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| **DELAWARE EARLY CHILDHOOD RESOURCE TOOLKIT** |
| **Math and Science** |
| **Evidence Sources** | The Changing Face of the United States: The Influence of Culture on Early Child Development[**http://main.zerotothree.org/site/DocServer/Culture\_book.pdf?docID=6921**](http://main.zerotothree.org/site/DocServer/Culture_book.pdf?docID=6921)Delaware Core Knowledge and Competencies for Early Childhood Professionals (Environment & Curriculum)[**http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early\_childhood\_professionals/EC\_CompetenciesECEProf.pdf**](http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early_childhood_professionals/EC_CompetenciesECEProf.pdf)Delaware Early Learning Foundations: Infant/Toddler (Discoveries)[**http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early\_childhood\_professionals/elfinfanttoddler9-10.pdf**](http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early_childhood_professionals/elfinfanttoddler9-10.pdf)Delaware Early Learning Foundations: Infant/Toddler in Spanish (Descubrimientos)[**http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early\_childhood\_professionals/Infant%20Toddler%20Spanish%20ELF.pdf**](http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early_childhood_professionals/Infant%20Toddler%20Spanish%20ELF.pdf)Delaware Early Learning Foundations: Preschool (Mathematics, Science)[**http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early\_childhood\_professionals/elfpreschool9-10.pdf**](http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early_childhood_professionals/elfpreschool9-10.pdf)Delaware Early Learning Foundations: Preschool in Spanish (Matemática, Ciencias)[**http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early\_childhood\_professionals/Pre-School%20Spanish%20ELF.pdf**](http://www.dieec.udel.edu/sites/dieec.udel.edu/files/pdfs/early_childhood_professionals/Pre-School%20Spanish%20ELF.pdf)Early Childhood Mathematics: Promoting Good Beginnings, a Joint Position Statement of NAEYC and the National Council of Teachers of Mathematics [**http://www.naeyc.org/files/naeyc/file/positions/psmath.pdf**](http://www.naeyc.org/files/naeyc/file/positions/psmath.pdf)Highlighting the Positive Development of Minority Children [**http://www.srcd.org/sites/default/files/documents/washington/spr\_brief\_minority\_children\_2013\_10\_11.pdf**](http://www.srcd.org/sites/default/files/documents/washington/spr_brief_minority_children_2013_10_11.pdf)The Impact of Family Involvement on the Education of Children Ages 3 to 8: A Focus on Literacy and Math Achievement Outcomes and Social-Emotional Skills [**http://www.mdrc.org/publication/impact-family-involvement-education-children-ages-3-8**](http://www.mdrc.org/publication/impact-family-involvement-education-children-ages-3-8)Math and Science in Preschool: Policies and Practice [**http://nieer.org/resources/policybriefs/20.pdf**](http://nieer.org/resources/policybriefs/20.pdf)Math in the Early Years [**http://www.ecs.org/clearinghouse/01/09/46/10946.pdf**](http://www.ecs.org/clearinghouse/01/09/46/10946.pdf)National Association for the Education of Young Children. (NAEYC) Position on Developmentally Appropriate Practice [**http://www.naeyc.org/files/naeyc/file/positions/PSDAP.pdf**](http://www.naeyc.org/files/naeyc/file/positions/PSDAP.pdf)National Council of Teachers of Mathematics. Curriculum Focal Points for Prekindergarten Through Grade 8 