

# ENLACES MAT-2018: BÁSICOS

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ABSTRACT. Presentamos algunas referencias a recursos de libre acceso en Internet, relevantes para el aprendizaje de las matemáticas (principalmente de temas fundamentales), así como para desarrollo de una apreciación del quehacer matemático. También se incluyen *insights* selectos. Esperamos sean de utilidad tanto para estudiantes como para docentes. Si tienen sugerencias, pueden enviarlas a: [mathlinks@cemati.org](mailto:mathlinks@cemati.org) (Nota: El enlace está en los títulos.)

## Part 1. Libros

- [1] Badger, M. et al. (2012) *A Guide to Puzzle-Based Learning in STEM Subjects*. Univ. of Birmingham {PDF, 87pp.}
- [2] Beck, Matthias; Ross Geoghegan (2011) *The Art Of Proof: Basic Training For Deeper Mathematics*. Springer. {PDF, 202pp.}
- [3] Braver, Seth (2007) "Lobachevski Illuminated: Content, Methods, and Context of the Theory of Parallels". Theses, Dissertations, Professional Papers. Paper 631. {PDF, 320pp.}

- [4] Coad, Lance (2014) **Being Mathematical: An Exploration of Epistemological Implications of Embodied Cognition**. Doctoral thesis. Curtis University. {PDF, 327pp.}
- [5] **Courant**, Richard; Herbert **Robbins** (1979) **¿Qué es la matemática? Una exposición de sus ideas y métodos**. Edit. Aguilar {CIMAT, PDF, 581pp.}
- [6] Day, Martin V. (2016) **An Introduction to Proofs and the Mathematical Vernacular**. Virginia Tech. USA {PDF, 147pp.}

- [7] Eckmann, Beno (c. 1980) **Mathematical Miniatures**. {PDF, 58pp.}
- [8] Fields, Joseph (2013) **A Gentle Introduction to the Art of Mathematics** (Version 3.1). Southern Connecticut State University. USA {PDF, 438pp.}
- [9] Göller, Robin; et al. (2017) **Didactics of Mathematics in Higher Education as a Scientific Discipline**. Conference Proceedings. khdm-Report 17-05 {PDF, 509pp.}

- [10] Kessel, Cathy (2009) **Teaching Teachers Mathematics: Research, Ideas, Projects, Evaluation**. Critical Issues in Mathematics Education Series, Volume 3. MSRI. {PDF, }
- [11] Krantz, Steven G. (2007) **The Proof is in the Pudding: A Look at the Changing Nature of Mathematical Proof**. {PDF, 334pp.}
- [12] **Nieto**, José H. (2004) **Resolución de Problemas Matemáticos**. Taller de Formación Matemática. {PDF, 69pp.}

- [13] Ruelle, David (2007) **The Mathematician's Brain**. Princeton Univ. Press. {Harvard, PDF, 168pp.}
- [14] Russell, Bertrand (c. 1920) **Introduction to Mathematical Philosophy**. {PDF, 182pp.}
- [15] **Solís**, Julio E.; Yolanda **Torres** (1995) **Lógica matemática**. Univ. Autónoma Metropolitana, México. {PDF, 284pp.}
- [16] Sundstrom, Ted (2014) **Mathematical Reasoning: Writing and Proof**. Grand Valley State University. USA {PDF, 589pp.}

- [17] Trench, William F. (2013) **Introduction to Real Analysis**. Trinity University, Texas, USA {PDF, 586pp.}
- [18] **Uscátegui**, Carlos (2011) **Lógica, Conjuntos y Números**. Univ. de Los Andes. {PDF, 189pp.}
- [19] Zvonkin, Alexander K. (c. 2005) **Math from Three to Seven The Story of a Mathematical Circle for Preschoolers**. MSRI. {PDF, 314pp.}



## Part 2. Artículos

- |1| Aboud, Mathilde (2017) **Philosophy of mathematics in “La Science et l’Hypothèse”**, from **Henri Poincaré**. U.U.D.M. Project Report 2017:39, Uppsala University {PDF, 58pp.}
- |2| Alexander, James C. (2008) **Mathematical Blending**. Case Western Reserve Univ. (Prof. Emeritus) {PDF, 54pp.}
- |3| Bagchi, A.; Charles Wells (1998) **Varieties of Mathematical Prose**. {PDF, 22pp.}

