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PUBLICATIONS

RESEARCH IN SCIENCE EDUCATION

My concern is with science education in India, and I have concentrated on publishing research articles which are accessible to teachers and educators in India. Most of my research is done in order to develop teaching methods, books and other materials for direct use by these teachers and educators.

Let Students Ask and Investigate: The case of a variegated plant, Gurinder Singh and Karen Haydock, I Wonder 02, 71-76 (2016)

How is the environmental crisis understood and taught? A few examples from teacher interviews, classroom practices, textbooks, and policy documents, by Himanshu Srivastava and Karen Haydock, submitted for publication

Drawing from Life, Karen Haydock, in Teaching Learning Resources for Elementary School, edited by Disha Nawani, Sage, India, ISBN: 9789351509264 (2016)

Magic Bullet, Karen Haydock, The STEAM Journal, Vol. 2, Iss. 1, Article 16 (2015)

DOI: 10.5642/steam.20150201.16

Available at: <http://scholarship.claremont.edu/steam/vol2/iss1/16>

Do Leaves Need Chlorophyll for Growth? Kranti Patil, Gurinder Singh, & Karen Haydock, Science in School 33, p. 47-51 (2015)

Stated and Unstated Aims of NCERT Social Science Textbooks, Karen Haydock, Economic and Political Weekly, Vol L, No 17, pp 109-119 (2015)

An Analysis of the Treatment of Evolution by Natural Selection in NCERT Textbooks, Karen Haydock, Voices of Teachers and Teacher Educators Vol. III, No. 1, p. 20-38 (2014)

शिकवणे किती नियोजित असावे ? कैरन हेडाक, मराठी संदर्भ 92, pp 71-76 (2015)

मोड़ने का अनुभव - शिक्षण कितना नियोजित हो ? कैरन हेडाक, संदर्भ 89, 11-19 (2014)

Chicken Eggs - Which comes first: the expected results or the science? Karen Haydock, School Science Review 95(353) 27-35 (2014)

Teaching and Learning about Evolution and Natural Selection: Problems and Solutions, Karen Haydock & MC Arunan (2013) Proceedings of EpiSTEME 5

Why do we have problems learning and teaching science?, Karen Haydock, Contemporary Education Dialogue 8: 257 (2011)

विज्ञान सीखने और सिखाने में हमें दिक्कत क्यों आती हैं ? कैरन हेडाक, संदर्भ 4(20), October, pp.65-75 (2011)

मेघ मरीचिका , कैरन हेडाक, संदर्भ 70, pp. 19-24 (2010)

विज्ञान की पढ़ाई में कला का स्थान, कैरन हेडाक, सन्दर्भ 43, pp. 13-23 (2002)

पंखे, थर्मामीटर, तापमान से कहां तक पहुंची चर्चा, कैरन हेडाक, सन्दर्भ 41, PP. 11-16 (2002)

Observation and Drawing in Learning Science, Karen Haydock, Despatch, Vigyan Prassar (2001)

Observation and Drawing in Learning Science, Karen Haydock, Science, Technology and Mathematics Education for Human Development, Vol II, Proceedings of the CASTME-UNESCO-HBCSE International Conference, Goa, February 2001, pp 398-402

The Loo Story, Karen Haydock, Science, Technology and Mathematics Education for Human Development, Vol II, Proceedings of the CASTME-UNESCO-HBCSE International Conference, Goa, February 2001, pp 94-98 - a longer version published in Science and Technology Literacy for All. UNESCO-ICASE-Delhi University, pp 123-137 (2001)

Exploring Science in Primary Years, illustrations by Karen Haydock, Issues in Primary Education, A despatch on Primary Education, DPEP, Vol III, No. 3, October (2001)

जवाब सीखें या जवाब देना सीखें, कैरन हेडाक, सन्दर्भ 27, pp. 34-38 (1999)

Developments in Development: New Teaching Methods in District Primary Education, Karen Haydock, Economic and Political Weekly (May 1998)

SELECTED ARTICLES IN NEWSPAPERS AND MAGAZINES

(written and/or illustrated)

The Ideal of Citizenship, Rohit Dhankar, illustrated by Karen Haydock, Teacher Plus 13(11) p. 34-37 (2015)

