

Cognition and General Knowledge Syllabus — In-Person Course

Instructor Contact Information

Name:

Email:

Phone:

Office location:

Office hours:

Course Description

Early in childhood, children's cognitive skills develop substantially and provide an important foundation for later learning. Instructional practices that promote the development of these important skills and support children's understanding of the world around them are crucial. Classroom discussions and activities designed to promote logic and reasoning, mathematics, and science knowledge and skills can capitalize on children's natural curiosity and provide rich opportunities for learning.

This course is designed to increase participants' knowledge of and ability to implement instructional strategies aimed at promoting (a) logic and reasoning skills including reasoning, and problem solving, and symbolic representation, (b) mathematical skills in specific domains including number and operations, geometry and measurement, and data and (c) science knowledge (understanding of core ideas and science concepts in life, physical and earth sciences) as well as key science skills or practices (such as observing and asking questions, planning and conducting investigations, collecting data and constructing explanations, and reporting and reflecting on findings). The course is designed to increase participants' knowledge of and ability to implement high quality strategies that support children's learning in developmentally appropriate ways.

This course is designed to:

- Increase participants' **knowledge** of the development of children's early logic and reasoning and mathematical and scientific thinking and their relationship to important instructional practices;
- Provide opportunities for participants to **see** teacher-child interactions and specific instructional strategies that elicit children's logic and reasoning, mathematical, and scientific knowledge and skills;
- Implement strategies that support and elicit participants' logic and reasoning, mathematical, and scientific knowledge and skills, taking advantage of informal and formal opportunities to engage in instruction; and
- Support **reflection** by inviting participants to analyze and assess their classroom strategies related to logic and reasoning, mathematics, and science and then plan for improvement.

Objectives

Participants will be able to:

1. Describe the development of children's cognition, mathematics, and scientific reasoning skills and use teacher strategies to support them.
2. Identify strategies to support children's cognition, mathematics, and scientific reasoning skills in videos of early childhood classrooms
3. Practice enacting and exhibiting effective strategies to support young children's cognition, mathematics, and scientific reasoning skills.
4. Use culturally relevant teaching strategies by applying sociocultural knowledge of differences in the development of and dispositions toward cognition, mathematical, and scientific reasoning skills and approaches to learning.
5. Demonstrate appropriate use of ongoing child observation and assessment to guide teaching and facilitate children's development and learning.
6. Identify, evaluate, and create learning environments that support children's cognition, mathematics, and scientific reasoning development.

Grading

Participation/Professionalism	20%
In-Class Activities	30%
Weekly Assignments	50%

Expectations

Participation/Professionalism (20%: Grading per Instructor)

You are expected to come to class prepared to discuss any assigned readings and to actively engage during classroom activities and discussions.


In-Class Activities (30%: Grading complete/incomplete)

In-class activities may consist of, but are not limited to, discussions, observations, idea-sharing and generation, and planning exercises. Some class activities are designed as quick checks of your understanding, engagement, and application of course information. Other class activities require you to work in pairs or small groups, and present findings to the rest of the class. You are expected to participate in all in-class activities.

Weekly Assignments (50% total: Grading per assignment rubrics)

Weekly assignments provide practitioner-focused time to make meaning from course readings, videos, and eLearning activities. Assignments vary and may include reflection, action logs, and practice using skills in your daily life.

- **Applied Assignments:** In this course, you will complete assignments that are very practitioner-oriented. These help you build your portfolio of resources for your work as an educator.



Examples include action plans, preparing cue cards and other materials, creating schedules and routines, and activity matrices. These assignments help bridge theory to practice.

- Video and Communities of Reflection and Practice (CORP) Assignments: In this course, you will video record yourself working with children. You will then share your videos in Communities of Reflection and Practice (CORP) where your peers and instructors will provide support and feedback to help you improve your practice. Your participation in this group is meant to help you form personal connections with one another, facilitate high-level collaboration, and improve your ability to provide coach quality feedback to yourself and peers.