- |4| Borwein, Jonathan M. (2001) *Aesthetics for the Working Mathematician*. {PDF, 22pp.}
- |5| Bossé, Michael J. (2006) *Beautiful Mathematics and Beautiful Instruction: Aesthetics within the NCTM Standards*. {PDF, 16pp.}
- |6| Carothers, Neal L. (2010) *Think Deeply About Simple Things*. {PDF, 17pp.}
- |7| Easdown, David (2006) *Teaching mathematics: the gulf between semantics (meaning) and syntax (form)*. School of Mathematics and Statistics University of Sydney. {PDF, 5pp.}

- |8| Glaz, Sarah (2011) *Poetry Inspired by Mathematics: a Brief Journey through History*. {PDF, 29pp.}
- |9| Gowers, Timothy (2008) *Advice to a Young Mathematician*. Sección del libro: The Princeton Companion to Mathematics. {PDF, 11pp.}
- |10| Griffiths, Phillip A. (2000) *Mathematics at the Turn of the Millennium*. American Mathematical Monthly 107, MAA. {PDF, 14pp.}
- |11| Halmos, P. R.; E. E. Moise and George Piranian (1975) *The Problem of Learning to Teach*. The

American Mathematical Monthly 82:5 (466-476)  
{PDF, 12pp.}

- |12| Halmos, Paul R. (1982) **Does mathematics have elements?**. Bull. Austral. Math. Soc., Vol. 25, pp. 161-175 {Publ. también por **Mathematical Intelligencer**} {PDF, 15pp.}
- |13| Halmos, Paul R. (1982) **The Thrills of Abstraction**. The College Mathematics Journal, Vol. 13, No. 4, pp. 243-251. {PDF, 9pp.}
- |14| Houston, Kevin (2010) **10 Ways to Think Like a Mathematician**. {PDF, 13pp.}

- |15| Hutchings, Michael (c. 2004) [Introduction to mathematical arguments](#). {PDF, 27pp.}
- |16| Hsu, Erick; Emiliano Gómez (2008) [Minus times minus](#). {PDF, 7pp.}
- |17| [Illanes](#), Alejandro (2014) [Alberto Barajas Celis en el centenario de su nacimiento](#). Miscelánea Matemática 58. {PDF, 10pp.}
- |18| Klobucar, Josipa (c. 2013) [19th Century Mathematics](#). {PDF, 24pp.}

- |19| Lee, John M. (2012) **Some Remarks on Writing Mathematical Proofs**. Univ. of Washington. {PDF, 6pp.}
- |20| **López Pellicer**, Manuel (2007) **Algunos descubrimientos matemáticos del siglo XX**. Rev. R. Acad. Cienc. Exact. Fís. Nat. (Esp) Vol. 101, N<sup>o</sup>. 2, pp 285-305. {PDF, 21pp.}
- |21| **Luque**, Micaela S. (2010) **Estrategias para la resolución de problemas**. ISFD No 127 “Ciudad del Acuerdo”. {PDF, 8pp.}

- |22| Manin, Yuri I. (2012) **Foundations as Superstructure (Reflections of a practicing mathematician)**. {PDF, }
- |23| Maracchia, Silvio (2013) **The importance of symbolism in the development of algebra**. Lett Mat Int 1:137–144. {PDF, 8pp.}
- |24| Mazur, Barry (2009) **“What should a professional mathematician know?”**. {PDF, 5pp.}
- |25| Oesterle, Susan (2016) **Unpacking Mathematical Habits of Mind: What’s in your suitcase?**. {PDF, 37pp.}

- |26| **Prieto**, Carlos (2001) **El Futuro Promisorio de las Matemáticas**. La Ciencia Mexicana en el Siglo XX. {PDF, 11pp.}
- |27| Rosenshine, Barak (2012) **Principles of Instruction: Research-Based Strategies That All Teachers Should Know**. American Educator, Spring {PDF, 9pp.}
- |28| Sastri, Chelluri C. A. (2017) (Book review) "I, Mathematician" Edited by Peter Casazza, Steven G. Krantz, and Randi D. Ruden MAA, 2015. {PDF, 7pp.}



- |29| Sfard, Anna (2007) **When the Rules of Discourse Change, but Nobody Tells You: Making Sense of Mathematics Learning From a Comognitive Standpoint**. *The Journal of the Learning Sciences*, 16(4), 567–615 {PDF, 49pp.}
- |30| Stefanowicz, Agata (2014) **Proofs and Mathematical Reasoning**. Univ. of Birmingham. {PDF, 49pp.}
- |31| Strayer, Jeremy F.; Elizabeth Brown (2012) **Teaching with High-Cognitive-Demand Mathematical**

