Rhode Island College

Feinstein School of Education and Human Development
ELED 518 Science in the Elementary School

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Course Information

Students learn about recent research and curriculum trends in science education. Central concepts include inquiry, assessing student learning, integrating inquiry science with reading and writing, using scientist notebooks to improve scientific thinking and communication, aligning curriculum with Grade Span Expectations in Science, and instructional technology.

COURSE OUTCOMES

1. Students know, understand, and use some of the major concepts, principles, theories, and research related to development of children and young adolescents to construct learning opportunities that support individual students' development, acquisition of knowledge, and motivation. (ACEI 1 Development, learning, and motivation). Course Assessments: Inquiry learning experiences (teacher observation), classroom discussions, Unit plan and lesson development, introduction to unit plan essay, reflection on unit plan essay.

2. Students know, understand, and use some of the fundamental concepts in the subject matter of science—including physical, life, and earth and space sciences—as well as concepts in science and technology, science in personal and social perspectives, the history and nature of science, the unifying concepts of science, and the inquiry processes scientists use in discovery of new knowledge to build a base for scientific and technological literacy. (ACEI 2.2 Curriculum - Science) Course Assessments: Inquiry learning experience, Classroom presentations and discussion, Introduction to unit essay, reflection on unit essay.

   Supporting Explanation:
   - Students have a broad general understanding of science and they teach elementary students the nature of science, and the content and fundamentals of physical, life, earth and space sciences, and their interrelationships. They are familiar with, and teach, some of the major concepts and principles that unify all scientific effort and that are used in each of the science disciplines: (1) systems, order, and organization; (2) evidence, models, and explanation; (3) change, constancy, and measurement; (4) evolution and equilibrium; and (5) form and function.
   - Students engage their peers in the science inquiry process that involves asking questions, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, constructing and analyzing alternative explanations, and communicating scientific arguments and explanations. They introduce their peers to understandings about science and technology and to distinctions between natural objects and objects made by humans by creating experiences in making models of useful things, and by developing students' abilities to identify and communicate a problem, and to design, implement, and evaluate a solution.
   - They know naive theories and misconceptions most children have about scientific and technological phenomena and help children build understanding.
   - Students understand the use of assessment through diverse data-collection methods as ways to inform their teaching and to help students learn scientific inquiry, scientific understanding of the natural world, and the nature and utility of science.

3. Students know, understand, and use the connections among concepts, procedures, and applications from given content areas to motivate elementary students, build understanding, and encourage the application of knowledge, skills, and ideas to real world issues. (ACEI 2.8. Connections across the curriculum). Course Assessments: Inquiry learning experiences, Unit plan and lesson plan development, classroom presentations and discussion.

4. Students plan and implement instruction based on knowledge of students, learning theory, subject matter, curricular goals, and community. (ACEI 3.1. Instruction-Integrating and applying knowledge for instruction) Course Assessments: Inquiry learning experiences, Unit plan development, student-led classroom demonstrations and presentations.

5. Students understand how elementary students differ in their development and approaches to learning, and create instructional opportunities that are adapted to diverse students. (ACEI 3.2. Instruction-Adaptation to diverse students) Course Assessments: Inquiry learning experiences, Unit reflection essay, Unit and lesson plan design.

6. Students understand and use a variety of teaching strategies that encourage elementary students' development of critical thinking, problem solving, and performance skills (ACEI 3.3. Instruction-Development of critical thinking, problem solving, performance skills) Course Assessments: Inquiry learning experiences, Unit and lesson plan design, assessment graphic organizer included in unit plan.

7. Students use their knowledge and understanding of individual and group motivation and behavior to foster active engagement in learning, self motivation, and positive social interaction and to create supportive learning environments. (ACEI 3.4. Instruction-Active engagement in learning) Course Assessments: Inquiry learning experiences, presentations.

8. Students use their knowledge and understanding of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction. (ACEI 3.5. Instruction-Communication to foster collaboration) Course Assessments: Inquiry learning experiences, presentations.

