



Catalogue of
Recommended
**Resources for
Teachers of Adult Numeracy**

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Adult Numeracy Teaching: Making Meaning in Mathematics

Form a binder that provides everything needed for an 84-hour professional development program designed to train and support teachers of adult numeracy and mathematics in adult literacy and basic education

Best used by a teacher-trainer to help experienced LBS teachers learn about teaching numeracy (the course is not designed for self-study, but it still can be read by a teacher)

Purpose This professional development package aims to give ALBE [Adult Literacy and Basic Education] teachers a broad understanding of the content and structure of mathematics and how it is applied in modern life. It also aims to develop teachers' confidence in their own use of mathematics and in the theories, methodologies and communication processes appropriate for teaching numeracy in ALBE.

Author Dave Tout and Betty Johnson, National Staff Development Committee for Vocational Education and Training

Published in Australia in 1995

How to get it

- borrow it from AlphaPlus
- buy it for approximately \$80 plus shipping from the Adult Education Resource and Information Service (ARIS) web site:
www.sunsite.anu.edu.au/language-australia/aris/index.html

Strengths

- created especially for adult numeracy
- involves manipulables frequently
- applies skills in everyday or other real-life contexts
- layout is clear and professional
- helps with study skills and learning strategies
- addresses the language of math
- has variety
- forms a coherent system for teachers to progress through
- contains up-to-date reading lists on adult numeracy, demonstrating the scope and value of numeracy
- excellent resource for extensive PD of literacy teachers

Limitations or Shortcomings

- not to be used directly with students
- at times is distractingly Australian
- Australian-sized paper makes photocopying a little awkward

Breaking the Maths Barrier: a kit for building staff development skills in adult numeracy

Form a book that can be used for two to three days of teacher training or self-study (see the companion document, "Reclaiming Mathematics" in this catalogue)

Best used by a teacher-trainer delivering PD, or by a teacher learning on his or her own to teach numeracy

Purpose to develop the numeracy teaching skills of (a) literacy teachers who want to teach numeracy, and (b) math teachers who want to teach adult numeracy

Author Beth Marr and Sue Helme, with Dave Tout

Published in Australia in 1991

How to get it

- borrow it from AlphaPlus
- buy it from the Adult Education Resource and Information Service (ARIS) web site: www.sunsite.anu.edu.au/language-australia/aris/index.html

Strengths

- each of the five chapters has (1) background theory, (2) activities for teachers to do as training, and (3) materials to be used with students
- would be an excellent training tool, after modifications to make it useable in Canada
- 'participatory workshop' model of staff development
- created especially for adult numeracy
- materials for lower-level students
- clear, simple explanations with good examples
- encourages hands-on kinesthetic learning
- applies skills in real-life contexts
- includes answer key
- clear, simple layout
- helps with learning strategies and study skills
- addresses the language of math
- photocopiable
- addresses parts of each of the most frequently taught areas of math

Limitations or Shortcomings

- Australian-ness of some language and real-life examples makes them inappropriate
- Australian-sized paper is awkward to photocopy

Family Math

Form a book for teachers (which describes many activities), a web site, and a newsletter

Best used with lower level LBS students, or mid-level LBS students who would like to do math with their children

Purpose to show teachers how to give adult students who are parents ways of helping their children with math at home, to inform parents of the role mathematics plays in their children's studies and career choices, to promote participation of students and adults in mathematics courses and encourage their interest in math-based fields of study and work, to emphasize understanding mathematics through hands-on materials

Author Jean Kerr Stenmark, Virginia Thompson, Ruth Cossey, from EQUALS, Lawrence Hall of Science, Berkeley, California

Published in the
USA in 1986

How to get it

- borrow it from AlphaPlus
- get it or more information from the Family Math web site: www.toc.lcs.mit.edu/~emjordan/famMath.html
- look on the EQUALS web site: www.equals.lhs.berkeley.edu

Strengths

- at a basic level, therefore good for levels 1 and 2 LBS students
- every activity involves manipulables
- builds on the strong interest that parents often have in learning math in order to help their children, or simply to better understand what their children are doing in school math
- activities present skills in small chunks with many opportunities for practice
- though not Canadian, it's not disruptively un-Canadian
- activity sheets are photocopiable

Limitations or Shortcomings

- does not actually include the manipulables
- no tests or reviews

Fundamental Level Mathematics I, II and III

Form workbooks for students, and guides and test books for teachers

Best used with students who have high levels of literacy

Purpose to provide learning materials that support a change from the time when mathematics education was “a means to separate those who were likely to take management roles from those who were more likely to provide labour” to the present, when “all members of society must apply some mathematics to be productive citizens”, in hopes that “Students should leave our classrooms with confidence in their abilities to apply mathematical reasoning to the world around them.”

