

## REFERENCES

- Alberta Education. *The Alberta K–9 Mathematics: Program of Studies with Achievement Indicators*. Edmonton, AB: Alberta Education, 2007. Available online at <[http://education.alberta.ca/media/645598/kto9math\\_ind.pdf](http://education.alberta.ca/media/645598/kto9math_ind.pdf)>
- American Association for the Advancement of Science [AAAS-Benchmarks]. *Benchmark for Science Literacy*. New York, NY: Oxford University Press, 1993.
- Anderson, A.G. "Parents as Partners: Supporting Children's Mathematics Learning Prior to School." *Teaching Children Mathematics* 4.6 (February 1998): 331–337.
- Armstrong, Thomas. *Seven Kinds of Smart: Identifying and Developing Your Many Intelligences*. New York, NY: NAL-Dutton, 1993.
- Ashlock, R. "Diagnosing Error Patterns in Computation." *Error Patterns in Computation*. Columbus, OH: Prentice Hall, 1998. 9–42.
- Banks, J.A., and C.A.M. Banks. *Multicultural Education: Issues and Perspectives*. Boston, MA: Allyn and Bacon, 1993.
- Battista, Michael T. *Cognition-Based Assessment and Teaching of Addition and Subtraction: Building on Students' Reasoning*. Portsmouth, NH: Heinemann, 2012.
- Becker, J.P., and S. Shimada. *The Open-Ended Approach: A New Proposal for Teaching Mathematics*. Reston, VA: National Council of Teachers of Mathematics, 1997.
- Ben-Chaim, D., et al. "Adolescents Ability to Communicate Spatial Information: Analyzing and Effecting Students' Performance." *Educational Studies Mathematics* 20.2 (May 1989): 121–146.
- Borasi, R. *Learning Mathematics through Inquiry*. Portsmouth, NH: Heinmann, 1992.
- Borsari, R. *Reconceiving Mathematics Instruction: A Focus on Errors*. Norwood, NJ: Ablex, 1996.
- Bright, George W., Wallece Brewer, Kay McClain, and Edward S. Mooney. *Navigating through Data Analysis in Grades 6–8*. Reston, VA: National Council of Teachers of Mathematics, 2003.
- British Columbia Ministry of Education. *The Primary Program: A Framework for Teaching*, Victoria, BC: British Columbia Ministry of Education, 2000.
- Burke, M.J., and F.R. Curcio. *Learning Mathematics for a New Century* (2000 yearbook). Reston, VA: National Council of Teachers of Mathematics, 2000.
- Burke, M., D. Erickson, J. Lott, and M. Obert. *Navigating through Algebra in Grades 9–12*. Reston, VA: National Council of Teachers of Mathematics, 2001.

- Burns, Marilyn. *About Teaching Mathematics: A K-8 Resource*. 2nd ed. Sausalito, CA: Math Solutions Publications, 2000.
- Buschman, Larry. "Using Student Interviews to Guide Classroom Instruction: An Action Research Project." *Teaching Children Mathematics* (December 2001): 222-227.
- Caine, Renate Numella, and Geoffrey Caine. *Making Connections: Teaching and the Human Brain*. Menlo Park, CA: Addison-Wesley Publishing Company, 1991.
- Chambers, D.L., ed. *Putting Research into Practice in the Elementary Grades*. Reston, VA: National Council of Teachers of Mathematics, 2002.
- Chapin, Suzanne, Alice Koziol, Jennifer MacPherson, and Carol Rezba. *Navigating through Data Analysis and Probability in Grades 3-5*. Reston VA: National Council of Teachers of Mathematics, 2003.
- Charles, Randall, and Joanne Lobato. *Future Basics: Developing Numerical Power, a Monograph of the National Council of Supervisors of Mathematics*. Golden, CO: National Council of Supervisors of Mathematics, 1998.
- Clements, D.H. "Geometric and Spatial Thinking in Young Children." *Mathematics in the Early Years*. Ed. J. Copley. Reston, VA: National Council of Teachers of Mathematics, 1999. 66-79.
- . "Subitizing: What is it? Why teach it?" *Teaching Children Mathematics* (March 1999): 400-405.
- Colan, L., and J. Pegis. *Elementary Mathematics in Canada: Research Summary and Classroom Implications*. Toronto, ON: Pearson Education Canada, 2003.
- Confrey, J. "A Review of the Research on Student Conceptions in Mathematics, Science and Programming." *Review of Research in Education* 16. Ed. C. Cadzen. Washington, DC: American Educational Research Association, 1990. 3-56.
- Cuevas, G., and K. Yeatt. *Navigating through Algebra in Grades 3-5*. Reston VA: National Council of Teachers of Mathematics, 2001.
- Dacey, Linda, Mary Cavanagh, Carol R. Findell, Carole E. Greenes, Linda Jensen Sheffield, and Marion Small. *Navigating through Measurement in Prekindergarten - Grade 2*. Reston, VA: National Council of Teachers of Mathematics, 2003.
- Davis, R.B., and C.M. Maher. "What Do We Do When We 'Do Mathematics'?" *Constructivist Views on the Teaching and Learning of Mathematics*. Reston, VA: The National Council of the Teachers of Mathematics, 1990. 195-210.
- Day, Roger, Paul Kelley, Libby Krussel, Johnny Wilott, and James Hirstein. *Navigating through Geometry in Grades 9-12*. Reston VA: National Council of Teachers of Mathematics, 2002.

