

**CALIFORNIA STATE UNIVERSITY SAN MARCOS
COLLEGE OF EDUCATION
EDMS 545 – Science Education in Elementary School
Tuesday & Thursday Night in Temecula**

General Information:

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Other times are also available by appointment so please feel free to call or e-mail me to set up a convenient time to meet.

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 Textbooks:
1. Learning from Cases: Unraveling the Complexities of Elementary Science Teaching. By Tippins D. J., Koballa T. R. & Payne B. D. Boston, MA: Allyn & Bacon.
 2. Use of Discrepant Events for K-12 teachers Keating Aztec Press.
 3. Other handouts may be distributed in class or through WebCT (<http://courses.csusm.edu>)

Other Good Books

Moon Journals; Writing, Art and Inquiry through Focused Nature Study.

By J. Chancer and G. Rester-Zodrow. Portsmouth, NH: Heinemann. On reserve.

A Year of Hands-on Science (1996). By Lynne Kepler. New York: Scholastic.

Teaching Science as Inquiry. By Arthur Carin & Joel Bass. Columbus OH, Prentice Hall.

200 Goopy, Slippery, Slimy, Weird & Fun Experiments. (1993). By Janice VanCleave. New York: JohnWiley

Science Matters: Achieving Scientific Literacy. By Robert M. Hazen

Great Explorations in Math & Science (G.E.M.S.). Lawrence Hall of Science.
<http://www.lhs.berkeley.edu/GEMS/> *Activities Integrating Math and Science.* Aims Education
Foundation. <http://www.aimsedu.org/aimscatalog/default.tpl>

These and many other hands-on science books are in bookstores, museums, zoos, even grocery stores!

COURSE DESCRIPTION

This course is designed to provide a comprehensive overview of the objectives, skills, concepts, experiments, materials, and methods necessary to teach science to elementary school children. A series of team activities will provide you with first-hand experiences in these areas. This course focuses on instructional methods, techniques, materials, lesson planning, curriculum development, organization and assessment in science. The integration of curricular areas is addressed. Methods of cross-cultural language and academic development will be integrated into the course.

COURSE OBJECTIVES

By the end of this course, students should be able to

1. Demonstrate proficiency with inquiry skills of observing, measuring, inferring, classifying, predicting, verifying predictions, hypothesizing, isolating variables, interpreting data, and experimenting.
2. Identify exemplary materials (curriculum kits, science programs, textbooks, equipment, technology, ancillary materials) appropriate for elementary school children.
3. Demonstrate knowledge and understanding of the California Science Framework, the California Science Content Standards, and the National Science Education Standards.
4. Demonstrate an understanding of the physical, earth and life science concepts included in the K-8 California Science Content Standards, and how to design lessons to teach the concepts.
5. Use the Learning Cycle model of instruction to teach science in a contemporary manner.
6. Use technology in elementary science teaching.
7. Demonstrate confidence in leading and performing investigations designed to teach science concepts, science process skills, and scientific attitudes.
8. Use authentic methods of assessment to evaluate student learning of science concepts and processes.
9. Design an elementary science-teaching mini-unit.
10. Practice strategies to include all students in science (linguistically and culturally diverse, students with disabilities and other students with special needs).

INFUSED COMPETENCIES

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.

(Approved by CCTC in SB 2042 Program Standards, August 02))

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.

COURSE REQUIREMENTS

COE Attendance Policy

Due to the dynamic and interactive nature of courses in the College of Education, all students are expected to attend all classes and participate actively. Absences and late arrivals/early departures will affect the final grade. 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.

For this class, if you miss 2 class sessions or are late (or leave early) for three or more sessions, your highest possible grade is a B. If you miss 3 class sessions, your highest possible grade is a C. If you miss more than 20% of the class (3 class sessions), you may not receive a passing grade for the course. Absences do not change assignment due dates. Late assignments will receive a 20% reduction in points for each day late. After one week, late assignments will receive no credit.

Writing

In keeping with the All-University Writing Requirement, all courses must have a writing component of at least 2,500 words (approximately 10 pages), which can be administered in a variety of ways.