Mathematics [**http://www.nctm.org/standards/content.aspx?id=270**](http://www.nctm.org/standards/content.aspx?id=270)National Council of Teachers of Mathematics. Principles and Standards for School Mathematics [**http://www.nctm.org/standards/content.aspx?id=16909**](http://www.nctm.org/standards/content.aspx?id=16909)National Research Council. National Science Education Standards [**http://www.nap.edu/readingroom/books/nses/**](http://www.nap.edu/readingroom/books/nses/)National Science Teachers Association Position Statement on Early Childhood Science Education[**http://www.nsta.org/about/positions/earlychildhood.aspx**](http://www.nsta.org/about/positions/earlychildhood.aspx)What Works Clearinghouse Practice Guide: Teaching Math to Young Children[**http://ies.ed.gov/ncee/wwc/practiceguide.aspx?sid=18**](http://ies.ed.gov/ncee/wwc/practiceguide.aspx?sid=18)  |

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| **DELAWARE EARLY CHILDHOOD RESOURCE TOOLKIT** |
| **Math and Science** |
| **Books** | Almarode, J., & Miller, A. M. (2013). *Captivate, activate, and invigorate the student brain in science and math grades 6-12*. Thousand Oaks, CA: Corwin.Chaille, C. & Britain, L. (2002). *The Young Child as Scientist*. Boston: Pearson.Chalufour, I., & Worth, K. (2004). *Building structures with young children*. St. Paul, MN: Redleaf Press.Charlesworth, R., & Lind, K. K. (2010). *Math and science for young children*, 7th ed. Independence, KY: Cengage.Copley, J. V. (2010). *The young child and mathematics*, 2nd ed. Washington, DC: NAEYC.Copple, C. (2012). *Growing minds: Building strong cognitive foundations in early childhood*. Washington, DC: NAEYC.Copple, C., & Bredekamp, S. (Eds.) (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: NAEYC.Cross, C., Woods, T., & Schweingruber, H. (2009). *Mathematics learning in early childhood: Paths toward excellence and equity*. Washington, DC: National Research Council.DeVries, R., & Sales, C. (2011). *Ramps and pathways: A constructivist approach to physics with young children*. Washington, DC: NAEYC.The Early Math Collaborative. (2013). *Big ideas of early mathematics: What teachers of young children need to know*. Boston: Pearson.Gelman, R., Brenneman, K., MacDonald, G., & Román, M. (2010). *Preschool pathways to science: Facilitating ways of thinking, talking, doing, and understanding*. Baltimore: Brookes.Harlen, W. (2001). *Primary science: Taking the plunge*, 2nd ed. Portsmouth, NH: Heinemann.Kilpatrick, J., Swafford, J., & Findell, B (Eds). (2001). *Adding it up: Helping children learn mathematics*. Washington, D. C.: National Research Council.Martin, R., Sexton, C., & Franklin, T. (2009). *Teaching science for all children: An inquiry approach*, 5th ed. Boston: Pearson. Shilladay, A. (Ed.). (2012). *Exploring math*. Washington, DC: NAEYC.Small, M. (2009). *Good questions: Great ways to differentiate mathematics instruction*. New York: Teachers College Press.Tucker, B. F., Singleton A. H., & Weaver, T. L. (2005). *Teaching mathematics to all children: Designing and adapting instruction to meet the needs of diverse learners*. Upper Saddle River, NJ: Merrill Prentice Hall.Williams, B., Cunningham, D., & Lubawy, J. (2005). *Preschool math.* Beltsville, MD: Gryphon House. |
| **DELAWARE EARLY CHILDHOOD RESOURCE TOOLKIT** |
