



# Children's TECHNOLOGY REVIEW

July 2016

Volume 24, No. 7, Issue 196



## A Survey of Apps, Toys and Sites for Learning to Code

LittleClickers: **Moon**



On the cover: A child's illustration made with **The Very Hungry Caterpillar: Creative Play**, Reviewed on page 21

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\* Denotes "Editor's Choice."

### One Tester Especially Loved "The Very Hungry Caterpillar, Creative Play." You Will, Too.

Every once in a while, it's nice to remember why we work so hard to review all these new apps, toys and video games. For me that reminder came from a very quiet girl, about 6 years of age. She was mixed in with a group of middle school boys, including her older brother, who were enrolled in a one week coding camp, held each summer in our public library. I had just downloaded a fresh app (The Very Hungry Caterpillar, Creative Play), reviewed on page 21) that was designed to let you create with Eric Carle's tissue papers and paints. I was curious to find out how the kids would respond to it. The quiet girl's hand went up and I left her alone with an iPad Pro and a fully charged Apple Pencil. I came back at the end of the morning, just as the coding instructor started airplaying the girl's work so everyone could see. It was dazzling. Here was a case where all the right elements lined up: the safe environment our library, a child with some time, and the best materials. In this case those materials were unlocked by some clever app designers who had the keys to Eric Carle's studio. It was like being able to hand a child Beethoven's baton, or Walt Disney's camera. All the elements were in one place, at one time, in my home town. A crowd of children and parents had gathered around the pictures, wanting more. I heard the very quiet girl say her first word: "tomorrow." That's why we invest in this technology and take the time to find the magic. See video of two other children testing this Editor's Choice app, at <https://youtu.be/HZI-4dUWl4>



### 2016 Barbie Bodies Reflect Human Diversity

This year's Barbie lineup, and \$10 price (including outfit), just scream "collect me." Whatever the business motive, the reality is that the diverse lineup serves as a more accurate cultural mirror. In other words, it's far more likely that every child can find something in common with one of the dolls. Another thing we like about this particular set -- they don't require any batteries, they don't talk, and don't require Wi-Fi. And not one has Bluetooth. Have a look: <https://youtu.be/KeilbxWkE2M>



## Children's Technology Review July 2016

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**Staff Update:** This will be Sarah McDougall's last issue. We're sad to see her go, and wish her the best.

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5 (or so) sites &amp; 10 videos

# The Moon

Read this column online, with links, at [www.littleclickers.com/moon](http://www.littleclickers.com/moon)

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Forty seven years ago (July 20, 1969 to be exact) the Apollo 11 space mission landed a man on the moon. Let's poke around the Internet to explore this amazing place.

**1. Can you live on the moon?** Not without a really good space suit. The temperature goes from HOT (287 degrees F) to COLD (-243 degrees F). There are some other problems, like a lack of air, food and plants. Learn about the moon surface at <http://bit.ly/1jpGQfg>.

**2. Where on the moon did the astronauts land?** Google Moon <https://www.google.com/moon/> has cool maps of the landing sites, including links to the pictures that were taken there.

**3. How big is the moon?** This photo lets you see the answer <http://bit.ly/292E8iT>.

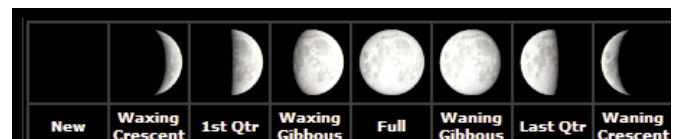
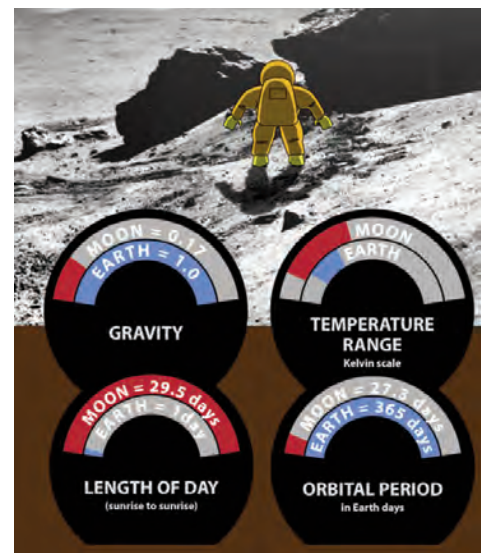
**4. What US President decided we should visit the moon?** The history of mission to the moon is explained at the JFK museum site, at <http://bit.ly/1KgK0jM>.

**5. Can you name 10 inventions that came from the moon mission?** Here's a site that lists 15 <http://bitly.com/29aBXtV>

## EXTRA CREDIT

**When is the next full moon?** Check out the moon's schedule for this year- <http://bit.ly/1TZOHBs>

**If you weigh 100 pounds on earth,** how much would you weigh on the moon? Use this Wonderopolis calculator <http://bitly.com/29hKBrF> and find out!