Bold and Holistic: Mahatma's education, Pawan Kumar Gupta, illustrated by Karen Haydock, Teacher Plus 13(11) p. 17-19 (2015)

इनका विकास कैसे हुआ ?, written and illustrated by Karen Haydock, चकमक: (भाग 1) November 2011, pp. 36-37; (भाग 2) December 2011, pp. 34-35; (भाग 3) January 2012, pp. 37-39; (भाग 4) February 2012, pp. 22-23 (2012)

मान लो कि तुम बहरी हो, written and illustrated by Karen Haydock, चकमक, November, pp. 88-90 (2011)

Numerous articles Illustrated, चकमक, November, pp. 4, 5, 6, 148-151, 163 (2011)

हम अपने शरीर को कैसे जानते हैं ? written and illustrated by Karen Haydock, सन्दर्भ 69, pp. 21-33 (2010)

सुन्दर कौन है ? written and illustrated by Karen Haydock, चकमक, pp. 22-24 (2010)

डार्विन न होता तो क्या होता, written and illustrated by Karen Haydock, चकमक 73, pp. 34-45 (2010)

What Difference Did Darwin Make? written by Karen Haydock, The Hindu, (15 Feb 2009)

विज्ञान शिक्षा के मायने, written and illustrated by Karen Haydock, स्रोत pp. 5-7, July 2009

Teaching War or Teaching Peace, written by Karen Haydock, The Hindu, (August 2002)

अच्छे सवाल कैसे पूछें ? written and illustrated by Karen Haydock, सन्दर्भ 69, pp. 21-33 (2001)

Teaching Art to Children, written by Karen Haydock, The Hindu (1999)

परीक्षाएं और सिर्फ परीक्षाएं, written and illustrated by Karen Haydock, सन्दर्भ 28, pp. 37-44 (1999)

Intersexuality and the Rise of Medicine, book review by Karen Haydock, Summerhill International Area Studies Review (June 1999)

क्यूँ आंकते हैं हम बच्चों को कम कर के?, written and illustrated by Karen Haydock, सन्दर्भ 26, pp. 37-41 (1999)

The Class V Blues: Teaching Poetry to Children, written by Karen Haydock, The Hindu (1998)

बच्चों के चित्र क्या बताते हैं हमें, written and illustrated by Karen Haydock, सन्दर्भ 15, pp. 46-54 (1997)

Einstein, written and illustrated by Karen Haydock, The Tribune, Chandigarh (1996)

All Eyes on One Beauty, written and illustrated by Karen Haydock, The Tribune, Chandigarh, (October, 1996)

Education in India, written by Karen Haydock, The Tribune, Chandigarh, (1995)

Innovative Teaching, written by Karen Haydock, Indian Express, Chandigarh Newline, (1995)

Art for People? written and illustrated by Karen Haydock, The Tribune, Chandigarh (1995)

Free Love, written and illustrated by Karen Haydock, The Tribune, Chandigarh, (1995)

Micky Mouse or Madhubani? written and illustrated by Karen Haydock, The Tribune, Chandigarh (1995)

BOOKS

I have illustrated, or illustrated and written more than three dozen children's story, science, and activity books in English, Hindi, Punjabi, Marathi, and other Indian languages, most of which are listed below:

अकाल और उसके बाद, नागार्जुन, illustrated by Karen Haydock, Eklavya, Bhopal, ISBN: 978-93-85236-28-0 (2017)

छोटी लाल मुर्गी written and illustrated by Karen Haydock, Eklavya, Bhopal, ISBN: 978-93-81337-77-6 (2015)

The Little Red Hen, written and illustrated by Karen Haydock, Eklavya, Bhopal, ISBN: 978-93-81337-78-3 (2015)

How do They Evolve? written and illustrated by Karen Haydock, National Book Trust, New Delhi (2015) [ISBN 978-81-237-7371-1]

कंकाल का कमाल - हमारी हड्डियाँ by Anu Gupta, some illustrations by Karen Haydock, Eklavya, Bhopal (2015) [ISBN 978-93-81300-97-8]

Those who did not die: Impact of the agrarian crisis on women in Punjab by Ranjana Padhi, cover by Karen Haydock; Sage Publications, India – also another cover for the version in Punjabi (2012) [ISBN 978-81-321-0950-1]