Cheating & Plagiarism

Please Also Note: Any evidence of cheating (including plagiarism--presenting the words or ideas of others as your own) will result in a failing grade for that assignment and possibly a failing grade for the course. Some assignments will include comments and suggestions on appropriate referencing. If you have modified an already existing lesson plan or unit, please include a copy of the original lesson plan. See one of us if you have any questions about what exactly constitutes plagiarism.

pla-gia-rize

1. to use and pass off as one's own (the ideas and writings of another)
2. to appropriate for use as one's own passages or ideas from (another)

The American Heritage Dictionary of the English Language
Third Edition

Proper attribution is an important concept for teachers. Giving credit where credit is due is only fair and ethical. It also advances learning by accurately tracking the path of ideas and information as they pass from person to person, often being enhanced and modified along the way. Teachers have a special responsibility to identify their sources in their own work, and to teach students to do the same.

Such attribution can be formal or informal. Formal attribution usually consists of footnotes and bibliographies, which follow guidelines such as those published by the APA. Teachers and elementary students are more likely to use informal attribution, for instance giving the original source of a lesson plan that you have adapted. Even a second grader writing a paragraph about an animal can tell where the information came from. Example: I watched the classroom guinea pig for five minutes a day for five days and read the book Guinea Pigs by Joe Blow.

The Two Commandments of Attribution

1. When you use someone else's ideas, thoughts, or information, you must give credit to the source, and do so in a way that clearly identifies the source and makes it possible for other persons to find the original source for themselves.
2. When you use someone else's exact words, you must put those words in quotes. Commandment #1 still applies.

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 at (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.

**You must go to ACD 202 to activate your CSUSM e-mail account, or provide another email address.

Course Topics

The Nature of Science
The Learning Cycle Model of Teaching
Learning Cycle Science Lesson Demonstrations
Writing Objectives for Student Learning
Writing Science Concept Definitions
CA Science Content Standards Grades K-8
California Science Framework
SDAIE Strategies in Science
Infusing Writing Activities in Science Lessons
Science Curriculum Kits and State Approved Texts
Science Process Skills and Scientific Attitudes
Current Issues in Science Education
Infusing Technology into Science Teaching
Authentic Assessments in Science
Science Projects, Student Research, Science Fairs
Safety in the Science Class
Inclusion and Teaching Science to Students with Special Needs

COURSE ASSIGNMENTS

- | | |
|--|-----------|
| 1. Participation, Collaboration and Professionalism | 10 points |
| 2. Field trip assignments (Animal Observations) | 30 points |
| 3. California Science framework Analysis | 25 points |
| 4. Discussion Questions (individual) | 20 points |
| 5. Discrepant Events presentation (Individual and/or in pairs) | 45 points |
| 6. Observation/Art/Writing | 20 points |

7. Directorship (Extra Credit only)

5 points

**Late assignments will be penalized by a 20-point reduction each day they are late.
Keep digital copies of all assignments for your Credential Program Electronic Portfolio.**

CRITERIA FOR GRADING ASSIGNMENTS

A	Outstanding work on assignment, excellent syntheses of information and experiences, great insight and application, and excellent writing.	90-100%
B	Completion of assignment in good form with good syntheses and application of information and experiences; writing is good.	80-89%
C	Completion of assignment, adequate effort, adequate synthesis of information and application of information and experiences, writing is adequate.	70-79%
D	Incomplete assignment, inadequate effort and synthesis of information, writing is less than adequate.	60-69%

Grades will be determined by points earned:

A = 93-100	C+ = 77-79
A- = 90-92	C = 73-76
B+ = 87-89	C- = 70-72
B = 83-86	D = 60-69
B- = 80-82	F = 0-59

ASSIGNMENT DESCRIPTIONS

Assignment 1- Use of Field Trips in Science (Exploration of resources at the Wild Animal Park) (30 pts)

Students will have the opportunity for a hands-on visit to the Wild Animal Park and as part of this visit do the following three assignments/activities that will instruct them on: 1) How to do animal observation studies with K-6; 2) how to implement of curriculum models from the WAP; 3) utilize various resources for teachers from the WAP

Assignment 2 – California Science Framework and Standards

Spirit of the assignment: to read a portion of the California Science Framework and the Standard for a particular grade. You will write your individual response to the readings. Then you will work with your grade level team to prepare and do a presentation to the class. It's important that you do the reading and the writeups BEFORE you meet with your team.