Tasks Helps Students Learn to Think Mathematically. Notices of the AMS. {PDF, 3pp.}

|32| **Tao**, Terence (c. 2009) **There's more to mathematics than rigour and proofs.** {HTML}

|33| **Vázquez**, Juan Luis (c. 2006) **Matemáticas, Ciencia y Tecnología: una relación profunda y duradera.** Univ. Autónoma de Madrid. {PDF, 51pp.}

|34| Webb, David C. (2009) **Designing Professional Development for Assessment.** Educational Designer, 1(2). {PDF, 26pp.}

- |35| Werndl, Charlotte (2009) [Justifying Definitions in Mathematics—Going Beyond Lakatos](#). {PDF, 37pp.}
- |36| Xiuping, Chang (2002) [The Combination of Traditional Teaching Method and Problem Based Learning](#). The Chine Papers, Vol. 1 (30-36), October {PDF, 7pp.}

## Part 3. Videos

- /1/ Boaler, Jo (2016) **How you can be good at math, and other surprising facts about learning.** TEDx Talks.
- /2/ Federman, Sarah (2015) **Finish & Flourish! – Planning and completing your dissertation, thesis, article or research paper.** {YouTube}
- /3/ Finkel, Dan (2016) **Five Principles of Extraordinary Math Teaching.** TEDxRainier.
- /4/ Institute of Advanced Studies: { **Conversations | Faculty Lectures** }

- /5/ Serre, Jean Pierre (2014 Pegel) "How to write mathematics badly" (Published by Christoph Pegel  
Noise removed)
- /6/ Simon Foundation: Science Lives {Entrevistas extendidas a algunos matemáticos destacados del siglo XX}
- /7/ Sfard, Anna (2016) When words get in your eyes: On challenges of investigating mathematics-in-teaching and on the importance of paying

attention to words. {Critical Issues In Mathematics Education 2016: Observing, Evaluating And Improving Mathematics Teaching From The Early Grades Through The University February 10-12} MSRI.

- /8/ Wildberger, N. J. (2014) **Math Terminology 7: How to write mathematics at the College level.**

## Part 4. *Desarrollo Profesional*

- §1 AMS. [Journals](#). [En particular: [NOTICES](#) | [Bulletin](#)] American Mathematical Society. {Web site}
- §2 Anderson, Rick (2007) [Being a Mathematics Learner: Four Faces of Identity](#). The Mathematics Educator 2007, Vol. 17, No. 1, 7–14. {PDF, 8pp.}
- §3 AoPS. [IMO Problems and Solutions](#). Art of Problem Solving {ver también: [AMC Videos](#) }

- §4 Badger, Matthew (2013) [Problem-Solving in Undergraduate Mathematics and Computer Aided Assessment](#). PhD Thesis. {PDF, 274pp.}
- §5 Barton, Bill; Judy Paterson (obm) (2017) [Capturing learning in undergraduate mathematics](#). Research Report. Learning in undergraduate mathematics: the outcome spectrum (LUMOS). {PDF, 32pp.}
- §6 Ben-Shahar, Tal. { [Videos](#) | [Articles](#) }



- §7 Buldt, Bernd, et al. (2008) [Towards a New Epistemology of Mathematics](#). *Erkenn* 68:309–329 {PDF, 21pp.}
- §8 [CIMAT](#).— [Colección de Videos](#). Centro de Investigación en Matemáticas, A. C. , México.
- §9 [CINVESTAV](#).— [Videoteca](#). Centro de Investigación y Estudios Avanzados del I.P.N., México.
- §10 Csikszentmihalyi, Mihaly (1997) [Happiness and Creativity: Going with the Flow](#). *The Futurist* Sept-Oct 8-12. {PDF, 5pp.}

- §11 Csikszentmihalyi, Mihaly (2004) *Flow, the secret of happiness*. {Video, YouTube}
- §12 CMS. *Crux Mathematicorum*. Canadian Mathematical Society. {Web site}
- §13 Dorff, Michael, et al. (c. 2015) *Successfully Mentoring Undergraduates in Research: A How To Guide for Mathematicians*. {PDF, 15pp.}
- §14 Gardner, Howard (2010) *GoodWork: Theory and Practice*. {PDF, 309}