- Egan, K. *The Educated Mind: How Cognitive Tools Shape our Understanding*. Chicago, IL: University of Chicago Press, 1997.
- Fennell, F., and T. E. Landis. "Number Sense and Operations Sense." *Windows of Opportunity: Mathematics for Students with Special Needs*. Eds. C. A. Thornton and N. S. Blay. Reston, VA: National Council of Teachers of Mathematics, 1994. 187–203.
- Findell, C., M. Small, M. Cavanagh, L. Dacey, C. Greenes, and L. Sheffield. *Navigating through Geometry in Prekindergarten – Grade 2*. Reston, VA: National Council of Teachers of Mathematics, 2001.
- Friel, S., S. Rachlin, and D. Doyle. *Navigating through Algebra in Grades 6–8*. Reston, VA: National Council of Teachers of Mathematics, 2001.
- Fuys, D., D. Geddes, and R. Tischler. *The van Hiele Model of Thinking in Geometry among Adolescents*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Gattegno, C. *The Common Sense of Teaching Mathematics*. New York, NY: Educational Solutions, 1974.
- Gavin, M., Belkin, A. Spinelli, and J. St. Marie. *Navigating through Geometry in Grades 3–5*. Reston, VA: National Council of Teachers of Mathematics, 2001.
- Gay, S., and M. Thomas. "Just Because They Got It Right, Does it Mean They Know It?" *Assessment in the Mathematics Classroom*. Ed. N.L. Webb. Reston, VA: National Council of Teachers of Mathematics, 1993. 130–134.
- Ginsburg, H.P., L.S. Lopez Choi, R. Netley, and C. Chao-Yuan. "Happy Birthday to You: Early Mathematical Thinking of Asian, South American, and U.S. Children." *Learning and Teaching Mathematics: An International Perspective*. Eds. T. Nunes and P. Bryant. Hove, East Sussex: Psychology Press, 1997. 163–207.
- Greenes, C.M., M. Cavanagh, L. Dacey, C. Findell, and M. Small. *Navigating through Algebra in Prekindergarten – Grade 2*. Reston, VA: National Council of Teachers of Mathematics, 2001.
- Greeno, J. "Number sense as a situated knowing in a conceptual domain." *Journal for Research in Mathematics Education* 22.3 (1991): 170–218.
- Griffin, S. "Teaching Number Sense." *ASCD Educational Leadership* (February 2004): 39–42.
- Haylock, Derek, and Anne Cockburn. *Understanding Mathematics in the Lower Primary Years*. Thousand Oaks, CA: SAGE Publications Inc., 2003.
- Heaton, R.M. *Teaching Mathematics to the New Standards: Relearning the Dance*. New York, NY: Teachers College Press, 2001.