2a. Framework summary response I 10 points

- Read the first part of the California Science Framework, up to page 20. This includes Board Policy, the Introduction and Chapters One and Two.
- Think about the reading holistically.
- Write about a page, in your own words, that answers these questions: What do you think are the most important ideas addressed in the reading? Were there any ideas in the reading which were very new to you, or which disagreed with something you thought?

2b. Grade level Science standard response I 10 points

- Using the standard for your chosen grade, pick a line item from physical science, life science, and earth science. For each one, come up with a brief description of an activity that children in that grade can do that also addresses one of the Investigation and Experimentation standards for the grade.
- You should end up with three sections, each of which includes a content line (physical, life, or earth science), an Investigation and Experimentation line, and a one or two sentence description of an activity that combines the two. The whole thing should be about a page.
- See example next page.

2c. Team preparation and presentation T 5 points

You will be given 30-40 minutes of class time to work with your team.

- Get together with your team. Look at the activities that everyone wrote up for Assignment 2b. Choose one.
- As a team, write up a lesson plan for the activity (with objectives, assessment, and a brief description of the activity}. Put it on chart paper or an overhead transparency so it can be easily presented to the class. Make sure you quote the line from the standard on which your lesson plan is based.
- As a team, come up with a brief overview of the Science Standard for your grade. Don't try to give us every single line of the standard. Summarize it in such a way that we see generally what students are supposed to learn in physical, earth, and life science and in investigation and experimentation in that grade.
- In 8 minutes or less, present your lesson plan and standards choices. Be prepared to explain why your lesson plan represents really good science for kids.
- Your grade for this assignment will be based on the content and quality of your presentation, and on the level of collaboration of the group.

Sample response to Assignment 2b.

Grade Four

Physical Science

1.b. Students know how to build a simple compass and use it to detect magnetic effects, including the Earth's magnetic field

Investigation and Experimentation

6.f Follow a set of written instructions for a scientific investigation.

Activity

Following directions from the Internet, the students will work in partner pairs to build compasses, using paper cups, thread, a needle and a magnet. They will observe and record the action of the compass indoors and outdoors, and in proximity to various objects.

Life Science

2.c. Students know decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.

Investigation and Experimentation

6.c. Formulate and justify predictions based on cause-and-effect relationships.

Activity

The students will predict the growth of mold on bread that has no preservatives. They will observe and record the progress of the mold in various circumstances (if the bread is left in the open air, if the bread is in a closed sandwich bag, etc.)

Earth Science

5.c. Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).

Investigation and Experimentation

6.b. Measure and estimate the weight, length, or volume of objects.

Activity

In groups of four, students will create landforms (using common dirt) on cookie sheets. They will add measured amounts of water to their landforms, and will collect and measure the dirt that runs off.

Assignment 3 – Discrepant Event

Spirit of the Assignment: to develop and teach a particular kind of a science inquiry lesson that teaches both science thought processes and science content. You will practice your discrepant event on at least one school-age child and reflect on the child's responses and what they indicate about how much he/she understood. Working by yourself or with a partner you will actually present your discrepant event to the class and give a copy of the lesson plan to each class member. After all the discrepant events have been presented, you will take a quiz to demonstrate that you personally learned the important science concepts that were presented.

3a. Discrepant Event Lesson Plan and Presentation I or P 20 points

- Working by yourself, or with a partner, find a discrepant event to do. You can get one from Discrepant Events, by Keating, or go to a bookstore or the children's section of the library and look for books on Science Tricks, or Science Magic.
- Get together the materials needed for the discrepant event. (If you can't get certain things, look for another event to do.)
- Practice doing the event. (If you can't get it to work, you may need to find another event to do.)
- Make sure you understand the science behind the event. If you got it from an internet website, there may be background info on the site. Another good place to look: the children's section of the public library. Find children's books on the topic in addition to or even preferably to books for adults. The children's books will explain things simply and will use the appropriate vocabulary for you to use

with your students. Remember, you don't have to have a college-level understanding of the topic, just have good, accurate information at your students' level.

- Do your discrepant event with at least one school-age child and take careful notes on the child's responses. (This ties in with Assignment 3b.)
- Fill in the discrepant event cover sheet, including the two questions.
- On your assigned day, bring in your materials and equipment and do your discrepant event for/with the class. You are limited to 15 minutes presentation time.
- After presenting your event, give each member of the class a copy of the lesson plan.
- Turn in your lesson plan, the cover sheet and your individual journal.

