

A young child with dark hair, wearing a yellow shirt, is seen from behind, holding and interacting with an iPad. The iPad screen displays a colorful educational app with a rocket ship and the text '5+2=7'. The background is a blurred classroom environment with other students and desks.

iPad apps for primary mathematics teaching and learning

2015 edition

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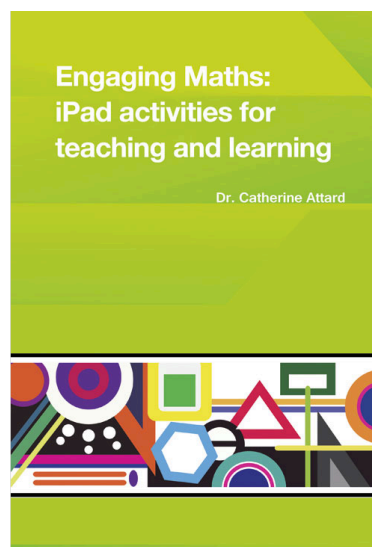
Table of Contents

WHAT'S NEW IN THE 2015 EDITION	3
USING IPADS TO TEACH AND LEARN MATHEMATICS	4
PLANNING CHECKLIST	5
SAMR MODEL	6
LESSON IDEAS	7
1. TEMPLE RUN (AVAILABLE ON A ANDROID AND IOS)	7
2. GEOMETRY TREASURE HUNT	9
3. A BIG DAY OUT	11
4. STRIP DESIGNER	12
IPAD APPS	14
GENERIC APPS	16
NUMBER & ALGEBRA	21
MEASUREMENT & GEOMETRY	36
STATISTICS & PROBABILITY	40
REFERENCES	42

What's new in the 2015 edition

In this latest edition of my iPad app booklet I have added several new apps and included an additional column in the 'Generic Apps' section to include android equivalent apps. I have also updated the prices – several free apps are no longer free, and many prices have increased. When I first started writing the first version of this booklet in 2012 only a small portion of schools had already invested in iPads. Now, in 2015, almost every school is using iPads to some extent. Although iPads will remain to be popular for some time, I am becoming increasingly aware that we will begin to see more schools engaging in BYOD (bring your own device) programs. With this in mind, I would like to emphasise that this booklet should be used as a source of ideas that can be adapted to suit different devices – don't limit yourself to the apps contained within these pages – they are there to provide a guide to the many apps available. What is more important is *how* you use the devices and apps to *enhance* the learning and teaching of mathematics.

You will also notice that I haven't added any more lesson ideas to this booklet. Rather than continuing to increase the size of this document, I am writing a book that will have a bigger range of ideas and will include reflection, assessment and differentiation ideas. The book will be available from April 2015 from Modern Teaching Aids (www.teaching.com.au).



Using iPads to teach and learn mathematics

iPads and similar mobile devices are being purchased by many Australian schools in the hope they will address the needs of 21st century students. Integration of technology is now an essential aspect of Australian classrooms, with current curriculum documents expressing explicit expectations that ICTs are integrated into the teaching and learning of mathematics (Australian Curriculum Assessment and Reporting Authority, 2012; Board of Studies New South Wales, 2012). Literature around teaching practice and the use of ICT suggest the implementation of new technologies has potentially changed teaching and learning radically, providing opportunities for a shift of focus from the mechanics of action to a more problem-solving based approach (Resnick, 2006)

The introduction of iPads as teaching and learning tools can also potentially remove some of the existing barriers to successful ICT integration (issues with accessibility and technical support). The distinct affordances offered by iPads when compared to the use of laptop and desktop computers include their affordability and ubiquitous access, mobility, ease of use, opportunities for more flexible learning spaces and more opportunities for students to author their own work rather than simply consuming the work of others (Ireland & Woollerton, 2010; Kiger, Herro, & Prunty, 2012; Melhuish & Fallon, 2010).

We know iPads have the potential to enhance teaching and learning, but how should teachers be using them to teach primary mathematics? In two recent studies (Attard, 2013; Attard & Curry, 2012), teachers found it more challenging to use iPads in interesting ways when teaching mathematics, in contrast to their use in other subjects. Often teachers tend to rely on applications (apps) that are specifically designed for mathematics, but focus on a drill and practice approach that simply replaces the repetition of a standard worksheet or textbook page with some added animation and colour. Sometimes the apps that are used in mathematics lessons are based on games, with little or no opportunity for students to develop their problem solving skills or being able to reflect on their learning.

The purpose of this document is to provide teachers with some support in relation to using iPads and other tablets to enhance the teaching and learning of mathematics in the primary classroom. First, I provide a list of questions for you to consider before making the decision to use iPads in your lesson planning. This is followed by an introduction to the SAMR framework (Puentedura, 2006), which is a great tool for planning and evaluating the use of iPads (or any other technology). Next, I provide some sample activities that incorporate iPads and finally, I provide a list of iPad apps.

Planning Checklist

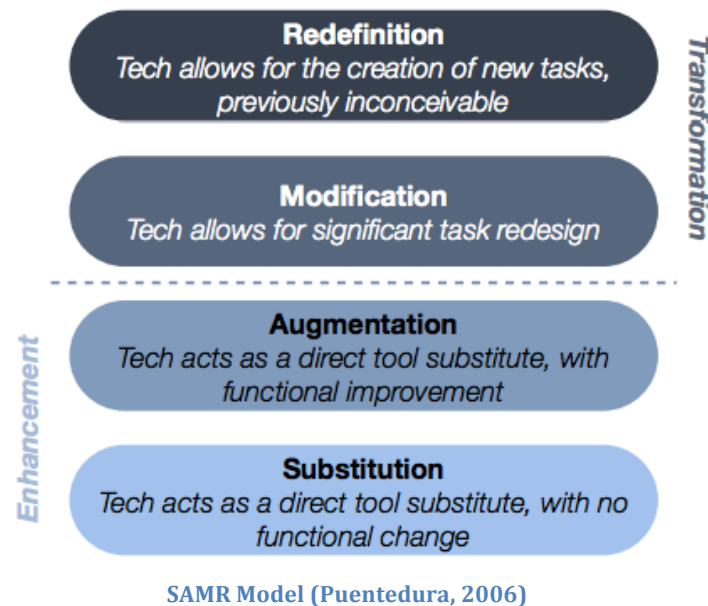
There are several things to think about when considering the integration of tablet devices into teaching and learning mathematics. The following is a brief list:

- What is the specific mathematics content to be covered and will the use of the tablet/app address the content appropriately?
- What types of tasks help students learn this content? (Don't forget the importance of including concrete materials.)
- What function/affordance of the tablet could you utilise to *enhance* teaching and learning? (If the tablet does not add anything to the lesson, then don't use it.)
- Do you want your students to act as consumers or producers/authors when interacting with the device?
- How will you integrate the device into the lesson structure? Will the lesson begin with a whole class demonstration using projection onto a bigger screen?
- How many devices will you need? (This often depends on how many you have available)
- Should each child have a device, or is it better for students to share a device? (Sharing promotes reasoning and supports the development of mathematical language.)
- How will the students be grouped?
- Will all students be engaged in exactly the same task using the devices, or will there be a range of tasks that address the same mathematical content?
- How will you know if students are engaging with the mathematics of the lesson? (Sometimes tablets can be distracting.)
- How will you collect evidence of student learning?

When initially introducing iPads or other tablet devices in a primary mathematics classroom, a 'trial and error' approach is often required until you find a range of integration strategies that suit your particular context. The SAMR model is a useful tool to assist you evaluating the effectiveness of your technology use and assist in planning future technology based lessons.

SAMR Model

The SAMR model (Puentedura, 2006) represents a series of levels of “incremental technology integration within learning environments” (van Oostveen, Muirhead, & Goodman, 2011, p. 82). It can be argued that if the purpose of purchasing iPads or other mobile devices is to redefine and transform teaching, teachers should be aiming to design teaching and learning experiences that address the Modification and Redefinition levels of the model. If tasks are planned at the lower two levels, where the technology is simply replacing existing practices with minimal or no enhancement, then perhaps the cost of the devices and the work involved in the required technical support may not be justified. There is also a risk the devices may be incorporated in ways that may reduce the effectiveness of the learning experience.