- Hope, Jack A., Larry Leutzinger, Barbara J. Reys, and Robert E. Reys. *Mental Math in the Primary Grades*. New York, NY: Dale Seymour Publications, 1988.
- Hopkins, Ros, ed. *Early Numeracy in the Classroom*. Melbourne, AU: State of Victoria, 2001.
- Howden, H. "Teaching Number Sense." *Arithmetic Teacher* 36.6 (1989): 6–11.
- Howe, R. "Knowing and Teaching Elementary Mathematics." *Journal of Research in Mathematics Education* 30.5 (1999): 556–558.
- Hunting, R.P. "Clinical Interview Methods in Mathematics Education Research and Practice." *Journal of Mathematical Behavior* 16.2 (1997): 145–165.
- Kamii, C. *Multidigit Division – Two Teachers Using Piaget’s Theory*. Colchester, VT: Teachers College Press, 1990.
- Kamii, C., and A. Dominick. "To Teach or Not to Teach Algorithms." *Journal of Mathematical Behavior* 16.1 (1997): 51–61.
- Kelly, A.G. "Why Can’t I See the Tree? A Study of Perspective." *Teaching Children Mathematics* 9.3 (October 2002): 158–161.
- Kersaint, G. "Raking Leaves – The Thinking of Students." *Mathematics Teaching in the Middle School* 9.3 (November 2002): 158–161.
- Kilpatrick, J., J. Swafford, and B. Findell, eds. *Adding it Up: Helping Children Learn Mathematics*. Washington, DC: National Academy Press, 2001.
- Kilpatrick, J., W.G. Martin, and D. Schifter, eds. *A Research Companion to Principles and Standards for School Mathematics*, Reston, VA: National Council of Teachers of Mathematics, 2003.
- King, J. *The Art of Mathematics*. New York, NY: Fawcett Columbine, 1992.
- Lakoff, G., and R.E. Nunez. *Where Mathematics Comes From – How the Embodied Mind Brings Mathematics into Being*. New York, NY: Basic Books, 2000.
- Lampert, M. *Teaching Problems and the Problems of Teaching*. New Haven, CT: Yale University Press, 2001.
- Ma, L. *Knowing and Teaching Elementary Mathematics: Teachers’ Understanding of Fundamental Mathematics in China and the United States*. Mahwah, NJ: Lawrence Erlbaum, 1999.
- Mann, R. *Balancing Act: The Truth behind the Equals Sign*. *Teaching Children Mathematics* (September 2004): 65–69.
- Martine, S.L., and J. Bay-Williams. "Investigating Students’ Conceptual Understanding of Decimal Fractions." *Mathematics Teaching in the Middle School* 8.5 (January 2003): 244–247.

- McAskill, Bruce, Glen Holmes, Leslee Francis-Pelton, and Wayne Watt. *WNCP Mathematics Research Project: Final Report*. Victoria, BC: Holdfast Consultants Inc., 2004.
- McAskill, B., G. Holmes, and L. Francis-Pelton. *Consultation Draft for the Common Curriculum Framework Kindergarten to Grade 9 Mathematics*. Victoria, BC: Holdfast Consultants Inc., 2005.
- Moran, G.J.W. *Identifying the van Hiele Levels of Geometry Thinking in Seventh-Grade Students through the Use of Journal Writing*. Diss. University of Massachusetts, Abstracts International 54.02 (1993): 464A.
- National Council of Teachers of Mathematics. *Computation, Calculators, and Common Sense*. Reston, VA: National Council of Teachers of Mathematics, May 2005.
- . *Problem Solving*. 2012. <[www.nctm.org/standards/content.aspx?id=26860](http://www.nctm.org/standards/content.aspx?id=26860)>. (26 Nov. 2012).
- . *The Teaching and Learning of Algorithms in School Mathematics, 1998 Yearbook*. Lorna J. Morrow (1998 Yearbook Ed.) and Margaret J. Kenney (General Yearbook Ed.). Reston, VA: National Council of Teachers of Mathematics, 1998.
- National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO). *Common Core Standards Initiative. Common Core State Standards for Mathematics*. United States: NGA Center and CCSSO, 2010. Available online at <[www.corestandards.org/assets/CCSSI\\_Math%20Standards.pdf](http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf)>.
- National Research Council. *Adding It Up: Helping Children Learn Mathematics*. Jeremy Kilpatrick, Jane Swafford, and Bradford Findell (Eds.). Mathematics Learning Study Committee, Center for Education, Division of Behavioral Sciences and Education. Washington, DC: National Academy Press, 2001.
- Nelson-Thomson. *Mathematics Education: A Summary of Research, Theories, and Practice*. Scarborough, ON: Nelson, 2002.
- OECD (Organisation for Economic Co-operation and Development). *PISA 2012 Field Trial Problem Solving Framework*. September 30, 2012. <[www.oecd.org/pisa/pisaproducts/46962005.pdf](http://www.oecd.org/pisa/pisaproducts/46962005.pdf)>.
- Ontario. Ministry of Education. *The Ontario Curriculum Grades 1–8: Mathematics*. Ontario: Ministry of Education, 2005. Available online at <[www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf](http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf)>.
- Pape, S.J., and M.A. Tchshanov. “The Role of Representation(s) in Developing Mathematical Understanding.” *Theory into Practice* 40.2 (Spring 2001): 118–127.
- Paulos, J. *Innumeracy: Mathematical Illiteracy and its Consequences*. New York, NY: Vintage Books, 1998.