Note on Filming

As noted above, in some assignments participants will be asked to film classroom interactions, review video footage, and edit several small clips for the instructor and peers to view. Instructors will include guidance for this process by providing training and a detailed guide on filming and editing video clips for use with the EarlyEdU Coaching Companion.

Time Estimations

(Note: Institutions will need to update this section as required. Initial text is provided; institutions will need to provide all of their own details here).

The estimated time commitment for each session is 5-8 hours. This estimates that you will spend a total of 3 hours working "in class" (instructor to provide specifics on their class schedule) and an additional 2-5 hours of readings and assignments out of class. These are estimations. Some sessions may include assignments that require more than 5 hours out of class (e.g., completing the planning, video, reflecting, and feedback cycles) while others may take less. Additionally, some participants may complete assignments more quickly than others. Some participants may review readings and videos multiple times and spend more time on their assignments. There is no exact time designation; you are encouraged to communicate with your instructor for any questions on due dates, extensions, and workload.

Accommodations

(Note: Institutions will need to update this section as required. Initial text is provided; institutions will need to provide all of their own details here).

Your experience in this class is important to us, and it is the policy and practice of the _____ to create inclusive and accessible learning environments consistent with federal and state law. If you experience barriers based on disability, please seek a meeting with _____ to discuss and address them. If you have already established accommodations with _____, please communicate your approved accommodations to your instructor at your earliest convenience so we can discuss your needs in this course.

Course Schedule

Session	Topic	Readings and Assignments
1	<p>Course Introduction, Reasoning, and Problem-Solving</p> <p>Introductions, Objectives, and Course Overview</p> <p>Overview: Cognition, Math, and Science</p> <p>Cognition: Reasoning and Problem-Solving</p> <p>Strategies to Foster Reasoning and Problem-Solving</p>	<p>Readings</p> <p>U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start (HHS/ACF/OHS). (2015). <i>Getting started with the Head Start Early Learning Outcomes Framework</i>. http://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/getting-started.pdf</p> <p>HHS/ACF/OHS. (2015). <i>Head Start Early Learning Outcomes Framework</i>, 50-56. http://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf</p> <p>Medin, D. & Bang, M. (2013). Culture in the classroom. <i>Phi Delta Kappan</i>, 95(4), 64-67. http://pdk.sagepub.com/content/95/4/64</p> <p>Note: This article is available online only at institutions with a license for the journal database.</p> <p>Thompson, R. A. (2009). Doing what <i>doesn't</i> come naturally: The development of self-regulation. <i>Zero to Three</i>, 30(2), 33-39.</p> <p>Note: You will need to locate this article.</p> <p>Dweck, C. (2014, November). The power of believing that you can improve. <i>TED Talks</i>. http://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve?language=en</p> <p>Pink, D. (2010, April). Drive: The surprising truth about what motivates us. <i>RSA Animate</i>. https://www.thersa.org/discover/videos/rsa-animate/2010/04/rsa-animate---drive/</p> <p>Assignments</p> <p><i>CGK S1 Assignment Self-Introductions Video</i></p> <p><i>CGK S1 Assignment Annotate a Lesson Plan</i></p>

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Session	Topic	Readings and Assignments
2	<p>Symbolic Representation</p> <p>Overview: Symbolic Representation</p> <p>Strategies to Foster Symbolic Representation</p>	<p>Readings</p> <p>Epstein, A. (2003). How planning and reflection develop young children’s thinking skills. <i>Young Children</i>, 58(5), 28–36. https://www.naeyc.org/files/yc/file/200309/Planning&Reflection.pdf</p> <p>Gopnik, A. (2011, July). What do babies think? <i>TED Talks</i>. http://www.ted.com/talks/alison_gopnik_what_do_babies_think?language=en#t-534650</p> <p>Swartz, M. (2005). Playdough: What’s standard about it? <i>Young Children</i>, 60(2), 100–109. https://www.naeyc.org/files/tyc/file/TYC_V3N3_Swartz.pdf</p> <p>Visual Thinking Strategies (2008, August 18). <i>Visual Thinking Strategies</i>. https://www.youtube.com/watch?v=aVzcknOWpaE</p> <p>Focus on these segments</p> <ul style="list-style-type: none"> • 0:00 - 1:18 min – example of VTS use of 3 questions • 1:18 - 2:10 – Philip Yenawine and identifying purpose • 2:11 - 3:10 – examples of children thinking and wondering and statement (re: need for critical thinking skills) <p>DeLoache, J. (2010, May). Mind in the making – life skills for kids – making connections. <i>Daily Motion</i>. http://www.dailymotion.com/video/xdaneq_mind-in-the-making-life-skills-for_people</p> <p>Assignments</p> <p><i>CGK S2 Assignment Reflection</i></p> <p><i>CGK S2 Assignment Math Baseline Video and Reflection</i></p>



