California State University San Marcos
College of Education
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CRN 41722 UH 439
EDMX 543 – Mathematics Education in the Inclusive Classroom (3 units)

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COLLEGE OF EDUCATION MISSION STATEMENT

The mission of the College of Education Community is to collaboratively transform public education by preparing thoughtful educators and advancing professional practices. We are committed to diversity, educational equity, and social justice, exemplified through reflective teaching, life-long learning, innovative research, and ongoing service. Our practices demonstrate a commitment to student-centered education, diversity, collaboration, professionalism, and shared governance.

REQUIRED MATERIALS

- California Department of Education (2000). *Mathematics content standards for California public schools, kindergarten through grade twelve*. Sacramento, CA: Author. This document can be found on the WWW at: http://www.cde.ca.gov/ci/ma/cf/index.asp. The Web site contains both HTML versions and a downloadable PDF file. (I highly encourage students to purchase this publication). There are copies in the library for checkout.

- National Council of Teachers of Mathematics (2000). *Principles and standards for school mathematics*. Reston, VA: Author. This document can be found at: http://standards.nctm.org/

- Star Test Blueprints for Standards Items (grades 2-7)
  http://www.cde.ca.gov/ta/tg/sr/documents/bpcstmath2to7.pdf

- Van de Walle, John A. (2004). *Elementary and middle school mathematics: Teaching developmentally* (5th ed). Boston: Pearson Education, Inc.
  The text has a companion Web site at: http://wps.ablongman.com/ab_vandewalle_math_5.

- Choate, J. S. (2003). *Successful inclusive teaching: Proven ways to detect and correct special needs* (4th ed). Boston: Allyn-Bacon

COURSE DESCRIPTION

Learning to teach mathematics well is difficult and, therefore, you must expect that this course will only begin your education in learning how to teach mathematics. This course is but one stage in what is hoped will be a continuing evolution of you as a mathematics teacher. The focus of this course will be on (1) developing an understanding of the current practices in mathematics, (2) learning to teach content specific concepts using effective and appropriate strategies, and (3) practicing how to teach for mathematical understanding. Enfolded into this course will be curriculum development, developing an understanding of children's content specific thinking, creating a classroom environment that promotes the investigation and growth of mathematical ideas, and developing strategies to ensure the success of all students in multi-cultural settings.

Standards Alignment:

The course objectives, assignments, and assessments have been aligned with the CTC standards for Multiple Subjects Credential. The following standards are a primary emphasis in this course:

Standard 3: Relationship between Theory and Practice

Standard 4: Pedagogical Thought and Reflective Practice

Standard 5: Equity, Diversity and Access to the Core Curriculum for All Children

Standard 8A: Pedagogical Preparation for Subject-Specific Content Instruction by MS Candidates (Mathematics)

Teacher Performance Expectation (TPE) Competencies:

This course is designed to help teachers seeking the Multiple Subjects Credential to develop the skills, knowledge, and attitudes necessary to assist schools and district in implementing an effective program for all students. The successful candidate will be able to merge theory and practice in order to realize a comprehensive and extensive educational program for all students. The following TPE's are addressed in this course:

Primary Emphasis:

- TPE 1a-Subject Specific Pedagogical Skills for MS Teaching (Mathematics)

Secondary Emphases:

- TPE 2-Monitoring Student Learning During Instruction
- TPE 3-Interpretation and Use of Assessments
- TPE 4-Making Content Accessible
- TPE 5-Student Engagement
- TPE 6a-Developmentally Appropriate Practices in Grades K-3
- TPE 6b-Developmentally Appropriate Practices in Grades 4-8
- TPE 6d- Developmentally Appropriate Teaching Practices for Special Education: Teaching the Special Education Population in the General Education Environment
- TPE 7-Teaching English Learners
- TPE 8-Learning About Students
- TPE 9-Instructional Planning
- TPE 10-Instructional Time
- TPE 11-Social Environment
- TPE 13-Professional Growth
- TPE 14-Educational Technology in Teaching and Learning

ASSIGNMENTS

Detailed assignment sheets and scoring rubrics (course packet) will be provided electronically to each student for all written assignments below. The course calendar/topics schedule is attached to this syllabus.