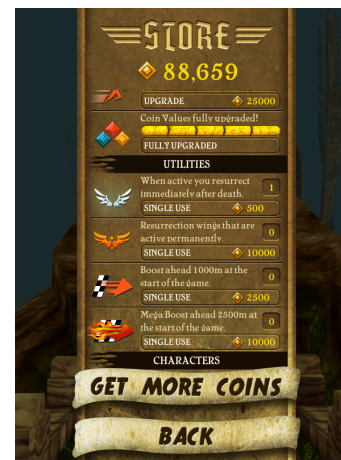
Lesson ideas

The following are examples of lessons in which iPads can be used. Some of the apps are also available in android form. Others have equivalent apps for devices that run on different platforms.

1. Temple Run (available on a android and ios)



Temple Run is a free game app that keeps a record of achievements and also allows players to purchase upgrades and utilities using coins collected from each game played. This game provides many opportunities to explore content from the *Number and Algebra* and *Measurement and Geometry* strands while building *Fluency* with number, and excellent as a lesson starter or as a stimulus for mathematical investigation. The use of a game format to tune students in, together with the use of numbers that have been generated by the students make this an engaging platform for some rich mathematical thinking.



The following are a few suggested ideas that can be used with the *Temple Run* app (beginning with students playing one game at the beginning of a lesson to generate some scores):

- Order the scores within your group from lowest to highest
- Use a numeral expander to write out your score
- Represent your score with base 10 material
- Write out your score in words
- Write out your score using expanded notation
- Calculate your group's mean score
- Add the total scores in your group
- Round your score to the nearest ten/hundred/thousand
- Is your score an even number or an odd number?
- Is your score a multiple of 3/4/6/8? How do you know?
- Who ran the furthest distance in your group?
- What is the difference between the longest and shortest distances run?
- What is the total distance your group ran?
- Convert your total distance to kilometres/centimetres
- Investigate how many times you would need to run around the perimeter of your school playground if you had to run the distance of your group's total. The class total? How did you work this out?
- What can you buy with the coins you have saved?
- How many more coins do you need to make a purchase?

2. Geometry Treasure Hunt



The *Geometry Treasure Hunt* (Figure 1) is an example of an interesting and engaging use of iPads to assess students' understanding of two-dimensional shapes (*Measurement and Geometry*). The task incorporates the built-in camera and photo apps as well as the free, *Explain Everything* app that allows students to annotate photographs and capture their audio explanations. Students' work can be replayed as a short video and shared via an interactive whiteboard. The advantage of this task is that it allows students to access the proficiency strands of *Understanding* and *Reasoning* and is open-ended enough to allow the majority of students the opportunity to achieve success. The task is also engaging as it is highly operative, includes cognitive challenge, and makes links to mathematics beyond the classroom. You can differentiate this task by changing the criteria of the treasure hunt or the focus of the hunt. For example, it could be a hunt for angles, three-dimensional objects, patterns in the environment or the use of numbers in the environment.

Geometry Treasure Hunt

Oh no! Someone has taken the polygons from the Year 4 maths books and hidden them in the environment. It's your job to find the polygons!

You need to use the following apps to complete this challenge:



Follow these instructions:

1. Look for polygons around you. You can search inside, outside, at home, at school, or anywhere!
2. Use your iPad to photograph the polygons.
3. Now use the Explain Everything App on your iPad to help us see the polygons you have found. You need to trace over the polygon, and explain everything you know about the particular shape. For example, what is its name, and what do you know about it? (Think about properties such as its sides, angles, diagonals, and symmetry)
4. Include the following reflection questions in your Explain Everything presentation:
 - How many polygons did you find?
 - Where there any you didn't find?
 - How do you know?
 - Were any of your polygons irregular?
 - Were any of your polygons tessellating?

3. A Big Day Out

The idea behind the task 'A Big Day Out' is to allow students to use a range of iPad applications to conduct a mathematical investigation based on a real-life scenario. In this particular scenario, students are to plan a day out in the city and present an itinerary that incorporates the use of public transport timetables, maps, cinema timetables, and costings. This type of open-ended task allows students to access a variety of curriculum content areas and proficiencies. For example, this task requires students to access content from the *Number and Algebra* strand, including money and financial mathematics and computation. The *Measurement and Geometry* strand is addressed via the topics of location and time. The task also requires students to use *problem solving, fluency, reasoning* and show *understanding*. The apps that students will need to access will differ according to the structure of the task and your location, so the apps included in the task are suggestions only. Other similar tasks could include:

- Planning a party
- Spending a million dollars
- Design and decorate a dream home

A Big Day Out

Your task is to plan a day out in the city for you and two of your friends. On your day out you will plan to see a movie and have some lunch. You may also choose to go to a museum or an art gallery.

You must include the following information in your final plan:

- Details of how you will travel to the nearest city using public transport (use a public transport app to investigate the timetables and include specific train or bus times). You must make sure you have enough time to get to the bus stop or train station.
- A budget for the day
- A map of the city and walking directions from the train station/bus stop for the day
- A full itinerary that begins from the time you leave home to the time you return

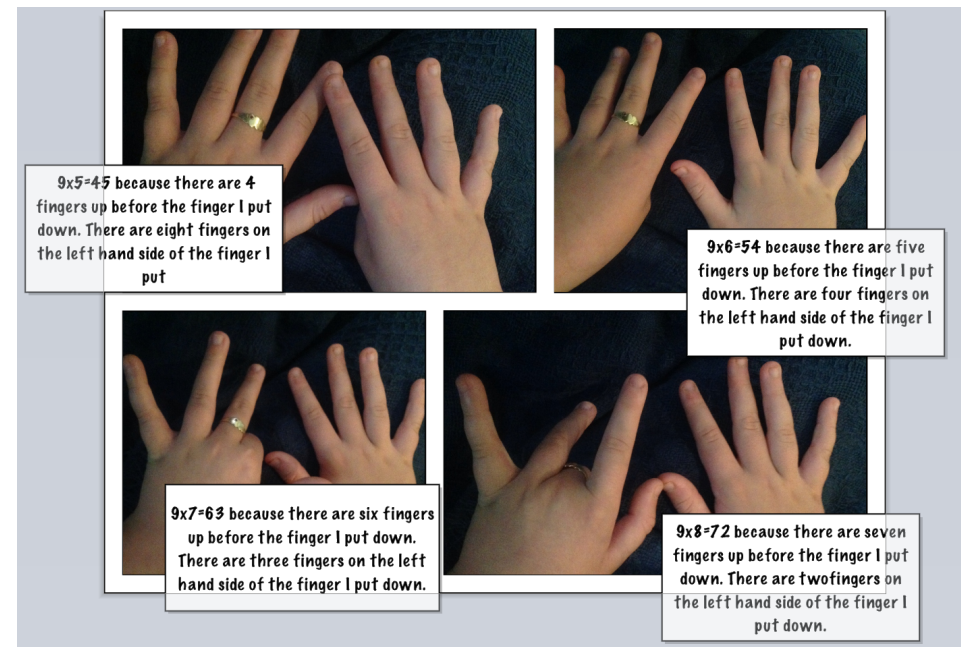
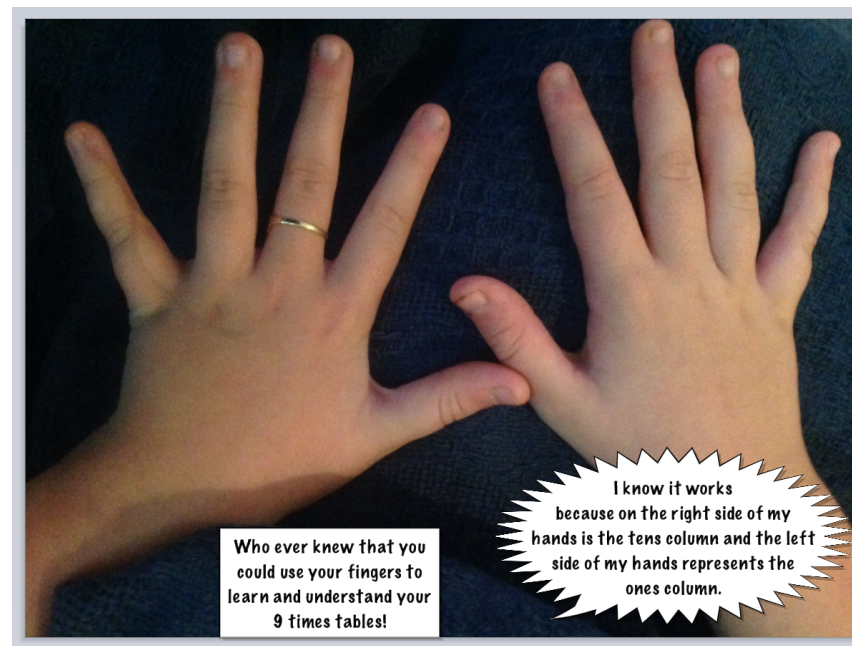
The following apps may be useful:




