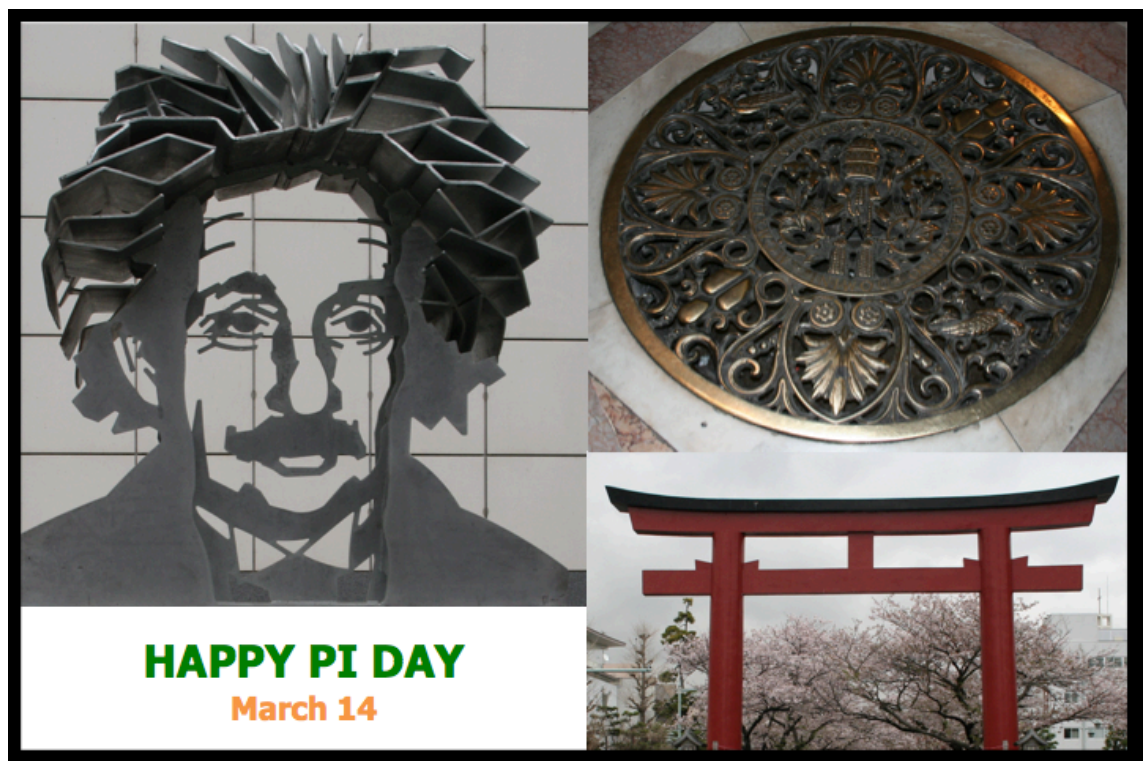


Pi Day 2016



A Spire Maths Activity

<https://spiremaths.co.uk/piday/>

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Resources

This file, ActivInspire and Notebook files can be found at:
<https://spiremaths.co.uk/piday/>