Author The Centre for Curriculum and Professional Development, Ministry of Skills, Training and Labour of British Columbia

Published in Canada,
in 1993 and 1994

How to get it • order it from Literacy Services of Canada, Ltd., Tel. 1-888-303-3213, 8719 50 St. NW, Edmonton, Alberta, T6B 1E7

Strengths

- created expressly for adult numeracy
- includes answer key for exercises, as well as tests
- Canadian
- includes activities to be done with manipulables
- layout is simple and professional
- helps with attitudes towards math; the volume “A New way to look at math”, especially, addresses math anxiety
- ready to use in the classroom
- has variety
- forms a coherent system to progress through
- if not used in its entirety, still can be used to find some good ideas for use in a different curriculum
- covers whole numbers, fractions, decimals and percents

Limitations or Shortcomings

- not photocopiable
- must be bought
- uses a lot of language, therefore cannot be used with students at low- or mid-levels of literacy
- large parts are just like a traditional workbook

Learning to Count Money, Learning to Tell Time

Learning to Add and Subtract

Form three reproducible texts

Best used with adult literacy learners and English as a Second Language literacy learners

Purpose to help learners learn the names, appearances and values of Canadian coins; to help learners learn to tell time, and to help learners add and subtract

Author Toronto Catholic District School Board (Anne-Marie Kaskens, Writer; Joy Lehman, Project co-ordinator)

Published in Toronto from 1999, onward
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- How to get it**
- borrow them from AlphaPlus
 - Buy them for \$15 each (the \$15 includes sales tax and \$5 for shipping and handling). Send a cheque (payable to “Adult Education, TCDSB”) to Tina D’Alessandro, Continuing Education Department, TCDSB, 80 Sheppard Ave., Toronto, Ontario, M2N 6E8. For more information, call Meagan Lee at (416) 222-8282 ext. 2427, or visit the board’s web site at www.tcdsb.on.ca/adulted.

Strengths

- made expressly for adult numeracy
- Canadian
- up-to-date
- some pages can be copied and cut up to make flashcards and games
- for lower-level students
- layout is clear, simple and professional
- addresses skills used in everyday life
- contains a lot of practice
- short chunks of content
- ready to use in the classroom; worksheets may be photocopied for classroom use
- forms a coherent system to progress through, including assessment and evaluation
- explicitly states which of the Ontario LBS learning outcomes are addressed in these exercises

Limitations or Shortcomings

- none, really — they achieves their purposes nicely!

Math Exercises for Non-Readers

Form a book for teachers, which includes activities

Best used with lowest level LBS students

Purpose to teach K-12 non-readers skills so that job training, community training and life skills education prove less complicated when students are ready for transition from the more sheltered school settings to community living

Author Anne-Marie Johnson

Published in the USA in 1998

How to get it

- borrow it from AlphaPlus
- buy it from the publisher: Mayer-Johnson Co., PO Box 1579, Solana Beach, CA 92075

Strengths

- helps a teacher identify topics that can be worked on with a very low level student
- several activities ready to be used in the classroom
- very clearly laid out
- contains a lot of practice (presents blank worksheets for teachers to photocopy to make several versions of one exercise)
- short chunks of content, and a small amount of information on each page
- hard to tell it's not Canadian
- up-to-date
- forms a coherent system to progress through

Limitations or Shortcomings

- the author's system of using communication pictures may not be useful (but it doesn't get in the way of using some other parts of the book)
- not created expressly for adult numeracy
- is a series of workbooks, which was not one of the priorities of the teachers surveyed

Math Games and Activities from Around the World

Form a book describing traditional games and providing photocopiable pages with which to recreate these games

Best used by a teacher with students who were born outside Canada, or students who are interested in multiculturalism, or students who see the value of playing games to practice math

Purpose to explain games involving math that are played all over the world, so that kids can play them

Author Claudia Zaslavsky

Published in the USA in 1998

How to get it

- borrow it from the Ottawa Public Library
- buy it from the publisher: Chicago Review Press, Inc., Chicago, Illinois

Strengths

- might access some students' background knowledge, and bring it into the current learning situation
- game format provides repeated practice
- most games involve manipulables
- broadens a student's idea of what math is

Limitations or Shortcomings

- some students don't like playing games

Mathematics: a new beginning

Form a resource book containing a set of activities

Best used with adult students returning to study after being out of school for a significant time

Purpose to support LBS teachers who would like to teach numeracy; to offer something worthwhile for students to do on short notice; to help teachers build a whole term or more of study

Author Beth Marr and Sue Helme (Eds.), Teaching Maths to Women Project

Published in Australia in 1987 (second reprint in 1992)

How to get it

- borrow it from AlphaPlus
- order it from Australia: Adult Education Resource and Information Service, Ph (03) 9926 4779, Fax (03) 9926 4780, Email aris@la.ames.vic.edu.au, web site www.sunsite.anu.edu.au/language-australia/aris. Cost: \$40.00 AU plus tax and postage (this is in Australian dollars; in Canadian dollars, the price is slightly lower)

Strengths

- created especially for adult numeracy
- can be used directly with students
- suited for mid-level students; may be adapted for lower or higher-level students
- involves hands-on active learning
- applies skills in real-life situations
- address math anxiety of students
- has an answer key
- layout is clear, simple and professional, helps with study skills and learning strategies, photocopyable by teachers

Limitations or Shortcomings

- Australian-ness interferes sometimes

Measure Up! (in mm, cm, m, km)

Form a workbook of materials that may be photocopied for use in a classroom

Best used with low- to mid-level learners who are beginning to learn the metric system

Purpose “This pack contains a series of worksheets to enable the adult learner to fully understand and confidently use the metric system for linear measurement. The pack will enhance a student’s ability to: visualise and estimate, measure accurately, master the foundation skills, apply these skills to appropriate everyday contexts.”