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| **Articles** | Beyond Helping with Homework: Parents and Children Doing Mathematics at Home [**http://elem-math.wiki.educ.msu.edu/file/view/Kliman\_TCM99.pdf**](http://elem-math.wiki.educ.msu.edu/file/view/Kliman_TCM99.pdf)Books + Manipulatives + Families = A Mathematics Lending Library [**http://www.pricelabhistory.org/docs/default-source/diane-mccarty/books-manipulatives-families-=-a-mathematics-lending-library.pdf**](http://www.pricelabhistory.org/docs/default-source/diane-mccarty/books-manipulatives-families-%3D-a-mathematics-lending-library.pdf)Calendar Math in Preschool and Primary Classrooms: Questioning the Curriculum [**https://home.comcast.net/~leighanne.kraemer/graduateportfolio/calendarmath.pdf**](https://home.comcast.net/~leighanne.kraemer/graduateportfolio/calendarmath.pdf)Childhood in the Garden: A Place to Encounter Natural and Social Diversity [**http://www.naeyc.org/files/yc/file/200801/BTJNatureNimmo.pdf**](http://www.naeyc.org/files/yc/file/200801/BTJNatureNimmo.pdf)Early Childhood Teachers’ Misconceptions About Mathematics Education for Young Children in the United States [**http://www.earlychildhoodaustralia.org.au/australian\_journal\_of\_early\_childhood/ajec\_index\_abstracts/early\_childhood\_teachers\_misconceptions\_about\_mathematics\_education\_for\_young\_children\_in\_the\_united\_states.html**](http://www.earlychildhoodaustralia.org.au/australian_journal_of_early_childhood/ajec_index_abstracts/early_childhood_teachers_misconceptions_about_mathematics_education_for_young_children_in_the_united_states.html)Help! They Still Don’t Understand Counting [**http://journals.cec.sped.org/cgi/viewcontent.cgi?article=1702&context=tecplus**](http://journals.cec.sped.org/cgi/viewcontent.cgi?article=1702&context=tecplus)Implementing Portfolio Assessment [**http://lase2.wikispaces.com/file/view/implementing+portfolio+assessment.pdf**](http://lase2.wikispaces.com/file/view/implementing%2Bportfolio%2Bassessment.pdf)Infants and Toddlers Meet the Natural World [**http://www.naeyc.org/files/yc/file/200801/BTJNatureMcHenry.pdf**](http://www.naeyc.org/files/yc/file/200801/BTJNatureMcHenry.pdf)Investigating Rocks and Sand: Addressing Multiple Learning Styles Through an Inquiry Based Approach [**http://www.naeyc.org/files/yc/file/200903/BTJSchmidt\_Ogu\_Expanded.pdf**](http://www.naeyc.org/files/yc/file/200903/BTJSchmidt_Ogu_Expanded.pdf)More, All Gone, Empty, Full: Math Talk Every Day in Every Way [**http://www.naeyc.org/yc/files/yc/file/201205/RockingAndRolling\_YC0512.pdf**](http://www.naeyc.org/yc/files/yc/file/201205/RockingAndRolling_YC0512.pdf)Science at the Center of the Integrated Curriculum: 10 Benefits Noted by Head Start Teachers[**http://www.naeyc.org/files/yc/file/200209/ScienceAtTheCenterOfTheIntegratedClassroom.pdf**](http://www.naeyc.org/files/yc/file/200209/ScienceAtTheCenterOfTheIntegratedClassroom.pdf)Science Concepts Young Children Learn Through Water Play [**http://www.southernearlychildhood.org/upload/pdf/Science\_Concepts\_Young\_Children\_Learn\_Through\_Water\_Play\_Carol\_M\_Gross.pdf**](http://www.southernearlychildhood.org/upload/pdf/Science_Concepts_Young_Children_Learn_Through_Water_Play_Carol_M_Gross.pdf)Science Education Through Gardening and Nature-Based Play [**http://www.naeyc.org/files/yc/file/200911/HacheyWeb1109.pdf**](http://www.naeyc.org/files/yc/file/200911/HacheyWeb1109.pdf)Science in Early Childhood Classrooms: Content and Process [**http://ecrp.uiuc.edu/beyond/seed/worth.html**](http://ecrp.uiuc.edu/beyond/seed/worth.html)Science in the Air [**http://www.naeyc.org/files/yc/file/200911/BosseWeb1109.pdf**](http://www.naeyc.org/files/yc/file/200911/BosseWeb1109.pdf)Science in the Preschool Classroom: Capitalizing on Children’s Fascination with the Everyday World to Foster Language and Literacy Development [**http://www.naeyc.org/files/yc/file/200209/PrinterFriendly\_ScienceInThePreschoolClassroom.pdf**](http://www.naeyc.org/files/yc/file/200209/PrinterFriendly_ScienceInThePreschoolClassroom.pdf)Supporting the Scientific Thinking and Inquiry of Toddlers and Preschoolers Through Play [**http://www.naeyc.org/yc/article/supporting-scientific-thinking-and-inquiry**](http://www.naeyc.org/yc/article/supporting-scientific-thinking-and-inquiry)Young Learners at Natural History Museums[**http://www.southernearlychildhood.org/upload/pdf/Young\_Learners\_at\_Natural\_History\_Museums\_Leah\_M\_Melber\_Vol\_36\_No\_1.pdf**](http://www.southernearlychildhood.org/upload/pdf/Young_Learners_at_Natural_History_Museums_Leah_M_Melber_Vol_36_No_1.pdf) |

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| **Audiovisual Resources** | Curious Minds: Incorporating STEM into Early Childhood Classrooms (webinar) [**http://vimeo.com/16738701**](http://vimeo.com/16738701)Do You Really Need to do it That Early? [**http://www.youtube.com/watch?v=EYaLrPNtD8I**](http://www.youtube.com/watch?v=EYaLrPNtD8I)Double-Column Addition Using Piaget’s Theory [**https://sites.google.com/site/constancekamii/videos**](https://sites.google.com/site/constancekamii/videos)Early Math Collaborative Videos [**http://earlymath.erikson.edu/ideas/#/formats=11**](http://earlymath.erikson.edu/ideas/#/formats=11)Early Mathematics: What’s a Big Idea? (PowerPoint presentation) [**http://www.erikson.edu/wp-content/uploads/NAEYC-2011-Big-Ideas-HynesBerry-Ginet.pdf**](http://www.erikson.edu/wp-content/uploads/NAEYC-2011-Big-Ideas-HynesBerry-Ginet.pdf)Evan and Pharoh at the Water Table [**http://www2.cde.state.co.us/media/resultsmatter/RMSeries/EvanAndPharohAtTheWaterTable.asp**](http://www2.cde.state.co.us/media/resultsmatter/RMSeries/EvanAndPharohAtTheWaterTable.asp)Feel for Shapes [**http://earlymath.erikson.edu/feel-for-shapes/**](http://earlymath.erikson.edu/feel-for-shapes/)Hypothesizing About Bugs [**https://www.teachingchannel.org/videos/pre-k-science-lesson**](https://www.teachingchannel.org/videos/pre-k-science-lesson)Making Play Dough: Mix, Measure, Describe [**https://www.teachingchannel.org/videos/pre-k-math-lesson-measurement**](https://www.teachingchannel.org/videos/pre-k-math-lesson-measurement)Reasoning About Garden Observations [**https://www.teachingchannel.org/videos/pre-k-lesson-observation-skills**](https://www.teachingchannel.org/videos/pre-k-lesson-observation-skills) |
| **Web Resources** | Baby and Toddler Math Milestones [**http://www2.ed.gov/pubs/EarlyMath/activities1.html**](http://www2.ed.gov/pubs/EarlyMath/activities1.html)Books for Young Children About Nature [**http://www.naeyc.org/files/yc/file/200801/BTJRecommendedNatureBooks.pdf**](http://www.naeyc.org/files/yc/file/200801/BTJRecommendedNatureBooks.pdf)Early Childhood Building Blocks: Turning Curiosity into Scientific Inquiry [**http://rec.ohiorc.org/orc\_documents/orc/recv2/briefs/pdf/0008.pdf**](http://rec.ohiorc.org/orc_documents/orc/recv2/briefs/pdf/0008.pdf)Early Math: A Key Topic Resource List [**http://www.childcareresearch.org/childcare/publications/topic.jsp?topic=early%20mathematics&display=Early%20Mathematics**](http://www.childcareresearch.org/childcare/publications/topic.jsp?topic=early%20mathematics&display=Early%20Mathematics)Early