9. Students know, understand, and use formal and informal assessment strategies to plan, evaluate and strengthen instruction that will promote continuous intellectual, social, emotional, and physical development. (ACEI 4. Assessment for instruction) Course Assessments: Inquiry learning experiences, Context essay

10. Students understand and apply practices and behaviors that are characteristic of developing career teachers. (ACEI 5.1. Professionalism - Practices and behaviors of developing career teachers) Course Assessments: Inquiry learning experiences, classroom discussions.

11. Students are aware of and reflect on their practice in light of research on teaching and resources available for learning; they continually evaluate the effects of their decisions and actions on students, parents, and other colleagues in the learning community and actively seek out opportunities to grow as a teacher. (ACEI 5.2. Professionalism-Reflection and evaluation) Course Assessments: Inquiry learning experiences, Context Essay, Class Performance, Unit plan reflection essay.

COURSE TEXTS AND MATERIALS

Required Texts:

Michaels, Shouse, Scweingruber (2007). Ready Set Science ! Putting Research to Work in K-8 Science Classrooms. National Research Council. http://www.nap.edu/catalog.php?record_id=11882

Recommended:

National Research Council. (1996). *National Science Education Standards*. Washington DC: National Academy Press. (NOTE: It's available on-line http://www.nap.edu/openbook.php?record_id=4962)

Hein, George H. and Price, Sabra. (1994). *Active assessment for active science.* Portsmouth NH: Heinemann.

Krueger, A. & Sutton, J. (Ed.) (2001). *EDThoughts: What we know about science teaching and learning.* Aurora, CO: Mid-continent Research for Education and Learning.

Prerequisites: a. Certified/experienced teacher or MAT student, admission to the MAT program; completion of CEP 552, ELED 500, FNED 546; minimum GPA of 3.0 or consent of department chair. One year of college-level laboratory-based science or consent of instructor.

Relationship to the Professional Programs: This elective course for students in either the M.Ed. or M.A.T. programs is designed to develop confidence and competence in the teaching of elementary and middle level science. For MAT students, this course is one of the six courses in the elementary education curriculum that deals with methods of teaching in specific content areas. It serves as a bridge between the undergraduate general education courses of their college program, academic majors, foundation courses in education and the teacher candidate's student teaching experience. For M.Ed. in Elementary and Early Childhood Education students, this course serves as an elective from their professional education component.

Relationship to the Conceptual Framework
The "Developing Reflective Practitioners: A Conceptual Framework" consisting of the model of process (planning, acting, and reflecting) and shared knowledge base [four themes of knowledge pedagogy, diversity, and professionalism are reflected in the objectives, pedagogical content, classroom activities, assignments, readings, and assessments. Students acquire pedagogical, subject matter, and curricular knowledge. They use *National Science Education Standards* to plan standards-based lessons.

Lessons are drawn from NSF-funded curriculum projects such as *Science and Technology for Children* and *Full Option Science System*. While preparing to teach an inquiry lesson from one of the modules, students analyze the curriculum and instructional materials to determine how the developers intended users to address diverse learning needs and multi-cultural perspectives of all learners. Students plan for continuous assessment that includes a performance assessment. Students reflect upon the semester experiences and communicate their new understanding, concerns, and questions.

The course includes the study of methods and materials appropriate for intellectually and culturally diverse populations. Integral to the course is learning to develop science concepts/principles and processes in the context of investigations. Students use computer technology and digital photography to gather, store, and present information. The instructor uses Web CT with students as a means of providing course information and resources and creating an electronic dialogue. For MAT students, the course culminates in the submission of a portfolio entry focusing on assessment of student learning and RIPTS Standard 9. The course requirements serve as performance assessments for teacher candidates.

Pedagogical Content:
Outline

I. Nature of Science
   A. Science is a set of interrelated thinking processes, scientific attitudes, and body of information
   B. Scientific inquiry is a way of finding out and knowing.
   C. Children's science is similar to scientists' science.