Author Eunice Nicholson and Mark Bedford

England, 1994

How to get it • borrow it from AlphaPlus

Strengths

- created expressly for adult numeracy, “by experienced practitioners in the field of Numeracy tutoring”
- for lower-level students
- clear and simple explanations with good examples
- hands-on kinesthetic learning in places (e.g., using a ruler)
- short chunks of content
- layout is clear, simple and professional
- ready to use in the classroom
- can be photocopied for use in a classroom
- doesn’t require a high level of literacy
- forms a coherent system to progress through

Limitations or Shortcomings

- because this resource is British, the paper is an unusual size, and some exercises that involve place names (e.g., a chart showing the distances among the cities of Bordeaux, Calais, Le Havre, Lyon, Reims, Toulouse) may need to be changed
- quite limited real-life applications

Numeracy Handbook (The): a resource for literacy and numeracy teachers

Form a book

Best used by a literacy teacher who wants up-to-date, clear and practical answers to his/her questions about how to teach numeracy

Purpose “This is a practical guide targeted at literacy and numeracy teachers. The book considers issues in defining and teaching numeracy, looks at numeracy in the workplace, and how to design a course and a unit of work. It has a section that looks at numeracy skills and strands, which includes the number system, space, measurement, data, estimation and calculators. The Numeracy Handbook also includes suggestions for professional development activities for teachers of numeracy and literacy and a section on resources.”

Author Annabelle Lukin and Linda Ross

Australia, 1997

How to get it

- borrow it from AlphaPlus
- order it from Australia: New South Wales Adult Migrant Education Services (NSW AMES), PO Box 1603, Rozelle NSW 2039. Ph (02) 9555 5300, Fax (02) 9555 5311, web site www.nsw.ames.edu.au. Cost: \$26.95 AU (this price is in Australian dollars; in Canadian dollars, the price will be a little lower plus postage)

Strengths

- created expressly for adult numeracy by experienced practitioners and researchers
- suggests teaching strategies
- shows how to plan a unit of study that includes hands-on learning, application in real life contexts, opportunities for practice of skills, and development of understanding
- excellent list of further readings

Limitations or Shortcomings

- Australian, therefore unusual paper shape and some unfamiliar real-life documents

Numeracy: more than numbers

Form a resource package for teachers, as “staff development sessions for teaching numeracy to adults”

Best used to support LBS teachers in teaching numeracy

Purpose “This book was developed as a resource package for Literacy and Numeracy teachers. Its aim is to demonstrate Good Practice in Numeracy via the example of lessons in six different teaching areas in Numeracy....This book does not attempt to cover all teaching areas in Numeracy but rather to provide teachers with examples that will inspire them to extend the philosophy of Good Practice to other teaching areas in Numeracy.”

Author Editors: Sue Lord and Pauline Tester, Adult Literacy Information Office

Published in Australia in 1990

How to get it • borrow it from AlphaPlus

Strengths

- created especially for adult numeracy
- has variety
- up-to-date
- clear and simple explanations
- short chunks of content
- ready to use with students
- addresses the vocabulary of math
- process followed includes vocabulary, hands-on experience, then worksheets
- covers household measurement, calculators, estimation, rounding off, fractions, decimals, patterns and geometry

Limitations or Shortcomings

- Australian-ness interferes sometimes
- not a lot of practice, tests or reviews — teacher must create own

Numeracy on the Line

Form a set of related activities developed to train workers in the automotive industry, and extendable to workers in any modern workplace

Best used by a teacher who is looking for ideas for practical math, in a work setting or an academic setting; also useable in any modern workplace, and in ESL classrooms

Purpose to help students upgrade their numeracy skills in an active way, in preparing for the modern workplace

Author Beth Marr, Chris Anderson and Dave Tout

Published in Australia in 1994

How to get it

- borrow it from AlphaPlus
- order it from Australia: national Automotive Industry Training Board, Doncaster, Victoria, Australia 3108

Strengths

- created especially for adult numeracy
- emphasis on the language of math
- activities are ready to be used
- supports teachers who lack confidence in numeracy
- clear and simple explanations with good examples
- has an answer key
- short chunks of content and small amount of information on a page
- photocopiable
- up-to-date
- has variety
- addresses measuring and reading gauges, decimals, percent, charts, graphs, averages, calculators

Limitations or Shortcomings

- Australian-ness interferes sometimes
- some material at quite a high level
- very little use of manipulatives
- doesn't include a lot of practice, or tests and reviews

Some Beginnings in Algebra: a resource book for teachers of adults returning to study

Form a book of related activities on introductory algebra (meant as a follow-up to 'Mathematics, a new beginning')