Math Collaborative [**http://earlymath.erikson.edu/**](http://earlymath.erikson.edu/)Easy Kid Science Experiments [**http://www.sciencebob.com/experiments/index.php**](http://www.sciencebob.com/experiments/index.php)Familiar Children’s Books Related to Science Topics [**http://www.naeyc.org/files/yc/file/200209/FamiliarChildrensBooks.pdf**](http://www.naeyc.org/files/yc/file/200209/FamiliarChildrensBooks.pdf)First and Second Grade Math Milestones [**http://www.pbs.org/parents/education/math/milestones/first-second-grade/**](http://www.pbs.org/parents/education/math/milestones/first-second-grade/)Helping Your Child Learn Mathematics [**http://www2.ed.gov/parents/academic/help/math/index.html**](http://www2.ed.gov/parents/academic/help/math/index.html)Math Activities for Your Day: Getting Up in the Morning [**http://www2.ed.gov/pubs/EarlyMath/activities1.html**](http://www2.ed.gov/pubs/EarlyMath/activities1.html)Math Concepts in Children’s Books [**http://www2.ed.gov/pubs/EarlyMath/appendix.html**](http://www2.ed.gov/pubs/EarlyMath/appendix.html)Math in the Early Years [**http://www.ecs.org/clearinghouse/01/09/46/10946.pdf**](http://www.ecs.org/clearinghouse/01/09/46/10946.pdf)Math Is Fun Resources [**http://www.mathsisfun.com/links/index.html**](http://www.mathsisfun.com/links/index.html) |

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| **Web Resources** | A Parents’ and Teachers’ Guide to Math Night [**http://orion.math.iastate.edu/mathnight/guide/MathNight.pdf**](http://orion.math.iastate.edu/mathnight/guide/MathNight.pdf)Preschool and Kindergarten Math Milestones [**http://www.pbs.org/parents/education/math/milestones/preschool-kindergarten/**](http://www.pbs.org/parents/education/math/milestones/preschool-kindergarten/)Quick Recipe Science Unit [**http://www.naeyc.org/files/yc/file/200209/QuickRecipeScienceUnit.pdf**](http://www.naeyc.org/files/yc/file/200209/QuickRecipeScienceUnit.pdf)Resources for Science in the Early Years [**http://www.naeyc.org/files/yc/file/200911/ClusterResourcesWeb1109.pdf**](http://www.naeyc.org/files/yc/file/200911/ClusterResourcesWeb1109.pdf)Resources for Teaching and Learning About the Natural World [**http://www.naeyc.org/files/yc/file/200801/BTJNatureResources.pdf**](http://www.naeyc.org/files/yc/file/200801/BTJNatureResources.pdf)Science and Math: Resources from the Educational Equity Center[**http://www.edequity.org/programs/science-and-math-programs/**](http://www.edequity.org/programs/science-and-math-programs/)Science from PBS Parents [**http://www.pbs.org/parents/education/science/**](http://www.pbs.org/parents/education/science/)Teaching Science to Students with Learning Disabilities [**http://www.nsta.org/publications/news/story.aspx?id=51706**](http://www.nsta.org/publications/news/story.aspx?id=51706)Ten Tips to Support Children’s Science Learning[**http://families.naeyc.org/learning-and-development/child-development/10-tips-support-children%E2%80%99s-science-learning**](http://families.naeyc.org/learning-and-development/child-development/10-tips-support-children%E2%80%99s-science-learning)Using Language During Science Activities [**http://www.naeyc.org/files/yc/file/200209/UsingLanguageDuringScienceActivities.pdf**](http://www.naeyc.org/files/yc/file/200209/UsingLanguageDuringScienceActivities.pdf)What is Mathematics? [**http://www2.ed.gov/pubs/EarlyMath/whatis.html**](http://www2.ed.gov/pubs/EarlyMath/whatis.html) |