4. Strip Designer




The *Strip Designer* app allows students to explain mathematical concepts using images and text in the form of a comic strip. The following is a work sample from Mikayla, a Grade 4 student who was asked to design a strip based on her understandings of one of the multiplication tables. Unfortunately due to the way the task was delivered to me, some of the text is missing. However, the work sample includes evidence of Mikayla's *understanding* and *fluency*. She also demonstrates relational understanding of the nine times table in the last cell, where she states "When learning my 9 times tables, I would also multiply the number by 10 and subtract 1 for each group multiplied". *Strip Designer* could also be to record an illustrate mathematical problems.






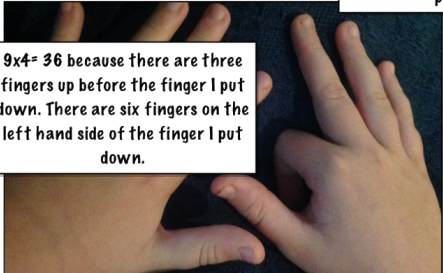
$9 \times 1 = 9$ because the number is on the left hand side of the finger.




$9 \times 2 = 18$ because there is one finger up before the finger I put down. There are eight fingers on the left hand side of the finger I put down.




$9 \times 3 = 27$ because there two fingers on the right hand side of my finger I put down and seven fingers on the left



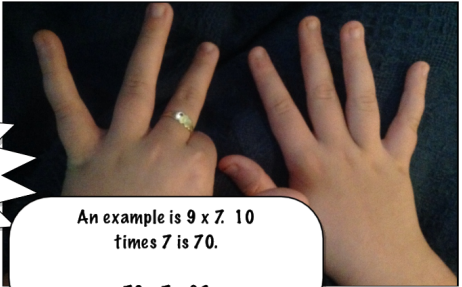
$9 \times 4 = 36$ because there are three fingers up before the finger I put down. There are six fingers on the left hand side of the finger I put down.



$9 \times 5 = 45$ because there are eight fingers up before the finger I put down. There is one finger on the left hand side of the finger I put down.



$9 \times 6 = 54$ because there are nine fingers up before the finger I put down. There are no fingers on the left hand side of the finger I put down.



An example is 9×7 . 10 times 7 is 70.
 $70 - 7 = 63$

I know that tricks don't really show understanding but it is a neat way to check the answers. When learning my 9 times tables, I would also multiply the number by 10 and subtract 1 for each group multiplied.

iPad Apps

The following table provides a list of applications (apps) that may (and in some cases may not), be useful for enhancing the teaching and learning of mathematics within the primary classroom. With over 300 apps being published each day, the list is a very small example of what is available. You will notice that not all the apps in the list are specifically designed for mathematics. Some are more generic productivity apps that can be used across all subject areas. Often it is the generic apps that promote creativity in task design!

To assist you in using the list, the apps have been organised into the content strands from the Australian Curriculum: Mathematics. Many of the apps address the proficiencies (*problem solving, fluency, understanding and reasoning*), but often this will depend upon how they are used by students, and how they are embedded in pedagogy. For example, when students are asked to provide a verbal or written reflection following their interaction with an app, the *reasoning* proficiency and perhaps the *understanding* proficiency can be addressed. Many of the apps are based on drill and practice, so aspects of the *fluency* proficiency are easily addressed. Very few apps incorporate *problem solving*. However, this proficiency can be addressed when the focus on the task is not the iPad and a self-contained mathematics app, but an investigation that requires the use of the iPad's various tools. For example, an investigation that requires students to plan groceries for a class party could utilise the *My Budget* and *Woolworths* apps for information retrieval, and the *Keynote* app or video recorder could be used by students to present their findings in the format of a proposal.

I have tried to list the price of the apps but this may not be accurate as prices do sometimes fluctuate. For each app I have included a brief comment to assist you in deciding whether the app would be useful to your context. I have also added a star rating that is *my personal opinion* of each app's potential to improve teaching and learning. Some of the apps have been rated quite low, with one or no stars. I believe it is useful to provide both good and bad examples of apps that are on the market.

I have also included a coding system to assist you in selecting an app that may assist in addressing your students' learning needs. Because mobile technologies are continually improving and apps are also being updated regularly, the codings are merely a suggestion made at the time this list was compiled.

The categories are as follows:

IB: Information based – provides information; student is a passive consumer rather than a producer


I: Interactive– provides some elements of interaction either with the app or with others, and incorporates choice and decision-making

P: Productivity– student acts as author and interaction with the apps results in a product




C: Collaboration – the app has the capability of allowing communication and collaboration between users


D: Drill and Practice– the app is designed to provide drill and practice of known skills, often these apps are game-based.

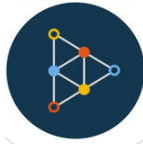


PS: Problem Solving – the app requires students to use problem solving skills


	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice







GENERIC APPS


	App	Equivalent Android apps:	Category	Cost	Comments	Curriculum Links	Year	Rating						
Built in functions	Camera 		<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Still camera: Students can photograph work samples when engaging with concrete materials. Students can write descriptions of their photographs and the teacher can then annotate these work samples. Video camera: This can be used by students to present their work or to record themselves completing a procedure. For example, you could ask students to rule and measure a line with a ruler. The student could explain the procedure as they complete it.	Dependent on task.	F-6	★★★★
	IB	I												
	P	PS												
C	D													
Maps 	MapQuest GPS	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Maps can be used to explore position/location anywhere in the world.	Measurement & Geometry: Location	3-6	★★★★	
IB	I													
P	PS													
C	D													
Calendar 	Google Calendar	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Students can explore concepts relating to time and investigate number patterns when using the 'month' or 'year' view.	Measurement & Geometry: Time Number & Algebra: Patterns & algebra	1-6	★★★	
IB	I													
P	PS													
C	D													






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Generic Apps for recording visual and audio	Educreations 	Doceri Interactive Whiteboard	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is a screen-casting interactive whiteboard app intended for use by teachers for lesson creation. The app allows you to integrate photos, annotations and files into presentations. Could be used by older students to create explanations of concepts, however other apps are easier to use.	Dependent on task.	teacher	★★
	IB	I												
	P	PS												
C	D													
Explain Everything 	Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	\$3.79	This is a great app that is flexible and allows the user to literally explain anything, in a number of ways. Great for addressing the proficiencies in the Australian Curriculum. This is the blurb that's on the app store "Explain Everything is an easy-to-use design, screencasting, and interactive whiteboard tool that lets you annotate, animate, narrate, import, and export almost anything to and from almost anywhere."	Dependent on task.	3-6	★★★★	
IB	I													
P	PS													
C	D													
ShowMe 	Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	ShowMe is a brilliant app that has great potential for use with primary mathematics. Teachers can use this to demonstrate on an IWB. Students can record their work and then present it to the class for constructive feedback. For example, students learning to use open number lines can record their work (in writing and verbally) and then share on the IWB. The other students can then discuss different strategies etc. By signing up to ShowMe teachers and students have access to ShowMe lessons created by other teachers and can share their own.	Dependent on task.	F-6	★★★★	
IB	I													
P	PS													
C	D													