खुदकुशी के साये में जिंदगी की बातें by Ranjana Padhi, translation by Sushil Joshi, cover and illustrations by Karen Haydock; Madhya Pradesh Mahila Manch, Bhopal, (2014)

मानव शरीर की तस्वीर by Karen Haydock and Anu Gupta, Eklavya Publications (2012) [ISBN: 978-81-89976-74-3]

Our Pictures, Our Words: A visual journey through the women's movement, by Laxmi Murthy and Rajashri Dasgupta, "Womens' Imaging Themselves" - posters and text by Karen Haydock, pp. 18, 173, Zubaan Books (2012) ISBN: ISBN 9789381017258,

रोशन सितारे, (Hindi) by Arvind Gupta, (Illustrated by Karen Haydock), published by Eklavya, Bhopal, August (2011)

असे घडले शास्त्रज्ञ, (Marathi) by Arvind Gupta, (Illustrated by Karen Haydock), published by Manovikas Prkashan, Pune (2011)

- Ujwala Kidigalu** (Kannada), by Arvind Gupta, (Illustrated by Karen Haydock), published by Navakarnatika Publications, Bangalore (2011)
- Atomic Energy**, by Neeraj Jain, (Illustrated by Karen Haydock), Aakar, Delhi (2011)
- Human Body Systems**, by Anu Gupta and Karen Haydock (co-author and illustrator), Eklavya (2010)
- Bright Sparks: Inspiring Indian scientists from the past**, by Arvind Gupta, illustrated by Karen Haydock, Indian National Science Academy (in English, Marathi, Hindi, etc) – also versions in Malayalam, etc. (2009)
- शरीर का कवच: त्वचा, बाल, और नाखून** by Anu Gupta, illustrated by Karen Haydock, Eklavya, Bhopal (2007)
- Let's Draw** (art workbook), written and illustrated by Karen Haydock, Eklavya, Bhopal (2002)
- Games and Activities for Class II**, (Worksheets and Teacher's Guide) School Mathematics Project, illustrated by Karen Haydock, Centre for Science Education and Communication, Delhi University (2001)
- Science and Technology Literacy for All**. (in English and in Hindi) UNESCO-ICASE-Delhi University, illustrations by Karen Haydock (2000)
- From Bone to Stone** (a story of how dinosaur fossils formed), written and illustrated by Karen Haydock, National Book Trust, Delhi, published in English, Malayalam, Tamil, and Konkani (1999)
- In Our Hands**, a workbook for women on fertility and sexuality awareness, Illustrated by Karen Haydock, in English and Marathi Tathapi, Pune (1998)
- बेटी करे सवाल** (Beti Kare Sawal) (in both Hindi and Kannada) by Anu Gupta, Illustrations and contributions by Karen Haydock, Eklavya, Bhopal (1997)
- लाखो**, अमरकांत, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- बूढ़ी काकी**, प्रेमचन्द, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- पूस की रात**, प्रेमचन्द, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- सद्गति**, प्रेमचन्द, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- बेटों वाली विधवा**, प्रेमचन्द, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- बात एक पुरखिन की**, एक अज्ञात हिन्दू महिला, SEARCH, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2003)
- मरी कयूरी**, गीता बंदोपाध्याय, illustrations by Karen Haydock, Bharat Gyan Vigyan Samithi, New Delhi (2003)
- बेटों वाली विधवा**, प्रेमचन्द, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- हिरनी**, चन्द्रकिरण सौनरेक्सा, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- ईश्वर की कहानियां**, विष्णु नागर, SEARCH,, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2002)
- अंतर्कथा**, (poetry collection), SEARCH, State Research Centre, illustrations by Karen Haydock, Rohtak, Haryana (2000)
- आखिरी पत्ता**, O. Henry, translated by Arvind Gupta, Bharat Gyan Vigyan Samithi (1997)
- बाज़ी**, Liu Shao Tang, in Hindi and Urdu, illustrations by Karen Haydock, Bharat Gyan Vigyan Samithi, New Delhi (1997)