Reading Reflections

(28 points) - Each week students will write a "meaningful" reflection on the material assigned to be read for that week. These reflections should be one page in length (use an "11" font, line spacing of 1.5, with **only** your name and class session number as a heading), and should clearly articulate your thoughts **on the assigned readings** and how you might **specifically apply** what you learned from the articles as a teacher in the classroom. Please do not repeat verbatim from the readings. **Other assignments may be given that will substitute the written reflection but not the reading assignment.** These will require more than 1 page in length.

Student Interviews (Critical Assessment Task – CATs)

(32 points) - You and one of your classmates will conduct four student interviews based on questions provided in class. For each interview, you will pose mathematical problems to any one student at a predetermined grade level. The purpose is to get you to begin thinking about students' mathematical understanding, to learn how to effectively pose questions and interpret the meaning of students' answers, and to provide you with an opportunity to interact with students.

Mathematical Resources & Lesson (Critical Assessment Task – CATs)

(30 points) – Working in small groups, your team will first compile resources on a predetermined mathematical topic (10 points) and then design a lesson that you will present and videotape in an elementary class or present in class (20 points). The purpose of this activity is to help you learn how to design effective mathematical activities, to provide you with an opportunity to begin compiling mathematical resources, and to provide an opportunity for you to practice teaching mathematics in an authentic classroom setting.

> **Lesson Plan Multidisciplinary Magic**
> Students who wish to "go the extra mile" and integrate assignments within their methods courses this semester are encouraged to do so. For example, in math you will be creating a lesson plan. If an assignment in science or social studies can be completed meeting objectives for both disciplines, it will be received with a welcome acceptance! Please note that you would be wise to consult with instructors with your idea to ensure that the integration of subjects is complete and meets the criteria for both disciplines.

Curriculum Assignment (Critical Assessment Task – CATs)

(10 points) – Students will review the mathematics curriculum currently being used in your classroom (e.g., a textbook) at one grade level and write a short paper that investigates the curriculum alignment with the CA Content Standards and current high stakes assessments. Students will also provide their general thoughts and concerns related to the curriculum (e.g., how the curriculum might need to be altered to make strong connections between mathematical concepts and procedures).

INFUSED COMPETENCIES

CLAD
In 1992, the College of Education voted to infuse Cross-cultural, Language and Academic Development (CLAD) competencies across the curriculum. The CLAD competencies are attached to the syllabus and the competencies covered in this course are highlighted.

Authorization to Teach English Learners
This credential program has been specifically designed to prepare teachers for the diversity of languages often encountered in California public school classrooms. The authorization to teach English learners is met through the infusion of content and experiences within the credential program, as well as additional coursework. Students successfully completing this program receive a credential with authorization to teach English learners

Special Education
Consistent with the intent to offer a seamless teaching credential in the College of Education, this course will demonstrate the collaborative infusion of special education competencies that reflect inclusive educational practices.

Technology
This course infuses technology competencies to prepare our candidates to use technologies, emphasizing their use in both teaching practice and student learning.

Visual and Performing Arts
This course infuses the visual and performing arts in order to prepare our candidates with the skills to integrate the arts in their teaching. The Visual and Performing Arts Content Standards for California Public Schools (http://www.cde.ca.gov/cdepress/standards-pdfs/visual-performing-arts.pdf) describe what every student should know and be able to do in the visual and performing arts, pre-kindergarten through grade 12 in five strands: artistic perception; creative expression; historical and cultural context; aesthetic valuing; and connections, relationships and applications.

ATTENDANCE POLICY

The attendance policy of the College of Education: Due to the dynamic and interactive nature of courses in the COE, all students are expected to attend all classes and participate actively. At a minimum, students must attend more than 80% of class time, or s/he may not receive a passing grade for the course at the discretion of the instructor. Individual instructors may adopt more stringent attendance requirements. Should the student have extenuating circumstances, s/he should contact the instructor as soon as possible. If possible, please discuss with me any extenuating circumstances that will cause you to miss class prior to your absence.

For this class, if you are absent 1 day, your highest possible grade is a B. If you are absent more than 1 day, your highest possible grade is a C, which means that you will not pass the course. Late arrivals and early departures will affect your final grade. Absences do not change assignment due dates. Late assignments will receive a reduction in points for each day late.

