

Online Numeracy Resources

Workshop for
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1. Online courses – Learning Modules, Scorm, Toolboxes

LORN Use the search facility to search for Learning Objects which include some of the TAFEVC and Equity toolboxes.	
LORN 'Design modules'	Unit on 2D and 3D Shapes originally written for CGEA Certificate I / Numeracy for Practical Purposes- Design - Level 1 & 2 http://lorn.flexiblelearning.net.au/resultDetail?identifier=2903 An excellent resource with some audio and many interactive activities on 2D & 3D shapes and spatial problems
LORN 'Measurement'	Covers metric units, geometry, perimeter, area volume http://lorn.flexiblelearning.net.au/resultDetail?identifier=41710
LORN Measure area	One of a series developed by Tas TAFE http://lorn.flexiblelearning.net.au/resultDetail?identifier=3941
Retail Maths	A learning module based on Cert II Retail Covers numerical problems and calculations that are essential to working in the retail. http://lorn.flexiblelearning.net.au/resultDetail?identifier=2751
Flexible Learning Toolbox http://toolboxes.flexiblelearning.net.au/	
LORN Youth Resource 'Where's the Party At?'	LORN Toolbox http://toolboxes.flexiblelearning.net.au/series5/519.htm Site map shows Maths activities. Teaching and practice activities in relevant Youth topics eg smoking, alcohol, sex
Flexible Learning Toolboxes 'Cybercentre'	http://toolboxes.flexiblelearning.net.au/series4/424.htm Resource covers R&W and Num. In the Learning Centre - Door 1 = Time, Door 2 = Reading Maps & Timetables, Door 3 = Numbers & Calculating, The Numeracy part of this resource can be "separated out" using this link http://tle.tafevc.com.au/toolbox/items/4fed7303-20e9-1ae6-6338-9261a0f688c3/1?nav.tabSection=summary&nav.tabData=summary&tempwn.b=access%2Fsearch.do%3Fpg.e%3Dtrue%26pg_pp%3D10%26pg_pg%3D1%26qs.q%3D%26pow.e%3Dtrue%26pow.x%3D%253Cxml%253E%253Citem%253E%253Ctoolbox%253E%253Ctoolbox.code%253E424%253C%252Ftoolbox.code%253E%253C%252Ftoolbox%253E%253C%252Fitem%253E%253C%252Fxml%253E%26pow_p%3D578ee3b4-88d7-a3e5-e3d1-36935aced499%26sort_s%3DRANK%26she_canDisplay%3Dchecked
Learning Federation	
Learning Federation	Huge repository of interactive P-12 resources. Institute registers then teachers can choose resources, group them to a learning path. Each learning path has a unique student password. http://econtent.thelearningfederation.edu.au/ec/p/home sample from catalogue http://www.thelearningfederation.edu.au/for_teachers/sample_curriculum_content/tm_-_maths.html demo PIN PCNOCY http://econtent.thelearningfederation.edu.au/ec/pin

2. Maths websites - skills teaching and practice sites

BBC Skillswise	Printable and interactive www.bbc.co.uk/skillswise (wonderful resource- avoid exercises involving money because of currency £!!!!)
DEST Numeracy <i>- Vocational</i>	Printable resources: Cover skills sheets (multipage) then Application usually single page questions posed in work context . http://www.dest.gov.au/archive/ty/litnet/numeracy/home/nh_0005.htm Contains 8 programs tailored to specific industries. The units
Skillsworkshop	Printable PDF exercises and handouts contributed by teachers- categorised according to the skills and level (UK) http://www.skillsworkshop.org/numeracy Lots of possibilities to make your own cards with this exercise generator: http://www.skillsworkshop.org/resources/loop-card-generator UK site –it also has Literacy etc. – watch £ symbol and pound/pence
SEN Special Ed	Printable PDF sheets - designed for Special Ed but very useful for initial and intro level – coins, shapes/nets/number sequences http://www.senteacher.org choose a currency and generate worksheets and coin dominoes http://www.senteacher.org/Worksheet/65/MoneySkillsCoins.shtml generate analogue clocks – specifying whole hour five min/or shorter http://www.senteacher.org/Worksheet/18/TellingTheTime.shtml
Mathplayground.com	Good range of activities Has maths videos to explain
Change maker	Interactive - practice giving change- 3 levels – Australian coin and notes – http://www.funbrain.com/cashreg/
IXL	All activities are labelled with a school level pre-school to yr8 so discouraging to adults– an extensive school maths site, interactive site generates questions- there are worded problems associated with most topics– http://au.ixl.com/ Aus site
Kids Zone - Create a graph	- good site where learners can type in data and the graph can be generated then printed. http://nces.ed.gov/nceskids/createagraph/default.aspx
Interactives	CGEA 2 & 3 - 2D and 3D shapes with nets of prisms and pyramids that fold interactively http://www.learner.org/interactives/geometry/index.html Maths in Daily Life- gives some good ideas and explanations and scenarios around buying a car, cooking, decorating etc http://www.learner.org/interactives/dailymath/index.html US site