II. Children's Learning of Science
   A. Results of current research
   B. Naïve theories and misconceptions
   C. Implications for standards, curriculum, instruction, and assessment

III. Standards, Curriculum, Instruction, and Assessment
- A. Standards
  1. National Science Standards: National Research Council's *National Science Education Standards* and AAAS' Project 2061 *Benchmarks for Scientific Literacy*
  2. Rhode Island Science Framework and Grade Span Expectations
  3. Rhode Island Beginning Teaching Standards and Feinstein School of Education and Human Development's Conceptual Framework
- B. Curriculum
  1. Curriculum in Rhode Island schools
  2. Instructional materials and community resources that support scientific thinking
  3. Characteristics of exemplary science curriculum projects such as FOSS , STC, and GEMS
  4. Community resources: scientists, engineers, and science-rich organizations
- C. Instruction
  1. Approaches to learning: hands-on/multi-sensory, pictorial, symbolic
  2. Approaches to teaching: constructivist, coaching, didactic
  3. 5-E learning cycle ("feedback loop")
  4. Technical skills: unit planning, questioning and responding, cooperative learning, materials management, instructional technology, accommodations
  5. Community resources
- D. Assessment
  1. Planning: aligning with purpose of learning, goals of unit and standards
  2. Internal and external sources of assessment data
  3. Types of assessment: formative and summative assessment; matching pre- and post-assessments; learner self-assessment
  4. Reporting and recording
  5. Teacher self-reflection. Using assessment information to improve teaching and learning

IV. Appropriate Science Learning Environments
- A. Diversity and equity
- B. Stereotyping and bias
- C. Accommodating special needs
- D. Collaborative relationships with colleagues, families, and the community
- E. Guiding principles for teaching and learning: authenticity, autonomy, and community of learners

V. Integrating Science with Other Disciplines
- A. Writing (expository, procedural, report); Use of scientists' notebooks
- B. Reading (children's science literature, vocabulary development, and literature circles)
- C. Environmental education
- D. Engineering and technology

COURSE REQUIREMENTS
Alignment with Standards

COURSE REQUIREMENT	CONCEPTUAL FRAMEWORK	RIPTS	ACEI STANDARDS	COURSE OUTCOMES
Inquiry Learning Experience	PAR, Knowledge, Diversity, Pedagogy	1-11	Development, Learning, Motivation Curriculum Instruction Assessment	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Assessment graphic organizer	PAR, Knowledge, Diversity, Pedagogy	9	Assessment	9, 11
Unit and lesson plan	PAR, Knowledge, Diversity, Pedagogy		Curriculum	2, 3, 9

Introductory essay to unit plan Context Essay	PAR, Knowledge, Diversity, Pedagogy, Professionalism	1-11	Development, Learning, Motivation Curriculum Instruction Assessment Professionalism	1, 2, 3, 5, 6, 10, 11
Reflection on unit plan Science autobiography	PAR, Knowledge, Diversity, Pedagogy	1-9	Development, Learning, Motivation Curriculum Assessment	1, 2, 3, 4, 5, 6, 9
Dispositions	Professionalism	10	Professionalism	11

Extended Descriptions with Due Date. Percent of course grade is in parentheses.

Science Autobiography (10%)

Purpose: To reflect upon prior experiences and learning in science, to consider avenues for developing an identity as a teacher of science. To consider the nature of science and learning.

Inquiry learning experiences (25%)

Purpose: To engage in, talk about, and revise models of scientific inquiry in class. Activities will include teacher constructed and student constructed inquiry based labs (e.g. water drops on a penny, pendulum experiment), and performing/critically examining the Inquiry based NECAP exam.

Unit Planning (25%)

Purpose: To learn about science curriculum that promotes scientific inquiry by exploring a science module from a set of exemplary K-8 instructional materials; to plan, teach, and reflect upon inquiry with a focus on the technical skills of questioning and responding.

Task

1. Examine the curriculum matrix at the Rhode Island Science Materials Resource Center. Choose a title of a science kit that you would like to learn about.
2. Locate a teacher guide using HELIN library catalog. Read the teacher's guide. Many teacher guides are available in Adams Library "Reserve Section" and Curriculum Resource Center "Kit Room" (4th floor). If the teacher guide is unavailable, contact the course instructor to learn about how to borrow materials.
3. Plan a 2 hour inquiry lesson based on a lesson from the selected module. Integrate the use of a scientist notebook in the lesson. Use the lesson planning template which you can download at WebCT *Assignments I-> Inq Learn Exp.*
4. Teach the lesson.
   a. Conduct part of the lesson to a small group of your peers (40 of 120 minutes). Use activities/materials suggested in the science module.
   b. Facilitate learning by questioning. Include effective questioning that encourage learners to communicate understanding of science ideas and to observe, focus on details, compare, measure, predict, and take action.
   c. Present "storyline" of science kit. Explain how the science kit supports the teaching of big ideas of science kit. Explain which Rhode Island Grade Span Expectations (statement of enduring knowledge and assessment targets) are addressed. (5-10 min).
5. Reflect upon science curriculum and instructional materials, planning an inquiry lesson using scientist notebooks, and teaching your peers. Send reflection using WebCT Mail to your instructor. Instructor will provide guidelines for composing the reflection.