Best used with students who are beginning to learn algebra

Purpose to support teachers in teaching algebra

Author Beth Marr and Sue Helme

Published in Australia in 1995

How to get it

- borrow it from AlphaPlus
- order it from Australia: Northern Metropolitan College of TAFE, Numeracy Centre

Strengths

- created especially for adult numeracy teachers
- up-to-date
- provides teaching strategies
- photocopiable worksheets
- emphasizes language
- clear and simple explanations with good examples
- includes answer key
- short chunks of content and small amounts of information on a page
- helps with learning strategies
- has variety
- best for students going on to further education

Limitations or Shortcomings

- Australian-ness interferes sometimes
- though surveyed teachers' priorities were for material at the lower levels, this is at a higher level
- no manipulables
- teacher is responsible for extra practice, tests and reviews

Strength in Numbers: a resource book for teaching adult numeracy

Form a 3-inch binder full of activities and worksheets

Best used with students who need to study the lower level math skills and whose reading levels are low

Purpose to be a lower-level companion to the document "Mathematics: a new beginning"

Author Ruth Goddard, Beth Marr, Judith Martin

Australia 1991

How to get it

- borrow it from AlphaPlus
- order it from Australia: Adult Education Resource and Information Service, Ph (03) 9926 4779, Fax (03) 9926 4780, Email aris@la.ames.vic.edu.au, web site www.sunsite.anu.edu.au/language-australia/aris. Cost: \$36.00 AU plus tax and postage (this is in Australian dollars; in Canadian dollars, the price is slightly lower)

Strengths

- written explicitly for adult numeracy students
- concentrates on basic maths skills being taught in a co-operative, hands on way
- range of group activities and worksheets using language suitable for students with low levels of literacy skills
- assumes very little knowledge of maths by either teachers, tutors or the students
- sections are: Getting Started, Exploring Numbers, Addition and Subtraction of Whole Numbers, Multiplication and Division of Whole Numbers, Metrics and Money, and Simple Fractions and Percentages
- addresses students' attitudes toward math
- photocopiable by a teacher for classroom use

Limitations or Shortcomings

- Australian, therefore unusual size of paper, some unfamiliar terms, and some inappropriate real-life documents

Sources of Manipulables

Building supply stores and hardware stores

Form stores from which to buy adult-appropriate concrete materials

Best used by a teacher or an administrator who has some money with which to purchase manipulables

Purpose to provide students with tools and materials with which to develop real-life numeracy skills such as measuring

Author n/a

Everywhere in Ontario, always carry materials and tools that are used currently

How to get it • stores like Home Hardware, Home Depot, Canadian Tire, any building supply store or hardware store

Strengths

- materials and tools that are used by adults in real-life
- hands-on, kinesthetic learning
- items recommended for purchase: wooden dowels of different diameters, electrical extension cords of different lengths, measuring tapes, outdoor and indoor thermometers, rain gauges, calipers, light timers, combination locks, washers of different diameters, plastic organizer trays, nails and screws of different lengths.
- reusable
- offer many opportunities to practice measurement, especially with fractions of an inch
- flexible — can be used as a quick activity or a longer project; can be adapted for use with students at all levels
- students might work with these items in groups, and thereby develop their ability to communicate using mathematical language
- will help students whose goal is to go into trades
- will help students who would like to develop personally, for example, by showing them how to use a combination lock

Limitations or Shortcomings

- cost money
- teacher must create own learning activities
- some students object to using manipulables in a math class, even if they are real ones that adults use in their home or work lives

Exclusive Educational Products

Form a company that sells manipulables for math, among other things

Best used by teachers who have a budget to buy manipulables

Purpose the reason that this resource has been included in this catalogue is to show teachers the manipulables used to teach math in Canadian schools; the company's purpose is to 'emphasize the "hands on" approach to learning...in mathematics, science and design/technology for students and teachers from Kindergarten to Grade 12" (and to make money, no doubt!)

Author n/a

Catalogue published in Ontario annually

How to get it

- order a catalogue over the phone: 1-800-563-1166 (Barrie, Ontario)
- use their web site: www.exclusiveeducational.ca

Strengths

- manipulables
- an all-Canadian company
- easy-to-use web site; items are sorted according to where they match the Ontario math curriculum, grades 1 to 9 of which parallel the LBS Learning Outcomes levels 1-5
- they sell: playing cards and spinners for overhead projectors, coins and bills, "The Learning Clock", wind-up metre tapes, a calculator cash register, a weather set, a cheque book, clip art for math teachers, clock dominoes, and much more

Limitations or Shortcomings

- not expressly for adults
- items cost money

Ottawa-Carleton Educational Media Centre

Form a resource centre

Best used by a teacher who wants to borrow kits of manipulables, and whose employer is a member of the media centre (member organizations include Ottawa's four boards of education, Algonquin College and the University of Ottawa)