<p>3</p>	<p>Introduction to Mathematics</p> <p>Overview: Early Mathematics</p> <p>Numbers and Operations</p> <p>Geometry and Spatial Sense</p> <p>Measurement</p> <p>Patterns</p>	<p>Readings</p> <p>Brenneman, K., Stevenson-Boyd, J. S., & Frede, E. (2009). Math and science in preschool: Policies and practice. <i>Preschool Policy Matters</i>, 19, 1–11. New Brunswick, NJ: National Institute for Early Education Research. Available at http://www.nieer.org/resources/policybriefs/20.pdf</p> <p>National Governors Association Center for Best Practices, Council of Chief State School Officers. (2010). Kindergarten: Introduction. In <i>Common Core State Standards for mathematics</i>. Washington, DC: National Governors Association Center for Best Practices, Council of Chief State School Officers. http://www.corestandards.org/Math/Content/K/introduction/</p> <p>Schwerdtfeger, J. K. & Chan, A. (2007). Counting Collections. <i>Teaching Children Mathematics</i>, 13(7), 356-361. http://www.jstor.org/stable/41198966?origin=JSTOR-pdf&seq=1#page_scan_tab_contents Note: This article is available online at institutions with a license for the JSTOR database, or by creating a JSTOR account, which allows limited access to content.</p> <p>HHS/ACF/OHS videos.</p> <ul style="list-style-type: none">• (2007). Number and operations (Webcast). https://eclkc.ohs.acf.hhs.gov/hslc/tta-system/teaching/eecd/Domains of Child Development/Mathematics/NumbersandOpera.htm• (2008). Geometry and spatial sense (Webcast no. 3): Baby and ball lesson. https://eclkc.ohs.acf.hhs.gov/hslc/tta-system/teaching/eecd/Domains of Child Development/Mathematics/GeometryandSpat.htm• (2008). Measurement (Webcast no. 4): Balloon rocket lesson. http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/teaching/eecd/Domains%20of%20Child%20Development/Mathematics/Balloon Rocket.htm• (2008). Patterns (Webcast no. 5): Patterns songs lesson. http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/teaching/eecd/Domains%20of%20Child%20Development/Mathematics/Pattern Songs.htm <p>Assignments</p> <p><i>CGK S3 Assignment Math Activity Plan</i> <i>CGK S3 Assignment Math Activity Plan Video</i> <i>CGK S3 Assignment Math Activity Plan CORP</i></p>
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Session	Topic	Readings and Assignments
4	<p>Mathematics: Number and Operations</p> <p>Transition: Number and Operations</p> <p>Number Concepts and Quantities</p> <p>Number Relationships and Operations</p> <p>Big Ideas in Mathematics: Attributes, Quantity and Counting</p> <p>Review Activity: <i>How Do Children Learn Number Skills in the Context of Family and School?</i></p>	<p>Readings</p> <p>Anderson, Diane Downer, & Gold, Eva (2006). Home to school: Numeracy practices and mathematical identities.</p> <p>Schwerdtfeger, J. K., & Chan, A. (2007). Counting Collections. <i>Teaching Children Mathematics</i>, 13, 356–361.</p> <p>Cognitive Foundations for Early Mathematics Learning, Geometry and Measurement Sections (pp. 71–94). In <i>Mathematics Learning in Early Childhood</i>. (2009)</p> <p>McCray, J. (2013, February 18). Myths of early mathematics (Part 2). <i>Erickson Early Math Collaborative</i>. http://earlymath.erikson.edu/myths-of-early-mathematics-part-2/</p> <p>Using number paths with Child 2. (2013, February 10). <i>Erickson Early Math Collaborative</i>. http://earlymath.erikson.edu/using-number-paths-with-child-2/</p> <p>Organizing Bears with Child 15. (2013, April 5). <i>Erickson Early Math Collaborative</i>. http://earlymath.erikson.edu/organizing-bears-with-child-15-maths-primary-school/</p> <p>Estimating quantity with Child 9. (2014, April 3). <i>Erickson Early Math Collaborative</i>. http://earlymath.erikson.edu/estimating-quantity-with-child-9-practical-math-skill-and-comprehension/</p> <p>Assignments</p> <p><i>CGK S4 Assignment Math Interaction Planning Form</i></p>



