



Additional Resources



ADDITIONAL RESOURCES

Introduction

The following pages provide a list of resources recommended by practitioners working in Ontario's Literacy and Basic Skills programs. These resources may be useful in helping learners develop skills and gain knowledge within various task groups of the Understand and Use Numbers competency.

The resource list is sorted alphabetically. Each listing contains the resource name, a brief description of its contents and where it is available. Prices have not been provided for resources that are purchasable, since prices have a tendency to change.

There are many valuable resources available to LBS programs and this is not an exhaustive list. To help you with your search for relevant materials related to the Understand and Use Numbers competency, we have included the current resources recommended by the many LBS practitioners contacted during the research of this project.

Community Literacy of Ontario hopes that this listing of additional resources will provide you with some new tools to help learners in your program, as they work to increase their abilities in this particular competency.



Resource Name	Information
AAA Math	<p>This interactive site provides online math exercises complete with explanations and challenging games. AAA Math boasts thousands of interactive arithmetic lessons and problems including: Statistics, Algebra, Numbers, Measurement and Geometry. The site is user-friendly with all links displayed on the main page as a table of contents. There is also a handy index of all exercises which enables the user to jump to specific lessons and levels. Each lesson has explanations, as well as online, timed practice and challenge games to increase speed, accuracy, and confidence while having fun. Immediate feedback avoids learning incorrect methods. There is no cost or registration required. www.aaamath.com</p>
Adult Education Tutor Support	<p>On this American website, you will find lessons, handouts and other resources to help tutors. It has a collection of lesson ideas specifically for adult educators. The subjects covered are reading, writing, math, GED preparation and workplace skills. There are also special lesson ideas for working with ESL and learning-disabled students. The math topics include: Balancing a Chequebook, Teaching Fractions, Teaching Percentages, Teaching Word Problems and Using a Chequebook. www.eastsideliteracy.org/tutorsupport/General/GeneralLessonList.htm</p>
BBC Skillswise – Maths	<p>This British adult learning site has practical, common-sense maths for adults. Choose a topic area from Numbers, Calculation, Percent, Fractions, Measuring, Shapes and Graphs. Within each topic area, there are between four and eight sub-topics. Each sub-topic includes three or four levels of activities. The activities vary, but include videos, interactive games, quizzes, etc. www.bbc.co.uk/skillswise/maths</p>



<p>Breakthrough to Math</p>	<p>This highly-recommended, four-level, New Readers Press publication has books on 20 different topics, as well as workbooks and teacher’s guides at each level. To make math easier to understand, skills are broken into very basic steps and related to life contexts. This edition includes multiple-choice questions to help learners practice standardized tests and word problems. The Teacher’s Guides include instructional strategies and reference materials, such as multiplication table and decimal-fraction conversion charts for each level. There are also level appropriate games to reinforce lessons and make math more fun. Available from:</p> <p>www.laubach-on.ca/bookstore and www.frontiercollegebooks.ca</p>
<p>Building Strength in Numeracy</p>	<p>This Australian resource is a collection of practical activities, hands-on materials and practice exercises. The activities and practice sheets span a range of numeracy levels and subject areas. The resource encourages learning through interaction, with activities that involve discussion, asking questions, explaining their reasoning to others and working co-operatively in pairs or small groups. It teaches concepts in a context relevant to adult students, letting them draw from their backgrounds, interests and experiences. It is accessible online and users will find it convenient to select and download separate activities, single practice sheets or whole sections, as needed.</p> <p>www.valbec.org.au/building-strength-with-numeracy/index.htm</p>
<p>EasyData Activities</p>	<p>The <i>EasyData Activities: Modeling Algebraic Functions with Data Collection Activities</i> CD, from Texas Instruments, is a collection of 15 activities that can be done using their TI-84 Plus and other graphing calculators. Data files are included. Useful for managing data collection, especially for new practitioners. Available from www.eaieducation.com/Product/501914/EasyData%e2%84%a2_Activities_Modeling_Algebraic_Functions_with_Data_Collection_Activities.aspx or Amazon.</p>