Product/Performance: lesson plan, teaching, and reflection

Criteria for evaluating

Planning (60%)

-Selects one of the science kits used by Rhode Island teachers

-Develops lesson plan for 2 hour lesson according to format

Action (20%)

-Presents storyline; explains how this inquiry lesson is aligned to teaching of big ideas of science module and Grade Span Expectations in Science

-Teaches part of inquiry lesson (40 minutes) to peers-modifying lesson activity from science kit

-Facilitates learning through effective questioning

Reflection (20%)

-Reflects critically upon planning and implementing lesson

-Presents evidence of understanding of inquiry teaching and learning

How Grade is Determined: Analytic rubric

Due Dates:

Drafts due throughout semester, final unit plan and reflection due December 8, 2011

RIPTS 9 Artifact: context essay and assessment graphic organizer (25%)

Purpose: to understand the role of assessment in teaching and learning science; to prepare a component of the "Preparing to Student Teach" portfolio.

Task:

See instructor for guidelines for developing the artifact focusing on *Rhode Island Professional Teaching Standards Standard 9*.

Product/Performance: Single Microsoft Word file with all components.

Criteria for Evaluating: understanding of the standard and sub-standards with evidence of selecting, interpreting, and reflecting upon "artifacts," planning for assessment in the context of curriculum, instruction and RIBTS and NSES standards; sharing of portfolio entry. To satisfy requirement for the "Preparing to Student Teach portfolio, students are required to "exceed or meet the standard" for *each* sub-standard: 9.1, 9.2, 9.3, 9.4, 9.5.

How Grade is Determined: Analytic rubric

Due dates:

All components due 12/8**. (**Re-submission for Acceptable rating due 12/15)

Present to the class one component of your RIPTS 9 Artifact **Due 12/8**

Introduction to Unit Plan and Unit Plan Reflection (15%)

Purpose: To articulate a vision for teaching and learning science

This course requirement is designed as a summative assessment as well as "learner self-assessment."

Task: 1) Write a summary of your unit plan. 2) Write a reflection about your unit plan that either considers why this topic is important to teach students (short term and long term goals), or considers ways that you would revise this unit plan, with rationale for revisions, when you teach this unit in the future.

1. Relate your thinking to major themes of FSEHD Conceptual Framework:
   - ___planning, action, and reflection
   - ___*knowledge*- of science, theory of learning science, and science as a specialization, contexts of schooling (RIPTS# 1,2)
   - ___*diversity*-cultural diversity, special needs, and inclusion (RIPTS# 1,3,4)
   - ___*pedagogy*- assessment, technology (RIPTS# 2,3,5,6,8)
   - ___*professionalism*-ethics, collaboration and advocacy, and professional development (RIPTS# 1,7,10,11)
2. Provide examples with supporting details and cite sources of ideas from readings and experiences.

Dispositions (10 %):

Purpose: To demonstrate and self-assess dispositions related to teaching and learning in this course that includes attending and active participation including use of I<Clickers.

Task: Download Word file at WebCT *Assignments*-> Dispositions. Rate yourself. Complete the form. Upload file at WebCT *Assignments*-> Dispositions.

Product: Self-assessment. Download assignment file in WebCT Dispositions.

Criteria for Evaluating: List of Dispositions in WebCT Dispositions; attendance; and participation.

How Grade is Determined: Scoring on criteria

Due Date: **12/8**

Class Attendance Policy: Your course grade will be reduced by .33 (on a 4-pt. scale) for each absence after one undocumented absence. Arriving late and leaving early count as absences. Each class will start and end on time. If you are late or absent for any class, ask a team members to inform you of new assignments or changes in schedules and to collect handouts for you.