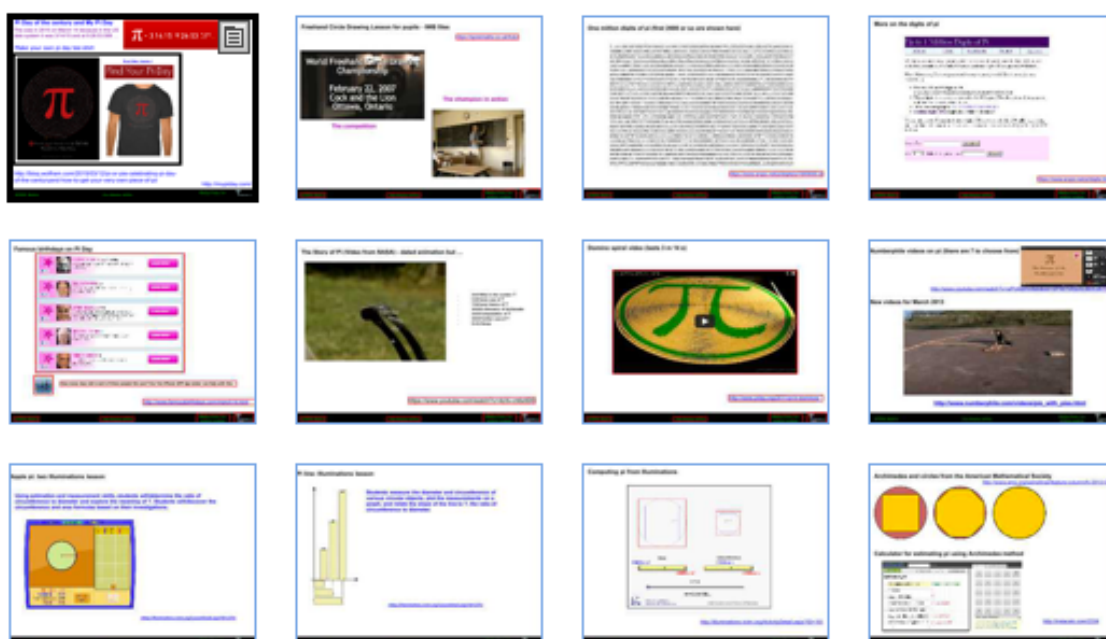
Einstein photo

Photo on page one was taken at Questacon in Canberra, Australia – relevant here since Einstein was born on 14 March 1879.

<https://www.questacon.edu.au/visiting/galleries/outdoor/exhibits/einstein-sculpture>

Pi Day: activities and ideas for March 14

Diagrams below are IWB pages each linked to an idea, lesson or resource with key shown after.



Here is the key: the activity titles are given here.

Pi Day of the Century and My Pi Day	Freehand Circle Drawing Lesson for pupils – IWB files	One million digits of pi (first 2000 or so are shown here)	More on the digits of pi
Famous birthdays on Pi Day	The Story of Pi (Video from NASA) – dated animation but ...	Domino spiral video (lasts 3 m 14 s)	Numberphile videos on pi
Apple pi: two Illuminations lessons	Pi line: Illuminations lesson	Computing pi from Illuminations	Archimedes and circles from the American Mathematical Society

Pi Day of the Century and My Pi Day

This was in 2015 on March 14 because in the US date system it was 3/14/15 and at 9:26:53.589 ...

<http://blog.wolfram.com/2015/03/12/pi-or-pie-celebrating-pi-day-of-the-centuryand-how-to-get-your-very-own-piece-of-pi/>

$$\pi = 3.14.15 \ 9:26:53.589...$$



Make your own pi day tee-shirt: <http://mypiday.com/>

Freehand Circle Drawing Lesson for pupils – IWB files Organise a competition on Pi Day

All materials here: <https://spiremaths.co.uk/fcdc/>

One million digits of pi (first 2000 or so are shown here)

<https://www.angio.net/pi/digits/pi1000000.txt>

There's lots that can be done with these and with more digits.

3.1415926535897932384626433832795028841971693993751058209749445923078164062862
089986280348253421170679821480865132823066470938446095505822317253594081284811
174502841027019385211055596446229489549303819644288109756659334461284756482337
867831652712019091456485669234603486104543266482133936072602491412737245870066
063155881748815209209628292540917153643678925903600113305305488204665213841469
519415116094330572703657595919530921861173819326117931051185480744623799627495
673518857527248912279381830119491298336733624406566430860213949463952247371907
021798609437027705392171762931767523846748184676694051320005681271452635608277
857713427577896091736371787214684409012249534301465495853710507922796892589235
420199561121290219608640344181598136297747713099605187072113499999983729780499
510597317328160963185950244594553469083026425223082533446850352619311881710100
031378387528865875332083814206171776691473035982534904287554687311595628638823
537875937519577818577805321712268066130019278766111959092164201989380952572010
654858632788659361533818279682303019520353018529689957736225994138912497217752
834791315155748572424541506959508295331168617278558890750983817546374649393192
550604009277016711390098488240128583616035637076601047101819429555961989467678
374494482553797747268471040475346462080466842590694912933136770289891521047521
620569660240580381501935112533824300355876402474964732639141992726042699227967
823547816360093417216412199245863150302861829745557067498385054945885869269956
909272107975093029553211653449872027559602364806654991198818347977535663698074
265425278625518184175746728909777727938000816470600161452491921732172147723501
414419735685481613611573525521334757418494684385233239073941433345477624168625
189835694855620992192221842725502542568876717904946016534668049886272327917860
857843838279679766814541009538837863609506800642251252051173929848960841284886
269456042419652850222106611863067442786220391949450471237137869609563643719172
874677646575739624138908658326459958133904780275900994657640789512694683983525

More on the digits of pi

<https://www.angio.net/pi/digits.html>

There are other sites, but I like this one.