PLAGIARISM AND CHEATING

Plagiarism is presenting the words or ideas of others as your own. Please be sure to read and understand the university policy on plagiarism (found in the Academic Regulations and CSUSM Policies in the General Catalogue), as it will be strictly enforced. Academic dishonestly will not be tolerated, and will result in a failing grade for this course and will be reported to the University.

Person-First Language

Use "person-first" language in al written and oral assignments and discussions (e.g., "student with autism" rather than "autistic student".

Students with Disabilities Requiring Reasonable Accommodations

Students are approved for services through the Disabled Student Services Office (DSS). This office is located in Craven Hall 5205 and can be contacted by phone (760) 750-4905, or TTY (760) 750- 4909. Students authorized by DSS to receive reasonable accommodations should meet with their instructor during office hours or, in order to ensure confidentiality, in a more private setting.

GRADING SCALE: Grades for this course will be based on the following grading scale:

A..... .. 93% - 100 %
A-……90% - 92%

B+……. 88% - 89%
B..... 83% - 87 %
B-…….. … 80% - 82%

C+……. 78% - 79%
C.....… 73% - 77 %
C-……... 70% - 72%

Exemplary "A" Students:

- Demonstrate serious commitment to their learning, making full use of the learning opportunities available and searching out the implications of their learning for future use.
- Complete all assignments thoroughly and thoughtfully toward the goal of developing in-depth math projects.
- Make insightful connections between all assignments and their developing overall understanding of mathematical concepts; they continually question and examine concepts in a genuine spirit of inquiry.
- Students show a high level of achievement of course goals.

"B" Students:

- Simply comply with the course requirements and expectations.
- Complete all assignments, usually thoroughly and thoughtfully.
- Usually connect assignments to their developing overall understanding of mathematical concepts; may be satisfied with accepting their learning as it is received without deeply examining concepts or seeking a higher level of understanding.
- Students show reasonable achievement of course goals.

"C" Students:

- Demonstrate an inconsistent level of compliance to course requirements and expectations.
- Complete all assignments with limited thoroughness and thoughtfulness.
- Make limited connections between assignments and their developing overall understanding of mathematical concepts; may not be open to examining concepts on a deeper level and may actually dismiss the importance of such inquiry.
- Attempt, but show limited progress in achieving course goals.

Remember! You are required to maintain a B average (3.0 GPA) in your teacher education courses to receive a teaching credential in the State of California.

EDMX Course Topics

Date	Session Number and Topic	Assignment to be Completed BEFORE Class Session
Friday 9-2-05	**1. Introduction to Mathematics Education** **2. Developing Mathematical Understanding**	**Van de Walle ch. 2,3**
Friday 9-9-05	**3. Problem Solving** **4. Standards**	**Van de Walle ch.4,1**
Friday 9-16-05	**5. Lesson Study & Working Groups** **6. Instructional Practices**	**Van de Walle ch. 6, 7**
Friday 9-23-05	**7. Assessment & Conducting Student Interviews** **8. Technology**	**Van de Walle ch. 5, 8** **Student Interview #1 Due**
Friday 9-30-05	**9. Number Concepts** **10. Addition and Subtraction**	**Van de Walle ch. 9,10,11,12,13** **Number Concepts Interview Due**
Friday 10-7-05	**11. Multiplication and Division** **12. Fractions, Decimals, Percents, Ratio & Proportion**	**Van de Walle ch. 14, 15,16,17,18** **Multip.Interview Due** **Fraction Interview Due**
Friday 10-14-05	**13. Algebraic Thinking** **14. Measurement & Geometry**	**Van de Walle ch. 19, 20, 22, 23** **Algebra Interview Due** **Measurement/Geometry Interview Due**
Friday 10-21-05	**15. Data Analysis & Probability** **16. Wrap-up**	**Van de Walle ch. 21** **Data Anal/Prob Interview Due** **Curriculum Assignment Due**

PARTICIPATION, COLLABORATION, AND PROFESSIONALISM

Students are expected to actively participate, collaborate, and demonstrate professionalism at all times.