<p>Edugains</p>	<p>Edugains is a website that houses Ontario Ministry of Education resources, to support improved learning and teaching in Ontario schools. Its intended audience is classroom educators and learning facilitators. Its mathematics section (www.edugains.ca/newsite/math/index.html) has links to a wealth of material for both classroom help and professional development. The following sections may be of particular interest:</p> <ul style="list-style-type: none"> <p>• Gap Closing (www.edugains.ca/newsite/math/gap_closing.html)</p> <p>The resources on this section of the website are designed for students who need additional support in mathematics. There are two modules, both available in English and French, which deal with various topics of number sense (e.g., fractions, decimals, integers, basic operations, ordering, powers and roots, measurement, algebraic expressions). Each topic is downloadable on its own in PDF format. For each topic in the resource, there is a diagnostic and a set of intervention materials. Diagnostics are designed to uncover the typical problems students have with a specific topic. The site also links to ePractice interactive, web-based activities for students to build confidence in their understanding of concepts and skills. Each activity aligns with a particular Gap Closing lesson.</p> <p>• Continuum & Connections has six downloadable resources: Big Ideas and Proportional Reasoning K-12; Fractions; Integers; Perimeter, Area, and Volume; Proportional Reasoning 7-10; and Solving Equations. Each resource provides contextual connections, suggests instructional strategies and offers a sampling of questions and problems. It also models a variety of representations and strategies that may be used to solve the problems. www.edugains.ca/newsite/math/continuum_connections.html</p>
<p>Freeport Work Place Role-Play Series</p>	<p>This series from ProEd publishers simulates realistic work site activities with authentic entry-level employee tasks that can be accomplished in the classroom. Each of the 5 modules includes: Objectives, Teaching Suggestions, Actual Job Site Samples, a Task Overview, Specific Task Instructions, and Answer Keys. Each module has reproducible worksheets and can function independently from the others. The modules include: Restaurant, Health Care, Banking, Grocery and Park District Store. www.proedinc.com</p>



GCF Learn Free

GCFLearnFree.org (www.gcflearnfree.org) is a highly-recommended, online-based, educational organization. It now offers tutorials designed to provide easy, non-intimidating techniques to gain a better understanding of math. The style is casual with an emphasis on images, interactive lessons and more than 200 video courses. The tutorials are designed to be like a math workbook, so that learners can practice what they learn directly within the lessons and can learn at their own pace. There are three routes to math activities. The first is through the Math link, which offers links to: Addition and Subtraction; Multiplication and Division; Fractions; Decimals; Percentages; and Good at Math. Alternate paths are through the following links:

- *Everyday Life* (www.gcflearnfree.org/everydaylife) uses interactive, situation-based lessons to teach functional literacy and numeracy skills. There are approximately 30 different life scenarios included that cover topics such as bus routes and schedules, telling time, food labels, measurement, money math and wages. Each activity provides learners with the opportunity to test their knowledge of real-world situations and to develop the confidence and skills necessary to be successful in everyday life.
- *Work and Career* (www.gcflearnfree.org/career) also uses interactive, real-life situations to present and practise skills. As well as tutorials on resumes, job search and interviewing, you can find a number of numeracy activities through the links of Career Planning and Salary, Money Basics, Job Success (Time Management) and Workplace Basics (Understanding Your Pay, Benefits, and Paycheck).

For the various activities, the Everyday Life project also establishes learning objectives and curriculum guides, which you may find useful.

(www.gcflearnfree.org/everydaylife/about/objectives and www.gcflearnfree.org/educators/curriculum-guides)



<p>GED Video Partners Workbooks</p>	<p>The GED Mathematics Tests, produced by the California Distance Learning Project, are a series of 13 math booklets to help a learner prepare for the math portion of the GED. The booklets take the learner from number-sense through to data analysis and algebra, and include a section on coordinate planes and slopes. After a student has worked through the instruction and practice sections of each module, there is a quiz to check learning. As an added bonus, strategies provided throughout each module focus on how to be successful on the actual GED test. Although geared towards those seeking to write the GED, these modules can be helpful for other learners who need a quick review of particular math concepts.</p> <p>www.cdlponline.org/gedprint</p>
<p>Home School Math</p>	<p>HomeschoolMath.net (www.homeschoolmath.net) is a wide-ranging math site with resources that emphasize understanding of concepts instead of mechanical memorization of rules. Sections include:</p> <ul style="list-style-type: none"> • Free math lessons from addition to percentages • Math worksheet generators from 1st grade number charts to 7th grade proportions and square roots, customizable and randomly generated • A comprehensive list of online math games and resources, arranged by math topic, from addition to geometry, algebra, and calculus • My math YouTube videos that teach the instructor or the learner • Detailed reviews of dozens of interesting math products and resources
<p>K12 Math Worksheets</p>	<p>www.k12mathworksheets.com offers more than 500 free, printable math worksheets covering a wide variety of concepts. The site includes worksheets for addition, subtraction, multiplication, division and geometry. Plus, you'll find practical worksheets on counting money, using number lines, using rulers, and more. You can even print your own graph paper in a number of Imperial measurement formats. While this site has many benefits, watch out for the many false "download links" that actually take you to a google leads advertising site.</p>