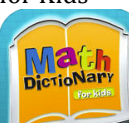
	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Generic Apps			<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This clock app displays the time in digital and analogue and includes a metronome and other timers.	Measurement & Geometry: Time	1-6	***
	IB	I												
	P	PS												
	C	D												
		Pocket Band Social DAW	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	\$6.49	Although primarily a music app, links between mathematics and music can be made as well as the development of pattern recognition and development.	Number & Algebra: Patterns & algebra	1-6	***
	IB	I												
P	PS													
C	D													
	Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	One of my favourites! Google Earth is great for teaching concepts of location. It is also a very good tool for exploration 3D space – try looking for the pyramids at Giza, or the Pentagon building in the US.	Measurement & Geometry: Location and transformation, geometric reasoning	1-6	****	
IB	I													
P	PS													
C	D													
	GeaCron History Maps	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app contains a range of historical maps that can be used to highlight the differences between old and new, as well as providing practice with coordinates.	Measurement & Geometry: Location	5-6	***	
IB	I													
P	PS													
C	D													
	Google Drive Slides	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	\$12.99	Similar to Microsoft PowerPoint. Students can create presentations on the iPad – great for illustrating their understanding of specific concepts or for presenting mathematical investigations.	Dependent on task.	3-6	****	
IB	I													
P	PS													
C	D													
	Comic Strip It	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	\$2.99	The <i>Strip Designer</i> app allows students to explain mathematical concepts using images and text in the form of a comic strip.	Dependant on task.	3-6	***	
IB	I													
P	PS													
C	D													


	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice

	World Factbook	Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	\$5.99	This app provides data on every country in the world. Excellent tool for exploring statistics and the use of large numbers (be aware that commas are used to separate place value groups)	Statistics & Probability Number & Algebra	3-6	★★★★
IB	I													
P	PS													
C	D													
	Whereis	Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is a GPS. Great for practice in following directions as well as concepts relating to location.	Measurement & Geometry: Location and transformation	3-6	★★★★
IB	I													
P	PS													
C	D													
	Lifelike Clock Lite	Sense Flip Clock & Weather	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This clock app is useful for exploring time concepts (analogue only in the free version) as well as temperatures.	Measurement & Geometry: Time, temperature Statistics & Probability: Gathering and interpreting data	1-6	★★★
IB	I													
P	PS													
C	D													
	Timer	Stopwatch & Timer	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	A handy app for timing group work or other activities. Also useful for developing concepts relating to the passage of time. Young students could estimate how many times they can write their name in one minute, then test it out using the timer.	Measurement & Geometry: Time	1-6	★★
IB	I													
P	PS													
C	D													
	Weather +	Weather & Clock Widget	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Weather+ provides the temperature at each hour as well as five days ahead. Great for recording data.	Statistics & Probability: Gathering, presenting and interpreting data	3-6	★★★
IB	I													
P	PS													
C	D													




	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


		WorldClock Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Explore different time zones with this app - students can add any country.	Measurement & Geometry: Time	3-6	***
	IB	I												
P	PS													
C	D													
		Woolworths Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	The Woolworths app is very useful for conducting investigations where shopping is the context. Also useful for developing critical numeracy skills in relation to price comparisons and value for money.	Number & Algebra: Money, fractions	3-6	****
IB	I													
P	PS													
C	D													
Generic Educational Apps		BrainPOP Available on Android	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	The BrainPOP app is linked to the subscription based website www.brainpop.com . The app provides a free animated movie each day on random topics and also has some free mathematics based movies available. Further access is available via subscription.	Range of topics available.	3-6	***
IB	I													
P	PS													
C	D													
Mathematics Apps Broad Application		iMathematics	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This is a useful app for older students. It contains hundreds of formulas, definitions and theorems, with links to Wikipedia and Wolfram Alpha for further information. Some information is locked in the free version.		5-12	***
	IB	I												
P	PS													
C	D													
		Math Dictionary for Kids Mathematics Dictionary	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	\$3.79	This app is a glossary of almost 1 000 mathematical terms. Useful for upper primary, however, be wary of American terminology that is NOT used in Australia!		3-6	***
IB	I													
P	PS													
C	D													






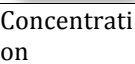
	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


	Minds of Modern Mathematic s 		<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This is a very interesting app that explores the work of mathematicians through history. The information is presented as a timeline and the user can click on an image for further information. Great for older students and useful for highlighting to students that much of the mathematics we use today was derived by real people...and not just textbook writers!		5-8	***
IB	I													
P	PS													
C	D													







NUMBER & ALGEBRA


App	Category	Cost	Comments	Curriculum Links	Year	Rating						
2048 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	One of my personal favourites in 2014 – you can lose hours in this app. Apart from its value as a game, students can use this app to build fluency with double numbers. It is also a game of strategy.	Number & Algebra	5-8	★★★
IB	I											
P	PS											
C	D											
100s Board 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	This app is a digital 100s board that can show and hide numbers from 1 to 100.	Number & Algebra: Whole number, place value, addition, subtraction, multiplication, patterns.	K-4	★★★
IB	I											
P	PS											
C	D											
Base 10 Blocks 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	0.99	This is similar to the Hands-on Base Ten Blocks app below. The learner manipulates representations of Base 10 blocks onto a place value chart and a cumulative total is kept. There is an option for addition and subtraction with this app. The term ‘borrowing’ rather than ‘trading’ is used for subtraction.	Number & Algebra: Place value, addition, subtraction	1-4	★★
IB	I											
P	PS											
C	D											







	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Bubble Math! 	IB P C	I PS D	Free	Bubble Math is a leveled number game. Each level has 25 questions and the player must pop the bubble with the correct answer to get to the next question. There are three categories: addition, subtraction, and addition and subtraction together. I'm not sure whether young children would get bored with having to answer 25 questions before being able to progress to the next level.	Number & Algebra: Addition, subtraction.	F-2	★★
Candy Factory 	IB P C	I PS D	Free	Candy Factory is a fraction app suitable for upper primary. It provides a scenario of a factory that requires students to partition fractions using a measurement model. A little confusing on the first try, but worthwhile once the user masters the steps.	Number & Algebra: Fractions	5-6	★★★
Chicken Coop Fractions 	IB P C	I PS D	Free	A fraction app that is quite entertaining! This app provides practice at placing proper and improper fractions in a number line. Players choose a level of difficulty.	Number & Algebra: Fractions	5-6	★★★
CoinCalc 	IB P C	I PS D	1.29	Although the coin graphics are quite good, this app has really no useful functionality!	Number & Algebra: Money		☹
Colours & Shapes 	IB P C	I PS D	Free	A basic counting app that has audio so does not rely on children being able to read. Great for the early stages of kindergarten.	Number & Algebra: Whole number Measurement & Geometry: 2D Shapes	F	★★
Concentration 	IB P	I PS	Free	This is an NCTM (National Council for Teachers of Mathematics) app. It is basically a game of concentration, however, players can change the content.	Number & Algebra	F-6	★★★ ★






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


	C	D		The app covers a range of content in number starting at subitising, all the way through to equivalent fractions. Very useful for building fluency.			
Connect Sums 	IB	I	\$1.29	This is another of Darren Carsten's apps. Connect sums is based on addition. The user is given a sum and must select numbers that add to make that total. The settings are adjustable and can be as simple as adding dots on dice to more complex adding of binary numbers.	Number & Algebra	F-6	***
	P	PS					
	C	D					
Deep Sea Duel 	IB	I	Free	This NCTM app is great for practicing mental computation and problem solving. The user plays against 'Okta', the octopus by taking turns to select cards from a pile with the aim of reaching a target number. The player can select the level of difficulty.	Number & Algebra: Addition	5-6	*** ★
	P	PS					
	C	D					
Digicubes 	IB	I	Free	Digicubes is a nice app that is based on number ideas. The app involves manipulating squares. When the squares are joined, they change colour according to the colours used in Cuisenaire Rods. The app allows early learners to explore number facts and number patterns.	Number & Algebra: Whole number, patterns	F-1	*** ★
	P	PS					
	C	D					
Equivalent Fractions 	IB	I	Free	An NCTM app. Players can choose from a square or circle, automatic or 'build your own'. On initial investigation this app is complex to use. Players are given a square or circle that has a fraction shaded, and must divide another square or circle to make an equivalent fraction. Not a very intuitive app and students may get frustrated quite quickly with this one.	Number & Algebra: Fractions	5-6	★
	P	PS					
	C	D					
Factor Samurai 	IB	I	3.79	This app is based on the Fruit Ninja game app where players need to slash numbers until they are left with only prime factors. Students need a strong understanding of prime numbers for this game which has three different speed levels: grasshopper, apprentice and master. This is a good game that older primary students would enjoy.	Number & Algebra: Whole number	5-6	***
	P	PS					
	C	D					