Rubric for PCP: Participation, Collaboration and Professionalism

	Excellent	Acceptable	Unacceptable
Attitude Do you show a positive attitude toward class, "the work" and learning?	Always displays a positive attitude. May offer constructive criticism and include alternatives that show initiative.	Sometimes displays a positive attitude. May offer constructive criticism and include alternatives that show initiative.	Seldom has a positive attitude. Often is critical. Does not offer alternative solutions to criticism.
Participation Do you participate in class discussions productively, sharing you knowledge and understandings?	Attends every class, always on time and well prepared, and never leaves early. Gives closest attention to class activities and speakers.	Attends every class, on time and prepared, and never leaves early. Gives most attention to class activities and speakers.	Is not always ready when class time begins. Doesn't give full attention in class; sometimes talks when others are speaking.
Professionalism Do you exhibit professional behavior at all times?	Consistently behaves, talks and works in a professional manner, regardless of task/topic.	Most of the time, behaves, talks and works in a professional manner, regardless of task/topic.	Seldom behaves, talks, and works in a professional manner, regardless of task/topic.
Collaboration Can you monitor and adjust your participation to allow for others' ideas to be heard? Are you supportive of others' ideas and work?	Consistently listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Most of the time listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Is not always a good team player.
Contributions Do you contribute to whole class and group work? Do you "do your share"?	Consistently provides useful ideas; always stays focused on the task. Exhibits a lot of effort and valuable contributions.	Most of the time provides useful ideas and stays focused. A satisfactory group member who does what is required.	Rarely provides useful ideas; not always focused. Reluctant to participate. Lets others take charge.
Disposition toward teaching Do you exhibit a	Consistently demonstrates concern in learning to	Most of the time demonstrates concern in learning to teach all	Rarely shows concern in learning to teach all children. Rarely

positive disposition towards teaching all students?	teach all children. Always demonstrates strong commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CA Standards for the Teaching Profession (CSTP), Teacher Performance Expectations (TPE), and CA Content Standards.	children. Often demonstrates commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CSTP's, TPE's, and CA Content Standards.	demonstrates commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CSTP's, TPE's, and CA Content Standards.
Leadership Do you interact productively with your peers and show leadership initiative?	Shows strength through leadership in class activities; other students respect you as a leader.	Effectively participates and contributes, but rarely shows leadership qualities.	Does not show leadership in any area of class.

SB 2042 – Authorization to Teach English Learners Competencies

TEST 1: LANGUAGE STRUCTURE AND FIRST- AND SECOND-LANGUAGE DEVELOPMENT	TEST 2: METHODOLOGY OF BILINGUAL, ENGLISH LANGUAGE DEVELOPMENT, AND CONTENT INSTRUCTION	TEST 3: CULTURE AND CULTURAL DIVERSITY
I. Language Structure and Use: Universals and Differences (including the structure of English)	**I. Theories and Methods of Bilingual Education**	**I. The Nature of Culture**
A. The sound systems of language (phonology) *	**A.** Foundations	**A.** Definitions of culture
B. Word formation (morphology) *	**B.** Organizational models: What works for whom?	**B.** Perceptions of culture
C. Syntax *	**C.** Instructional strategies *	**C.** Intragroup differences (e.g., ethnicity, race, generations, and micro-cultures)
D. Word meaning (semantics) *	**II. Theories and Methods for Instruction In and Through English**	**D.** Physical geography and its effects on culture
E. Language in context *	**A.** Teacher delivery for <u>both</u> English language development <u>and</u> content instruction *	**E.** Cultural congruence
F. Written discourse *	**B.** Approaches with a focus on English language development *	**II. Manifestations of Culture: Learning About Students**
G. Oral discourse *	**C. Approaches with a focus on content area instruction (specially designed academic instruction delivered in English) ***	**A. What teachers should learn about their students ***
H. Nonverbal communication *	**D.** Working with paraprofessionals *	**B. How teachers can learn about their students ***