3b. Discrepant event journal I 15 points

- After you have done your discrepant event with a child or children, look at your notes and think about how it went. (You may realize that your event needs to be modified before you do it with the class.)
- Write a description of what happened, with special attention to what the child said and did. Analyze the child's response: what portions of the event, and to what extent, did the child understand what was happening? Why or why not?

3c. Discrepant event quiz I 10 points

After all discrepant events have been presented in class, a quiz will be given on the content of the events. The course instructors will design the quiz based on the questions submitted by each partner pair on their Discrepant Event Cover Sheet. *This quiz will be open notebook, but not open handout. That means you should take careful notes during each discrepant event presentation.*

Assignment 4 – Observation/art/writing

The spirit of this assignment is for you to observe something using all your senses, then use what you have observed to do a writing and an art activity from the book Moon Journals. You can use any kind of an experience for this: a walk on the beach, playing basketball, bathing a baby. Immediate experience is very important, so even it's something you've done many times before, do it again for this assignment. DON'T DO IT FROM MEMORY.

4a. Observation I 5 points

- Sign up for a particular day, from 1 to 28 in the Moon Journals book. Look at the Art Invitation and the Writing Invitation for your particular day. If you didn't buy the book, borrow it from the Moon Journals director or use one of the copies on reserve in the library and copy the relevant pages.
- Observe a natural event and take notes. You will need at least five specific details for each sense. Your notes can be in any format, and can be handwritten, as long as they are legible. If there is one sense that can't be used for your observation, give the reason why.) You will turn in your notes.

4b. Art and Writing I 15 points

- Follow the directions in the Moon Journals book to the writing and art activities for your assigned day. Connect them to your observation for assignment 5a. If either the writing or the art won't work, see the instructor.
- Look in the Timeline for Art/Writing. On that day, bring your response to the Art and Writing Invitations to class for Show and Tell.

- REMEMBER—YOU ARE NOT GOING TO DO YOUR WRITING AND ART ABOUT THE MOON. YOU ARE GOING TO USE WHAT YOU OBSERVED, WHETHER IT’S WALKING ON THE BEACH OR BATHING A BABY.

5. DISCUSSION QUESTIONS: (Based on Readings from Learning from Cases Text) I. 20 points

Each student will be required to submit a discussion question for the class based on the readings of the assigned chapters from the book *Learning from Cases*. The question should be submitted to the instructor via email by NOON on the day of the class when such readings are assigned. The discussion question should be an open-ended question that provides opportunity for discussion and calls for diverse responses. In addition it should reflect that you read the assigned readings. The dates when the questions are due are reflected in the course schedule. Examples of such questions will be available on WebCT. Selected questions will be discussed in class. Part of the credit for this assignment includes contributing to the class discussion.

6. Participation Collaboration and Professionalism 10 points

Students will engage in active learning each class session, and will be expected to actively participate, collaborate, and demonstrate professionalism at all times.

- Do you participate in class discussions productively, sharing your knowledge and understandings?
- Do you interact productively with your peers, taking on a variety of roles (leader, follower, etc.)?
- Do you contribute appropriately to group work—do you “do your share”?
- Are you able to accept others’ opinions?
- Are you supportive of others’ ideas?
- Do you support your peers during their presentations?
- Can you monitor and adjust your participation to allow for others’ ideas as well as your own to be heard?
- Do you show a positive attitude and disposition towards teaching all students?
- Do you exhibit professional behavior at all times?
- Do you attend each and every class, arrive on time and well prepared in all aspects, and do not ever leave early?
- Do you give close attention to each activity and speaker, and never whisper or do other things while there is a speaker?

You will do a self-assessment using the Rubric for Participation, Collaboration and Professionalism; and write a two-three page rationale. You should give a rationale for the points you gave yourself in each area of the rubric and provide examples for each area. Your professors will also do an assessment using this rubric. Turn in your Rubric and Rationale with examples.

Extra Credit (Directors Role):

- Be a director, according to the list below. 4 points

Director of Directors – Assigns Directorships – keeps list

Syllabus director – holds a hard copy of the Syllabus so other students can make copies.

Name Tag Director – Make sure everybody has a name tag each class

Contact Information Director—Make class list with current contact info

Framework/Standards Copies Manager/Director of Presentations – holds hard copies of the grade level standards and Chapters 1 and 2 of the Syllabus, for students to copy. Also directs formation of grade-level groups for presentations.