Session	Topic	Readings and Assignments
5	<p>Mathematics, Geometry and Spatial Sense, and Measurement</p> <p>Geometry and Spatial Sense</p> <p>Measurement and Comparison</p> <p>Big Ideas in Mathematics: Measurement and Shapes</p> <p>Learning Activity: Article Review</p>	<p>Readings</p> <p>Clements, D., & Sarama, J. (2009). Cognition Affect, and Equity. 222–230. https://books.google.com/books?id=1I0hAwwAAQBAJ&lpg=PA253&ots=r34PGni0JK&dq=%22Cognition%20Affect%20and%20Equity%22%20Clements&pg=PA253#v=onepage&q=%22Cognition%20Affect%20and%20Equity%22%20Clements&f=false</p> <p>Clements, D.H. & Sarama, J. (2000). Young children's ideas about geometric shapes. <i>Teaching Children Mathematics</i>, 6(8), 482-488. http://www.jstor.org/stable/41197461?seq=1#page_scan_tab_contents</p> <p>Note: This article is available online at institutions with a license for the JSTOR database, or by creating a JSTOR account, which allows limited access to content.</p> <p>Sorting geo solids with Child 5. (2013, July 30). <i>Erickson Early Math Collaborative</i>. http://earlymath.erikson.edu/sorting-geo-solids-with-child-5/</p> <p>Davidson Films (producer). Building Mathematical Competencies in Early Childhood. (2012, August 20). http://www.youtube.com/watch?v=BMoF-hiH3J8</p> <p>Casey, B., Erkut, S., Ceder, I., & Young, J. M. (2008b). Use of a storytelling context to improve girls' and boys' geometry skills in kindergarten. <i>Journal of Applied Developmental Psychology</i>, 29(1), 29-48. http://www.sciencedirect.com/science/article/pii/S0193397307001256</p> <p>Assignments</p> <p><i>CGK S5 Assignment Math Interaction Plan Video</i> <i>CGK S5 Assignment Math Interaction Plan CORP</i></p>

Session	Topic	Readings and Assignments
6	Mathematizing and “Talk Moves” Mathematizing Talk Moves	<p>Readings</p> <p>McNeil, T. BU’s Project Challenge has ‘exponential’ promise. Part two: Equation + discussion = opportunity. (2007, April 27). Republished from <i>Bostonia</i> (2007, Spring). http://www.bu.edu/today/2007/bu%E2%80%99s-project-challenge-has-%E2%80%98exponential%E2%80%99-promise-2/</p> <p>Casey, B., Erkut, S., Ceder, I., & Young, J. M. (2008b). Use of a storytelling context to improve girls’ and boys’ geometry skills in kindergarten. <i>Journal of Applied Developmental Psychology</i>, 29(1), 29-48. http://www.sciencedirect.com/science/article/pii/S0193397307001256 Note: This article is available online only at institutions with a license for the journal database.</p> <p>Anderson, D. D. & Gold, E. (2006). Home to school: Numeracy practices and mathematical identities. <i>Mathematical Thinking and Learning</i>, 8(3), 261-286. http://www.tandfonline.com/doi/pdf/10.1207/s15327833mtl0803_4 Note: This article is available online only at institutions with a license for the journal database.</p> <p>Kazemi, E. Talk Moves. In <i>Teaching 4- to 8-year-olds: Literacy, math, multiculturalism, and classroom community</i>. Howes (Ed.) 2003.</p> <p>Assignments</p> <p><i>CGK S6 Assignment Using Talk Moves</i></p>