Deadline/Extension Policy: If you are late in submitting any component of a course requirement, the grade for the course requirement will be reduced by 1 (on a 4-pt. scale). Please inform me *at the beginning of the semester* if you have problems meeting a deadline. You are expected to submit assignments on the day they are due (see course schedule for due dates). Any emergency extensions must be requested before the due date.

COURSE EVALUATION

Grading System: You will earn a number grade for each course requirement based on a 4.0 grading scale.

A = 4.00 (3.85-4.17); A- =3.67 (3.51-3.84); B+ =3.33 (3.18-3.50); B= 3.00 (2.85-3.17); B- = 2.67 (2.51-2.84); C+ =2.33(2.18-2.50); C= 2.00 (1.85-2.17); C- = 1.67 (1.51-1.84);
D+ =1.33 (1.18-1.50); D= 1.00 (1.17-0.85); D- = 0.67 (0.51-0.84); F = 0.00

Grade Definitions:

A (4) Achieves standards *above the expected level of proficiency*…actions reflect the knowledge and abilities of a experienced teacher of science who is achieving the science teaching standards. Carefully completes all assignments above the expected level of proficiency. Reads and

thoughtfully reacts to assigned readings. Actively participates in class discussions and activities. Demonstrates a high level of understanding of methods, materials, and theory; makes integrated connections; demonstrates a creative flair--solves problems; and demonstrates a strong commitment to education.

B (3) Achieves the standards. Actions reflect the knowledge and abilities of a proficient teacher of science achieving the science teaching standards. Completes all assignments at the expected level of proficiency. Reads and reacts to assigned readings. Participates in class discussions and activities. Demonstrates an understanding of methods, materials, and theory and demonstrates a strong commitment to education.

C (2) Achieves the standards in most areas. Actions reflect the knowledge and abilities of an teacher of science approaching the teaching standards. Completes all assignments at the expected level of proficiency. Reads and reacts to assigned readings. Participates in class discussions and activities. Demonstrates some of the competencies necessary for elementary science teaching.

D (1), F (0) Actions reflect the knowledge and abilities of an teacher of science who fails to meet the teaching standards. Complete failure early in the term will signal a grade of D or F. The student will be counseled to drop the class.

COURSE SCHEDULE, TOPICS, ACTIVITIES, READINGS, ASSIGNMENTS
*Subject to change. Changes will be announced through Web CT.
Academic Calendar: College Closed: Monday, 9/7; Monday 10/12; Wednesday 11/11; Thursday 11/16; Monday Classes Meet: Tuesday, October 13; Final Exam: 12/14-12/19; Grades Due: 12/28

CLASS	TOPICS ACTIVITIES	READINGS TEXT -WWW - WEBCT	ASSIGNMENTS DUE
#1	Topic Who are we, where we're going, how, and why? Developing a Philosophy for Science Teaching and Learning --Prior experiences, beliefs and attitudes affect our view towards teaching/learning of science and science curriculum? -Relate to 9.1 Pre-Assessment Activities -Present syllabus -Pre-Assessment activities: -Introduce WebCT -Present assignment.		By 9/6 *Preassessment QUESTIONAIRE.*
# 2	Topics Developing a Philosophy for Science Teaching and Learning (continued) Current Beliefs National Science Standards -Nature of Science and Scientific Inquiry -Science for All -Teaching Science -Learning Science -Curriculum -Instructional Materials	K&S Science for All/RSS! Chapter 1 *What is equity and how is it evident in science classrooms?* Learning Science *What is the value of learning science in today's world?* Science Curriculum *What does it mean to have a standards-based curriculum in science?; How do we determine what students should know and be able to do in science?* "An Overview" in National Research Council. (1996). *National Science*	Science Autobiography