II. Theories and Factors in First- and Second-Language Development	III. Language and Content Area Assessment	C. How teachers can use what they learn about their students (culturally responsive pedagogy)*
A. Historical and current theories and models of language analysis that have implications for second-language development and pedagogy	**A. Purpose**	**III. Cultural Contact**
B. Psychological factors affecting first- and second-language development	**B. Methods ***	**A.** Concepts of cultural contact
C. Socio-cultural factors affecting first- and second-language development	**C. State mandates**	**B.** Stages of individual cultural contact
D. Pedagogical factors affecting first- and second-language development *	**D. Limitations of assessment ***	**C.** The dynamics of prejudice
E. Political factors affecting first- and second-language development	**E. Technical concepts ***	**D.** Strategies for conflict resolution

Curriculum Review Assignment
EDMX 543

	Developing	Nearly Meets	Meets	Exceeds
TPE 1, 1a Subject Specific Pedagogical skills for MS Teaching Assignment (Teaching Mathematics in a MS Assignment)	Candidate's analysis of the curriculum will demonstrate little to no understanding of how to teach the state adopted academic content standard in mathematics.	Candidate's analysis of the curriculum will demonstrate some understanding of how to teach the state adopted academic content standard in mathematics.	Candidate's analysis of the curriculum will demonstrate considerable understanding of how to teach the state adopted academic content standard in mathematics.	Candidate's analysis of the curriculum will demonstrate exceptional understanding of how to teach the state adopted academic content standard in mathematics.
TPE 4 Making Content Accessible	Candidate's analysis of the curriculum will demonstrate little to no understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum.	Candidate's analysis of the curriculum will demonstrate some understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidate's analysis of the curriculum will demonstrate considerable understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidate's analysis of the curriculum will demonstrate exceptional understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum
TPE 6, 6a, 6b Developmentally Appropriate Teaching Practices in Grades K-3 & 4-8	Candidate's analysis of the curriculum will demonstrate little to no understanding in the use of developmentally appropriate teaching practices.	Candidate's analysis of the curriculum will demonstrate some understanding in the use of developmentally appropriate teaching practices	Candidate's analysis of the curriculum will demonstrate considerable understanding in the use of developmentally appropriate teaching practices	Candidates's analysis of the curriculum will demonstrate exceptional understanding in the use of developmentally appropriate teaching practices

Secondary TPE's for this Assignment

- TPE 9 – Instructional Planning
- TPE 10 – Instructional Time

Lesson Presentation Assignment

EDMX 543

	Developing	Nearly Meets	Meets	Exceeds
TPE 1, 1a Subject Specific Pedagogical skills for MS Teaching Assignment (Teaching Mathematics in a Multiple Subject Assignment)	Candidates' lesson plan and presentation demonstrates little to no understanding of how to teach the state adopted academic content standard in mathematics	Candidates' lesson plan and presentation demonstrates some understanding of how to teach the state adopted academic content standard in mathematics	Candidates' lesson plan and presentation demonstrates considerable understanding of how to teach the state adopted academic content standard in mathematics	Candidates' lesson plan and presentation demonstrates exceptional understanding of how to teach the state adopted academic content standard in mathematics
TPE 4 Making Content Accessible	Candidates' lesson plan and presentation will demonstrate little to no understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidates' lesson plan and presentation will demonstrate some understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidates' lesson plan and presentation will demonstrate considerable understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidates' lesson plan and presentation will demonstrate exceptional understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum
TPE 6, 6a, 6b Developmentally Appropriate Teaching Practices – Grades K-3 & 4-8	Candidates' lesson plan and presentation will demonstrate little to no understanding in the use of developmentally appropriate teaching practices.	Candidates' lesson plan and presentation will demonstrate some understanding in the use of developmentally appropriate teaching practices.	Candidates' lesson plan and presentation will demonstrate considerable understanding in the use of developmentally appropriate teaching practices.	Candidates' lesson plan and presentation will demonstrate exceptional understanding in the use of developmentally appropriate teaching practices.

Secondary TPE's for this Assignment

- TPE 2 – Monitoring Student Learning During Instruction
- TPE 5 – Student Engagement
- TPE 9 – Instructional Planning
- TPE 10 – Instructional Time
- TPE 11 – Social Environment

Lesson Resources Assignment
EDMX 543

	Developing	Nearly Meets	Meets	Exceeds
TPE 4 Making Content Accessible	Candidates' resources and descriptions will demonstrate little to no understanding of how instructional resources can help provide all students with access to a balanced and comprehensive curriculum.	Candidates' resources and descriptions will demonstrate some understanding of how instructional resources can help provide all students with access to a balanced and comprehensive curriculum.	Candidates' resources and descriptions will demonstrate considerable understanding of how instructional resources can help provide all students with access to a balanced and comprehensive curriculum.	Candidates' resources and descriptions will demonstrate exceptional understanding of how instructional resources can help provide all students with access to a balanced and comprehensive curriculum.