- §15 Gold, Bonnie, et al. (1999) [Assessment Practices in Undergraduate Mathematics](#). MAA Notes #49. {PDF, 305pp.}
- §16 Hamming, Richard (1986) ["You and Your Research"](#) (Transcript by Kaiser, J. F.) {HTML}
- §17 Hiriart-Urruty, Jean-Baptiste (2010) [Reminiscences...and a Little Bit More](#). Set-Valued Anal (2010) 18:237–249 {PDF, 13pp.}
- §18 Huber, Mark; Gizem Karaali (Editors) [Journal of Humanistic Mathematics](#). {Web site}

- §19 IHES. **Preprints**. Institut des Hautes Études Scientifiques. {Web site}
- §20 **IMUNAM**.— **Colección de videos**. Instituto de Matemáticas, UNAM.
- §21 INI. **Preprints**. Isaac Newton Institute for Mathematical Sciences. {Web site}
- §22 Kaiser, Gabriele (2017) **Proceedings of the 13th International Congress on Mathematical Education ICME-13**. Springer Open. {PDF, 735pp.}

{ **Observación**. Si está en un *Campus* con CON-RICyT (como en el ITT), explorar [link.springer.com](http://link.springer.com) con *preview only* desactivado. }

- §23 MAA (c. 2016) [A Handbook for Mathematics Teaching Assistants](#). {HTML}
- §24 MathDoc. [NUMDAM](#). The French Digital Mathematical Library. {Web site}
- §25 Moore, Robert C. (2016) [Mathematics Professors' Evaluation of Students' Proofs: A Complex Teaching Practice](#). Int. J. Res. Undergrad. Math. Ed. 2:246–278 {PDF, 33pp.}

- §26 MSRI. **Publications**. Mathematical Sciences Research Institute. {Web site}
- §27 Niss, Mogens Allan; Højgaard, Tomas (2011) **Competencies and Mathematical Learning Ideas and inspiration for the development of mathematics teaching and learning in Denmark**. {PDF, 215pp.}
- §28 Powell, A. B. et al. (2009) **Challenging Tasks and Mathematics Learning**. Chapter 4 of E.J.

Barbeau, P.J. Taylor (eds.), Challenging Mathematics In and Beyond the Classroom, New ICMI Study Series 12. {PDF, 38pp.}

§29 Schoenfeld, Alan H. (2015) **Teaching for Robust Understanding of Essential Mathematics.** {PDF, 25pp.}

§30 Schoenfeld, Alan H. et al. (2016) **On understanding and improving the teaching of university mathematics.** International Journal of STEM Education 3:4 (**SpringerOpen Journal**) {PDF, 17pp.}

- §31 **SMM**. *Miscelánea Matemática*. Una publicación de la *Sociedad Matemática Mexicana* {Web site}
- §32 Sriraman, Bharath (Editor) *The Mathematics Enthusiast*. ScholarWorks. {Web site}
- §33 Sumpter, L. (2015) *Recreational Mathematics - Only For Fun?*. *Journal of Humanistic Mathematics*, 5(1): 121-138 {PDF, 21pp.}
- §34 **Tao**, Terence: *Career Advice*. {Web site}



- §35 Tedre, Matti; Denning, Peter J. (2016) [The Long Quest for Computational Thinking](#). Proceedings of the 16th Koli Calling Conference on Computing. {PDF, 10pp.}
- §36 [The Good Project](#): En particular: [Research Paper Series](#). {Web site}
- §37 The Royal Society Publishing: [Proceedings of the Royal Society A: Mathematical, Physics and Engineering Science \(Colección por materias\)](#). {Acceso a artículos en PDF}

- §38 Tufts ECE Students (c. 2017) **Communications and Life Skills**. En ***Electrical and Computer Engineering Design Handbook***. {HTML}
- §39 USon. **Sahuarus**. Revista académica digital del Departamento de Matemáticas de la Universidad de Sonora. {Sitio Web}
- §40 USon. **Semana Nacional de Investigación y Docencia en Matemáticas**. Departamento de Matemáticas, Univ. de Sonora, Hermosillo. {Sitio Web}

- §41 Ziegler, Günter M.; Andreas Loos (c. 2014)  
Teaching and Learning “What is Mathematics”.  
{PDF, 14pp.}

## Part 5. *Insights*

1. "MATHEMATICAL TALENT AND MATHEMATICAL PASSION ARE DIALECTICALLY INTERTWINED: EACH IS THE GENESIS OF THE OTHER" —**JOHN GEAKE**
2. "LES RECUERDO QUE MATEMÁTICO NO ES EL NOMBRE DE UN TALENTO SINO DE UNA PASIÓN" —**ALBERTO BARAJAS** (OBM)