn Burns in class. Your task is to write a plan for a measurement lesson that includes this book. Your lesson should be prepared for a 3rd grade class of heterogeneously grouped students. Identify the QCC objective(s) that your lesson addresses. Your lesson plan should be thorough enough that a substitute teacher could pick it up and implement it successfully.

ASSESSMENT

Go to the Georgia Department of Education web site and the section for released CRCT items (http://www.doe.k12.ga.us/curriculum/testing/crct_items.asp). Select 5 items from the same grade level. Copy and paste the items into a word processing file. For each item, identify the major mathematical content idea that is being assessed, and write an open-ended version of the problem to assess the same content idea. Try, to the extent possible, to write items that reflect the characteristics of open-ended assessment that we discuss in class. In other words, do not simply take a multiple-choice computational item (such as $27 + 54$) and take away the choices to make it open-ended. You may not use items from the web site that I demonstrate in class for this assignment. You should make up your own assessment items.

FIELD EXPERIENCE

Lesson plan: Turn in one lesson plan and reflection from the field experience. The lesson plan should be from what you consider your best mathematics lesson. In the reflection include responses to the following questions:

- Was this a teacher-centered or student-centered lesson? (Some parts of the lesson may have been teacher-centered while others were student-centered. Articulate where these changes occurred.) Provide evidence to support your answer. (What happened in the lesson that was teacher-centered or student-centered?) Why was the lesson this way? (What obstacles or opportunities did you have in planning and implementing this lesson?)

- What would you do differently if you could teach this lesson again
 - in the same classroom?
 - in your own classroom?

Pedagogical case: Describe a pedagogical dilemma you encountered while teaching mathematics during the field experience and write it in a format similar to the cases we have read in class. You may use a dilemma that you observe when your mentor teacher is teaching if necessary. The case should be approximately 2 pages long and should provide readers with enough detail so that they feel that they have personally experienced your dilemma. Use pseudonyms for children's names and teachers' names. Bring 2 copies of your case to class on the due date, and turn one into me electronically. You will give the 2 copies to peers who will read your case and provide feedback.

Post-field reflection: There is a lot of negative press about schools these days. Describe two things about schools that pleasantly surprised you. *I will collate all of the responses from each school, remove all identification of you and students/teachers, and will send the compiled paper to the teachers at the school for National Teacher Appreciation Day.*

This assignment must be turned in electronically.

Feedback on pedagogical case: You will receive 2 cases from peers on which you will provide feedback. For each case, provide a 1-2 page reaction to the case, giving suggestions for ways to resolve any problems or dilemmas in the case. Remember to address the data in the case rather than telling your own story in your feedback. On the due date, bring 1 copy of your feedback to class for your peer, and send one to me electronically.

DATA ANALYSIS

For this assignment, you will investigate the classroom discourse that occurs in the classroom episode in the *Lady Bugs* tape. You may complete this assignment in groups of no more than four people. If you choose to work with a group, you should turn in one paper with all of your names on it, and you will all receive the same grade for the assignment.

In your paper, focus on communication and the mathematical discourse that occurred during the lesson. To assist you in thinking about discourse, refer to the NCTM Professional Teaching Standards 2, 3, and 4 (Appendix B2 of your text). These standards address the teacher's role in classroom discourse, the students' role in classroom discourse, and tools for enhancing discourse.

GEOMETRY

Select a topic from K-5 geometry. Design 2 activities for this topic at each van Hiele level, 0, 1 and 2 (a total of 6 activities). For each activity, describe the activity in narrative form in enough detail that a substitute teacher could conduct the activity successfully (similar to the format of activities in the text). Also explain why this activity is appropriate for a particular van Hiele level. You may not use any activities from the text. If you adapt any activities from other sources (e.g., books, the web, articles), provide a citation for the original source.

PROBABILITY

Analyze the following two dice games to determine if they are fair. Thoroughly explain how you determined if each game is fair or not. Use concepts from mathematics to explain WHY each game is fair or unfair.

- a) Game I: Roll 2 dice and record their sum. If the sum is odd, Player A scores a point. If their sum is even, Player B scores a point.
- b) Game II: Roll 2 dice and record their product. If the product is odd, Player A scores a point. If their product is even, Player B scores a point.

Explain how you would use these 2 games to teach a lesson to a class of fifth graders. What QCC objectives would be addressed?

FINAL REFLECTION PAPER

Consider your learning across MATH 5001, 5002, EMAT 3400, and 3410. (In other words, you are not restricted to what you have learned in this course.) Select one of the following ways to demonstrate what you have learned thus far:

- Select an assignment from an EMAT or MATH course that you would do differently today than when you did it initially. Redo the assignment and describe how/why it is different from your first attempt.
- Select 2 assignments from EMAT or MATH courses that show a contrast in your thinking (mathematical or pedagogical). Describe the contrast and what might have led to the change.
- Select a topic or an issue in mathematics education that you disagree with, find confusing, have questions about, or are unsure how you feel about. Carefully and thoroughly articulate your views, making reference to materials, texts, or experiences from courses as appropriate.
- Produce an artifact of some kind (poem, picture, metaphor, etc.) and explain how it describes your views on the teaching and learning of mathematics.

