George Mason University
College of Education and Human Development
Early Childhood Education

ECED 516.001 Science for Diverse Young Learners
3 Credits, Spring 2020
01/21/2020 – 05/13/2020, Mondays/ 4:30pm – 7:10pm
Thompson Hall, Room L028, Fairfax

Faculty

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Prerequisites
ECED 401 or ECED 501 and ECED 403 or ECED 503
Prerequisites require a minimum grade of C for undergraduate courses and B- for graduate courses.

University Catalog Course Description
Examines ways to foster development of science in preschool to third-grade children. Covers construction of science lessons and hands-on experiences that promote learning in children with diverse abilities and cultural and linguistic backgrounds.

Course Overview
Not applicable

Course Delivery Method
This course will be delivered using a lecture and discussion format.

Learner Outcomes or Objectives
This course is designed to enable students to do the following:

1. Explain how knowledge, skills, and practices in the four core science disciplines (i.e., Earth sciences, biology, chemistry, and physics), as defined in *Virginia's Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds* and the *Virginia Science Standards of Learning,* provide a sound foundation for teaching science in prekindergarten through third grade.
2. Describe the nature of science and scientific inquiry, including the function of research design and experimentation, and the role of science in explaining and predicting events and phenomena.
3. Describe the practices required to provide empirical answers to research questions, including data collection and analysis, modeling, argumentation with evidence, and contracting explanations.
4. Discuss the reliability of scientific knowledge and its constant scrutiny and refinement; self-

checking mechanisms used by science to increase objectivity, including peer review; and assumptions, influencing conditions, and limits of empirical knowledge.
5. Describe and organize key science content in Earth science, biology, chemistry, and physics content into meaningful units of instruction that actively engage students in learning; integrate processes and crosscutting concepts into planning and implementing in the interdisciplinary context; and promote the application of key science principles to solve practical problems and develops a "systems" understanding of the natural world.
6. Describe the role of family and community knowledge, experience, and resources in planning and implementing science content in the curriculum.
7. Plan instruction on Earth science, biology, chemistry, and physics that (a) uses a variety of instructional techniques to meet the needs of diverse young learners; (b) incorporates instructional technology to enhance learner performance; (c) ensures learner competence in science; and (d) is informed by the *Virginia's Early Learning Foundation Building Blocks*, the *Virginia Standards of Learning for Science*, and the *New Generation Science Standards*.
8. Evaluate, select, and adapt a variety of instructional materials, technologies, and teaching strategies to engage diverse young learners in science.
9. Identify fiction and nonfiction texts to develop key science concepts in diverse young children.
10. Develop science activities for young children using the scientific process with an emphasis on describing, analyzing, and quantitatively presenting findings.
11. Conduct formative and summative assessments of students' learning of science concepts.
12. Describe and use the knowledge, skills, and practices to implement classroom, field, and laboratory safety rules and procedures and ensure students take appropriate safety precautions.
13. Describe and use the knowledge, skills, and practices needed to conduct research projects and experiments, including applications of design process and technology, and systematic field investigations using the school grounds, the community, and regional resources.
14. Explain the contribution and significance of science, including (a) its social, cultural, and economic significance; (b) the relationship of science to mathematics, the design process, and technology; and (c) the historical development of scientific concepts and scientific reasoning.
15. Exhibit standards of professionalism, ethical standards, and personal integrity with children, families, and professionals in the field and in interactions with classmates, the instructor, and others.
16. Use writing as an instructional and assessment tool to generate, gather, plan, organize, and to communicate for a variety of purposes; integrate correct written conventions (i.e., grammar, usage, mechanics, and spelling); and format using current APA style.