Up to 1 Million Digits of Pi

[Pi Search](#)
[Pi Stuff](#)
[How it works](#)
[About Pi](#)
[Digits of Pi](#)

Whether you want to *very* accurately calculate the area of a circle, paint the digits of Pi on your room, face, a t-shirt, or your baby brother, or memorize digits of Pi to impress your friends...

Note: Memorizing Pi is not guaranteed to impress your friends. But it can be fun as a challenge. :)

- **The first 10 and 50 digits of Pi:**
3.14159265 35897932384626433832795028841971693993751
- **More digits:** Scroll down to see the first 10,000 digits of Pi at the bottom of this page, or grab even more using the links below.
- **Files containing digits:** [10](#) [50](#) [100](#) [1000](#) [10000](#) [100000](#)
- [1 million digits of Pi](#) (Might take a while to download)

You can also use the Pi searcher to show digits of Pi anywhere in the first 200 million digits, using the second line in the search box. Curious what digits are from position 50,000,000 to 50,000,050? Find out...

Search For:

Search Pi






See digits starting at position

Show Pi

Famous birthdays on Pi Day

<http://www.famousbirthdays.com/march14.html>

There will be other lists, explore and do some mathematics.

1		ALBERT EINSTEIN (1879-1955) Physicist, genius, formulated the Theory of Relativity	LEARN MORE >
2		BILLY CRYSTAL 64 Comedian and actor in films such as 'City Slickers' (1991)	LEARN MORE >
3		SAMMI GIANCOLA 25 Nickname Sammi Sweatheart, American reality personality and model, known for her role in the hit series, Jersey Shore.	LEARN MORE >
4		MICHAEL CAINE 79 50 years of movie roles including 'Cider House Rules'	LEARN MORE >
5		QUINCY JONES 79 Influential composer of many film scores and hit songs	LEARN MORE >



How many days old is each of these people this year? Our free iPhone APP Age-ulator can help with this.

The Story of Pi (Video from NASA) – dated animation but ...

<https://www.youtube.com/watch?v=4zXv-m6x5D0>

A 25-minute video now on YouTube that is useful to show some of history and uses of pi. First part describes part of the rationale for the creation of this video, for other sections go to the following times:

- 2:52 What is the number π ?
- 5:20 Some uses of π
- 7:50 Early history of π
- 10:20 A discovery of Archimedes
- 13:52 Computation of π
- 18:26 Further uses of π
- 21:01 Recap



Domino spiral video (lasts 3 m 14 s)

<http://www.piday.org/2011/pi-in-dominos/>

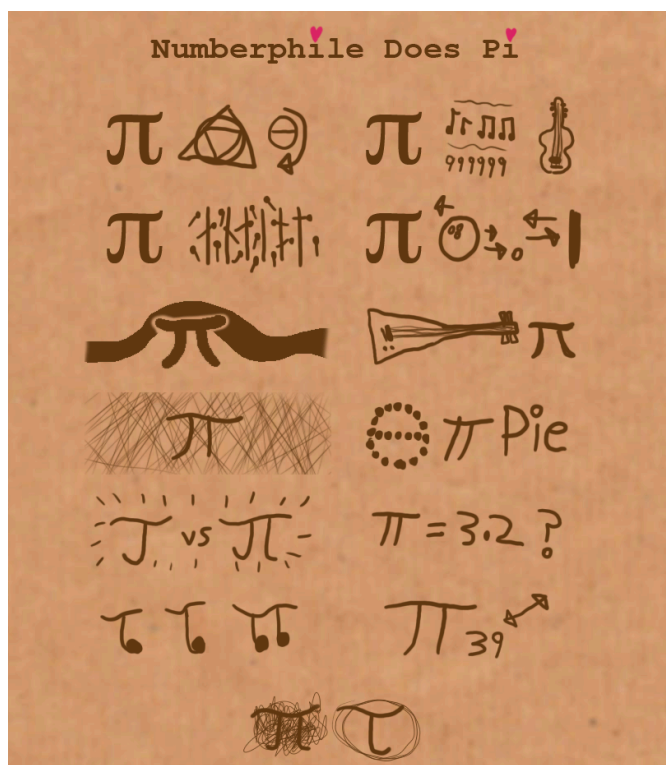


Numberphile videos on pi (there are now at least 13 to choose from)

A sample of Numberphile n videos

Index of Numberphile pi videos (there are 13 shown here)