Financial Literacy Website	http://practicalmoneyskills.com/foreducators/index.php You do need to register but it is free.
Sense and Dollars	Covers credit cards saving, spending- content and games plus a wide range of activities- aimed at Youth http://senseanddollars.thinkport.org/home.html US site
That Quiz	Interactive Has simple quiz <i>generator</i> that can be used for drill practice and feedback . User can choose a difficulty level and parameters – useful are the Arithmetic, Algebra, time, (can chose days, hours), graphs, measure, place value. Once the parameters are set, it is a flat screen so easy to use and not distracting http://www.thatquiz.org/
Teachers Corner	Can generate Printable worksheets for Time maps- including Australia maps http://www.theteacherscorner.net/printable-worksheets/maps/australia-oceania/
Excellence Gateway	http://www.excellencegateway.org.uk UK Large site with range of diagnostic tests that can be used as models
Math.com	Interactive Ranges from basic to Algebra- seems to work better in Firefox. Lots of explanation for Level 2+ Arithmetic practice Simple generator of one step + - x / 60-second-practice- do as many questions as you can. http://www.math.com/students/practice/arithmetricpractice.htm Pre-Algebra – theory, then set of ten problems- often self generating-fractions, percentages, etc http://www.math.com/homeworkhelp/PreAlgebra.html
Mathsnet <i>Numeracy section very good</i> <i>Terrific for level 1 up</i>	Interactive http://www.mathsnet.net/ Fantastic for Geometry, Algebra, Fractions, Graphs and Numeracy . Click on Numeracy Great demonstrations scale using thermometer, measuring cylinder, measuring scales. <i>Useful for Data Show Projector or Whiteboard</i> For Geometry, Algebra and Fractions --the site is very thorough and sequential so suited to a mixed ability class.... In many areas the learner can step through the worked solution. Navigation via the grid of coloured boxes. There are sequenced lessons in Geometry, Algebra and Fractions
aaamath	http://www.aaamath.com/B/nam.htm For Intro ESL - Words to numbers & ordinals. Design worksheets for Rounding and estimating - level 1, Drills for + - X / from Intro to level1
Shodor interactivate <i>Brilliant but not always intuitive</i>	http://www.shodor.org/interactivate/activities/index.html Scroll down to: Arithmetic Four – Basic skills game for 2 players (like Connect 4) – user adjusts level of difficulty and operations practiced. Site also has Fraction Four Tessellate – create an instant pattern from any 4 sided shape Reading a clock – elapsed time Bar Graph Sorter - It lets you sort, shows the tally sheet etc

	Image MAP
Virtual Manipulatives	http://nlvm.usu.edu/en/nav/vlibrary.html Grade 6-8 Number Sieve of Eratosthenes – Relate number patterns with visual patterns. – Number line addition and subtraction game. Number Puzzles – Solve puzzles involving arranging numbers on a diagram so that they add up to a given value. Percentages – Discover relationships between fractions, percents, and decimals. Grade 3-5 Measurement Pattern Blocks – Use six common geometric shapes to build patterns and solve problems.
aplusmath	http://www.aplusmath.com/ Online Flashcards, online & printable worksheets for practice of basic operations + x + /, rounding to nearest 10, 100, 1000 etc. Games : MATHO (BINGO game.) & Concentration (based on 4X4 grid) more of a challenge and develops spatial and memory skills. Worksheets allow the learner or teacher to generate & print basic worksheets Covers order of operations and simple algebra. ANSWERS printed as well Fractions, Algebra and Order of operations are suitable for level 2 learners.
Just in Time Maths	Printable www.fi.edu/time/Journey/JustInTime/contents.html Activities to do with Time
Websites for symmetry	http://www.adrianbruce.com/Symmetry/ Click on Stained Glass . Contains wonderful activities on symmetry, including a fantastic exercise on Face Symmetry Also has examples of questions on symmetry created with Hot Potato.
Working out % change from original to new price	http://www.onemathematicalcat.org/algebra_book/online_problems/calc_percent_inc_dec.htm Limited interaction, but can check answers online. Also has printable worksheet with answers.
bpc digitalbrain Basic & vocational	http://bpc.digitalbrain.com/bpc/web/onlineResources/index.html This one would not load at the time of this workshop, but I have included it, because it is very good and one of you may work out how to access it again. It has step by step demos of math processes.
Math Crossword puzzles	http://users.tpg.com.au/users/puzzles/ lots of Number crossword puzzles to print- a useful resource
Trade Talk	This is a resource built to support Numeracy for apprentices in the Construction Industry. Developed by Gordon Institute. http://search.edna.edu.au/simplesearch/viewRecord?q=id:725565 Current link not working but resource is still listed on Literacy Net DEEWR

3. Using real life sites for maths activities

Here are a few suggestions for using real life contexts to practice Maths skills.