Professional Standards – Virginia Professional Studies Competencies, Virginia Early Childhood Special Education Endorsement Competencies, Virginia Early/Primary Education PreK-3 Endorsement Competencies, Interstate Teacher Assessment and Support Consortium (InTASC) Standards, Council of Exceptional Children (CEC) and Division of Early Childhood (DEC) Standards, and National Association for the Education of Young Children (NAEYC) Standards

Upon completion of this course, students will have met the following professional standards:

Virginia Early/Primary Education PreK-3 Endorsement Competencies
Methods
Knowledge and Skills: Science

Required Texts

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). Washington, DC: Author.
Achieve Inc. (2013). *Next generation science standards*. Washington, DC: Author. http://www.nextgenscience.org
Peters, J. M., & Stout, D. L. (2011). *Science in elementary education: Methods, concepts, and Inquiries* (11th ed.). Boston: Pearson.
Shillady, A. (ed.) (2013). *Spotlight on young children: Exploring science*. Washington, DC: National Association for the Education of Young Children.
http://www.doe.virginia.gov/testing/sol/standards_docs/index.shtml
Virginia Department of Education. (2010). Science standards of learning. http://www.doe.virginia.gov/testing/sol/standards_docs/index.shtml
Virginia Department of Education. (2010). Science curriculum framework. http://www.doe.virginia.gov/testing/sol/standards_docs/index.shtml

Access Blackboard for required and optional class readings.

Course Performance Evaluation
Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy).

Assignments	Due Dates	Points
Attendance and Participation • Self-Evaluation	Ongoing May 4	**25**
Personal Journal • Part 1 • Part 2	 February 3 May 4	**10**
Science Activity Share	Variable	**15**
Enriching Science Inquiry with Literature • Literature Chart • Google Share: Pairing non-fiction and fiction science texts	February 24	**10** 8 2
6E/PBL Lesson Plan	March 23	**15**
Science Lesson Implementation and Reflection • Planning the Lesson • Collecting Data • Reflecting on the Lesson	 April 6 April 6 April 27	**25** 10 5 10
TOTAL		**100**

- **Assignments and/or Examinations**

NOTE: With exclusion of the personal journal, each of the major assignments for this course should focus on a <u>different</u> science area: physical science, life science, earth/space science, or engineering (i.e., no two assignments should focus on the same area.)

Personal Journal (Part 1=5 points; Part 2=5 points)
Part 1: To initiate class experiences, students will write a critical reflection on their personal experiences as a learner of science (2 pages). They will use the following prompts to help guide their reflection process.

- Begin with your earliest memories (give examples) and reflect until the present as a graduate student in a teacher preparation program.
- Reflect on your experiences in school, out of school, in the context of your family, etc.
- How do you think your social, cultural, and economic background played a role on your experiences as a science learner?
- How do you see yourself as a science learner?
- Why do you think you feel that way?
- How do you think these experiences will shape you as a teacher of science? In other words, what positive impacts or challenges on your teaching practice do you foresee from your prior experiences or self-conception?

Part 2: In conclusion of the course, students will revisit their initial thoughts in their first journal entry and reflect on how their thoughts and/or self-conception have changed, if at all (2 pages). They will use the following prompts to help guide their reflection process.

- What have you learned in the course?
- Do you view yourself as a science learner differently than you did before?
- Is there a concept you learned in the course that really stuck out for you? (Include references to course readings, as necessary.)
- Is there a particular reading, handout, or material from class that you found particularly helpful or eye-opening? (Include references to course readings, as necessary.)
- Articulate the kind of early childhood science teacher you plan to be. Will something you learned in the course be included in your guiding principles?

Science Activity Share (15 points)
Students will choose a science content area from the four core science areas, including Earth sciences, biology, chemistry, and physics, during the first class session in which to present an activity. Three students will sign up per content area: one person will focus on PreK, one on K-Grade 1, and one on Grades 2-3. Individual students will prepare a lesson plan using the template provided and lead a 15-minute informative and interactive center that actively engages students in learning in their science content area to a small group of classmates. During the center, each student will include the following:

- An overview of the topic, including the key ideas or content and the importance of the topic to students' science learning
- An overview of relevant state and national content standards at the appropriate grade level(s), noting consistencies (or inconsistencies, if the case may be)

- A description of classroom and behavior management strategies that would increase the effectiveness of the implementation of the activity and contribute to creating and maintaining a safe environment
- Materials appropriate to the activity (bring or borrow from the instructor; have enough materials to lead the activity share approximately three times to a small group of students; materials should be visually attractive and engaging for young learners)
- Modeling of the science concept (no videos please)
- It should be evident that the student has read the course material on the science topic
- Modeling how to engage in the activity chosen for science concept. Science activity should be in-line with the type of teaching practices we are learning about in the course (e.g., hands-on with materials, not a worksheet)
- An opportunity for classmates to engage in the activity with guidance from the student leading the activity
- Modeling of the science concept and activity should be role played as if student is the teacher and classmates are young learners in the class
- Preparation for how to adapt the center activity for a range of learners
- A list of at least three resources related to teaching the topic that could include children's literature, websites, manipulatives or materials, or other teacher resources (at least one must be a relevant developmentally appropriate picture book (have an actual hard copy of the book for the activity share) and one must be an article from a practitioner journal (e.g., *Science and Children*) on the topic)
- Science activity share should not exceed or fail to take up the 15-minute duration