<http://www.numberphile.com/pi/>



Sounds of π (put digits to music)

http://www.numberphile.com/pi/pi_sounds.html

n and Buffon's Needle (drop matches to approximate π)

http://www.numberphile.com/pi/pi_matches.html

n is Beautiful (put digits in artistic arrangements)

http://www.numberphile.com/videos/pi_visualisation.html

Calculating n with real pies

Short version (3 m 14 seconds)

http://www.numberphile.com/videos/pie_with_pies.html

Longer version (6 m 28 seconds)

https://www.youtube.com/watch?annotation_id=annotation_639045&feature=iv&src_vid=ZNiRzZ66YN0&v=x4kyFKyCMv0

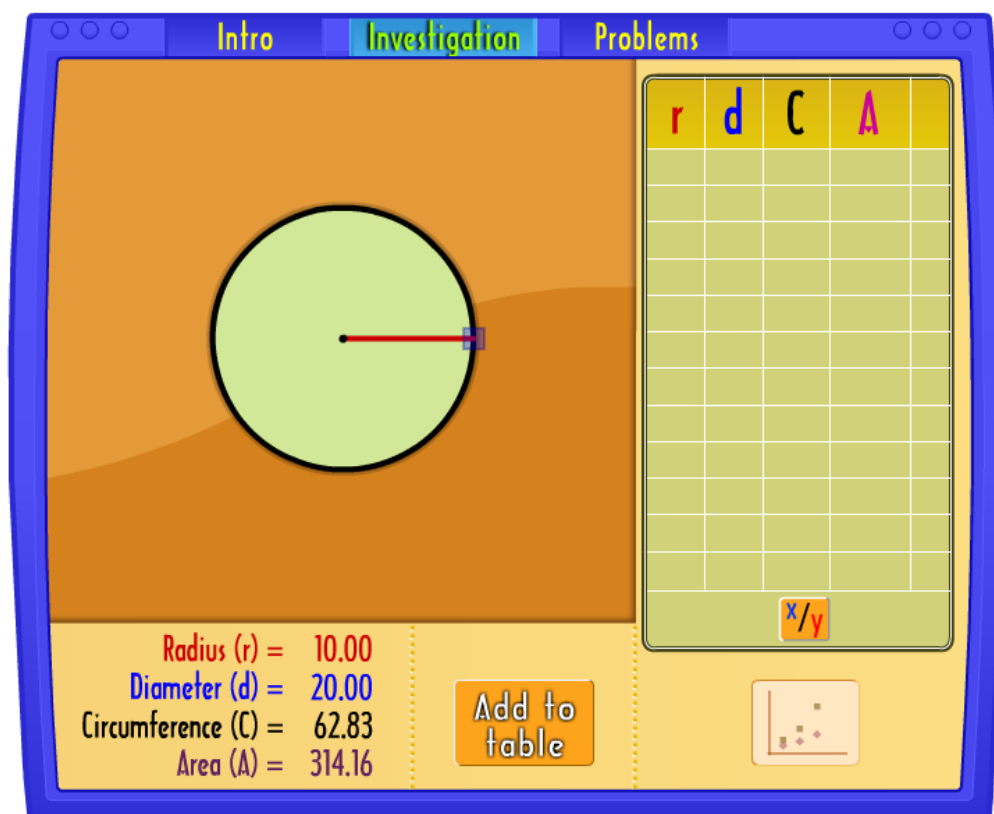
When the US government nearly made $n = 3.2$

http://www.numberphile.com/videos/pie_three_point_two.html (pi as 3.2?)

Apple pi: two Illuminations lesson

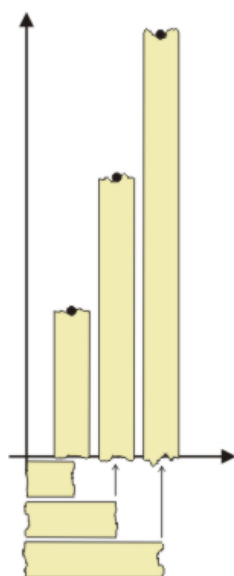
<http://illuminations.nctm.org/LessonDetail.aspx?ID=L573>

Using estimation and measurement skills, students will determine the ratio of circumference to diameter and explore the meaning of π . Students will discover the circumference and area formulas based on their investigations.