Number supermarket	http://www.woolworths.com.au/wps/wcm/connect/webSite/Woolworths/ For browsing supermarket for products, prices and metric quantities, recipes
Data Weather	Meteorological site, for information on current weather details and 7 day forecasts for Melbourne http://www.bom.gov.au/vic/forecasts/melbourne.shtml http://www.bom.gov.au/products/IDR024.loop.shtml#skip shows a Radar map of Melbourne – see rain for last 6 min up to 24 hr period.
Cars and travel	For fuel and car running costs, car insurance and finance, vehicle comparisons, travel distances http://www.racv.com.au
Population stats	For facts and statistics on Australia or any country in the world https://www.cia.gov/library/publications/the-world-factbook/geos/as.html Worldometer counters of statistics http://www.worldometers.info
Design Flags	Flags displayed alphabetically – student’s work in pairs to describe and recognise a flag http://www.flags.net/
Real estate	Match house plans to the images- lots of different activities involving numbers http://www.realestate.com.au/buy
Time & Money Airlines	For flight times and fares http://www.qantas.com.au/travel/airlines/home/au/en For bus times and fares http://www.metlinkmelbourne.com.au/timetables/metropolitan-buses/
Public transport	For public transport timetables and fares http://www.metlinkmelbourne.com.au/fares-tickets/metropolitan-fares-and-tickets/
Location	For maps and street directories, directions, distances http://www.street-directory.com.au/sd_new/home.cgi directions and distances http://www.whereis.com/ Google Maps http://maps.google.com.au/ See maps then images of houses etc
Measurement	World times http://www.timeanddate.com/worldclock/ For times and distances http://accommodation.racv.com.au/club/trip-planner/ For recipes - weights & volumes http://www.recipezaar.com/recipes/new-zealand For volume, temperature etc. www.worldclimate.com http://www.betterhealth.vic.gov.au Recipes, matters related to health,

4 A sample activity

Buying a Used Car

Car Guide Website is a website where you can find a used car.
http://www.carsguide.com.au/?from=CG_logo



- Choose Used Car
- Choose a common make and model so there will be plenty for sale. eg Nissan Pulsar
- Set Yr range eg 2002-2008
- Select a location-All VIC

Find a car

Type	All New and Used	Browse by body type	Browse by price
Make	All Makes	Sedan	Up to \$10,000
Model	All Models	Hatchback	\$10,001 - \$25,000
Year	From... To...	4WD	\$25,001 - \$50,000
Price	From... To...	Wagon	\$50,001 - \$80,000
Location	All Locations	Commercial	More than \$80,001
Advanced Search		Ute/Trav	Browse by year
Search			New Cars
Recent search: All Used, NISSAN, MAXIMA			Up to 1 year old
			Up to 3 years
			Up to 5 years

- Don't set a price range, just **Start your Search**

You'll see a list of cars like this one.
 Each one will show:

Year model	Odometer reading (kms travelled)	Price
2004 NISSAN PULSAR ST N16 MY03 Dealer Used, Melbourne VIC Silver, 4 Door Sedan, Manual, 4 Cyl (1.8L), 100,704 kms, 5 Seats, Unleaded, more...	\$10,997 1300 790 Email dealer Add to shortlist	

- For this exercise, just use the cars that come up on one screen (usually 15 cars per screen)
- Print the screen

1. Which is the oldest car – how old is it? _____

Newest car – how old? _____

2. a) Which is the most expensive car? _____

and which is the cheapest car? _____

2 b) Put all the cars in order from cheapest to most expensive car.

Do you want – the cheapest car of all? - a car that is not too old? - one that has not done a lot of kilometres?

4. a) Now, using the whole list of cars, work out the average **annual** kilometres travelled for each car. Use this chart to help you.

	Year model	Age of car	Kilometres	Price	Average km / yr
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

b) Which car has done the lowest average annual kilometres, and is the cheapest price? This is your ‘best buy’.

Write down the details of your best buy – year model, odometer reading and price.

Best Buy _____

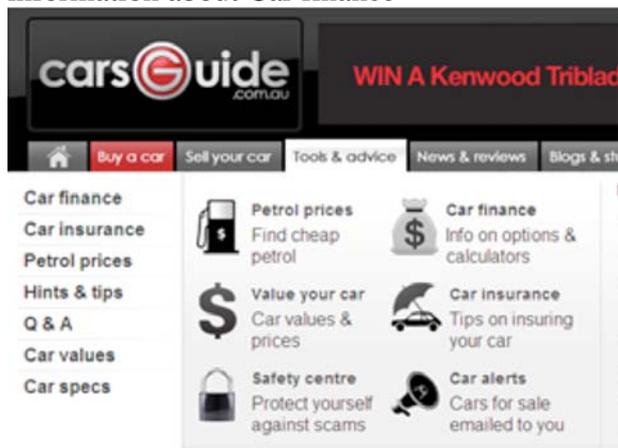
Paying a deposit on the car.