	Activities -PowerPoint- Part 1 Why Teach Science. -Revisit Science Standards -Introduce Course Requirements ball toss activity	*Education Standards*. Washington DC: National Academy Press. (on-line) Go to WEB CT. Click on *K-8 Science Education*. Click on *Instructional Materials* on left column. Click on *Instructional Materials in Rhode Island*. Browse the titles science kits and other related resources used by Rhode Island teachers. Click on STC *Electric Circuits*. Examine the storyline. Click on *K-8 Science Education*. Click on *Published Curriculum* on left column. Browse different links for FOSS, STC, Insights.	
#3	Topics NECAP Inquiry Exam Science Curriculum in Rhode Island Materials Support at the Materials Resource Center	K&S Curriculum *-What is curriculum coherence and articulation?* *-What is the importance of reading and writing in the science curriculum?* *-What are the most important considerations in selecting instructional materials?* *-In what ways can integrating curriculum enhance learning?* *-How does integrated instruction among science disciplines affect learners?* *-How can studying technology be included in the science curriculum?* *-How does classroom curriculum connect to the outside world?* NECAP exam on RIDE website	NECAP Recap reflection
# 4	Topic Developing a Philosophy for Science Teaching and Learning (continued) - Investigating Pendulums -Providing feedback. Introduce Inquiry Learning Experience Course Requirement		

# 5	Topics Children's Learning of Science --Three key findings from research. Implications for teaching and learning. Digital Tree Collection Activities -Investigate using Digital Camera; Analyze scientific and creative thinking skills -Introduce "homework;" Pre-assessment for conceptual understanding: Interview a child to elicit misconceptions Activities -Video- Scientist Notebooks -Examine a lesson plan and scientist notebooks: Sound and Light using scientist notebook: *UV Rays Investigation* -Scaffolding and Accommodating Diverse Learners -Provide feedback using Scientists Notebook Feedback Guide	K&S Learning Science *-What do we know about how students learn science?* *-Can all students learn science?* *-How can teachers help students reflect on and communicate their own learning?* *-What does brain research tell us about learning science?* K&S-Teaching Science *-How does linking instruction with assessment impact student learning?* Donovan et. al. Chapter 2 "Key Findings" from How People Learn and *The Biological Basis of Thinking and Learning (PDF).* Find readings at: WEB CT Homepage->Class Handouts &URLS->How Children Learn Go to http://www.ric.edu/faculty/mkniseley/ScienceEducation/resources.html. Click on *Instructional Materials* on left column. Click on *Published Curriculum* on left column. Click on *The Private Eye.* Browse web pages.	Bring to class: title of your science kit/ curriculum Project (FOSS, STIC, Insights)/curriculum developer; preliminary thinking about the activity and materials for the inquiry learning experience lesson.
# 6	Topics Children's Learning of Science (continued) The Private Eye: Scientific and Creative Thinking Activities - - The Private Eye: Exploring Fingerprints		Pre-assessment for conceptual understanding: Interview a child to elicit misconceptions. Bring notes and drawings to class**.**
# 7	Debrief Assignment (Pre-Assessment Strategy-Interview) RIPTS 9 Assessment Activity: -Examine Assessment Standards: "RI Grade Span Expectations for Science"	K&S-Assessment in Science *-What roles does assessment play in science teaching and learning?* *-How can the use of varied assessments provide important evidence of learning?* *-How is student inquiry assessed in the classroom?* *-What do national/international assessments say about teaching and learning science?*	Assessment Presentations in class

# 8	-Examine assessment system in science kit instructional materials -Identify different types of assessments in science kit instructional materials (selective response, academic prompts, performance, personal communication) -recording teacher observations of students' learning (e.g. teacher checklist). -Examine rubrics/scoring systems for scientists notebooks and school report cards Activity: Drops of Water on Penny	-Read NSES Assessment Standards	Reflection on Drops of Water on a penny
# 9	<u>Topic</u> Inquiry, Inquiry Learning, Inquiry Teaching --Inquiry continuum and framework that promotes learning in science Improving inquiry teaching and learning through effective questioning and responding --"Making of a Scientist" --Teachers' questions and children's questions --Examine questions in a science kit lesson --Narrow and broad-based questions --Productive questions Activity -Inquiry activity (Cartesian Diver)	K&S Teaching Science *-What role does teacher questioning play in learning science?* *-How does classroom curriculum connect to the outside world?*	Submit Unit Plan by Thursday 10/29 PM.
#10	<u>Activities</u> Inquiry Learning Experience --Conduct lessons to small group (40 minutes) --Present unit design of science kit. Explain how inquiry lesson is aligned to teaching of big ideas (5-10 min)	Krueger & Sutton EDThoughts-Science Curriculum *-What are the most important considerations in selecting instructional materials?* Go to WEB CT. Click on *K-8 Science Education*. Click on *Instructional Materials* on the left column. Click on *Instructional Materials in Rhode Island*. Browse the titles of science kits presented by classmates.	