Pi line: Illuminations lesson

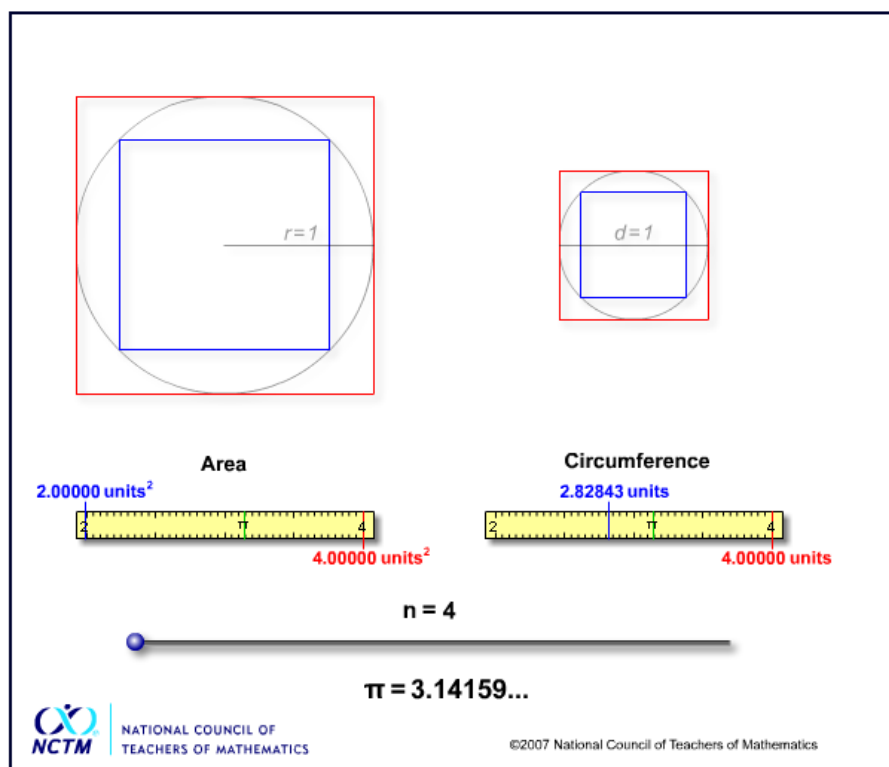
<http://illuminations.nctm.org/LessonDetail.aspx?id=L575>



Students measure the diameter and circumference of various circular objects, plot the measurements on a graph, and relate the slope of the line to π , the ratio of circumference to diameter.

Computing pi from Illuminations

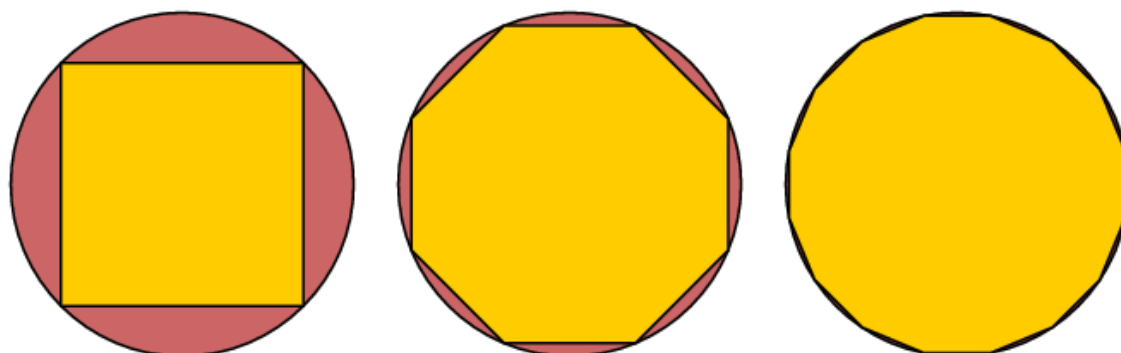
<http://illuminations.nctm.org/ActivityDetail.aspx?ID=161>



Archimedes and circles from the American Mathematical Society

<http://www.ams.org/samplings/feature-column/fc-2012-02>

I like this explanation and then using the calculator shown below to complete the calculations. See Story of pi video earlier and repeat Archimedes calculations using calculator below with polygons with 6, 12, 24, 48 and 96 sides.