- रसगुल** (Rasgule) by Sukhinder Kalra, Cover and illustrations by Karen Haydock, Punjab State University Textbook Board, Chandigarh (1996)
- धरती दे रंग** (Dharati de Rang), by Manmohan Singh Daon, Cover and illustrations by Karen Haydock, Punjab State University Textbook Board, Chandigarh (1996)
- सफ़ेद चूहे**, Dr. Prasoon Prasad, Cover and illustrations by Karen Haydock, Abhishek Prakashan, Chandigarh (1996)
- अब मैं सुनाओ माँ**, Dr. Prasoon Prasad, Cover and illustrations by Karen Haydock, Abhishek Prakashan, Chandigarh (1996)
- भाया जिंदाबाद**, Laltu, Cover and illustrations by Karen Haydock, Adhar Prakashan (1995)
- लोग ऊँरेंगे**, by Virginia Hamilton, translated by Laltu, Cover and illustrations by Karen Haydock, Adhar Prakashan (1995)
- What is Patriarchy?** By Kamla Bhasin, cover illustration by Karen Haydock, Kali for Women, New Delhi (1993)
- गोपी गवया और बाघा बजया**, by Upanesh Chandraseka, Cover and illustrations by Karen Haydock (1990)
- Bastar: Development and Democracy**, People's Union for Civil Liberties, Madhya Pradesh, illustrations by Karen Haydock (1989)
- घड़ियों की हड़ताल**, by Ramesh Thanvi, Cover and Illustrations by Karen Haydock, Sambhawna Prakaashan (1989)
- ह य व र ल**, by Sukumar Ray, Cover and illustrations by Karen Haydock, Sambhawna Prakaashan (1989)
- आगढ़म बगढ़म**, Nonsense poetry by Sukumar Ray, Translated by Laltu, Cover by Karen Haydock, Sambhawna Prakaashan (1989)
- आसमान भी दंग**, by Naveen Sagar, Cover and illustrations by Karen Haydock, Sambhawna Prakaashan (1989)
- जवाब दर सवाल : जनगीतों का संकलन**, by Eklavya, Cover and illustrations by Karen Haydock, Eklavya, Bhopal (1988)

TEXTBOOKS ILLUSTRATED

- Understanding Economic Development**, Social Science Textbook for Class X, NCERT, illustrations by Karen Haydock (2006)
- Do and Discover Science**, Class VI, State Council of Education, Research and Training Delhi, illustrations by Karen Haydock (2004)
- Do and Discover Science**, Class VII, State Council of Education, Research and Training Delhi, some illustrations by Karen Haydock (2004)
- Do and Discover Science**, Class VIII, State Council of Education, Research and Training Delhi, some illustrations by Karen Haydock (2004)
- History: The Mughal Period**, Eklavya, illustrations by Karen Haydock, Bhopal (2003)
- History: The English Rule India**, Eklavya, illustrations by Karen Haydock, Bhopal (2003)
- History: British Dominance and Indian Independence**, Eklavya, illustrations by Karen Haydock, Bhopal (2003)
- Civics: Constitution, Fundamental Rights and Duties, Central Government** (in English and Hindi), Eklavya, illustrations by Karen Haydock, Bhopal (2003)
- Geography: India and The Himalayas**, Eklavya, illustrations by Karen Haydock, Bhopal (2003)
- How Hot? How Cold? Geography: Temperature Patterns** (in English and Hindi), Eklavya illustrations by Karen Haydock, Bhopal (2003)
- Small Science Textbook**, Class 4, Jayashree Ramadas, Oxford University Press, illustrations by Karen Haydock (2005)
- Economics: Banks and Taxes**, Eklavya, illustrations by Karen Haydock, Bhopal (2003)

- Small Science Workbook**, Class 4, Jayashree Ramadas, Oxford University Press, illustrations by Karen Haydock (2005)
- Small Science Teachers' Book**, Class 4, Jayashree Ramadas, Oxford University Press, illustrations by Karen Haydock (2005)
- करें और खोजें: विज्ञान, कक्षा 6**, Delhi Textbook Bureau SCERT, illustrations by Karen Haydock (2004)
- सामाजिक अध्ययन कक्षा छः**, मध्य प्रदेश पाठ्यपुस्तक निगम, (Eklavya), Bhopal, some illustrations by Karen Haydock (2001)
- Social Studies, Class VI**, Eklavya, Bhopal, some illustrations by Karen Haydock (1998)
- Social Science**, Class VII, Eklavya, Bhopal, (in Hindi and in English) some illustrations by Karen Haydock (1990)
- Social Studies, Class VIII**, Part 1, Eklavya, Bhopal, illustrations by Karen Haydock (1993)
- सामाजिक अध्ययन कक्षा आठ**, Part 1, Eklavya, Bhopal, illustrations by Karen Haydock (1988)
- सामाजिक अध्ययन कक्षा सात**, मध्य प्रदेश पाठ्यपुस्तक निगम some illustrations by Karen Haydock, Bhopal (1988)
- खुशी खुशी**, Integrated textbooks, Classes 3-5, (Eklavya), some illustrations by Karen Haydock, Madhya Pradesh Textbook Nigam, Bhopal (1996-1998)
- बाल वैज्ञानिक कक्षा आठ**, (Eklavya), illustrations by Karen Haydock, Madhya Pradesh Textbook Nigam, Bhopal (1989)