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


	IB P C	I PS D	Free	This app includes four separate games, based on addition, subtraction, multiplication and fractions. Very basic and would provide very limited engagement for students.	Number & Algebra	2-6	☹
	IB P C	I PS D	Free	A very interesting app that has a great set of tutorials that teach the user how to use an abacus for simple addition. Once the user gets through the tutorials, there he or she is ready to engage with the game, which consists of a series of levels of increasing difficulty.	Number & Algebra: Whole number, addition.	F-6	★★★
	IB P C	I PS D	Free	This free app does not have much function. It does have screens that are intended to explain fraction concepts visually, although students may not gain much without teacher explanation. There is a question/answer level that provides multiple-choice questions. In terms of engagement, this app is not much better than a worksheet.	Number & Algebra: Fractions	5-6	☹
	IB P C	I PS D	Free	Fingu is a very basic game that requires the player to match the number of icons on the screen by placing the equivalent number of fingers on the screen. This is good practice of one-to-one correspondence and subitising. However, there is a minor technical glitch. If all the fingers are not placed on the screen at the same time, the incorrect number is registered by the game.	Numeration	F	★★
	IB P C	I PS D	0.99	As above, with more levels of difficulty. No better than the free version.	Number & Algebra: Fractions	5-6	☹
	IB P C	I PS D	Free	An interesting fraction app that focuses on addition. This app is quite good in that it allows the user to see a visual representation of the fractions being added. It also provides a record of the questions answered, which is important in terms of allowing the teacher to assess students.	Number & Algebra: Fractions	5-6	★★★






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Friends of Ten 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app uses a visual of a ten frame and counters. The app can be used as the teacher to demonstrate 'friends of ten' or can be used by the students to practice.	Number & Algebra	F-2	★★★
IB	I											
P	PS											
C	D											
Hands-On Math Base Ten Blocks 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	A nice app that allows students to drag Base 10 to represent specific numbers. The app also provides addition and subtraction algorithms that students must represent using the Base 10. This part of the app does not appear to be very effective – not recommended.	Number & Algebra: Whole Number	1-4	★★
IB	I											
P	PS											
C	D											
Hungry Fish 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	Motion Math Hungry Fish (free version) is based on addition. More levels that incorporate subtraction and negative numbers are available for purchase. The context of this app is a reef in which a fish swims around with a number on its back. The player must select 'bubbles' that add up to the number on the fish, which are then swallowed by the fish. Scores are kept – this may be a way of keeping track of student's achievements by using a screen shot of the completed level. Level of difficulty is adjustable. Good for building fluency.	Number & Algebra: Addition	F-3	★★★
IB	I											
P	PS											
C	D											
Jungle Coins 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	This app uses Australian coins with the option of using other currencies. Users practice identification of coins, counting, comparing and working out correct change. Has audio and written instructions to suit a diversity of learners.	Number & Algebra: Money, addition, subtraction.	F-2	★★★
IB	I											
P	PS											
C	D											
KenKen Classic 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	If you love KenKen puzzles, you will love using this app with your students. The app allows the user to select KenKen puzzles from 3 x 3 grids to 7 x 7 and also includes two levels of difficulty: easy and unsigned (the operation is not given). You can upgrade this version to remove the ads.	Number & Algebra: Addition, subtraction, multiplication & division	3-6	★★★
IB	I											
P	PS											
C	D											



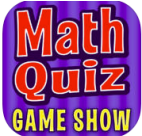



	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


<div>Kids Counting</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is really most suitable to pre-school children. It is a very basic counting activity (it calls itself a game, but isn't one). The user must count items by tapping on the items or by tapping on the total at the bottom of the page.	Number & Algebra: Whole number	F	★
IB	I											
P	PS											
C	D											
<div>King of Maths</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	In this app players are provided with a set of single digit numbers to add. Players are to continue adding until they end up with a single digit. Eg. $1 + 2 + 3 + 5 = 11$, $1 + 1 = 2$ This app is quite limited but may be useful for students who need practice building fluency in addition.	Number & Algebra: Addition	1-6	★
IB	I											
P	PS											
C	D											
<div>Khan Academy</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app contains a collection of instructional videos, all based on mathematics. Those appropriate for primary students are in the Arithmetic and Pre-Algebra folder. The videos are useful for students to access when they need an explanation from a 'different' voice. The videos also support the notion of the 'flipped' classroom, where students learn what they need from technology away from the classroom, and use classroom time to apply their skills and knowledge.	Number & Algebra	F-6	★★★
IB	I											
P	PS											
C	D											
<div>Math Bubbles</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	A colourful app that young learners might find appealing. This one provides practice at each of the number operations and there are different levels of difficulty. The app does not provide feedback for incorrect answers and the fonts are difficult to read. The multiplication symbol is represented as an asterisk and may be confusing for students.	Number & Algebra	F-2	★
IB	I											
P	PS											
C	D											
<div>Math Zombies</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	6.49	Originally a free download, this app has a video game feel about it, which students would love. It requires the user to answer simple addition and subtraction questions in order to gain points. The focus is on speed, so this app is a good way to build fluency in addition and subtraction, however, the questions are presented as formal algorithms – unnecessary when adding single digit numbers. This app was worthwhile when it was free but I wouldn't recommend paying \$6.49 for it.	Number & Algebra: Addition and subtraction	1-6	★★
IB	I											
P	PS											
C	D											






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


MathBoard addition 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	The free version of this app is limited to addition but does give a variety of options for the user. This app also has a 'problem solver' that explains how to solve an addition problem step-by-step which students can select when they require assistance. The only issue with this app is that it does not encourage mental computation and provides formal algorithms when they are not always necessary	Number & Algebra: Addition	3-6	★★
IB	I											
P	PS											
C	D											
Math Doodles 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	This is an app designed by award winning designer Daren Carstens. The app includes three separate puzzles – Sums Stacker, Connect sums and unknown square. This app is highly recommended for the mathematical content and the potential to address all of the Working Mathematically strands.	Number & Algebra	1-6	★★★ ★
IB	I											
P	PS											
C	D											
Math Party 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	free	This free app requires the user to tap on number bubbles from the smallest to the biggest number. The game is timed and has a multiplayer mode. This game gets a little boring after the first few turns – may be exciting for young learners...	Number & Algebra: Whole number	F-2	★★
IB	I											
P	PS											
C	D											
Maths Pop 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Again, this app practices the four operations and players can choose their own level. Rather than solve an equation, the app provides the answer and the operation, and players must complete the question. A little difficult to use – players have to drag a balloon with the number and place it within the equation. Creepy music!	Number & Algebra	2-4	★
IB	I											
P	PS											
C	D											
Maths Monkey's Quest 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	A good app for building fluency in addition, subtraction and whole number understandings including rounding. Instant feedback provided.	Number & Algebra	1-6	★★
IB	I											
P	PS											
C	D											