Session	Topic	Readings and Assignments
7	<p>Play and Interactions that Support Math Learning</p> <p>Meaningful Early Math Instruction</p> <p>Games in Early Math Instruction</p> <p>Block Building in Early Math Instruction</p> <p>Learning Activity: Make and Play Games at Math Stations</p>	<p>Readings</p> <p>Clements, D.H., & Sarama, J. (2005). MATH PLAY. (Cover Story). <i>Early Childhood Today</i>, 19(4), 50–57.</p> <p>Siegler, R.S., & Ramani, G.B. (2008). Playing linear numerical board games promotes low-income children’s numerical development. <i>Developmental Science</i>, 11, pp. 655–661. http://onlinelibrary.wiley.com/doi/10.1111/j.1467-7687.2008.00714.x/full Note: This article is available online only at institutions with a license for the journal database.</p> <p>Assignments</p> <p><i>CGK S7 Assignment Math Game Play Video</i></p> <p><i>CGK S7 Assignment Math Game Play CORP</i></p>

Session	Topic	Readings and Assignments
8	<p>Mathematics Observation and Assessment</p> <p>Formative and Summative Assessments</p> <p>Three Approaches to Formative Assessment</p> <p>Learning Stories</p> <p>Assessment Tools</p>	<p>Readings</p> <p>Weiland, C., Wolfe, C., Hurwitz, M., Clements, D., Sarama, J., & Yoshikawa, H. (2012). Early mathematics assessment: validation of the short form of a prekindergarten and kindergarten mathematics measure. <i>Educational Psychology</i>, 32(3), 311–333. http://www.tandfonline.com/doi/pdf/10.1080/01443410.2011.654190?needAccess=true</p> <p>Ginsburg, H.P. & Seo, K. (2000). Preschooler’s mathematical reading. <i>Teaching Children Mathematics</i>, 7, 226-229.</p> <p>Komara, C. & Herron, J. (2012) Implementing formative mathematics assessments in prekindergarten. <i>Childhood Education</i>, 88(3), 162-168. http://www.tandfonline.com/doi/abs/10.1080/00094056.2012.682548 Note: This article is available only at institutions with a license for the journal database.</p> <p>Carter, M. (2010). Using “Learning Stories” to strengthen teachers’ relationships with children. Republished from <i>Exchange</i> 196, 40-43. http://www.ecetrainers.com/sites/default/files/Using%20Learning%20Stories%20to%20Strengthen%20Teacher%20Relationships.pdf</p> <p>Drummond, T. (2015) Learning Story Examples. Posted to tomdrummond.com. http://tomdrummond.com/learning-stories/</p> <p>Assignments</p> <p><i>CGK S8 Assignment Choose and Try Assessment Strategy Video</i></p> <p><i>CGK S8 Assignment Choose and Try Assessment Strategy CORP</i></p>

Session	Topic	Readings and Assignments
9	<p>Planning for Mathematics Throughout the Day</p> <p>Writing Learning Objectives for Young Children</p> <p>Using an Activity Matrix</p> <p>Making an Activity Matrix Your Own</p> <p>Implementing an Activity Matrix</p>	<p>Readings</p> <p>Casey, B., Erkut, S., Ceder, I., & Young, J. M. (2008b). Use of a storytelling context to improve girls' and boys' geometry skills in kindergarten. <i>Journal of Applied Developmental Psychology</i>, 29(1), 29–48. http://www.sciencedirect.com/science/article/pii/S0193397307001256 Note: This article is available only at institutions with a license for the journal database.</p> <p>Assignments</p> <p><i>CGK S9 Assignment Build a Math Activity Matrix</i> <i>CGK S9 Assignment Providing the Right Materials</i></p>
10	<p>Reflections and Connections for Mathematics</p> <p>Learning Activity: Video Observations and Reflections</p> <p>Learning Activity: Share Math Activity Matrix</p> <p>Connections Between Math and Other Learning Domains</p> <p>Discussion: Growth and Next Steps</p>	<p>Readings</p> <p>Schwartz, T. & McCarthy, M. (2007). <i>Manage your energy, not your time.</i> https://hbr.org/2007/10/manage-your-energy-not-your-time</p> <p>Assignments</p> <p><i>CGK S10 Assignment Math Baseline Video Reflection</i></p>

