

**Three Rivers Community College
ECE K109 Science and Math for Children
Course Materials**

Spring 2018

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Office Hours: Monday and Wednesday mornings
or by appointment

Course Description:

Prerequisite: ENG* K101 eligibility and ECE K101 or permission of the Program Coordinator based on ECE work experience. ECE K182 is recommended.

In this course, students will acquire an understanding of the materials and methods of working with young children. The focus will be on math and science and their integration into the early childhood curriculum. Emphasis will be placed on understanding these areas from a child development perspective. Active participation working with children will be required.

Required Texts:

Charlesworth, Rosalind Karen Lind. Math and Science for Young Children (8th Ed.).
Thompson Delmar Learning. 2015. ISBN: 9781305088962

Additional readings will be assigned throughout the semester.

Course Objectives:

- Provide students with an opportunity to apply theories of child development to learning experiences with young children.
- Offer child-orientated experiences in order to stimulate children's curiosity.
- Support the young child's natural desire to explore and learn.
- Discover how to make simple low-cost materials in order to teach science and math concepts.
- Discover strategies that aid in the development of problem-solving skills of young children.

General Education Goals:

- Candidates will develop the skills and abilities to communicate effectively in writing.
- Candidates will develop information literacy to assess what information is needed to answer questions and to retrieve, evaluate, and use that information effectively.

Course Outcomes:

- Candidates will reflect on the major theoretical approaches that include Piaget, Vygotsky, Gardner, and Kamii. (NAEYC 1.a.)
- Candidates will understand what young children are like and what the multiple influences are on their development and learning. (NAEYC Standard 1.a. and 1.b.)
- Candidate will learn integrative approaches to curriculum by designing a web which includes learning experiences ample lesson plans written in a specific format. (NAEYC Standard 4.b. and 4.c.)
- Candidate will apply developmentally appropriate practices in math and science lessons. (NAEYC Standard 1.a., 1.b. and 5.a.)
- Candidates will analyze the importance of being a continuous and collaborative learner. (NAEYC Standard 6.c.)

Policies:

If you have problems with the course or material, please see me or call to arrange for an appointment. Candidates who are not able to complete the course need to speak to me immediately as we will try to work together to have you complete the class successfully.

As part of the course, candidates will be required to spend **additional time observing** and/or working with children in actual or simulated child development settings.

Active participation in class discussions and activities is required. Candidates are expected to complete assigned readings prior to class and come to class prepared to discuss them. Throughout the course there will be other written assignments to help guide your studies which will be handed in and counted as part of your participation grade.

Class attendance is required. The greatest amount of learning occurs during class time, where group activities and interactive assignments allow for learning not covered by the text and required assignments. Attendance is taken at the beginning of class. Frequent absences will count against your attendance grade.

Candidates are urged to devote their time and energy to fulfilling stated class requirements. Please note that a credit hour 'work expectation' equates to one hour of classroom or direct faculty instruction and a minimum of two hours of out of class candidate work. So for this three credit course you should expect to spend a minimum of three in class and six out of class hours (total of nine hours) per week on this course in order to be successful.

Extra credit points may be considered if a candidate is active in the Early Childhood Education Club, participates in early childhood events, or tutors / supports another classmate in their understanding of course content. Additionally, with prior permission, there may be an opportunity to redo and resubmit an assignment. These opportunities will be decided on an individual basis.

Take home tests will not be accepted beyond the scheduled due date. Make-ups for in class, scheduled tests are only allowed when planned in advance. Make-ups must be done in a timely manner.

It is assumed that all assignments will be completed and turned in on time. Ten percent of the grade (10%) will be deducted from a late assignment. Assignments will not be accepted beyond a one-week extension. Late assignments cannot be rewritten or resubmitted.

Spelling and grammar will be included as part of the grade for all written work. Thus, proper spelling and careful proofreading are important. A candidate's written work is expected to be original and done independently unless otherwise indicated.

Citations and references must be used to **acknowledge the source and avoid plagiarism**. Violations of academic integrity will be referred to and dealt with in accordance with the college policy.

Academic integrity is essential to a useful education. Failure to act with **academic integrity** severely limits a candidate's ability to succeed in the classroom and beyond. In this class and in the course of your academic career, present only your own best work; clearly document the sources of the material you use from others.

TRCC has assigned you a college email address. Please familiarize yourself with this as this is the **primary way the college communicates with you** (course schedules, financial aid, etc.). In the past students have found it useful to set up their college emails to be forwarded to another place (email or iphone, etc.).

Lap top computers and tape recorders may be used during class time, with prior permission and for the purpose of note taking only. Computers and other forms of technology are prohibited during tests.

Cell phones, pagers, ipods, and other similar devices must be turned off during class. **Texting or using your cell phones during class is not acceptable and you may be asked to leave the class.**

The candidate is responsible for all materials covered in class as well as the assignments. If a candidate misses a class, it is the candidate's responsibility to get the notes from another candidate. **Do not contact the instructor and ask for a review of the class.**

Learn to rely on your syllabus and / or another candidate. You may want to share your contact information with other candidates to help facilitate this process.