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


<div>Maths Trainer</div> <div></div>	<div>IB</div> <div>P</div> <div>C</div> <div>I</div> <div>PS</div> <div>D</div>	Free	Skill & drill app for the four operations. Players choose which operations to practice and the level of difficulty. This app is really no different to a worksheet.	Number & Algebra	1-6	★
<div>Math with Springbird</div> <div></div>	<div>IB</div> <div>P</div> <div>C</div> <div>I</div> <div>PS</div> <div>D</div>	Free	A very cute app that focuses on basic addition and subtraction. This app is a multi-level game where the user must answer simple multiple-choice addition and subtraction questions to progress. Feedback is constant in this game. However, if players get an incorrect answer, they are not given another opportunity to answer that question.	Number & Algebra: Addition & subtraction	F-2	★★★
<div>Math Quiz Game Show</div> <div></div>	<div>IB</div> <div>P</div> <div>C</div> <div>I</div> <div>PS</div> <div>D</div>	2.49	I love this app! Everything about this app is great – it’s engaging, challenging and covers almost all areas of the mathematics curriculum. The only negative (and it’s minor), is that the some of the measurement questions use the imperial system. Highly recommended and great for using with an Interactive Whiteboard.	Number & Algebra, Statistics & Probability, Measurement & Geometry	4-7	★★★ ★
<div>Maths Wiz</div> <div></div>	<div>IB</div> <div>P</div> <div>C</div> <div>I</div> <div>PS</div> <div>D</div>	Free	Maths Wiz provides multiple choice questions on the four operations and on angles. The user can select the level of difficulty from ‘Easy’ or ‘Hard’ levels. This app allows the user to email results. Be aware that the ‘Easy’ level would be appropriate for Year 6 (high achievers)!	Number & Algebra: Addition, Subtraction, Multiplication, Division Measurement & Geometry: Angles	6	★
<div>Mathsterious Mansion</div> <div></div>	<div>IB</div> <div>P</div> <div>C</div> <div>I</div> <div>PS</div> <div>D</div>	Free	Mathsterious Mansion is a beautifully designed app that very creatively provides subtle increases in the level of difficulty. It is based on whole number understandings, addition, subtraction and the 100s chart, and is embedded in an engaging narrative of a haunted mansion. The level of difficulty increases as numbers disappear from the 100s chart, supporting the development of mental computation.	Number & Algebra: Whole number	1-3	★★★ ★
<div>Maya Numbers</div> <div></div>	<div>IB</div> <div>P</div> <div>C</div> <div>I</div> <div>PS</div> <div>D</div>	Free	This is a great app that has a high level of challenge for students in upper primary. The app teaches the Mayan numeration system which is Base 20, and is very useful for students who need enrichment. It’s also addictive....	Number & Algebra: Numeration	5-6	★★★






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Meteor Math 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	This app feels, sounds and looks like an arcade game so would be popular with students who play lots of video games at home. It is focused on the four operations and has three modes: practice, compete and survival. The app is useful for building fluency but not understanding. Could be used for a homework task.	Number & Algebra: Addition, Subtraction, Multiplication, Division	3-6	★★★
IB	I											
P	PS											
C	D											
Money Smart 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	You need to search for <i>Track my Spend</i> to find this app. This one suits older children (and adults), and assists with financial mathematics.	Number & Algebra: Financial Matheamtics	5-6	★★★
IB	I											
P	PS											
C	D											
Motion Math 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This is a fraction app that uses the tilt function on the iPad. The user must tilt the iPad so that the 'bouncing' fraction hits the appropriate place on a number line. There are several levels for users to select from and the app incorporates decimal and common fractions. This is another app that users could play without engaging with any mathematical thinking – the bouncing fraction continues to bounce until the user happens to bounce it onto the correct place on the number line.	Number & Algebra: Fractions	3-6	★
IB	I											
P	PS											
C	D											
Motion Math Zoom 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	The player is basically required to place numbers on a number line. May be useful in an early years classroom for a quick activity, however this app won't engage learners for a sustained period of time.	Number & Algebra: Number & place value	F-2	★
IB	I											
P	PS											
C	D											
Multiplicati on for Kids 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is based on multiplication. There are two main functions. The first allows the user to select a multiplication table (between 0 and 12). The table is then shown on the screen and a voice recites the entire table. The second function provides different levels of multiplication questions. This app is not the best – it includes the 11 and 12 tables and does not do anything to enhance students' learning that a multiplication poster can't do.	Number & Algebra: Multiplication	2-6	★
IB	I											
P	PS											
C	D											

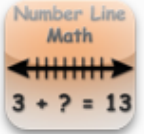





	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


<div>My Student Budget</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is appropriate for upper primary students and great for organising real or simulation budgets. A good app for learning about financial mathematics.	Number & Algebra: Financial mathematics	5-6	★★
IB	I											
P	PS											
C	D											
<div>My Times Tables</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app would be worthwhile if it is used to build fluency with the multiplication tables once students understand the concept of multiplication and division. The app has four stages – repetition, filling in the missing numbers, answering multiplication and division questions and an interactive multiplication grid. What is lacking in this app is that the user doesn't get the opportunity to blend different tables – you can only choose one multiplication at a time to work with. This could be a useful app for students to engage with at home.	Number & Algebra: Multiplication	2-6	★★★
IB	I											
P	PS											
C	D											
<div>My Math Flashcards</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app presents vertical algorithms for the four operations – using single digit numbers. Not recommended!			☹
IB	I											
P	PS											
C	D											
<div>Neo Maths x</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Skill & Drill app for number operations. Players select levels. Feedback is only provided when the level is complete, so players do not know which answers were incorrect. Not recommended!	Number & Algebra	1-6	☹
IB	I											
P	PS											
C	D											
<div>NineGaps</div> <div></div>	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	1.29	This is an iPhone or iPod app. This is a very nice puzzle app that provides practice at operations and problem solving. Players can select from five levels of difficulty. They are provided with a grid of connected number sentences with only some of the numbers filled in. The player must select from a group of numbers between 1 and 9 and fill in the missing gaps. All numbers must be used once and all calculations have to be correct to win the game.	Number & Algebra	4-6	★★★
IB	I											
P	PS											
C	D											






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Ninja Factor Tree 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	An engaging app to build fluency with factors. Students would love this game – it’s very well made and the graphics are great. Useful as a homework tool.	Number & Algebra: Multiplication & division.	4-6	★★★
IB	I											
P	PS											
C	D											
Number Bubble 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	In Number Bubbles players are given a target number. They then tap on number bubbles that add to the target. Players can also use multiplication. There are three different skill levels: Time, Survival & Child	Number & Algebra: Addition, multiplication	1-4	★★★
IB	I											
P	PS											
C	D											
Number Find Lite 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app promotes the understanding of pattern and structure within a 100s chart. The user must try and find a given number on a blank chart using knowledge of where the numbers are positioned in relation to each other.	Number & Algebra: Whole Number	F-2	★★★
IB	I											
P	PS											
C	D											
Numberline 2 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This number line app focuses on fractions, decimals and percentages, requiring the user to place different fractions on a number line. The level of difficulty increases as the user progresses through the app.	Number & Algebra: Fractions	5-6	★★★
IB	I											
P	PS											
C	D											
Number Line 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is basically a number line template with lots of functionality. It’s much easier than having to ask students to draw number lines and screen shots can be used to capture evidence for assessment.	Number & Algebra: Whole Number Addition, subtraction, multiplication & division	1-6	★★★
IB	I											
P	PS											
C	D											






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Number Line Math K-2 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	0.99	In this app the user is given a number line and an addition or subtraction equation. The user can select the footprints to see the equation on the number line, and then answer the question by selecting the appropriate number. This app is useful for helping students work with number lines with the view to building mental computation skills.	Number & Algebra: Addition, subtraction	F-2	★★★
IB	I											
P	PS											
C	D											
Number Pieces 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Number Pieces allows the user to manipulate a simulation of the shorts, longs and flats of the Base 10 material. The user can represent numbers using the Base 10 and symbolically. Not a bad app but I would prefer students to manipulate concrete materials. Might be useful if used alongside concrete material as a recording device.	Number & Algebra: Place Value	1-2	★★
IB	I											
P	PS											
C	D											
Number Rack 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is one that teachers would use to demonstrate addition and subtraction using number beads (simulating the Dutch Rekenrek). The app allows the user to add or subtract beads that are grouped in fives. Groups can also be covered by a shade to allow students to practice counting in groups of five. This is not an app that students could engage with unless they are given highly structured instructions and work in pairs.	Number & Algebra: Number, addition, subtraction	F-2	★★
IB	I											
P	PS											
C	D											
Numbler 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	1.29	This app is like Scrabble with numbers. You play against the CPU. Very addictive (even for adults)	Number & Algebra: Addition, Subtraction, Multiplication & Division	3-6	★★★ ★
IB	I											
P	PS											
C	D											
Pick-a-Path 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is published by the NCTM. Each level is a maze with a target number. The user must pick a path (each path has number operations) that will result in achieving the target number.	Number & Algebra: Multiplication	3-6	★★★
IB	I											
P	PS											
C	D											
Pizza Fraction 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	A fraction app that is problematic in that it uses a pizza to represent a circular region. No other shapes are used to represent fractions. This is basically a counting exercise rather than an exercise to increase students' understanding of fraction concepts.	Number & Algebra: Fractions		☹
IB	I											
P	PS											
C	D											