		When you click on a title, notice the resources (storylines, writing, assessment, etc.) available at the bottom of the page.	
11/11 College Closed			
# 11	Topics Integrating Science with Reading - Extending hands on learning of science with content area reading - Selecting Children's Literature - Vocabulary development - Video: *Thinking Science* - FOSS Science Stories -Explain Assignments - Philosophy requirement - Explain 11/25 Online Class - Explain 12/2 Book Share	Krueger & Sutton ED Thoughts-Science Curriculum *-What is curriculum coherence and articulation?* *-What is the importance of reading and writing in the science curriculum?* *-In what ways can integrating curriculum enhance learning?* *-How does integrated instruction among science disciplines affect learners?* Krueger & Sutton *EDThoughts*-Science for All -*What is equity and how is it evident in science classrooms?*	Unit plan "Reflection"
# 12	Integrating Technology in Science Teaching and Learning	.	Identifying 1- 2 technology resources to use in unit.
#13	-Book Share: Selecting Science Literature: Children's science literature and literature circles Review for Essay Exam		Visit library and select two titles representing two different genre of children's science literature for Book Share related to your ILE science module theme.
# 14	Presentations of Unit Plan Reflections --Each person will share a part of their statement of philosophy (a few slides or part of paper)		Dispositions: Complete/submit Word file Submit Unit Plan and Reflection Presentations of Reflections
Finals Week	Unit Plan Presentations		

REFERENCES: Suggested Reading, Internet, and Multi-Media Resources

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Internet

WEB CT Course Site (enrollment in class required to log-in and access)
K-8 Science Education Resources web site developed by instructor

Video

Thinking Science Elementary Science Integration Project, Dr. Wendy Saul, University of MD, Baltimore County. Heinemann.
Achieving Literacy Through Inquiry Science Science and Literacy Integration Project, Rhode Island College
Science Literature Circles, East Bay Educational Collaborative

ADDITIONAL COURSE INFORMATION

Rhode Island College is committed to making reasonable efforts to assist individuals with documented disabilities. If you are seeking reasonable classroom accommodations under the ADA of 1990 and/or Section 504 of the Rehabilitation Act of 1973, you are required to register with the Student Life Office (Craig-Less 127, 456-8061). To receive accommodations for this class, please obtain the proper Student Life Office forms and meet with me at the beginning of the semester. Student services may be found at http://www.ric.edu/disabilityservices/faq.php; http://www.ric.edu/disabilityservices/faq.php

The instructor reserves the right to change the syllabus at any point in the semester to accommodate learners' needs and pace of progress. Students will be notified in class of any changes.

Academic Dishonesty Policy (*Rhode Island College Handbook of Policies, Practices, and Regulations* (Spring 2010), Chapter 3: Academic policies and procedures. Pp. 32-34, section 3.9.1.): http://www.ric.edu/administration/pdf/College_handbook_Chapter_3.pdf#28

Students' assignments may be duplicated and utilized anonymously for the Department's program folios, for purposes of accreditation. All information that identifies a document as belonging to a particular student will be removed before it is used.

Expectations for Attendance, Deadlines, Use of Computers

Cell Phones, Beepers, and Pagers:
Please turn them off before you come to class.

Attendance:
Your course grade will be reduced by .33 (on a 4-pt. scale) for each absence. Arriving late and leaving early will count as absences. Each class will start and end on time. Please inform me in advance if you have problems arriving on time and staying for the duration. If you are late or absent for any class, ask a classmate to inform you of new assignments or changes in schedules and to collect handouts for you.

Deadlines:
If you are late in submitting a course requirement, the grade for the assignment will be reduced by 1 (on a 4-pt. scale). Please inform me *at the beginning of the semester* if you have problems meeting a deadline. You are expected to submit assignments on the day they are due (see course schedule for due dates).