TRCC does not follow the local school closing schedule. The TRCC website offers the most updated information about school closings and / or early dismissals. It is recommended that all candidates sign up for the electronic notification system to receive instant alerts and messages. In the event that class is cancelled, separate from the college, the instructor may notify candidates using the Blackboard messaging system and / or the email contact available through TRCC. Please be sure the college has your updated contact information.

Please refer to the Institutional Policies available in the Office of the Dean of Student Development and Services as well as on line, which include regulations regarding candidate conduct and the disciplinary code.

Candidates with documented disabilities are provided supportive service and accommodations to assist them with their academic objectives. Services are strictly confidential. Disability services may include individualized accommodations, advising, advocacy, counseling, technical assistant and / or referral information. Students who may need academic accommodations should discuss options with the instructor as early as possible. You will need to provide written documentation of your disability to the Candidate Services Counselors (Disabled Candidate Counselor). Appropriate accommodations will be provided to candidates who have completed this procedure.

The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence.

This syllabus is subject to change. Any changes will be announced.

Points given for requirements are as follows:

Please use this as a tool to keep a record of your progress in this course.

Assignment	Points	Due Date	Grade Received
Science Portfolio Assignment	100		
Math Portfolio Assignment	100		
Science Lesson Plan	50		
Math Lesson Plan	50		
Test One	25		
Test Two	25		
Attendance and Participation (<i>article reviews included</i>)	50		
Total	400		

Final Grade:

To determine your final grade take the total number of points awarded and review the following breakdown.

- A 371 – 400 points
- A- 351 – 370 points
- B+ 331 – 350 points
- B 296 – 330 points
- B- 271 – 295 points
- C+ 246 – 270 points
- C 221 – 245 points
- C- 200 – 220 points
- D 150 – 199 points
- F anything below 150 points



*“Good teaching is one-fourth preparation and three-fourths pure theatre.”
- Gail Godwin*

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Resource List

_____. (2012). Connecticut standards for math practice, Kindergarten. DOE.
_____. (2012). Connecticut standards for math practice, First grade. DOE.
_____. (2012). Connecticut standards for math practice, Second grade. DOE.
_____. (2000). *Children as mathematicians [Focus issue]*. *Teaching Children Mathematics*, 6.

Chalufour, Ingrid & Karen Worth. *Building structures with young children*. Young Scientist Series. NAEYC. Pages 73 - 79.
Charlesworth, R. (2013). *Math and science for young children*. (7th ed.). Cengage Learning.

Clements, D. H. (2001). *Mathematics in the preschool*. *Teaching Children Mathematics*, 7, 270–275.

Clements, D. H., & Sarama, J. (2000). *The earliest geometry*. *Teaching Children Mathematics*, 7, 82–86.

Clements, D. H., & Sarama, J. (2000). *Standards for preschoolers*. *Teaching Children Mathematics*, 7, 38–41.

Cutler, K. M., Gilkerson, D., Parrott, S. & Bowne, M. T.. *Developing math games based on children's books*. *Teaching Young Children* magazine. Vol 2, Number 2.

DelCampo, D. & DelCampo, R. (2006). *Taking sides: Clashing views in childhood and society*. (6th ed.). McGraw-Hill.

Derman-Sparks, L. & Edwards, J. O.. (2010). *Anti-Bias education for young children and ourselves*. Washington, DC: NAEYC.

Elkind, David. *The power of play: Learning what comes naturally*. Da Capo Books, 2007. Pages 119 - 144.

Epstein, Ann. *The intentional teacher: Choosing the best strategies for young children's learning*. NAEYC. July 2007.

Flick, L., & Lederman, M. (2004). *Scientific Inquiry and Nature of Science*. Boston, MA: Kluwer Academic Publishers.

Gallagher, K. C. (2005). Brain research and early childhood development: A primer for developmentally appropriate practice. *Spotlight on Young Children*. Washington DC: NAEYC.

Jacobs, H. H. (2010). *Curriculum 21: Essential education for a changing world*. ASCD Publications.

Lederman, N. & Lederman, J. (2004). *Revising instruction to teach nature of science: Modifying activities to enhance students' understanding of science*. The Science of Teacher, November.

Matricardi, J. & McLarty, J. (2005). *Math activities A to Z*. Delmar Cengage Learning.

Matricardi, J. & McLarty, J. (2005). *Science activities A to Z*. Delmar Cengage Learning.

National Research Council. (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: The National Academy Press.

Sanders, S. (2005). *Active for life*. Washington, DC: NAEYC.

Voltz, D., Sims, M. J. & Nelson, B. (2010). *Connecting teachers, students and standards: Strategies for success in diverse and inclusive classrooms*. ASCD.