	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Place Value 	IB P C	I PS D	1.29	This app requires the user to answer questions regarding the place value digits. For example, the number 5436 is given and the user is asked questions such as 'how many tens'. The user must then tap the number on the screen, which is a little difficult until you get used to the amount of pressure required. This app would be appropriate for very short lengths of time as it is quite repetitive.	Number & Algebra: Number and place value	1-4	★
Place Value 	IB P C	I PS D	3.79	This app uses the Montessori number cards and requires the user to drag the card for each place value of a given number (the number is written in words and provided in audio), and then 'layer' the cards to create the completed number in digits. The player (or teacher) can select the number of digits, whether to include zeros, and whether to use the voice option.	Number & Algebra: Place Value	K-4	★★★
Red Dragonfly Mathematics Challenge 	IB P C	I PS D	Free	This app is actually a problem-solving book that has been adapted for the iPad. It has a good range of problems and their answers, but is not interactive. Students need to record their working on paper. This app would work well with an interactive whiteboard and could then be used for whole-class problem solving. A great resource.	Number & Algebra Measurement & Geometry Statistics & Probability	5-6	★★★
Rocket Math Free 	IB P C	I PS D	Free	This app embeds mathematics practice within a game that requires players to earn money and medals. Players choose an avatar and then get to modify a rocket. Players then launch their rocket and respond to mathematics questions. There is a choice of numbers, time, US Money (inappropriate here), shapes/patterns, multiply/divide. The game aspect of this app would make it appealing to some students.	Number & Algebra Measurement & Geometry	3-6	★★★
Skip Counting 	IB P C	I PS D	Free	This app provides opportunities for students to practice counting by 1 and skip counting by 2, 3, and 5. The user taps on a group of objects and the voice pronounces the total. This app is good if students are just beginning to learn to skip count. However, they could engage with this app without actually learning. The voice on the app is also a little unclear and may be hard to understand.	Number & Algebra: Whole number	F-2	★

	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice






Snow Day Math 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	0.99	This app is very visually appealing, however it is little more than a drill and practice app that requires the user to pull apart and put together numbers to practice arithmetic.	Number & Algebra: Addition, Subtraction	2-4	★★
IB	I											
P	PS											
C	D											
Pattern Recognition 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	1.29	A good app for the early years requiring children to continue a pattern or fill in the missing element of a pattern. Provides feedback for the right answers and when an answer is incorrect it shows the correct response.	Number & Algebra: Algebra	Pre-F	★★
IB	I											
P	PS											
C	D											
Penguin Mathematics 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	A cute little app that builds fluency in adding two single digit numbers. The goal is to get the penguin to the iceberg by answering nine questions. The player is timed. The full version offers all four operations and up to 10 000 questions (not sure why you would need that many questions as the app isn't that engaging). Could be useful for a quick warm up activity projected onto an interactive whiteboard.	Number & Algebra: Addition	F-1	★★
IB	I											
P	PS											
C	D											
Sums Stacker 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	This app is addictive for those who like problem solving. Users are given three stacks of objects (ranging from dice, ten frames, to binary numbers and currency) and must drag values from stack to stack until they equal the target sums below each stack. The ultimate aim is to solve the problem in as few moves as possible. This is an excellent resource for students who need extension work and is excellent for developing problem solving skills.	Number & Algebra: Addition	5-6	★★★ ★
IB	I											
P	PS											
C	D											
Super 7 HD 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	1.29	This app is a game that requires the user to draw lines to connect and combine number disks that add to seven. The app uses addition and subtraction, so may not be useful in the early stages of kindergarten. Okay as a game, but may not be of benefit in the classroom. This app would make a nice homework tasks when you want students to build their number fluency.	Number & Algebra: Addition, subtraction.	F-3	★★
IB	I											
P	PS											
C	D											


	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice







Teaching Number Lines 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Number Lines explores the skills of sequencing, skip counting, and addition. This app provides feedback when numbers are placed correctly on the number line. There is no sound with this app and young children will also require some literacy skills to read the instructions. The app also includes a teaching tool that provides opportunities for teacher-led instruction.	Number & Algebra: Number, addition, subtraction.	F	★★★
IB	I											
P	PS											
C	D											
Temple Run 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	The beauty of this game app is that it provides lots of opportunities for number, measurement, data and even position exploration. Lessons would begin with the use of the app to engage students and give them ownership of the numbers they generate. The focus can then turn to the mathematics.	Number & Algebra Statistics & Probability Measurement	2-6	★★★ ★
IB	I											
P	PS											
C	D											
Threes 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	My favourite game app for 2014 – I have been addicted for six months now! Apart from being a great game, this app has great potential for mathematical investigation, problem solving and fluency building. I will be writing up some ideas for this app in my new book.	Number & Algebra: Addition, multiplication, algebra	4-10	★★★ ★
IB	I											
P	PS											
C	D											
Tric Trac 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	A two-player game that requires the users to match sums using as many digits as possible, after adding dots on two dice. The player with the lowest score wins.	Number & Algebra: Addition	1-3	★★★
IB	I											
P	PS											
C	D											
Virtual Manipulatives 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is based on using fractions walls and representing common fractions, decimal fractions and percents. There is a 'work area' where the user is able to drag parts of the fraction wall across and by tapping, the user can read the equivalent fraction. The user can also write in the work space.	Number & Algebra: Fractions	4-6	★★
IB	I											
P	PS											
C	D											
Wings 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This is another Motion Math app. It is a small free sample with limited levels. This app is based on multiplication and uses arrays, requiring the user to determine which of two multiplications has the larger product. I found this app tricky to use and can't see any real benefit – users can play the game without actually engaging with the mathematics.	Number & Algebra: Multiplication	3-4	★
IB	I											
P	PS											
C	D											


	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice



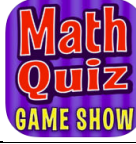


MEASUREMENT & GEOMETRY


App	Category	Cost	Comments	Curriculum Links	Year	Rating						
<div>3D Cities</div> 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	free	This app is somewhat limited, however it does provide students with a birds eye view of a city and allows them to zoom in to explore the various shapes of buildings.	Measurement & Geometry: Position, 3D objects.	4-46	★★
IB	I											
P	PS											
C	D											
<div>Amazing Time</div> 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	I downloaded the free version of this app before purchasing the full version as I was impressed by what I saw! This is a very good app for helping children learn to read the time as well as understanding the language of tie. It also provides good opportunities for children to gain benchmarks in relation to the duration of time. Well worth the price.	Measurement: Time	F-4	★★★★
IB	I											
P	PS											
C	D											
<div>Banana Hunt</div> 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	1.29	This is a nice little app that requires the user to estimate angles. The closer the angle, the more bananas you win. Strange, but quite addictive!	Measurement: Angles	5-6	★★★
IB	I											
P	PS											
C	D											
<div>Bee-Bot</div> 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app replicates the Bee-Bot robot and requires the users to move from one position to another specific position on a small grid, using forward, backward, left and right arrows to program the Bee-Bot. Great for practicing the language of position.	Measurement & Geometry: Position	F-2	★★★★
IB	I											
P	PS											
C	D											
<div>Circus</div> 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	The best thing about this app is the opportunity it provides for children to practice using the language of mathematics. It's designed for pre-schoolers but could be used in the early years of school, particularly for students from a language background other than English.	Measurement & Geometry: Length, position	Pre-F	★★★
IB	I											
P	PS											
C	D											