OTHER PUBLICATIONS

Numerous illustrations, articles, and cartoons published in magazines, newspapers, and websites (Sandarbh, Bhopal; Himal South Asian, Kathmandu; Chakmak, Bhopal; Indradhanush, Shimla; Jansatta, Chandigarh, etc.) Also, a contribution to the Vigyan Prassar TV Series Wise Spice: Mustard, which was aired on Dordarshan in 2015.

SELECTED PUBLICATIONS IN BIOPHYSICS

(Note that the list includes publications with Sidney Altman, as well as Martin Karplus, who were awarded Nobel Prizes in 1989 and 2013)

Response, *Science* **1994** 264, 27 May, pp 1238

Simulation analysis of structures on the reaction pathway of RNase A

Karen Haydock, Carmay Lim, Axel T. Brünger, and Martin Karplus
Journal of the American Chemical Society **1990** 112 (10), 3826-3831

Metal ion requirements and other aspects of the reaction catalyzed by M1 RNA, the RNA subunit of ribonuclease P from Escherichia coli

Cecilia Guerrier-Takada, Karen Haydock, Leland Allen, and Sidney Altman
Biochemistry **1986** 25 (7), 1509-1515

Role of Active Site Residues and Solvation in RNase A,

Brooks, C., Brünger, A., Francl, M., Haydock, K., Allen, L. C., Karplus, M.,
Annals of the New York Academy of Sciences **1986**, Vol 471(1), Blackwell Publishing Ltd, 295 - 298

Molecular mechanism of catalysis by RNA

Haydock K, and Allen LC.
Prog Clin Biol Res. **1985** 172A, 87-98

Electronic structure investigations of catalysis: carbonic anhydrase

Charles M. Cook, Karen Haydock, Richard H. Lee, and Leland C. Allen
The Journal of Physical Chemistry **1984** 88 (21), 4875-4880

Molecular Modelling of Protein-Nucleic Acid Interactions, R. Rein, T. Kieber-Emmons, K.

Haydock, R. Garduno-Juarez, M. Shibata, *Journal of Biomolecular Structure and Dynamics* Vol. 1, Iss. 4, 1983

Purine-amino acid hydrogen bonding interactions and suggestions for modeling the lac operator-repressor system

Garduño, Ramon, Haydock, Karen, MacElroy, Robert D., Rein, Robert
Annals of the New York Academy of Sciences **1981** 367(1), 281-294

Organ vascularity and metastatic frequency,

L. Weiss, K. Haydock, J. W. Pickren, W. W. Lane,
Am J Pathol. **1980** October; 101(1): 101-114.

Modelling of DNA-Protein Recognition,

R. Rein, R. Garduno, S. Colombano, S. Nir, K. Haydock, and R.D. MacElroy
Molecular Structure, Conformation, Function, and Evolution; R. Srinivasan, ed.
Pergamon Press **1980** pp 387-395.

Interactive computer graphics for bio-stereochemical modelling

Rein, Robert, Nir, Shlomo, Haydock, Karen, and Macelroy, Robert
Proc. Indian Acad. Sci. **1978** (87A)4, 95-113

Optimum geometries and relative energies for guanine, the imino-enol tautomer of guanine, the enol tautomer of guanine, adenine, and the imino tautomer of adenine as found by the MINDO/2 SCF MO method

Zielinski, Theresa Julia, Breen, Donna L., Haydock, Karen, Rein, Robert, and MacElroy, Robert D.,
International Journal of Quantum Chemistry **1978** 14(S5), 355-365