Session	Topic	Readings and Assignments
11	<p>Introduction to Science</p> <p>Overview: Science</p> <p>Why Do We Need to Start Science Early?</p> <p>Video Observations and Discussion</p> <p>Science Learning in the Preschool Classroom</p>	<p>Readings</p> <p>Brenneman, K., Stevenson-Boyd, J. S., & Frede, E. (2009). Math and science in preschool: Policies and practice.</p> <p>Greenfield, D. B., Jirout, J., Domínguez, X., Greenberg, A., Maier, M. F., & Fuccillo, J. M. (2009). Science in the preschool classroom: A programmatic research agenda to improve science readiness. <i>Early Education and Development</i>, 20, 238–264. http://www.tandfonline.com/doi/pdf/10.1080/10409280802595441?needAccess=true</p> <p>Note: This article is available only at institutions with a license for the journal database.</p> <p>Grissmer, D., Grimm, K. J., Aiyer, S. M., Murrah, W. M., & Steele, J. S. (2010). Fine motor skills and early comprehension of the world: Two new school readiness indicators. <i>Developmental Psychology</i>, 46(5), 1008. http://edre.uark.edu/resources/pdf/article-2010-dev-psych.pdf</p> <p>HHS/ACF/OHS. (2015). <i>Head Start Early Learning Outcomes Framework</i>, 62-65. http://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf</p> <p>Brenneman, K., Stevenson-Boyd, J. S., & Frede, E. (2009). Math and science in preschool: Policies and practice. <i>Preschool Policy Brief</i> 19. http://nieer.org/resources/policybriefs/20.pdf</p> <p>Galizio, C., Stoll, J., & Hutchins, P. (2009). Exploring the possibilities for learning in natural spaces. <i>Young Children</i>, 64(4), 42-48. http://outdoor.tyngsboroughma.net/wp-content/uploads/2010/06/YCStoll.pdf</p> <p>Medin, D., & Bang, M. (2013). Culture in the classroom. <i>Phi Delta Kappan</i>, 95(4), 64-67. http://pdk.sagepub.com/content/95/4/64 Note: This article is available online only at institutions with a license for the journal database.</p> <p>Assignments</p> <p><i>CGK S11 Assignment Science Baseline Video and Reflection</i></p>

Session	Topic	Readings and Assignments
12	<p>Science Skills and Practices</p> <p>Observing and Describing</p> <p>Comparing / Contrasting and Sorting</p> <p>Making Predictions and Experimenting</p> <p>Document Observations and Record Data</p>	<p>Readings</p> <p>Hamlin, M., & Wisneski, D. B. (2012). Supporting the scientific thinking and inquiry of toddlers and preschoolers through play. <i>Young Children</i>, 67(3), 82-88. http://www.naeyc.org/yc/files/yc/file/201205/Hamlin_YC0512.pdf</p> <p>Patrick, H., Mantzicopoulos, P., & Samarapungavan, A. (2009). Reading, writing, and conducting inquiry about science in kindergarten. <i>Young Children</i>, 64(6), 32. http://www.researchgate.net/publication/257981023_Reading_writing_and_conducting_inquiry_about_science_in_kindergarten</p> <p>Cagla, G. (2011). Physics in preschool. <i>International Journal of Physical Sciences</i>, 6(4), 939-943. http://www.academicjournals.org/article/article1380804267_Gur.pdf</p> <p>Ashbrook, P. (2011). Recording data with young children. <i>Science and Children</i>, 48(5), 22-23. http://static.nsta.org/files/sc1105_22.pdf</p> <p>Assignments</p> <p><i>CGK S12 Assignment Science Activity Plan</i> <i>CGK S12 Assignment Science Activity Plan Video</i> <i>CGK S12 Assignment Science Activity Plan CORP</i></p>