	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Cube it 3D 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	I didn't like this app. After spending a few minutes trying to get it to work I found a Youtube clip showing how it should work and I still had trouble. The app has good potential but if it is too difficult to operate, it's not worth downloading.	Measurement & Geometry: 3D objects		★			
IB	I														
P	PS														
C	D														
Free Protractor 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	I believe it's much better to use a real protractor than an app-based protractor. Apart from just being able to get a sense of the size of angles up to 180°, I don't see any benefits to using this kind of app.	Measurement & Geometry: Angles	5-6	★			
IB	I														
P	PS														
C	D														
Geoboard 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	<table><tr><td>\$1.99</td></tr><tr><td></td></tr><tr><td></td></tr></table>	\$1.99			This is a great app – it's almost like using a real Geoboard. Students can explore shape, as well as measurement concepts with this app.	Measurement & Geometry: 2D shape, area, perimeter, position, angles.	F-6	★★★★
IB	I														
P	PS														
C	D														
\$1.99															
iClass Shapes 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	I love the potential of this augmented reality app. The app comes with a PDF of representations of 3-dimensional objects. When the user opens the app and holds the iPad over the pictures, they pop out of the screen in 3D form. The app is limited to the images on the PDF, however the 'wow' factor will definitely engage students. I have used this with data projector (projecting the images on a large screen) and it works quite well this way.	Measurement & Geometry: 3D objects	\	★★★			
IB	I														
P	PS														
C	D														
Jungle Time 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	3.79	This app is designed for iPhones or iPod Touch, however it works well on the iPad. Jungle Time has several different settings. The user can practice reading the time setting the time on various types of clocks and reading information about different time zones. Has audio instructions.	Measurement & Geometry: Time	F-4	★★★			
IB	I														
P	PS														
C	D														
Koala Math 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	This free app covers the content area of position. There are four different levels to choose from covering the language of position, grids, paths, and a challenge level. Instructions are only given in print which will make it difficult for young learners to follow instructions.	Measurement & Geometry: Position	F-4	★★			
IB	I														
P	PS														
C	D														



	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice

Lets Tans 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	0.99	This Tangram app is actually built for iPhones but works quite well on the iPad. I included it on this list because it is better than the Tangrams LE app below. The pieces in this app are coloured and you a record is kept of the length of time taken to solve each puzzle.	Measurement & Geometry: 2D shape, transformation	F-6	★★★
IB	I											
P	PS											
C	D											
Measure Length 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Although the title of this app implies it's content focuses on measurement, it is actually a subtraction-based app where a ruler appears on the top of the screen, an animal is placed below it, and the user is provided with three possible measurements. My objection to it being used as a measurement app is that the animals are not placed at zero. Rather, they are placed somewhere near the centre of the ruler and as such, are not requiring the user to practice the skill of measurement.	Number & Algebra: Subtraction	1-2	☹
IB	I											
P	PS											
C	D											
Math Quiz Game Show 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	I love this app! Everything about this app is great – it's engaging, challenging and covers almost all areas of the mathematics curriculum. The only negative (and it's minor), is that the some of the measurement questions use the imperial system. Highly recommended and great for using with an Interactive Whiteboard.	Number & Algebra, Statistics & Probability, Measurement & Geometry	4-7	★★★★
IB	I											
P	PS											
C	D											
Montessori Matching Shapes 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app is basically a memory game for 2D shape. There are four levels of difficulty.	Measurement & Geometry: 2D shape	F-2	★★
IB	I											
P	PS											
C	D											
Pattern Blocks 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	1.29	This app replicates the standard pattern block set with the addition of two extra shapes (that I wouldn't recommend using). The app provides the option of using a triangular, square or no grid as a background. Users simply drag shapes onto the grid. Shapes can also be layered which allows for exploration of fraction concepts as well as shape and tessellation.	Measurement & Geometry: 2D shape, transformation Number & Algebra: Fractions	F-6	★★★★
IB	I											
P	PS											
C	D											



	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Reading the Ruler 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	0.99	This is a really good example of a very bad app! Firstly, the 'rulers' on this app are not true to size. Secondly, there is minimal functionality on this app.	Measurement: Length		☹
IB	I											
P	PS											
C	D											
Scratch Jnr 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Scratch Jnr is a basic programming app ideal for young children. Not only does it support problem solving, it also encourages the use of positional language.	Measurement & Geometry: Position	F-3	★★★
IB	I											
P	PS											
C	D											
Symmetry Shuffle 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	2.49	Another app by Daren Carstens. This app focuses on translations and although I found it difficult to begin with, it gets easier and is very engaging.	Measurement & Geometry: transformation	3-6	★★★★
IB	I											
P	PS											
C	D											
Tangram Free 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	Users maneuver the traditional tangram pieces to fit onto a range of silhouettes. You can tap on the pieces to rotate them. Good for the development of visualisation skills although this app does not provide and feedback or hints. Players are timed but no record is kept of achievements. It would be more beneficial to use actual concrete pattern blocks!	Measurement & Geometry: 2D shape, transformation	F-6	★★
IB	I											
P	PS											
C	D											
Tap Tap Blocks 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app allows the user to create 3D objects from coloured cubes. By swiping the screen the user can rotate the object to view it from different perspectives. This app would complement the use of concrete materials and would be great to use when teaching students to draw on isometric dot paper.	Measurement & Geometry: 3D objects	3-6	★★★★
IB	I											
P	PS											
C	D											





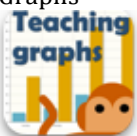

	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice


Think 3D Free 	<table><tr><th>IB</th><th>I</th></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This is a great app that allows the user to create and manipulate 3D objects. Excellent for assisting students develop visualization skills.	Measurement & Geometry: 3D objects	3-6	★★★★
IB	I											
P	PS											
C	D											
Unfold 	<table><tr><th>IB</th><th>I</th></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	1.29	This is a nice app to use alongside concrete materials when exploring 3-dimensional objects and their nets. It could be used with an interactive whiteboard where the teacher shows the object and students have to sketch the net before it is revealed.	Measurement & Geometry: 3D objects	4-8	★★★
IB	I											
P	PS											
C	D											

STATISTICS & PROBABILITY

App	Category	Cost	Comments	Curriculum Links	Year	Rating						
ABS Stats 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	The Australian Bureau of Statistics app provides census data for any given location. Great to assist students in exploring real statistics in their home suburb.	Statistics & Probability: data interpretation and representation	5-6	★★★
IB	I											
P	PS											
C	D											
Graphs by Tap to Learn 	<table><tr><td>IB</td><td>I</td></tr><tr><td>P</td><td>PS</td></tr><tr><td>C</td><td>D</td></tr></table>	IB	I	P	PS	C	D	Free	This app has two functions. The first provides information about bar graphs, line graphs and pie charts. The second function is a range of multiple-choice questions that require students to interpret information on graphs. Good for practice, however this is no better than a textbook or worksheet activity.	Statistics & Probability: data interpretation	5-6	★★
IB	I											
P	PS											
C	D											

	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice

Math Quiz Game Show 	IB P C	I PS D	2.49	I love this app! Everything about this app is great – it's engaging, challenging and covers almost all areas of the mathematics curriculum. The only negative (and it's minor), is that the some of the measurement questions use the imperial system. Highly recommended and great for using with an Interactive Whiteboard.	Number & Algebra, Statistics & Probability, Measurement & Geometry	4-7	★★★★
Probability 	IB P C	I PS D	2.49	This app provides an audio explanation of probability and uses examples to illustrate the language of probability. It then provides a series of graphics with questions. Quite a good app and one that would allow students some control over their learning.	Statistics & Probability: Chance	4-6	★★★
Probability Tools 	IB P C	I PS D	1.99	A handy app to have if you can't find any dice, spinners or coins! I prefer to use the real thing for probability investigations, however, is using an iPad is what is going to encourage students to become involved, then this is the app for you.	Statistics & Probability: Chance	3-6	★★
Social Landscape 	IB P C	I PS D	2.49	This app is similar to the ABS app in that it provides census data. However, it does not allow the user to choose the area from which to collect the statistics. What it does do is pinpoint the neighbourhood in which you are situated and provide specific data for that area. Along with providing the numerical statistics, the app displays the requested information within a column graph.	Statistics & Probability: data interpretation	5-6	★★★
Teaching Graphs 	IB P C	I PS D	Free	This is a great app for teaching graphs. The app has two separate functions. The first provides practice at reading weather graphs, picture graphs, Venn diagrams and Carroll diagrams. The second function allows the user to make pie charts, Carroll diagrams, Venn Diagrams and line graphs. The app also allows the user to save and email their work - great for assessment purposes.	Statistics & Probability: data interpretation and representation	3-6	★★★★
World in Figures 	IB P C	I PS D	Free	The World in Figures app provides facts about 190 different countries. Great for students to explore statistics. The app provides lots of graphics to illustrate the data presented.	Statistics & Probability: data interpretation	5-6	★★★

	IB	Information Based	I	Interactive	P	Productivity
	PS	Problem Solving	C	Collaboration	D	Drill & Practice

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