Photographer – takes photos of various class activities. Shows them to class.

Webmaster – Find science/science ed websites – present to class

Moon Journals assignments coordinator – keep copies of book, assign days

RESOURCES

JOURNALS

Science	Science Scope	Physics Teacher
Science and Children	The Science Teacher	Journal of Chemical Education
Science Education	School Science and Math	Innovations in Science & Technology Education
Science News	American Biology Teacher	Journal of Research in Science Teaching

EISENHOWER NATIONAL CLEARINGHOUSE <http://enc.org>

The Eisenhower National Clearinghouse (ENC) has recently launched an all-new web site, ENC Online, at <http://enc.org>. ENC, which was established by the U.S. Department of Education, provides K-12 math and science educators with information about teaching materials, innovative ideas, and professional development.

The content on ENC Online has been organized into four major categories. They are Curriculum Resources, Web Links, Professional Resources, and Topics. Through Curriculum Resources, teachers can locate teaching or professional development materials using subject words, grade level, cost, and type of material to meet their specific needs.

Teachers have said that the Digital Dozen, a monthly selection of exemplary math and science web sites, is one of their favorite features on the site. It is now found in the Web Links area. (Teacher can now also choose to have Digital Dozen delivered to their email boxes when registering with ENC.) Web Links also includes links to sites offering lesson plans, arranged by math or science topics.

The Professional Resources area is intended to become a part of a teacher's professional support system. A Timesavers section found within the Professional Resources area offers a collection of the most popular professional resources in one place for quick linking and use. Standards and state frameworks are also found under Professional Resources, as are federally funded resources, professional development strategies, and research articles.

ENC has always created projects and publications on relevant topics for teachers. The Topics area arranges hundreds of articles, teacher interviews, and selected curriculum resources and web sites thematically. Key education issues addressed in the Topics area include inquiry and problem solving, integrating educational technology, equity, and assessment. These areas include the materials developed for ENC Focus, our quarterly magazine for math and science educators.

COURSE GRADES

An "A" student is one who:

- Completes all assignments on time and demonstrates the ability to summarize, analyze, and/or reflect at high levels.
- varies sources of information for assignments, demonstrating high degree of effort in pursuing varied perspectives around important educational issues.
- completes all the reading assignments and develops thoughtful and thorough responses.
- produces work that reveals a strong commitment to self-discovery and learning.
- produces work at a high professional level in terms of both writing and content.
- develops a high quality presentation, demonstrating significant learning around a contemporary issue.
- presents confidently and intelligently, demonstrating effective teaching skills.
- completes assignments in/out of class with a focus on learning and exploration, pushing him/herself to better understand the profession through quality work.
- attends almost every class meeting and is fully engaged during class.

- pushes him/herself to new understandings by participating in discussions, sharing his/her opinions, and valuing others' perspectives.
- contributes to the positive environment of the class by respecting all members.

A “B” student is one who:

- completes all or almost all assignments, all or most on time, and demonstrates the ability to summarize, analyze, and/or reflect at fairly high levels, showing consistent improvement over time.
- varies sources of information for assignments, demonstrating high degree of effort in pursuing varied perspectives around important educational issues.
- completes all or most of the reading assignments and develops thoughtful and fairly thorough responses.
- produces work that reveals a commitment to self-discovery and learning.
- produces work that is close to professional level in terms of both content and writing, working to develop a strong command of writing, speaking, planning and presenting.
- develops presentations, demonstrating significant learning
- presents confidently and intelligently, demonstrating effective teaching skills.
- completes assignments in/out of class with a focus on learning and exploration, pushing him/herself to better understand the profession through quality work.
- attends almost every class meeting and is regularly engaged during class.
- pushes him/herself to new understandings by participating in discussions, sharing his/her opinions, and valuing others' perspectives.
- contributes to the positive environment of the class by respecting all members.

A “C” student is one who:

- completes or attempts most of the assignments, mostly on time, and demonstrates the ability to do some quality summarizing, analysis, and reflection, showing improvement over time.
- varies sources of information for assignments, demonstrating effort in pursuing varied perspectives around important educational issues.
- completes most of the reading assignments and develops thoughtful and sometimes thorough responses.
- produces work that reveals a commitment to some self-discovery and learning.
- produces work that is not yet at a professional level in terms of both writing and content.
- develops a quality presentation, demonstrating learning around a contemporary issue.
- presents confidently and intelligently, demonstrating some effective teaching skills.
- completes assignments in/out of class with a focus on learning and exploration, pushing him/herself a little to better understand the profession.
- attends most class meetings and is often engaged during class.
- pushes him/herself to some new understandings by participating to a moderate degree in discussions, sharing his/her opinions, and valuing others' perspectives.
- contributes to the positive environment of the class by respecting all members.