<p><i>Khan Academy</i></p>	<p>LBS practitioners regularly cite this as a great free resource. The site (www.khanacademy.org) is most widely known for its math videos that cover math concepts from upper-elementary through college-level. The videos are short and are presented in a casual and unrehearsed, yet engaging, style. It also offers an almost unlimited number of practice exercises, organized by topic, with instant feedback and progress data. Users are encouraged to sign up using a Google or Facebook account. However, it's also possible to sign up with an email address. Once logged in, users can monitor their math progress on a personal dashboard. Badges and points help motivate without being too childish. There is also a teacher's section where you can review learner progress with instant, detailed feedback about each learner and your class as a whole. Knowing how they are doing on each skill, allows you to adjust lesson plans or assign additional activities.</p> <p>Now there is also an app for your iPhone or Android device. To install, open http://khanapp.com from your phone or tablet.</p>
<p><i>Learning on Demand - Numeracy: The Basics (video and workbook tutorial series)</i></p>	<p>Workplace Education Manitoba's (WEM's) "Numeracy: The Basics" video series includes 50 videos, covering 25 essential mathematical skills topics. For each topic, there is a concept instructional video and a practice video with questions and full, walk-through solutions. WEM has also prepared a series of 25 workbooks that accompany the video series and provide opportunities to practise the concepts. The materials use numbers and mathematical thinking to measure and make calculations, estimate, work with money, analyze numerical trends, and create schedules and budgets. This is a good choice for skill development.</p> <p>www.wem.mb.ca/learning_on_demand_numeracy.aspx</p>



<p>Make Math Work Series</p>	<p>There are ten booklets in this OALCF-related series from Ningwakwe Press. Each one focuses on one area of math related to a career. The learner can practice real-life tasks and develop the math skills needed to succeed in their chosen field. Individual tasks may incorporate various competencies and apply to multiple goal paths. A chart outlining the relevant OALCF Competencies and Task Groups precedes each workbook answer key. The series includes: Budgeting – Personal Support Worker; Area and Angles – Welder; Measurement – Carpenter; Estimation – Hairstylist; Ratios and Proportions – Cook/Baker; Averages – Hunting and Fishing Guide; Fractions – Plumber; Tables, Charts and Graphs – Band Office Administrative Assistant; Height, Weight and Distance – Transport Truck Driver; and Money – Cashier. www.ningwakwe.ca/books</p>
<p>Math Goodies</p>	<p>This website is a free math help portal featuring lessons with interactive questions, worksheets generator, flashcards and puzzles for learners, as well as forums and articles for teachers. Math concepts are clearly presented with examples. The difficulty levels extend from single digit basic math facts to geometry and basic algebra skills. Some of the worksheets have numerous practice questions that can be printed out or used interactively online. Although the lessons are categorized by grade, the format is not inappropriate for adults. The site avoids use of juvenile clipart and topics for word problems are not childish. You can also build your own worksheets and make adjustments to suit individual learners. http://mathgoodies.com</p>
<p>Math is Fun</p>	<p>This website offers mathematics in an enjoyable and easy-to-learn manner. It has a variety of good, simple explanations, tips, tutorials, worksheets, games, puzzles, a dictionary, as well as activities to teach and learn different math concepts. Everything is easy to follow and laid out in a clean, concise manner. The content covers basic numbers, measurement, money, algebra, data, geometry and more. www.mathsisfun.com</p>