Calculator for estimating pi using Archimedes method

<http://instacalc.com/2334>

The calculator allows you to change the values for the inside and outside polygons.

instacalc Search calc library... Latest

Add to your calcs Link <http://instacalc.com/2334> Show Embed Code

Estimating Pi

R1	// estimate pi with a shape	estimate pi with a shape
R2	sides = 4	4
R3	angle = 360 / sides	90
R4	inside = sin(angle / 2) * sides	2.82842712475
R5	outside = tan(angle / 2) * sides	4
R6	pi_guess = (inside + outside) / 2	3.41421356237
R7	accuracy = (1 - (pi_guess - pi) / pi)	91.32220695539

+5 rows Clear

Button Pad Your Calcs Help

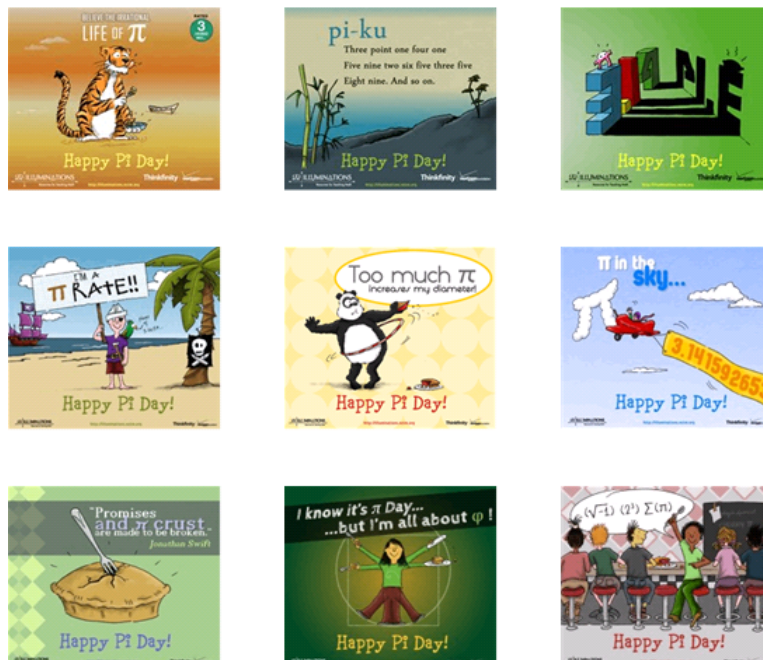
Basic Calculator & Examples

Demos: BMI, Unit Conversion, Home Loan, Salary, Programming, Website Bandwidth, Website Earnings, Growth Estimation, Currency conversion

Pi Day images from Illuminations (no longer available)

<http://illuminations.nctm.org/piday.aspx>

Images available for memory and Pelmanism (pairing) activities plus your own ideas.

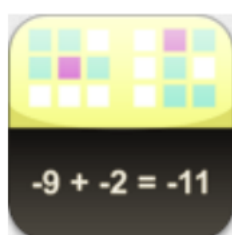


Our iPad and iPhone resources

Search for Jamtec on the AppStore. We also have other non-mathematics apps. Prices correct at 6 October 2015.



[Age-ulator](#) Free: [Randomised](#) £0.79



[Directed Numbers](#) £0.79: [Equivalents](#) £0.79: [Multiplication Pairs](#) £0.79



[Maths Charts for Jenny Eather](#) Free:
[Maths Charts for Jenny Eather \(Deluxe version\)](#) £3.99



[Grids4Maths](#) £0.79: [GeoDraw](#) £0.79 (iPad only)

Education APPs from Apple

[Half price for volume purchase of some Education APPs](#)

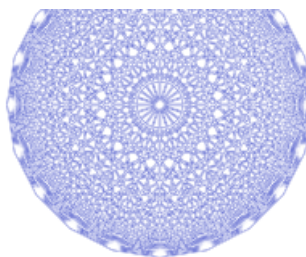
Maths APPs for iPads and iPhones



GEO DRAW

Available on iPad iOS 5.0 or later!

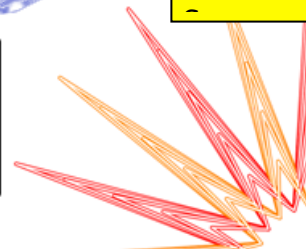
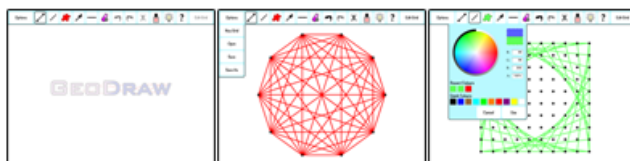
(iPad only)