- Peck, D., S. Jencks, and M. Connell. "Improving Instruction through Brief Interviews." *Arithmetic Teacher*, 37.3 (1989): 15-17.
- Pepper, K.L., and R.P. Hunting. "Preschoolers' Counting and Sharing." *Journal for Research in Mathematics Education* 28.2 (March 1998): 164-183.
- Peressini D., and J. Bassett. "Mathematical Communication in Students' Responses to a Performance-Assessment Task." *Communication in Mathematics K-12 and Beyond*. Ed. P.C. Elliot. Reston, VA: National Council of Teachers of Mathematics, 1996. 146-158.
- Perry, J.A., and S.L. Atkins. "It's Not Just Notation: Valuing Children's Representations." *Teaching Children Mathematics*. 9.1 (September 2002): 196-201.
- Prince Edward Island. Department of Education. *Mental Math: Fact Learning, Mental Computation, Estimation – Grade 3 Teacher's Guide*. Charlottetown, PE: Prince Edward Island Department of Education, 2008. Available online at <[www.gov.pe.ca/photos/original/eecd\\_gr3math.pdf](http://www.gov.pe.ca/photos/original/eecd_gr3math.pdf)>.
- Pugalee, D., J. Frykholm, A. Johnson, M. Slovin, C. Malloy, and R. Preston. *Navigating Through Geometry in Grades 6-8*. Reston, VA: National Council of Teachers of Mathematics, 2002.
- Québec. Ministère de l'Éducation. *Québec Education Program: Preschool Education, Elementary Education*. Quebec: Government of Quebec, 2001. Available online at <[www.mels.gouv.qc.ca/DGFJ/dp/programme\\_de\\_formation/primaire/educprg2001h.htm](http://www.mels.gouv.qc.ca/DGFJ/dp/programme_de_formation/primaire/educprg2001h.htm)>.
- Rigby-Heinemann. *First Steps in Mathematics: Number*. Sydney, AU: Rigby-Heinemann, 2004.
- Robitaille, D., G. Orpwood, and A. Taylor. *The TIMSS-Canada Report, Vol. 2-G4*. Vancouver, BC: Dept. of CUST - UBC, 1997.
- Romagnano, L. *Wrestling with Change - The Dilemmas of Teaching Mathematics*. Portsmouth, NH: Heinemann, 1994.
- Rubenstein, Rheta N. *Mental Mathematics beyond the Middle School: Why? What? How?* 94.6 (September 2001): 442.
- Sakshaug, L., M. Olson, and J. Olson. *How much film? Children are mathematical problem solvers*. Reston, VA: National Council of Teachers of Mathematics, 2002. 17-20.
- Sawyer, W.W. *Mathematician's Delight*. New York, NY: Penguin Books, 1943. Cited in Moran, G.J.W., 1993.
- Seymour, Dale. *Mental Math in the Primary Grades*. Palo Alto, CA: Dale Seymour Publications, 1998.