OPTIONAL MATH FAIR ASSIGNMENT

Whit Davis Math Fair Thursday, January 22 5:45-7:30 pm Patti Huberty pattihuberty@charter.net	Barnett Shoals Family Math Night Tuesday, February 10 Time TBA Christine Register registerc@clarke.k12.ga.us
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This assignment gives you an opportunity to visit a school during a parent-child mathematics fair. You may assist teachers with stations that they have set up, or you may design your own station (by yourself or in pairs). Contact the organizer listed above to inform her of your plans. (Note: Whit Davis particularly needs people to assist teachers with stations and needs K-2 stations.)

If you assist teachers with their stations, you should write a paper (approximately 3-4 pages) commenting on the math fair. Your commentary should include the following:

- description of the station with which you assisted
- children's reactions to the station
- parents' reactions to the station
- difficulties children and/or parents encountered with the station
- your overall reaction to the math fair

You may substitute this assignment for any 10-point assignment. Your paper is due one week after the math fair.

If you design your own station, you write a paper (approximately 3-4 pages) commenting on the math fair. Your commentary should include the following:

- a description of your station
- children's reactions to the station
- parents' reactions to the station
- difficulties children and/or parents encountered with the station
- how well the station met your expectations (Was it easier or harder than you planned? More or less interesting than you thought it would be? Difficult to manage? etc.)
- your overall reaction to the math fair

You should also turn in any artifacts from your station (such as a recording sheet, a directions sheet, etc.) You may substitute this assignment for any 20-point assignment. Your paper is due one week after the math fair. If you work with a partner you should turn in one paper, and you will both receive the same grade.

Time Case: What Time Is It?

My second graders had been studying time for over a week, and I was really thinking that they were understanding what they were doing. Nearly all of my students were consistently giving the time to the nearest 5 minutes. They could count 5-10-15-20-25-30-35-40-45-50-55 around the face of the clock to name the minutes. Counting by 5 is something they've been able to do since first grade, so this seems really easy for them.

I was ready to wrap up our lessons on time and move on to something new, so I decided that we would play a game for our last lesson. I gave half of the class index cards showing a digital time and half of the class index cards showing an analog clock with hands drawn on to show the time. They were supposed to find the partner who had the time that matched theirs. Then, I had another set of cards to repeat the activity with the kids who had digital times in the first round getting analog times in the second round.

After about 5 minutes of the first round, most of the kids had found their partners. But two children with analog clocks approached me saying that they thought I had made a mistake because there weren't any children with their times on index cards. Mike had a clock showing 1:50, and Megan had a clock showing 4:55. Mike insisted that his clock said 2:50, and Megan thought her clock said 5:55. I thought that it would be best to have other children in the class explain to them what time they should be looking for and why. When I asked for volunteers to tell what time Mike's clock said, there was a chorus of voices that answered 2:50. I was shocked by this response because I thought they knew how to tell time. I got out the class clock and moved the hands around and had them count the minutes with me. We got to 50 minutes, and then I asked them what time the clock showed, and they STILL said 2:50! At this point, I was running out of time, and I didn't really know what to do, so I told them that Mike's clock said 1:50 and Megan's clock said 4:55. They found their partners with the matching digital times, and I ended the lesson.

Questions to consider when writing your response:

What do you think was causing the children's confusion?

How would you explain to children why it is 1:50 instead of 2:50?

What do you do when children are confident in their wrong answers?

Money Case: Zeroes Aren't Important

My fourth graders were sailing along in the money unit, so I decided to introduce them to writing amounts of money two ways—using the cents sign and using the dollar sign and decimal point. We practiced lots of examples such as $45\text{¢} = \$.45$ and even $125\text{¢} = \$1.25$. All of the children seemed to be successful, so I assigned some word problems for them to do using the dollar sign and decimal point notation. I thought this would be a good way to combine some much needed practice with word problems and practice a new skill. **WRONG!!!!**

The next day when we went over homework, there was one problem that nearly everyone seemed to have missed. The problem was: “John has 32 cents. He finds a nickel under his bed. How much money does he have now?” Over half of my students answered 82 cents! Unsure of how they got that answer, I asked for volunteers to come to the board and show how they arrived at their answers. Three students volunteered, and each one of them wrote:

$$\begin{array}{r} \$.32 \\ + \$.50 \\ \hline \$.82 \end{array}$$

I was really surprised to see the students writing 5¢ as $\$.50$ until I realized that when we worked examples the previous day we didn't do any with single digit amounts. So, I asked the students how to write 50¢ . Everyone said $\$.50$. I showed them that they had written $\$.50$ to stand for both 50¢ and 5¢ . Someone suggested that we write 5¢ as $\$.5$ rather than $\$.50$. When I asked if these two were the same or different, there was a lot of disagreement. About half of the class thought they were the same because “zeroes aren't important” and half of the class thought they were different because one was missing a zero. They were missing the point!!!!

Questions to consider in responding to the case:

What is it that the children do not understand?

How would you go about helping them develop a better understanding of these ideas?