Grids
Circular
Isometric:
horizontal
Isometric: vertical
Polar



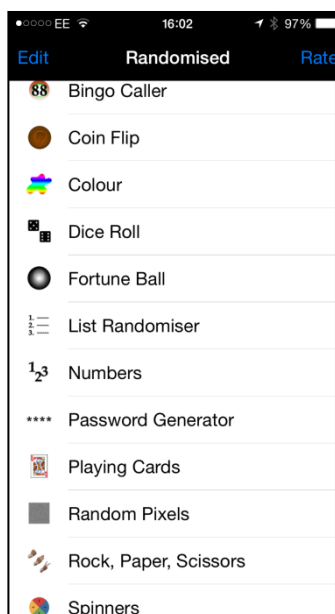
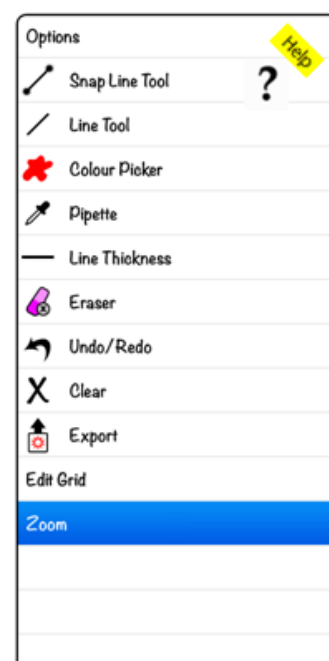
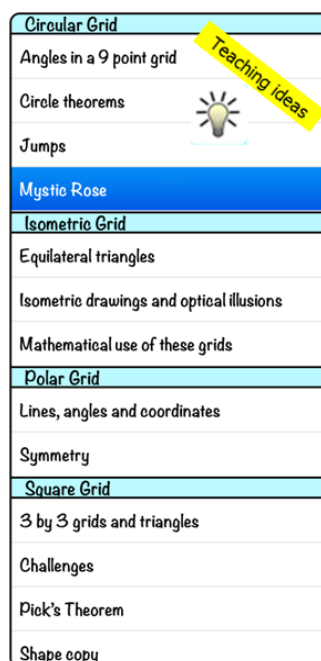
£0.79



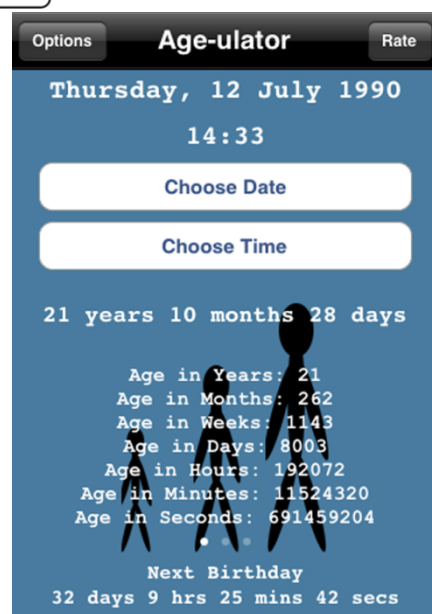
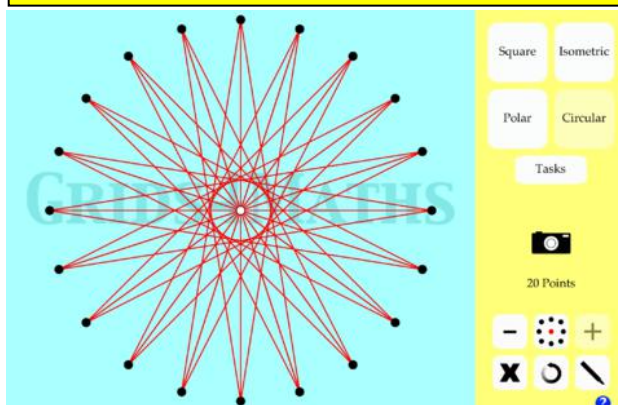
Change
Number of grid points
Grid point size
Line thickness
Line colour

- GeoDraw offers users a choice of 5 grids for use in mathematics and D&T lessons. Send/export images with/without grid using: Bluetooth, Email, Facebook, Twitter and into Pages or Keynote.

Eligible for VPP discount
(see next page).



Randomised (79p): for probability lessons.
Age-ulator (free): for large number work and problem solving.
Grids4Maths (79p): much simpler version of GeoDraw for iPhones.