Session	Topic	Readings and Assignments
13	Science Content Domains and Big Ideas Science Content Domains Life Science Physical Science Earth and Space Science Big Ideas Web	Readings Conezio, K., & French, L. (2002). Science in the preschool classroom: Capitalizing on children's fascination with the everyday world to foster language and literacy development. <i>Young Children</i> , 57(5), 12–18. https://www.naeyc.org/files/yc/file/200209/ScienceInThePreschoolClassroom.pdf Zan, B., & Geiken, R. (2010). Ramps and pathways: Developmentally appropriate, intellectually rigorous and fun physical science. <i>Young Children</i> , 65(1), 12-17. https://www.naeyc.org/files/naeyc/Ramps_Pathways.pdf Assignments <i>CGK S13 Assignment Revised Science Activity Plan Video</i> <i>CGK S13 Assignment Revised Science Activity Plan CORP</i>



<p>14</p>	<p>Instructional Environment and Practices</p> <p>Science Resources and Tools</p> <p>Types of Tools</p> <p>Science Talk</p> <p>Planning Science Activities</p>	<p>Readings</p> <p>Trundle, K., Miller, H., & Krissek, L. (2013). Digging into rocks with young children. <i>Science and Children</i>, 48(2), 46-51. http://www.researchgate.net/profile/Kathy_Trundle/publication/258287547_Digging_into_rocks_with_young_children/links/0f31753a1f1b0d13f9000000.pdf</p> <p>Dominguez, L., McDonald, J., Kalajian, K., & Stafford, K. (2013). Exploring the wild world of wiggly worms. <i>Science and Children</i>, 51(4), 44-49. http://search.proquest.com/docview/1467533306?pq-origsite=gscholar Note: This article is available online only at institutions with a license for the journal database.</p> <p>Hoisington, C., Chalufour, I., Winokur, J., & Clark-Chiarelli, N. (2014). Promoting children’s science inquiry and learning through water investigations. <i>Young Children</i>, 69(4), 72–79. http://www.naeyc.org/yc/files/yc/file/201409/YC0914_Promoting_Science_Inquiry_Hoisington.pdf</p> <p>Jones, J., & Courtney, R. (2008). Documenting early science learning. Republished from J. Coffey, R. Douglas, & C. Stearns (Eds.), <i>Assessing Science Learning: Perspectives from Research and Practice</i>, 73-81. Arlington, VA: NSTA Press, 2008. http://ww2.valdosta.edu/~troot/eced4300/Science.pdf</p> <p>Sackes M., Trundle K., & Flevares L. (2009) Using Children’s Books to Teach Inquiry Skills. <i>Young Children</i>, 24–26.</p> <p>Hoisington C., Sableski, N. & DeCosta, I. (2010) A Walk in the Woods: A partnership with an arboretum gets preschoolers outside—and into science. <i>Science and Children</i>, 48, 27–31 https://www.researchgate.net/publication/303564256_A_Walk_in_the_woods_a_partnership_with_an_arboretum_gets_preschoolers_outside_and_into_science Note: This article is available online only at institutions with a license for the journal database.</p> <p>Zan, B., & Geiken, R. (2010). Ramps and Pathways: Developmentally appropriate, intellectually rigorous and fun physical science. <i>Young Children</i>, 12–17.</p>
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Session	Topic	Readings and Assignments
		<p>Assignments</p> <p><i>CGK S14 Assignment Revised Science Activity Plan Video</i></p> <p><i>CGK S14 Assignment Revised Science Activity Plan CORP</i></p>

Session	Topic	Readings and Assignments
15	Connections Between Science and Other Readiness Domains Recording and Analyzing Data Science and Engagement Science and Literacy	Readings None for this session. Assignments <i>CGK S15 Assignment Science Baseline Video Reflection</i>