Purpose to be Ottawa-Carleton's leading source of learning resources

Author n/a

based in Ottawa, regularly updated

How to get it

- browse their holdings, and reserve what you would like, from their web site: www.mediacentre.com
- browse their holdings in person at their building at the south east corner of Bronson and the Queensway — enter from Chamberlain along the south side of the building
- phone them at: general inquiries 239-2379, kit centre 239-2556

Strengths

- free (to members)
- already-assembled kits of manipulables
- will deliver and pick up your order
- as well as the math kits, some of the science kits may also be appropriate
- several good kits for geometry and measurement
- they take donations of resources

Limitations or Shortcomings

- most resources are for elementary and high school students
- relatively limited number of resources that are appropriate for adults
- can only be used by members
- for some of the popular items it is necessary to book several months in advance
- lending period is only two weeks

Scholar's Choice Moyer

Form a company that sells educational products

Best used by a teacher who has some money with which to buy manipulables, especially for lower level students

Purpose the company's purpose is to "search the world for educational products that can be used at home or at school to help parents and teachers in the process of educating young children"

Author n/a

Based in London, Ontario, regularly updated
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How to get it

- visit their Ottawa stores at 2635 Alta Vista Dr., 260-8444, and 2121 Carling Ave., 729-5665
- order from their catalogue
- visit their web site: www.scholars.on.ca
- phone their main office in London, Ontario at: 1-800-265-1095

Strengths

- Canadian
- 'Mathematics' and 'Science' sections of catalogue contain good products and ideas
- provides opportunities for hands-on kinesthetic learning

Limitations or Shortcomings

- only a few of their hundreds of products are suitable for adults
- cost money

Computer Software

Attainment's Dollars and Cents

Form software on CD

Best used with any student who wants to practice paying and making change

Purpose to provide opportunities for students to practice paying with appropriate bills and coins, and to choose appropriate coins to give back as change

Author Scott D. Meister, Attainment Co., Inc.

Published in the USA in 1999

- How to get it**
- from AlphaPlus
 - order from a Canadian source: a single CD for \$153 Cdn, or a five-copy lab set for \$293 Cdn from Tash in Ajax, 1-800-463-5685
 - order from Attainment itself, in the US: a single CD for \$99 US or a single CD with a five-computer license for \$189 US by phone (1-800-327-4269) or fax (1-800-942-3865)
 - check out their web site: www.attainmentcompany.com

Strengths

- basic and simple, but not boring
- mostly adult-like, even though it's not created expressly for adult numeracy
- realistic-looking Canadian currency, including the twonie
- endless practice of an everyday skill
- includes tests, and checks student's work
- only preparation is to load the CD

Limitations or Shortcomings

- a bit tricky to find how to change from US currency to Canadian currency
- George Washington shows up now and again

Measuring Up

Form software on CD, “an interactive multimedia computer resource for teaching and applying metrics and measurement to real life contexts through the learning areas of decimals, fractions, scales and the metric system”

Best used with mid-level students, but lower-level learners could do many of the introductory activities, and higher-level students could use some activities for practice and revision

Purpose to provide adult students of numeracy with opportunities for effective learning in a range of meaningful contexts

Author Dave Tout and Beth Marr (content), Virginia Westwood and Heather Kaufmann (program design and production)

Published in
Australia in 1997

How to get it • order it from Literacy Services of Canada, Ltd., Tel. 1-888-303-3213, 8719 50 St. NW, Edmonton, Alberta, T6B 1E7 (\$110.00 Cdn, plus freight and GST = \$133.75 for one CD for one computer. Licenses for 5 users, 10 users, and an entire site are also available.)

Strengths

- created expressly for adult numeracy
- teaches skills and then offers the opportunity to apply them in five real-life settings, (e.g., in a mail room)
- clear instructions (though they are given with an Australian accent, they can be repeated as many times as the student wishes)
- manageable organizational structure, supported by two sections of the manual: (1) Table of Skills and Knowledge, and (2) Learner’s Record Sheet
- so rich that it can be used a lot
- encourages students to estimate and use a calculator (the student’s own, or one on the computer screen)
- every student response is given feedback, and a student’s performance can be summarized at the click of a button

Limitations or Shortcomings

- difficult for some students because of Australian accents and vocabulary (e.g., ‘the chemist’s shop’, ‘the greengrocer’)

Web Sites

Adult Numeracy in Australia

Form a web site

Best used by a numeracy teacher looking for resources and professional development

Purpose "Australia is seen as a leader in the development and production of adult numeracy curriculum, professional development materials and teaching resources. This home page aims to provide information and access to some of these ideas and materials."

Author n/a (operated by Adult Education Resource and Information Service (ARIS) and Language Australia, Executive Director Dave Tout)

Based in Australia,
updated frequently

How to get it • www.sunsite.anu.edu.au/language-australia/numeracy

Strengths

- created expressly for adult numeracy teaching
- describes background of numeracy, and leads the way into the future
- links to the Certificates in General Education for Adults (CGEA) (the Australian numeracy and mathematics curriculum framework for adults)
- has a resource database and a database of journal readings
- reports on numeracy projects in Australia, and links to project reports worldwide
- publishes a monthly memo
- sells Australian resources

Limitations or Shortcomings

Adult Numeracy Network

Form a web site

Best used by a teacher looking for professional development and interesting links

Purpose “We are a community dedicated to quality mathematics instruction at the adult level. We support each other, we encourage collaboration and leadership, and we influence policy and practice in adult math instruction.”