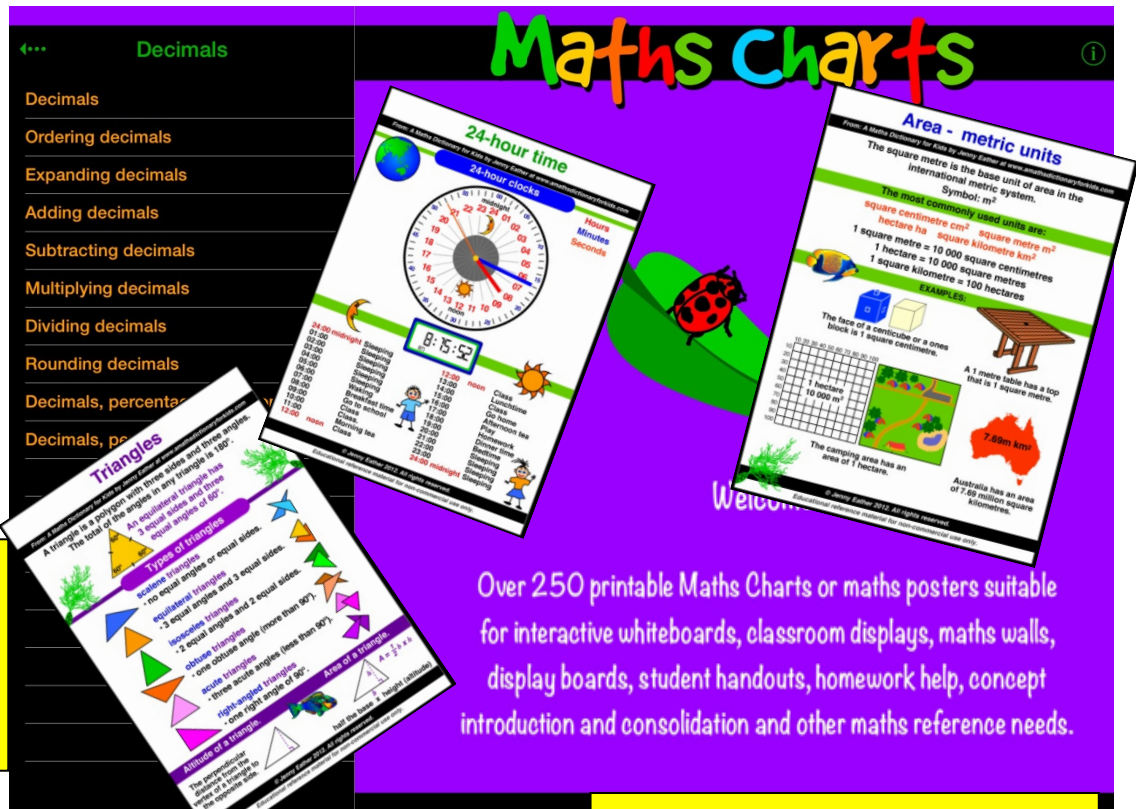
SPiRE MATHS: Stimulating, Practical, Interesting, Relevant, Enjoyable Maths For All

<http://jamtecstoke.co.uk/>

<https://spiremaths.co.uk/>

We've teamed up with Jenny Eather to bring her Maths Charts web resources to the iPad/iPhone. Try Maths Charts by Jenny Eather for free, then buy full Deluxe version for £3.99 (half this if you sign up for VPP with Apple and buy 20 or more copies).

Volume Purchase Programme (VPP) lets you buy Apple apps at discount rate of half price for 20 or more of the same app.



Over 250 printable Maths Charts or maths posters suitable for interactive whiteboards, classroom displays, maths walls, display boards, student handouts, homework help, concept introduction and consolidation and other maths reference needs.

$\frac{3}{8}$	$\frac{4}{5}$	$\frac{5}{8}$	$\frac{16}{36}$	$\frac{24}{30}$	$\frac{35}{63}$
$\frac{1}{9}$	$\frac{4}{9}$	$\frac{5}{9}$	$\frac{27}{36}$	$\frac{8}{72}$	$\frac{21}{56}$
$\frac{3}{5}$	$\frac{1}{7}$	$\frac{3}{4}$	$\frac{40}{64}$	$\frac{3}{21}$	$\frac{24}{40}$

Maths Pairs (£1.49) – three App bundle: eligible for VPP discount Directed Number, Equivalent and Multiplication Pairs (or 79p each).

7	x	1	=	Show
7	x	2	=	Show
7	x	3	=	Show
7	x	4	=	Show
7	x	5	=	Show
7	x	6	=	Show
7	x	7	=	Show
7	x	8	=	Show
7	x	9	=	Show
7	x	10	=	Show
7	x	11	=	Show
7	x	12	=	Show



Contact and further details:
In school training can be arranged to support implementation. www.jamtecstoke.co.uk
contact@jamtecstoke.co.uk

$64 \div 8$	$72 \div 12$	$48 \div 8$	9	6	5
$40 \div 8$	$70 \div 7$	$20 \div 4$	10	9	5
$72 \div 8$	$21 \div 3$	$81 \div 9$	8	6	7