A “D” student is one who doesn't meet all of the minimal standards of a “C” student; “F” is earned by someone who hasn't completed significant portions of the required work and fails to meet the “C” student standards.

APENDIX A:
EDMS 545 Summer 2004 Tentative Course Outline

#	Date	Topic	Assignment
1	7/6	How were you taught Science? /Intro Syllabus/Intro Discrepant event Intro Framework/Standard—Form Framework presentation groups; DE Times; Moon Journal Activities	
2	7/8	Scientific method/ learning cycle/nature of sc. Loonie Goonies Open Ended vs Closed Ended Science: Paper Towel Experiment Toys in Space activity	
3	7/13	Framework team presentations (First 20 Minutes of Class will be available for teams to get organized) Student Discrepant Events X2 teams	Assts. 2abc Assts. 3a, 3b
4	7/15	Use of Authentic Assessment in Science: A Model of Performance Assessment—Use of Map and Compass (Orienteering)	Build Superlink Project for next class
5	7/20	Student Discrepant Event Presentations x 2 Problem Solving Model/Creative Thinking Activity: Odyssey of Mind Science Enrichment Program	Assts. 3a, 3b Moon Journal Presentations
6	TBA	(Counts as two classes) Use of Zoo's and Nature Centers in a Science Curriculum: Field Trip to Wild Animal Park – Schedule to be determined (late afternoon/evening)	
7	TBA	Same as above	Animal Observation Assignment Due
8	7/29	Planning and Managing Inquiry based Lessons	Read Chapters 3 & 4 Disc. Question Due
9	8/3	Science Process skills Student Discrepant Event Presentations x 3	Read Chapters 2 Dis. Question Due Assts. 3a, 3b
10	8/5	Using Cooperative strategies & questioning and Wait time as a learning tools Student Discrepant Event Presentations x 3	Read Chapters 5 & 6 Dis. Question Due Assts. 3a, 3b
11	8/10	From lessons to Units: Building the science curriculum Student Discrepant Event Presentations x 2	Read Chapters 7 & 8 Dis. Question Due Assts. 3a, 3b
12	8/12	State Approved Textbooks Contemporary Issues in Science Education & Professional Development for elementary teachers	Read Chapters 9 & 10 Dis. Question Due PCP Rubric Due Assts 3c Due

Appendix B

Rubric for Participation, Collaboration and Professionalism (PCP)

CATEGORY	Excellent 14 pts.	Acceptable 9 pts.	Unacceptable 4 pts.	Your Score
Attitude	Always has a positive attitude. Never is critical of the task or others without offering alternatives, showing initiative, and working hard for improvement.	Usually has a positive attitude. Rarely is critical without alternatives.	Seldom has a positive attitude. Often is critical but without alternatives.	
Participation	Attends every class, always on time and well prepared, never leaves early. Give closest attention to class activities and speakers.	Usually attends every class, on time and prepared, doesn't leave early. Give 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	Always behaves, talks and works in a professional manner, regardless of task/topic.	Often behaves, talks and works in a professional manner, regardless of task or topic.	Seldom behaves, talks and works in a professional manner, regardless of task/topic.	
Collaboration	Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Often 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	Always provides useful ideas; always stays focused on the task. Exhibits a lot of effort and valuable contributions.	Often provides useful ideas; stays focused most of the time. A satisfactory group member who does what is required.	Rarely provides useful ideas; not always focused. Reluctant to participate. Lets others take charge and participate.	
Disposition toward Teaching	Always demonstrates concern in learning to 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 and CA Science Content Standards.	Often demonstrates concern in learning to teach all children. Often demonstrates commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CA Standards for the Teaching Profession and CA Science Content Standards.	Rarely shows concern in learning to teach all children. Rarely demonstrates commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CA Standards for the Teaching Profession and CA Science Content Standards.	
Leadership	Shows strength through leadership in different 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.	

Total Score: _____