Author n/a

Based in the USA,
updated regularly

How to get it

- www.std.com/anpn

Strengths

- focus is on adult numeracy teaching
- expands one’s view of the field
- links to interesting information

Limitations or Shortcomings

- some of the practical information (e.g., dates for professional development sessions) is only useful for people in the USA

Essential Skills Profiles (Human Resources Development Canada)

Form a web site that describes the essential skills (defined as the skills that (1) help people perform the tasks required by their occupation, (2) provide workers with a foundation to learn skills that are more occupation-specific, and (3) enhance people's ability to adapt to workplace change) that are necessary for 150 occupations in Canada that require a high school diploma or less (eventually, the site will profile occupations with higher requirements)

Best used by a teacher who is setting up students' training plans, and planning goal-directed numeracy learning activities; could be used by a student exploring long-term goals

Purpose "At this point in time, the Profiles are essentially research reports on a variety of occupational groups. When all the Profiles are written, HRDC will do further analysis across occupations as well as using the information to develop specialized products such as career information publications."

Author Human Resources Development Canada

Canadian, in progress

How to get it • www.hrdc-drhc.gc.ca/hrib/hrp-prh/skills/profiles.html

Strengths

- can be downloaded as Microsoft Word Documents or Word Perfect Documents
- free
- lists numeracy skills needed for entry level employment
- for adults in the world of work
- a great help to the teacher who must plan learning activities for a group of students who have different long-term goals
- a guide to the profiles can also be downloaded, and it is very clear and helpful

Limitations or Shortcomings

- the downloading process sometimes gives a document incorrect formatting, but not so much that it becomes illegible

FunBrain.com ('ChangeMaker' and 'Guess the Number')

Form two games on a web site that has many games

Best used by low- to mid-students who want to practice making change ('ChangeMaker'); by students who would benefit from guessing a number, given simple clues ('Guess the Number')

Purpose "to focus on providing teachers, parents and kids with the tools they need to succeed"

Author n/a (Publisher: Michael Cirks, Curriculum advisor: Dr. Robert Skinner)

Based in the USA (Chicago), copyright 1997-2000

How to get it

- Changemaker: www.funbrain.com/cashreg/
- Guess the Number: www.funbrain.com/guess
- for a list of their other games: www.funbrain.com/numbers.html (most of the other games are not highly recommended for adult numeracy, but new ones may be added)

Strengths

- ChangeMaker: real-looking Canadian coins and bills, game's appearance is appropriate for adults
- Guess the Number: simple, teacher can control difficulty level

Both games:

- can be played on any computer that has an internet connection
- free
- students practice using the numberpad, scrolling and clicking
- endless practice

Limitations or Shortcomings

- has advertising
- advertising is geared toward kids
- in ChangeMaker, some small purchases are sometimes paid with unrealistically large bills, e.g., a purchase of \$1.39 is paid for with \$100.00. (this game doesn't set a good example regarding paying with appropriate bills and coins – see Attainment's Dollars and Cents in this catalogue for better, though not free, software to develop this skill)

Lemonade Stand

Form a simulation of running a lemonade stand, on the internet (“In this game, it is your job to run a street-corner lemonade stand and to try to make some money doing it. You have the ability to control how much lemonade you produce in a day. If you create too much, you have wasted some of your money. If you create too little, you lose out on opportunities to sell your product.” “Customer demand is important, or else nobody will be there to buy your lemonade. One major factor in customer demand is the weather. People are much more likely to buy lemonade on hot, sunny days than on cold, rainy ones.” “Your pricing also affects demand. The more expensive your lemonade is, the fewer people who will want to buy it.”)

Best used by a mid- to higher-level LBS student, repeatedly, so that he or she has a chance to understand the game, to learn, and to apply what has been learned

Purpose to provide an opportunity for students to solve problems and make judgements in a small business context; to estimate costs, and predict sales in order to make the most money possible

Author Jason Mayans, a software engineer, maintains this web site

Based in USA (Washington State), updated regularly
--

How to get it • www.littlejason.com/lemonade

Strengths

- rich!
- can be used on any computer that has an internet connection
- free
- gives weather predictions on which students base how much lemonade they will make (using this information requires the students to read a table and understand the temperatures it presents, as well as the percentage indicating the chance of rain)
- students must do a lot of estimating and problem solving, for example, ‘If I plan to sell 50 glasses of lemonade at 50 cents each, will I cover my fixed costs?’
- inspired lively conversation, laughter and friendly competition in an LBS math class that used it

Limitations or Shortcomings

- not for lower-level students
- has become more complicated in the last two years, so may continue to evolve beyond the LBS level
- has some advertising
- may be frustratingly slow on older systems or at high use times
- students will need to play this on more than one occasion in order to get the hang of it

Math Forum (The)

Form a web site

Best used by teachers first, in order to locate resources, and then by students, with the direction of the teacher