Secondary TPE's for this Assignment

- TPE 1a – Subject-Specific Pedagogical Skills for MS Teaching Assignments (Teaching Mathematics in a MS Assignment)
- TPE 5 – Student Engagement

Student Interviews Assignment

EDMX 543

	Developing	Nearly Meets	Meets	Exceeds
TPE 1, 1a Subject Specific Pedagogical skills for MS Teaching Assignment (Teaching Mathematics in a Multiple Subject Assignment)	Candidate's assessment and recommendations from the student interview demonstrates little to no understanding of how to teach the state adopted academic content standard in mathematics	Candidate's assessment and recommendations from the student interview demonstrates some understanding of how to teach the state adopted academic content standard in mathematics	Candidate's assessment and recommendations from the student interview demonstrates considerable understanding of how to teach the state adopted academic content standard in mathematics	Candidate's assessment and recommendations from the student interview demonstrates exceptional understanding of how to teach the state adopted academic content standard in mathematics
TPE 2 Monitoring Student Learning During Instruction	Candidate's assessment and recommendations from the student interview demonstrates little to no understanding of how to monitor student learning and how to effectively make use of this information when teaching.	Candidate's assessment and recommendations from the student interview demonstrates some understanding of how to monitor student learning and how to effectively make use of this information when teaching.	Candidate's assessment and recommendations from the student interview demonstrates considerable understanding of how to monitor student learning and how to effectively make use of this information when teaching.	Candidate's assessment and recommendations from the student interview demonstrates exceptional understanding of how to monitor student learning and how to effectively make use of this information when teaching.
TPE 3 Interpretation and Use of Assessments	Candidate demonstrates little to no understanding of how to effectively assess students' content knowledge through the use of student interviews.	Candidate demonstrates some understanding of how to effectively assess students' content knowledge through the use of student interviews.	Candidate demonstrates considerable understanding of how to effectively assess students' content knowledge through the use of student interviews.	Candidate demonstrates exceptional understanding of how to effectively assess students' content knowledge through the use of student interviews.
TPE 4 Making Content Accessible	Candidate's recommendations from the student interview demonstrates little to no understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidate's recommendations from the student interview demonstrates some understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidate's recommendations from the student interview demonstrates considerable understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum	Candidate's recommendations from the student interview demonstrates exceptional understanding in the use of pedagogical strategies that will provide all students access to the mathematics curriculum

Secondary TPE's for this Assignment

- TPE 5 – Student Engagement
- TPE 6, 6a, 6b – Developmentally Appropriate Practices in Grades K-3 & Grades 4-8.
- TPE 8 – Learning about Students
- TPE 9 – Instructional Planning

STUDENT INTERVIEW GUIDELINES
EDMS 543

Student interviews are designed to provide students with opportunities to focus on a single child's thinking about mathematics. It will also help students to improve their use of inquiry for assessment purposes and to better understand elementary level students with different understandings.

I recommend that students work together with a partner on these interviews. As a pair, you would interview one child for each content interview and together write up your evaluation of the student (please also submit the child's written work attached to your paper).

Prior to the interview

- You should arrange with a teacher (or parent of a child you know) to interview one child for 20-30 minutes in a quiet place outside the classroom, if possible.

- Provide the teacher with some understanding of what the interview will contain and see if he/she has any thoughts about how this child will do on the assessment.

- Develop a list of questions you may want to use if the child is not forthcoming with a response. For example, if the child says "I just knew it", you might respond with "What did you think about first?" or "If you were helping a friend, how would you explain what you did?"

During the interview

Work with the child individually. Begin the interview by informing the child that you will be giving him/her a series of math problems to solve and that you are interested in his/her thinking process and in the strategies s/he uses to solve these problems. Inform the child that s/he can solve the problems in any way s/he wants. Please remind the child that the interview is voluntary and that s/he can end the interview at any time (if a student does end early then please find another willing student). Do everything you can to help make the child comfortable.