Enriching Science Inquiry With Literature: A Focus on Reading and Writing (10 points)

- Literature Chart (8 points)
  To place the core scientific disciplines of Earth science, biology, chemistry, and physics in an appropriate interdisciplinary context, students will identify a focused science topic (e.g., ecosystems or weather) and compile a chart of at least 10 literature resources that could be used for a unit on that topic, including fiction, non-fiction, digital, and non-digital forms, that promote children's engagement in the science concept. The chart will provide a picture of the cover of the book, a brief summary of the text, identify possible literacy experience(s) for the resource (e.g., read aloud, guided reading, exploration center, research text, independent reading, as a resource to promote writing, etc.), and identify and explain possible 6E entry points for the resource (i.e., engage, explore, explain, elaborate, evaluate, e-learning). A template of the chart is available on Blackboard.

- Google Share: Pairing Non-Fiction and Fiction Science Texts (2 points)
  Students will select a pair of texts (one non-fiction and one fiction) from their literature chart to contribute to a Google share site to serve as a reference for peers in the class. The Google chart will require students to include the APA citations for each text, a brief description of each text, grade-level connections, scientific discipline connection (e.g., Earth science, biology, chemistry, and physics), and a discussion of why the texts complement each other in a unit of inquiry.

6E/PBL Lesson Planning (15 points)
Students will use both an **inquiry-based** (6E model) and a **problem-based** (PBL) approach to develop a detailed 6E (engage, explore, explain, extend, evaluate, e-learning/incorporate technology) lesson plan for one of the following science areas: physical science, life science, chemistry, Earth/space science, or engineering as defined by *Virginia's Foundation Blocks of Early Learning, the Virginia Science Standards of Learning*, and the *Next Generation Science Standards*. They will develop a creative and engaging PBL challenge that they will integrate throughout the lesson plan (examples will be shared during class). Students will integrate questioning, curiosity, and active engagement, with real materials in the lesson whenever possible. Students will include plans for classroom and behavior management and building community. They will also include how they will create and maintain a safe environment. They will use the lesson plan format provided by the instructor. In addition, students will develop the student sheets and any other supporting materials needed for their lesson. Students will create an assessment of student learning for their lesson and a rubric for the assessment.

Science Lesson Implementation and Reflection (25 points)
In two-person partnerships, students will choose a developmentally appropriate science lesson in one of the four core science areas as defined by Virginia's Foundation Blocks of Early Learning, the Virginia Science Standards of Learning, and the Next Generation Science Standards from either the course textbook, VA Department of Education, or *Picture-Perfect Science Lessons* series (NSTA Press). They will implement the lesson during one of two "Afternoons of STEM Learning" at the Main Street Child Development Center (CDC) to multiple groups of preschool children, making necessary modifications and taking reflective notes. Students will bring any necessary materials for the lesson. Students will visit the CDC two consecutive times. One partner will teach the lesson while the other partner takes anecdotal notes during the lesson iterations; the next week the partners will switch roles. Students will submit a written reflection in two parts.

- ***Planning the Lesson (10 points).*** The first part of the reflection will be due before the experience and will include how the lesson was selected; a list of relevant prekindergarten standards; how course readings support the selection of the lesson plan; what adaptations were made, if any, to the lesson plan and why; and how the students prepared to implement the lesson. Students will include plans for classroom and behavior management, building community, and creating and maintaining a safe environment. In this part, students will be assessed on their preparation of all of the necessary materials for the lesson, including being prepared to implement the lesson upon arrival at the CDC. Partners will write and submit this reflection collaboratively. (2 to 3 double-spaced pages)

- ***Collecting Data (5 points).*** The second part of the reflection will be due before the experience and will include (a) a statement about their ethical considerations as they planned for the data collection and (b) a plan for collecting quantitative and qualitative data. Partners will develop an observational tool or teacher's checklist for the observing partner to use to collect data about the children's engagement in the lesson (must submit tool). They also will identify work samples (may be photos) they will collect and how they will be scored and

analyzed to determine children's learning of the concept. Partners will write and submit this reflection collaboratively.