<p>Math Sense 2 Series</p>	<p>This series from New Readers Press is designed for adult learners, using methods that correspond to how adults best learn math. It offers easy-to-follow, step-by-step instruction in each skill area, followed by practice and real-life application. There are three books in the Math Sense 2 series: Focus on Operations, Focus on Problem Solving and Focus on Analysis. Math Sense covers the math concepts needed to pass the GED. The content is also suitable for learners who wish to improve their employability skills or who seek other education or training. Lessons and review exercises emphasize real-life situations and applications.</p> <p>www.newreaderspress.com/Items.aspx?hierId=9015</p>
<p>Math-Aids</p>	<p>Math-Aids (www.math-aids.com) provides free math worksheets, including some with Canadian money content. The website is the most comprehensive worksheet site we researched, covering over 80 different math topics with more than 980 unique worksheets, randomly-generated in PDF format. Along with the more common math calculations and word problems, it has unique areas, such as graphing and probability. It offers many unique graph paper choices and also covers higher math levels, right up to trigonometry, in its Algebra 1 section. All of this allows you to produce an unlimited number of printable math worksheets according to your specifications. Each math topic has several different types of math worksheets to cover various types of problems you may choose to work on. A detailed description is provided in each section. Answer keys may be printed immediately or saved.</p>
<p>MathFrog</p>	<p>This free site from the University of Waterloo provides online, interactive, learning activities along with printable follow-up exercises. The site is targeted to grades 4, 5 and 6 children, but once you get through the lead in pages and frog cursor, to the actual activities, the material is appropriate for adults. Both the interactive and the printable exercises are suitable for use in introducing concepts and practicing previous learning. The follow-up activities relate well to the online learning tasks and provide a useful complimentary learning activity. The printable paper and pen exercises are set in real-world situations and use authentic concepts.</p> <p>http://cemc2.math.uwaterloo.ca/mathfrog</p>



<p>Mathopolis</p>	<p>Mathopolis has numerous interactive games and question sets for learners. They can practice skills in math areas from basic operations through estimation, percentages, measurement (metric and imperial), to high school level geometry, algebra and statistics. Free registration and login allows the learner’s activities to be tracked and rewarded. Mathopolis looks at math from the unique perspective of fun and adventure, yet it is also appropriate for adults. This format feels friendly and offers higher level thinking skills for users. www.mathopolis.com</p>
<p>Mathway.com and Mathway Mobile</p>	<p>Mathway provides the tools needed to understand and solve math problems. With hundreds of millions of problems already solved, Mathway is a good problem solving resource available for students, parents, and teachers. Currently it is offered online at www.mathway.com and as a mobile application for both Apple and Android (https://mathway.com/mobile.aspx). The application is free to obtain only the answer. However, to get the step-by-step solution to the problem, there is a membership fee.</p>
<p>Modern Math Modules</p>	<p>These five modules, which are updates of the now out-of-print “Math for the Real World” series, help learners gain the skills to understand and use numbers in real life. As the content was reorganized, supplemented and revised, it was also reviewed with the content in the “Breakthrough to Math” series to ensure that the concepts linked to the first two levels of that series. Of special note to practitioners looking for Canadian content, the measures were replaced with metric measures, U.S. currency was replaced with Canadian, and U.S.A. content was “Canadianized”. The applications were re-cast as task-based activities and cross-referenced with the Ontario Adult Literacy Curriculum Framework (OALCF). An OALCF connection section is included for each task-based activity in the answer keys. All the modules can be downloaded free of charge. http://laubach-on.ca/bookstore/book/modern-math-modules</p>