- Shaw, J.M., and M.F.P. Cliatt. "Developing Measurement Sense." *New Directions for Elementary School Mathematics*. Ed. P.R. Trafton. Reston, VA: National Council of Teachers of Mathematics, 1989. 149–155.
- Sheffield, Linda Jensen, Mary Cavanagh, Linda Darcey, Carol R. Findell, Carol Greenes, and Marion Small. *Navigating through Data Analysis and Probability in Prekindergarten – Grade 2*. Reston, VA: National Council of Teachers of Mathematics, 2002.
- Singapore. Ministry of Education. Curriculum Planning and Development Division. *Mathematics Syllabus: Primary*. Singapore: Ministry of Education, 2006. Available online at <[www.moe.gov.sg/education/syllabuses/sciences/files/maths-primary-2007.pdf](http://www.moe.gov.sg/education/syllabuses/sciences/files/maths-primary-2007.pdf)>.
- Small, M. *PRIME: Patterns and Algebra*. Toronto, ON: Nelson Publishing, 2005.
- . *PRIME: Number and Operations*. Toronto, ON: Nelson Publishing, 2005.
- Solomon, Pearl Gold. *The Math We Need to "Know" and "Do."* Thousand Oaks, CA: Sage Publications, 2001.
- Steen, L.A., ed. *On the Shoulders of Giants – New Approaches to Numeracy*. Washington, DC: National Research Council, 1990.
- Stiff, Lee. "Constructivist Mathematics and Unicorns (President's Message)." *NCTM News Bulletin* July/August 2001: 3.
- Swarthout, M. "Average Days of Spring – Problem Solvers." *Teaching Children Mathematics* 8.7 (March 2002): 404–406.
- Tang, E.P., and H.P. Ginsburg. "Young Children's Mathematical Reasoning – A Psychological View." *Developing Mathematical Reasoning in Grades K–12*. Eds. L. Stiff and F. Curcio. Reston, VA: National Council of Teachers of Mathematics, 1999. 45–61.
- Teppo, Anne R. *Reflecting on NCTM's Principles and Standards in Elementary and Middle School Mathematics*. Preston, VA: National Council of Teachers of Mathematics, 2002.
- Van de Walle, John A. *Elementary and Middle School Mathematics: Teaching Developmentally*. 5th ed. Boston, MA: Pearson Education, Inc., 2004.
- Van de Walle, John A., Sandra Folk, Karen S. Karp, and Jennifer M. Bay-Williams. *Elementary and Middle School Mathematics: Teaching Developmentally*. 3rd Can. ed. Toronto, ON: Pearson Canada Inc., 2011.
- Van den Heuvel-Panhuizen, M., and Gravemejer. "Tests Aren't All Bad – An Attempt to Change the Face of Written Tests in Primary School Mathematics Instruction." *Realistic Mathematics Education in Primary School: On the Occasion of the Opening of the Freudenthal Institute*. Ed. L. Streefland. Utrecht, Netherlands: CD-B Press, 1991. 54–64.
- Van Hiele, P.M. *Structure and Insight: A Theory of Mathematics Education*. Orlando, FL: Academic Press, 1986.

Vygotsky, L.S. *Thought and Language*. Cambridge, MA: MIT Press, 1986.

———. *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press, 1978.

Western and Northern Protocol (WNCP). *The Common Curriculum Framework for K–9 Mathematics*. Alberta, British Columbia, Manitoba, Northwest Territories, Nunavut Territory, Saskatchewan, and Yukon Territory: Ministries of Education of Alberta, British Columbia, Manitoba, Northwest Territories, Nunavut, Saskatchewan, and the Yukon Territory, 2006.

Willoughby, Steven. *Mathematics Education for a Changing World*. Alexandria, VA: Association of Supervision and Curriculum Development, 1990.

Wright, R.J. Martland, A.K. Stafford, and G. Stanger. *Teaching Number*, London, UK: Paul Chapman, 2002.