- ***Reflecting on the Lesson (10 points).*** The third part will be due after the experience and will include a presentation and analysis of the qualitative and quantitative data collected as well as a reflection on how the lesson went (what went well, what could have been done differently/better for next time), key learnings, and "aha" moments. Students will use the analyzed data and their own observations to reflect on both teacher learning (themselves) and children's learning during the lesson. Students will also reflect on their classroom and behavior management and how they built community. Students will provide specific linkages to course readings and research examined for the inquiry into evidence-based practices. They will conclude the reflection by posing a compelling question about what are the next steps to the lesson implemented for supporting children's understandings. Partners will engage in reflective discussions about their analysis of the data and the implementation of the lesson, but will submit written reflections independently. (3 double-spaced pages)

- **Other Requirements**

Attendance and Participation (25 points)
Because active participation and engagement are imperative for optimal learning, preparation for and participation in in-class and online activities will be evaluated based on the following criteria:

- Students attend class, arrive on time, and stay for the entire class period.
- Students notify the instructor by email in the case of an absence.
- Students submit a 2-3-page written reflection of the content covered (e.g., course readings, content on Blackboard) of any missed class. Reflection is due within 1 week after an absence.
- Students use laptops and personal devices for instructional purposes only.
- Students complete readings and prepare for class activities prior to class as evidenced by their ability to discuss and write about the concepts presented and examined in the texts as well as participate fully in related activities.
- Students are actively involved in in-class and online learning experiences as evidenced by (a) participating in all activities, (b) engaging in small- and large-group discussions, (c) completing written work related to the activities, and (d) supporting the participation and learning of classmates.
- Students show evidence of critical reflective thinking through in-class and online discussions, activities, and written reflections.
- Students display professional dispositions at all times while interacting with the instructor and other students.
- Students complete participation activities across the semester that complement the scheduled course topic. Instructors will periodically collect artifacts from the activities. Students in attendance and who actively engage in the learning experience will receive credit for their efforts. Graded participation activities are not announced and are implemented at the discretion of the instructor.
- Students submit attendance and participation self-evaluation.

Written Assignments
All formal written assignments will be evaluated for content and presentation. The American Psychological Association, Seventh Edition (APA) style will be followed for all written work. All written work unless otherwise noted must be completed on a word processor and should be proofread carefully. (Use spell check!) If students are not confident of their own ability to catch errors, they should have another person proofread their work. When in doubt, they should check the APA manual. Students may consult the Writing Center for additional writing support.

Students will do the following:

1. Present ideas in a clear, concise, and organized manner. (Avoid wordiness and redundancy.)
2. Develop points coherently, definitively, and thoroughly.
3. Refer to appropriate authorities, studies, and examples to document where appropriate. (Avoid meaningless generalizations, unwarranted assumptions, and unsupported opinions.)
4. Use correct capitalization, punctuation, spelling, and grammar.
5. Type the paper with double spacing, indented paragraphs, 1-inch margins all around, and 12-point Times New Roman font.

- **Grading**

A = 95-100 A- = 90-94 B+ = 87-89 B = 80-86 C = 70-79 F = <70
Incomplete (IN): This grade may be given to students who are passing a course but who may be unable to complete scheduled coursework for a cause beyond reasonable control.

All CEHD students are held to the university grading policies as described in the Academic Policies section of the current catalog, which can be accessed at http://catalog.gmu.edu. Those students seeking Virginia initial teaching licensure must earn a B- or better in all graduate licensure coursework.

Professional Dispositions
Students are expected to exhibit professional behaviors and dispositions at all times. See https://cehd.gmu.edu/students/policies-procedures/.