Orally provide the child with each problem, posing them one at a time, you received from class and provide him/her with sufficient time to complete each problem. You may also want to provide the child with a written copy of each problem.

After the child answers each problem you should ask a variety of questions that will help you to better understand the child's thinking and to assess his/her mathematical understanding. **You will want to note the questions you ask and the child's responses** and it may be necessary to ask the child to wait while you are writing -- it is OK to ask the child to wait. **You should not tape-record/video-tape the interview without parental permission**.

During the interview, be sure to consider the following:

- The best thing you can be is genuinely curious. Remember the point of the interview is to discover how the child thinks -- ***NOT*** to guide the child to the correct answer (try to fight the urge to be "teacher").

- Be careful to respond similarly to correct and incorrect answers. Be curious about all solution strategies -- not just the ones leading to incorrect solutions.
- Your primary role is to listen. Make sure you allow enough "wait time" -- children need time to think before answering.

- Make sure the child feels comfortable during the entire interview. If the child clearly cannot answer a problem, move on to the next problem. If you feel that the child is really struggling and frustrated, you may want to end the interview or give the child a problem you are fairly certain s/he can solve and then end the interview. If you cut an interview short because of student difficulty, be sure to discuss your reasoning in your write-up.

After the interview

You (and your partner) should **together** write no more than a two page reflection that includes a brief discussion on each of the following two points:

- What specifically did you learn about this child's mathematical understanding? Here you will want to make some claims about the mathematics your student understands or doesn't understand. I am looking for more of an explanation than just your student could or couldn't solve a particular problem.

- What specifically might you do for this child if you were his/her teacher? Here you might want to include discussions about such issues as curriculum, instructional strategies, etc.

Grading:

Each interview will be worth a total of 5 points. More specifically, I will be looking for nicely written papers that clearly and specifically express what you learned about: 1) the child's mathematical understanding and 2) what you would do next for this child if you were his/her teacher (again be specific here). For example, you might recognize that this student lacks a conceptual understanding of multiplication – so as this child's teacher you might want to pose meaningful problems related to multiplication, etc.

*NOTE: When you turn in your write-up, you should also include the child's written work (if it exists) and without the student's "actual" name listed.

MATHEMATICAL RESOURCES ASSIGNMENT
EDMS 543

In preparation for your Classroom Presentation Assignment, your "content group" will construct an Annotated List of Resources that your fellow colleagues will find helpful when teaching your mathematical topic to students. Your list should include resources that directly relate to your mathematical topic (e.g., algebra, geometry, etc.). For example, you should include such things as children's literature, teacher support materials, manipulatives, WWW locations, research articles, videos or movies, software, etc. Please include any useful information that you find when researching your topic so that your colleagues can learn from your work (but do not include duplicated pages from teacher workbooks, rather provide citations along with short descriptions of your resources). I will be looking to find well- constructed packets of information. If you partition the workload it should not be an overwhelming task. If each group prepares a packet of materials that is filled with important resources, and we share that information in class, then you will each have a wealth of information on some of the important mathematical resources for use when you teach! A general "rule of thumb" might be for your group to try and find 10 resources in each of the areas mentioned. Some topics will naturally have more resources than other topics.

Your group will need to turn in one nicely prepared copy of your List of Resources in on the day of your group presentation. Your group should also be prepared to make a 5 minute presentation that highlights some of the resources you found (consider bringing in a few of the items that you found most helpful when planning your presentation and resources for these materials).

This project is purposefully open-ended in the hopes that you will go out and find some great resources for your mathematical topic and for your presentation. You should talk with your master teachers, use the internet, and make use of materials I provide. However, if you have any questions or challenges finding resources, please be sure to ask (I am happy to provide support…I want these to be good so they are good resources)!

Mathematical Lessons:

Working in small groups, students will demonstrate various methods to teach a mathematical concept. Groups of four will work together to prepare lessons in a given strand of the elementary math curriculum. Each member must present a mini-lesson to demonstrate a strategy to teach the concept that has been assigned to the group. A written summary of the methods presented needs to be turned in on the day of the presentation.