Purpose “Our goal is to build an on-line community of teachers, students, researchers, parents, educators and citizens at all levels who have an interest in math and math education”

Author n/a (operated by The Math Forum, in Swarthmore, Pennsylvania)

Based in the USA, updated regularly
--

How to get it

- www.forum.swarthmore.edu
- for the part of this web site that is especially for adult numeracy:
www.forum.swarthmore.edu/teachers/adult.ed/

Strengths

- can search the site
- helps a teacher get a broader perspective on numeracy teaching, and also offers links to practical teaching suggestions

Limitations or Shortcomings

- because it is from the USA, some acronyms and references to government policies are not understandable by Canadians
- because the site contains so much information about all kinds of math teaching and learning, one can get sidetracked into math that is inappropriate for adults, or at too high a level for LBS students

National Adult Literacy Database (NALD)

Form a web site with links to countless excellent numeracy and literacy resources; this site also hosts the homepages of several literacy agencies

Best used by everyone involved in LBS, e.g., teachers, learners, administrators

Purpose to provide a site where ideas, literacy resources and information can be shared and exchanged

Author n/a (Charles Ramsey, Executive Director)

Canadian (based in New Brunswick), updated regularly
--

How to get it • www.nald.ca

Strengths

- vast!
- presents links to a large number of internet resources
- on-line math resources are grouped under the headings: resources for facilitators, theory and concepts, resources for learners, learning strategies, software, tools
- presents links to literacy and numeracy newsletters
- presents links to research in LBS, including numeracy
- is a place where teachers can put their work, should they want to share it
- lists most literacy organizations in Canada and all over the world
- includes a catalogue of literacy and numeracy resources that can be bought
- always growing
- every resource mentioned in the catalogue that you are reading can probably be found via NALD

Limitations or Shortcomings

- because the web site contains so much, the user may initially have to commit a significant amount of time to exploring it

Statistics Canada

Form a web site, including large on-line databases and teaching/learning activities

Best used by a teacher, to get interesting data and teaching ideas; or by a student, to get interesting data which can then be manipulated and presented, or to locate graphs and maps of interest

Purpose to make reliable and timely information about Canada and Canadians available freely (“Organized information has always been important in understanding problems, in aiding intelligent decision making, and in providing a means of learning from our experience.”)

Author many

Based in Ottawa,
updated regularly

How to get it

- start browsing from the home page of the Statistics Canada web site: www.statcan.ca/english
- look at the specific pages of the Statistics Canada web site that are recommended in the ‘Try these pages’ box below

Strengths

- up-to-date (also: historical, if you would like to look at statistics from the past)
- data relevant to adults
- data describing the students’ immediate society (i.e., Ottawa) can be easily found (e.g., compare the amounts of daily TV watching in Vanier and Ottawa)
- teaches about data management, so teachers can brush up
- Canadian — and how!
- free (once one has access to a computer with an internet connection)
- tables of data can be printed out and photocopied
- mid- to high level students can use the web site themselves
- suitable for students whose goal requires them to learn to understand data that describe society

Limitations or Shortcomings

- requires that a teacher create his or her own learning activities, for the most part
- lower level students would have trouble navigating the web site

Try these pages on the web site:

www.statcan.ca/english/edu
www.statcan.ca/english/kits/graph.htm
www.statcan.ca/english/kits/social.htm

Resource Centres

Centre AlphaPlus Centre

Form a resource centre that will mail its resources anywhere in Ontario, the centre's web site (which includes the AlphaPlus Index to Web resources, the trial runs of AlphaRoute (a Web-based adult literacy curriculum), and an electronic discussion system (AlphaCom)), and the centre's newsletter.

Best used by a teacher (some areas are for learners)

Purpose "Our aim is: (1) to facilitate communication within the adult literacy and second language learning communities, and (2) to provide useful, relevant resources that will enrich the learning of adults who are developing literacy and language skills"

Author n/a (Linda Monteith, Executive Director)

Based in Toronto, growing all the time

How to get it

- look at their catalogue and the other parts of their web site on the internet: www.alphaplus.ca
- contact them at: tel.: 1-800-788-1120, fax: 1-800-788-1417
- browse their collection in Toronto on Tuesdays and Thursdays from 11 a.m. to 6 p.m. (2040 Yonge Street, 3rd floor, M4S 1Z9)

Strengths

- has in its collection many of the resources recommended in this catalogue
- will purchase and include in its collection resources that come highly recommended
- on its web site, has an index to web resources in numeracy
- good source of information about the field of LBS

Limitations or Shortcomings

Business and Consumer Math: “Punching In and out” and “Earning Money”

Form two videos that can go together or separately, approximately 15 minutes each

Best used with students studying math for employment, or who want to understand the different ways in which workers are paid

Purpose to illuminate the exercises in an Independent Learning Centre course on Business and Consumer Math, these videos were originally broadcast on TVOntario

Author Ron Lancaster, Independent Learning Centre and TVOntario

Made in Ontario in the 90s

How to get it • borrow them (item numbers: 408903 VH and 408904 VH) from the Ottawa-Carleton Educational Media Centre (239-2379, 605 Bronson Ave. at the Queensway)