Class Schedule

Date	Topics	Readings & Assignments
Week 1 Jan 27	Four Core Science Disciplines • Earth sciences, biology, chemistry, physics • Understanding of the nature of science and scientific inquiry Foundations for Teaching Science in Early Childhood Education for Diverse Young Learners	Peters & Stout, Chapter 1

	Classroom, Field, and Laboratory Safety • Rules and procedures • Ensuring students take appropriate safety precautions	
Week 2 Feb 3	Role and Nature of Theory • Explaining events and phenomena, including learning theories undergirding pedagogical approaches for teaching science Contribution and Significance of Science • Social, cultural, and economic significance Role of Family and Community Knowledge, Experience, and Resources in Planning and Implementing Science Content	Peters & Stout, Chapter 2 Spotlight on Science, pp. 2-10 **Due to Bb – Personal Journal Part 1**
Week 3 Feb 10	Historical Development of Scientific Concepts and Scientific Reasoning Knowledge, Skills, and Practices for Conducting an Active Early Childhood Science Program Application of Key Science Principles to Solve Practical Problems • Problem-based learning (PBL) Standards • Virginia standards *(Virginia's Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds, Virginia Science Standards of Learning)* • National standards (*Next Generation Science Standards*)	Peters & Stout, Chapter 3 Spotlight on Science, pp. 55-60, 72-73 National and State Science Learning Standards <u>Readings on Blackboard</u>: *Weather Tamers* *Modeling Problem-Based Instruction*
Week 4 Feb 17	Integrating the Four Core Scientific Disciplines Across Content Areas • Integrate processes and crosscutting concepts in an appropriate interdisciplinary context • Relationship of science to mathematics, design process, and technology	Spotlight on Science, pp. 48-54 & 68-71 <u>Readings on Blackboard</u>: *Blending In-Using an Adaptation Activity to Integrate Math and Science*

Week 5 Feb 24	Formative and Summative Assessments of Student Learning Practices Required for Empirical Answers to Research Questions • data collection and analysis, modeling, argumentation with evidence, contracting explanations	Peters & Stout, Chapter 4 <u>Readings on Blackboard</u>: *Performance-Based Assessments in Science* **Due to Bb – Enriching Science Inquiry with Literature**
Week 6 Mar 2	Application of Key Science Principles to Solve Practical Problems Reliability of Scientific Knowledge • scrutiny, refinement, and self-checking mechanisms • objectivity, such as peer review • assumptions, influencing conditions, limits of empirical knowledge Field Trip to Children's Science Center at Fair Oaks Mall	Peters & Stout, Chapter 5
Mar 9	SPRING BREAK	
Week 7 Mar 16	Plan Instruction on Earth Science, Biology, Chemistry, and Physics • Using the goals of the *Virginia Standards of Learning* and the National Science Standards • Using variety of instructional technology to support learner competence Inquiry-Based Approach to Teaching Science • 5E/6E model	Spotlight on Science, pp. 41-47, 61-67 **Science Activity Share – Physical Science I**
Week 8 Mar 23	Core Science Discipline: Physics and Chemistry Research Projects and Experiments Classroom and Field Safety Rules and Procedures	Peters & Stout, Inquiry Unit 1 Spotlight on Science, pp. 29-35 **Due to Bb – 5E/6E/PBL Lesson Plan** **Science Activity Share – Physical Science II**
Week 9 Mar 30	Evaluate, Select, and Adapt Instruction and Materials to Meet the Needs of Diverse Learners Science Inquiry Invitations for Family Explorations	Peters & Stout, Chapter 6 Spotlight on Science, pp. 55-60 <u>Readings on Blackboard</u>: *Science Success for Students with Special Needs*