<p>Moving Forward</p>	<p>Community Literacy of Ontario’s curricula and resource list for learners on the independence goal path has 75 activities related to the OALCF. Many of the activities, especially those in the “Managing Your Money” and “Time Management” sections, have Understand and Use Numbers components. This resource is available for free download at: www.communityliteracyofontario.ca/resources/publications</p>
<p>New Zealand Maths</p>	<p>If you are looking for a site to help you teach numbers, algebra, geometry, measurement, statistics, and/or problem-solving, you might want to check out New Zealand’s Ministry of Education math site http://nzmaths.co.nz/. It provides learning plans along with PDFs of handouts in six levels. A handy resource finder http://nzmaths.co.nz/resource-finder helps you find the particular level and type of resource you are looking for. Downloadable books on teaching various concepts are also available at http://nzmaths.co.nz/numeracy-development-projects-books along with additional handouts at http://nzmaths.co.nz/material-masters.</p>
<p>Prism Math</p>	<p>This is the Canadian edition of the respected Spectrum Math workbook series. Prism Math is designed to help struggling students gain a solid understanding of, and confidence in, numeracy fundamentals from Grade 1 through adult education. Eight levels of non-grade specific, skill-based numeracy workbooks provide thorough development of basic mathematics skills and strategies. The program provides coverage of all major areas of mathematics, including geometry, algebra, number sense and numeration, measurement, data management and probability, which students can work through independently at their own skill level. Problem-solving strategies at the beginning of each book re-teach key concepts and real-world problem solving. Fully Canadian; adapted with metric measurements.</p>



<p>Purplemath</p>	<p>This multi-award winning site includes everything about algebra. Practitioners may find its lessons and site reviews particularly interesting. Purplemath boasts that its lessons are written with the student in mind and this seems to be the case. The hundreds of lessons are written clearly and simply and include appropriate graphics to help with the demonstrations. The site provides dependable techniques, warnings of likely "trick" questions and ways to avoid common mistakes. The lessons are cross-referenced to help you find related material and a "Search free lessons" link is provided above the article title on every page. Content includes preliminary topics (e.g., fractions, decimals, converting metric measurement, negative numbers, rounding) through beginner, intermediate and advanced algebra topics, to the beginnings of trigonometry. The site review section has short but useful reviews on: Free Online Tutoring and Lessons; Quizzes and Worksheets; and Other Useful Sites and Services. www.purplemath.com</p>
<p>Remedia math resources</p>	<p>Many LBS practitioners recommend Remedia Publications (www.rempub.com) materials. Remedia offers unique products that focus on building basic skills in multiple formats: activity books, storybooks, flash cards, games, software and eBooks. Remedia resources have a number of beneficial characteristics for adult learners, especially those with special needs. Some examples are: a strong focus on basic skills and repetition; a larger letter type than the average book; simple, non-distracting art that isn't juvenile. In general, Remedia resources are simple, skill-specific and not overwhelming to learners. A site search for math resources produces 331 titles on various topics and for various levels.</p>



SkillPlan numeracy materials

SkillPlan has developed many resources that contribute to essential skills development and include task-based activities. www.skillplan.ca/tools-and-publications has several highly-recommended numeracy resources:

- [Carpenter Applications](#) – Review and practice of trades math applications specific to the carpentry trade.
- [Formulas at Work: Tradesworkers on the Job](#) – Practice construction math skills using actual construction situations. For construction apprenticeship or pre-apprenticeship.
- [From the Ground Up: Tradesworkers on the Job](#) – Interpreting floor plans, reading specifications for wiring, calculating lengths of lumber, etc.
- [Measurement and Calculation for the Trades](#) – Review and practice activities for basic construction math skills, such as measurement and calculation. Preparation for technical training in a construction apprenticeship.
- [Numeracy at Work](#) – Applied work activities and on-the-job applications of numeracy: Money Math; Scheduling or Budgeting and Accounting Math; Measurement and Calculation Math; and Data Analysis Math.
- [Numeracy Rules](#) – Practice numeracy essential skills, such as measuring, fractions, and making metric-imperial conversions.
- [Preparing for the Boilermaker Trade, Preparing for Heavy Equipment Occupations, Preparing for Technical Training: Bricklayers , Preparing for Technical Training: Floorlayers and Preparing for the Ironworker Trade](#) – Not just for the trades listed, these five resources offer practise with three Essential Skills: Reading, Document Use and Numeracy. It includes reviews for math foundations, including fractions, decimals, ratio/proportion, geometry and Pythagorean Theorem, as well as practice solving word problems.
- Sustainable Essential Skills: Trades Worksheets, [Book 1](#), [Book 2](#) and [Book 3](#) – This collection of worksheets, to use with apprentices or with students interested in the trades, has numerous authentic numeracy tasks for a variety of trades. There is also an [Instructor’s Guide](#).
- [Thinking Strategies for Numeracy](#) – Teaches thinking strategies using workplace numeracy essential skills tasks. Designed to be instructor led and includes practice activities. Includes an eBook for instructors.