Strengths

- goes into a real restaurant where people are paid hourly, to look at a time clock and how it works (i.e., it uses the 24-hour system, it follows the 1/4-hour rules)
- gives real-life examples of commission, e.g., money earned by movie theatres, money earned as tips by waiters and waitresses
- looks at earning money for piecework
- for mid to high levels
- made in Ontario

Limitations or Shortcomings

- the host, Ron Lancaster, talks quickly — the teacher might need to replay the video
- teacher must create own learning activities based on this

Interactions: Real Careers, Real Math: Recycling

Form a video, approximately 13 minutes

Best used with students who are studying percents and pie graphs, or who are exploring career options, or who are interested in recycling

Purpose to explain the negative side of putting garbage in landfills, and to describe how Seattle, Washington changed from that to recycling; measures and describes the change with percents and pictographs

Author Foundation for Advancement in Science and Education, USA

Made in the USA in 1994

How to get it

- borrow it (item number: 956059 VH) from the Ottawa-Carleton Educational Media Centre (239-2379, 605 Bronson Ave. at the Queensway)
- order it from Canadian Learning Company, Woodstock, Ontario (519) 537-2360

Strengths

- appropriate for adults
- clear and simple
- real-life context
- up-to-date
- contains a variety of math, e.g., rate of participation in recycling program, charging homeowners according to the volume of garbage they generate, measuring what percent of garbage is paper.

Limitations or Shortcomings

- a bit unsettling at times, e.g., dead fish in leachate, explosive gas from a landfill required people to permanently leave their homes
- students should be told that it's about the United States, and that some of the information is not the same for Canada, but there are parallels
- teacher must create own learning activities to go with this

Reading for Professional Development

Cooperative Learning in Mathematics: a handbook for teachers

Form a book that describes theory and practical techniques, especially Chapter 4

Best used by a teacher who would like to implement small group or cooperative learning in a math class

Purpose “the procedures described in this volume are realistic, practical strategies for using small groups in mathematics teaching and learning. These methods can be applied with all age levels of students, ... and all major topic areas in math”

Author Neil Davidson, ed.

Published in USA in 1990

How to get it

- borrow it from AlphaPlus
- buy it from the publisher: Addison-Wesley Publishing Co., Don Mills, Ontario

Strengths

- its primary strength is that it describes teaching and learning strategies that improve math learning and attitudes toward math, and that develop the language of math as well as team-work skills
- recommends hands-on kinesthetic learning and mentions manipulables
- hard to tell it's not Canadian
- can be used to teach most topics

Limitations or Shortcomings

- not something you can use immediately in the classroom
- not created especially for adult numeracy, therefore may require some modification

Ethnomathematics: a multicultural view of mathematical ideas

Form a book

Best used by a teacher or teacher-trainer who works with immigrants to Canada, and would like to broaden his or her understanding of math, learn how math interacts with culture, and perhaps come to recognise the math skills of his or her foreign-born students

Purpose to “introduce the mathematical ideas of people who have generally been excluded from discussions of mathematics”, and “take a step toward a global, multicultural view of mathematics”

Author Marcia Ascher

Published in USA in 1991

How to get it

- borrow it from AlphaPlus
- buy it from a book store or the publisher: Brooks/Cole Publishing Company

Strengths

- multicultural view
- deep, on the frontier, mind expanding
- mentions Inuit mathematics

Limitations or Shortcomings

- doesn't include ready-to-use activities

The Language of Math: its implications for teaching numeracy

Form an article

Best used by a teacher interested in knowing more about the language of math

Purpose to explain how to use language to improve a student's learning

Author Dave Tout and Bill Bradshaw, Division of Further Education, Ministry of Education

Published in Australia in 1989

How to get it • borrow it from AlphaPlus

Strengths

- created expressly for adult numeracy teaching
- clear and simple explanations with good examples
- short
- helps with learning strategies and study skills
- talks about 'speaking to learn'

Limitations or Shortcomings

Reclaiming Mathematics: background readings to accompany “Breaking the Maths Barrier”

Form a book of reading on numeracy for LBS teachers

Best used by a teacher, to learn the theory and social context of numeracy and numeracy teaching

Purpose to encourage practitioners in numeracy to reflect critically on their practice and on the role of mathematics and numeracy in society

Author Betty Johnson, editor

Published in Australia in 1992

How to get it

- borrow it from AlphaPlus
- order it from Australia: Language and Literacy Centre, University of Technology, Sydney, PO Box 123, Broadway, NWS 2007, Fax: (20) 9330 3939

Strengths

- created especially for adult numeracy teachers
- up-to-date
- titles of chapters include, ‘Language and Maths’, ‘Overcoming Maths Abuse’, ‘Learning (and teaching) Maths’
- provides teaching strategies

Limitations or Shortcomings

- Australian-ness interferes sometimes
- not something a teacher can use in the classroom the next day
- a very good resource for understanding numeracy teaching from several angles, but not a priority of surveyed teachers