		Science Activity Share – Life Science I
Week 10 Apr 6	Core Science Discipline: Biology Engaging Diverse Young Learners in Science Experiences • Field investigations using school grounds, the community, and regional resources: Mason Apiary and Greenhouse • Science activities using scientific process: describing, analyzing, using quantitative methods for findings • Knowledge, skills, practices to conduct research projects and experiments	Peters & Stout, Inquiry Unit 2 Spotlight on Science, pp. 11-16, 23-28 Readings on Blackboard: *Teaching with Play-An Introduction to Environmental Stewardship for Preschooler* **Due to Bb – Science Lesson Reflection (Parts 1 & 2)** **Science Activity Share – Life Science II**
Week 11 Apr 13	Design Process and Engineering Science Learning in Out-of-School Time Science Lesson Implementation	Peters & Stout, Chapter 7 Spotlight on Science, pp. 36-40, 55-60 Readings on Blackboard: *They Can't Spell Engineering but They Can Do It*
Week 12 Apr 20	Core Science Discipline: Earth Science Technology to Enhance Student Performance in Science Evaluating Instructional Materials, Technologies, and Teaching Practices Science Lesson Implementation	Peters & Stout, Inquiry Unit 3 Spotlight on Science, pp. 61-67 **Science Activity Share – Earth and Space Science I**
Week 13 Apr 27	Core Science Discipline: Earth and Space Science Professional Development in Support of Inquiry Self-Reflections on Filling the Role of Science teacher for Diverse Young Learners	Peters & Stout, Chapter 8 Spotlight on Science, pp. 77-80 Readings on Blackboard: *Representation of the Moon in Children's Literature* **Due to Bb – Science Lesson Reflection (Part 3)** **Science Activity Share – Earth and Space Science II**
	Reading Days – No class meeting	

Week 14 May 4	Exam Period – No class meeting	**Due to Bb – Personal Journal Part 2 due May 4** **Due to Bb – Attendance and Participation Self-Evaluation due May 4**

Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

Core Values Commitment
The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: http://cehd.gmu.edu/values/.

GMU Policies and Resources for Students

Policies

- Students must adhere to the guidelines of the Mason Honor Code (see https://catalog.gmu.edu/policies/honor-code-system/).

- Students must follow the university policy for Responsible Use of Computing (see https://universitypolicy.gmu.edu/policies/responsible-use-of-computing/).

- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.

- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see http://ds.gmu.edu/).

- Students must follow the university policy stating that all sound emitting devices shall be silenced during class unless otherwise authorized by the instructor.

Campus Resources

- Support for submission of assignments to Tk20 should be directed to tk20help@gmu.edu or https://cehd.gmu.edu/aero/tk20. Questions or concerns regarding use of Blackboard should be directed to https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/.
- For information on student support resources on campus, see https://ctfe.gmu.edu/teaching/student-support-resources-on-campus.

Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking: As a faculty member, I am designated as a "Responsible Employee," and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator per

University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason's confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance from Mason's Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.

For additional information on the College of Education and Human Development, please visit our website: http://cehd.gmu.edu.

Group Topic Presentation Evaluation Rubric

	Exceeds Expectation	Meets Expectations	Does Not Meet Expectations	Points and Comments
Related Article *2 points*		An appropriate and relevant article is provided for students with several links to the article during the presentation	The article is either not appropriate or relevant to the topic and/or there aren't any links to the article during the presentation	
Topic Overview *2 points*		A detailed description of the science topic that is supported by references to class or other readings	Limited or no description of the science topic and/ or that is not supported by references to readings	
Developmental sequence *2 points*		A thorough, research supported description of the stages of knowledge acquisition related to the topic	A lack of description of the stages of knowledge acquisition or inaccurate or not research supported description	
Learning Standards *2 points*		Complete listing of all state and national standards related to the topic	Incomplete list of state and national standards related to the topic	
Learning Activities & Resources *5 points*	Detailed listing and explanation (at least 5) of learning activities to master the essential concepts related to the topic. A variety of carefully selected resources (at least 10) to facilitate instruction related to the topic	Listing and explanation of learning activities (at least 5) to master the essential concepts related to the topic. Resources (at least 10) to facilitate instruction related to the topic	Incomplete listing and explanation of learning activities & resources that will not help students to master the essential concepts related to the topic	
Strategies for instruction *5 points*	Comprehensive instructions for how to teach about the topic for a range of learners	Instructions for how to teach about the topic for a range of learners	Limited or no instructions for how to teach the topic without focusing on a range of learners	

Visual aids, Modeling & Active Engagement *5 points*	The use of visual aids, effective modeling & active engagement/centers during the presentation facilitates the clarity and value of the presentation	There is use of visual aids, modeling & active engagement/centers that somewhat facilitate the clarity and value of the presentation	Limited or ineffective use of visual aids, modeling & active engagement/centers during the presentation	
Class Handout *2 points*		The class handout provides a useful and concise overview of the presentation for colleagues with appropriate references	There is no handout to accompany the presentation and / or the handout has no references	
Total Points				**/ 25**