**Task-Based
Activities for
LBS portal**

“Created for Literacy and Basic Skills (LBS) practitioners, the portal (<http://taskbasedactivitiesforlbs.ca>) is a collection of activities that are aligned to the Ontario Adult Literacy Curriculum Framework (OALCF) and organized by stream, goal path and level. This fully searchable database, available in English and French, and designed for the Anglophone, Deaf, Native and Francophone streams, provides task-based activities (submitted by the literacy field and available in Microsoft Word and PDF) to help you support your students in achieving their goals.” (From www.AlphaPlus.ca)

It is worth noting, though, that the portal is not just a constantly growing database of task-based activities. It is also a source for some valuable practitioner tools that can be found under the link-headings of Additional Resources and Develop Task-Based Activities. Two examples of the many links found under Additional Resources are:

- [4 channels of math Sept 2012.xls](#). This is a printable chart outlining resources for GED Math, which includes Breakthrough to the Math, Aztec, Smartboard and videos. Developed by Adult Learning Centres: Grey–Bruce- Georgian
- OALCF Resources compiled by Learning Networks of Ontario ([PDF](#)).
A list of resources that were created to support OALCF, developed by the Learning Networks of Ontario. This list includes all the Anglophone resources listed in the Anglophone, Deaf and Native Material lists prepared by MTCU. Within this list, all resources show, in short form, below each title, the various competencies that the resource can be used for.

Under the [Develop Task-Based Activities](#) link, you will find three consecutive webinars for training on developing task-related activities yourself. Along with the webinars, there are documents referenced in the videos. The most important is [The Practitioner’s Guide to Developing Tasks](#). This guide is to be used as an accompaniment to the three webinars on creating task-based learning activities. It will expand upon and highlight different sections of the webinar. After viewing the webinars, this guide can be used as a reference for developing authentic tasks and task sets for the five LBS paths. By June 2014, the staff of each adult learning program in Ontario should have received a hard copy of this manual. It includes the Practitioner Guide as well as the handouts for all three webinars. The guide



	<p>and all of the handouts are also posted for free download at www.quillnetwork.com/wp-content/uploads/2014/07/oalcf_resources_compiled_by_learning_networks_of_ontario.pdf</p>
That Quiz	<p>This is a math practice site for learners who want to see how well they have mastered a particular math concept. The site also provides an optional login for instructors so they can keep track of how individual learners are doing and even design their own quizzes. This could be useful in preparing learners who are on the secondary, post-secondary and apprenticeship paths. www.thatquiz.org/</p>
TV411 Tune in to Learning	<p>This PBS website is a good resource for adult learners and instructors. TV411 is a collection of entertaining videos, web activities and print downloads, all with real-world context. You can choose from a number of topics, including math and finance. Math content includes: Basic Math; Ratios, Averages and Exponents; Fractions, Decimals and Percentages; and Geometry. Financial content includes Earning and Spending, and Saving and Investing. Learners don't need to register to enjoy TV411, but if they do register, they can keep track of the lessons and videos they have completed. Registration is free. www.tv411.org</p>
Walch Integrated Math resources	<p>A number of Walch Integrated Math resources have been recommended by LBS practitioners. Walch Education is the leading developer and publisher of resources related to the U.S.A. common core. However, they also offer a variety of middle school, high school and adult educational materials. A search of their math resources produces more than 30 pages of results. The most recommended are: Consumer Math Success Kit, Hands-on Math set (separate books or a set of: Pre-Algebra, Algebra, Geometry, and Data Analysis and Probability), Integrating Math in the Real World Series (Math of Food, Math of Homes and Other Buildings, Math of Sports) and Clock and Calendar Skills</p>
Workwrite Series	<p>This series, from PTP Adult Learning and Employment Programs, is a seven-book collection of instructional workbooks and teacher's guides. Its focus is on helping adult learners to understand and use documents that they will encounter in entry-level positions in the workplace. This series includes lesson plans and lots of practice activities using authentic workplace documents. Of particular use for working in the Understand and Use Numbers competency are: Book 2 – Schedules, Book 6 – Graphs and Charts, and Book 7 – Numeracy. www.ptp.ca/publications/workwrite-series</p>