5. The smallest deposit you can pay is 10% of sale price. [Click here for help](#)
[and here](#) [and here](#)

What is the minimum deposit for your best buy? _____

Getting a loan to buy the car.

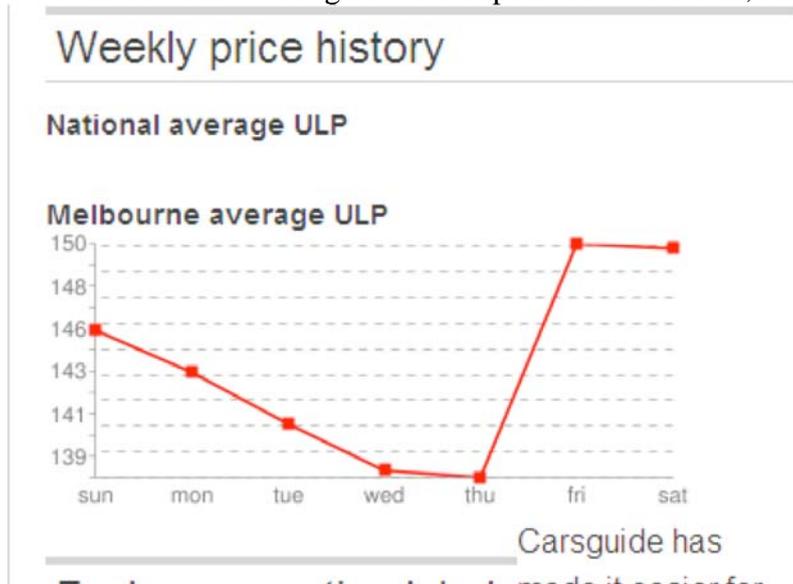
6. Find If you client on Tools at the top of the Cars Guide site, you'll find a range of links that will lead to information about Car finance



Investigate Petrol Prices using Car Guide

And why not investigate the Petrol prices. Click on the link to Melbourne and let the students discover if Petrol really is more expensive at the weekend!

Students can also investigate the cheapest fuel in the area, use consumption rates in the city and so on.



Buying a Used Car – Teacher version with details of ‘scaffolding’ sites

1. Which is the oldest car – how old is it? _____
Newest car – how old? _____
2. a) Which is the most expensive car? _____
and which is the cheapest car? _____

2 b) Put all the cars in order from cheapest to most expensive car.

Could limit the number of cars to 5 or 10 for some students.

Students could cut each car listing into separate strips of paper to manipulate into order, before copying out list.

Skillswise section on Whole Numbers

<http://www.bbc.co.uk/skillswise/numbers/wholenumbers/>

Rounding and Estimating, Comparing numbers for place value and comparing Numbers, and Writing Big Numbers for reading & comparing large numbers.

Buying a Used Car – Teacher version with details of ‘scaffolding’ sites

3. a) What is the most common year model listed? _____
- b) For this year model, which one is the cheapest _____ and
which one is the most expensive? _____

c) What is the price range difference?

Skillswise – <http://www.bbc.co.uk/skillswise/numbers/wholenumbers/>

Addition and Subtraction / Written method for finding the difference, especially when there are zeros in top line of subtraction sum

d) What is the average price for this year model?

Skillswise - <http://www.bbc.co.uk/skillswise/numbers/handlingdata/>

Understanding Averages for finding the mean

- e) From all the cars of this year model, which one has the
most kilometres on the odometer? _____
least kilometres on the odometer? _____

f) What is the odometer range difference?

g) What is the average odometer reading for all the cars of this year model?

How to work out the best car to buy.

Do you want – the cheapest car of all? - a car that is not too old? - one that has not done a lot of kilometres?

4. a) Now, using the whole list of cars, work out the average **annual** kilometres travelled for each car. Use this chart to help you.

	Year model	Age of car	Kilometres	Price	Average km / yr
1					
2					

b) Which car has done the lowest average annual kilometres, and is the cheapest price? This is your ‘best buy’.

Write down the details of your best buy – year model, odometer reading and price.

Best Buy _____

Paying a deposit on the car.

5. The smallest deposit you can pay is 10% of sale price.

What is the minimum deposit for your best buy? _____

*Skillswise - <http://www.bbc.co.uk/skillswise/numbers/fractiondecimalpercentage/>
Introduction to % and Comparing fractions and % and Finding % parts*

Buying a Used Car – Teacher version with details of ‘scaffolding’ sites