## YouTube Moon Videos

Here's a starter set of hand-picked YouTube videos. Starting with this issue, we're letting you add to this list, using the link below: [https://www.youtube.com/playlist?list=PLcBVHzUUEKw15q6NEuF2o0FGQVNIRTP53&jct=JfsPFPB32A8UqOhbsrTZ\\_HoEes6cg](https://www.youtube.com/playlist?list=PLcBVHzUUEKw15q6NEuF2o0FGQVNIRTP53&jct=JfsPFPB32A8UqOhbsrTZ_HoEes6cg)

# A Survey of Apps, Toys and Sites for Learning to Code

By the CTR Editors and Reviewers  
<http://bit.ly/childrencode>

*I fell in love with the gears. This is something that cannot be reduced to purely "cognitive" terms. Something very personal happened, and one cannot assume that it would be repeated for other children in exactly the same form. My thesis could be summarized as: What the gears cannot do the computer might. The computer is the Proteus of machines. Its essence is its universality, its power to simulate. Because it can take on a thousand forms and can serve a thousand functions, it can appeal to a thousand tastes. This book is the result of my own attempts over the past decade to turn computers into instruments flexible enough so that many children can each create for themselves something like what the gears were for me. Seymour Papert (1980, in MindStorms)*



We've now reviewed over 50 products that come with some sort of implied promise that they will help your child become a coder. See the complete list <http://bit.ly/childrencode>. Here's a roundup of some of the more noteworthy selections, with some discussion of the strengths and weaknesses. As with any product roundup, information changes frequently and quickly, and our observations are only the start of the discussion. If you know of products we've missed, or have a view different than ours, please make a note in CTREX.

## STARTER EXPERIENCES

Like training wheels, these tools can give children a taste of code. But they have limited functionality. You can't actually "make stuff."

**Code Studio** or [www.code.org](http://www.code.org) (\$free on any browser) is a great way to introduce some basic programming ideas. It is a key part of the code.org initiative, launched to try to get computer programming into every school. Free content (no registration required) includes six self-guided, online tutorials with video lectures by tech role models such as Bill Gates and Mark Zuckerberg plus game-based activities designed around popular games like Angry Birds, Plants vs. Zombies, and Flappy Bird. Features include a Play Lab that lets you send programs to a cell phone via a text message. The actual coding resembles MIT's Scratch -- you drag blocks that represent commands into place to see what they do. Each block snaps into place. The activities are well designed and guide you through each part of the process, step-by-step (until you've reached your "hour of code.")

**CotBot City** (\$2.99 on iPad, iPhone, Android, Kindle). Think Sim City for toddlers, and you have the idea of this simple, well designed town building game from Sweden. The app turns your screen into a six block city. You first select from 8 buildings to drop into the six squares on your city map. Next, you start driving by tilting the screen. There are six vehicles and your city and the characters respond accordingly as you drive. Video: [http://youtu.be/-HSC\\_029dj8](http://youtu.be/-HSC_029dj8)

**The Foes** (\$free on iPad, iPhone, Android, Kindle, Mac OSX, Internet Site). Easy to learn, and full of playful characters, this early programming experiences mixes an Angry Birds type of leveling system with Scratch-style programming icons. In order to move your "Foo" character across the screen to a star, you must drag and drop the correct sequence of commands in the right order. Everything happens in realtime, so it's easy to experiment. There's a handy stick of dynamite -- just in case.

**Hopscotch 3.0** (\$free on iPad, iPhone) is the first touch screen early coding experience (running on the iPad for three years). This year's (May 2016) edition (3.0.1) has two noteworthy features: the interface has been reworked for smaller phone-sized screens, and it is now possible to download or share projects with others, as long as you register (you are prompted for a user name, password and email address). These new community features make Hopscotch more "Scratch-like." That also means it's easy to participate in a community of coders to share ideas and projects. Like Scratch, you start by adding one or more sprites to the screen. Video: <https://youtu.be/foRi5bDalz0>

**Lightbot Jr.** (\$2.99 on iPad, iPhone, Android) is a 3D spatial programming puzzle game that asks you to move small robot through a stack of blocks using simple forward/turn/jump commands. The puzzles are easier and there is more help (than the Sr. version). There are 42 puzzles, that start with simple forward, backward, right and left, and move up to loops, where a function block can be used to represent a cluster of commands. The looping music can be muted at any time. There are no in-app purchases or gimmicks.

**Lightbot** (\$2.99 on iPad, iPhone, Android) is the "senior" version of Lightbot (see also Lightbot Jr.), presenting a collection of programming puzzles that use touch-and-drop commands. There are six sets of puzzles, each with nine challenges. Each starts locked, and must be solved in order, sequentially. Lightbot was created in Canada using the OpenFL/Lime framework by a University of Waterloo student, Danny Yaroslavski. Video <http://youtu.be/BEUi8f34aNE>



**Tynker** (\$free with in-app purchases on iPad, iPhone, Android) is a well-designed set of self-paced challenges and tutorials. The complete bundle is available as an in-app purchase for \$2.99. Levels have challenges like Lost in Space, which deals with geometric pen up and pen down commands, and Sketch Racer, which contains an additional 48 puzzles featuring snap the turtle.

## MAKE A VIDEO GAME

**LittleBigPlanet**, (\$60 on PlayStation) has always been one of our favorite game design platforms. It makes it possible to make your own beautiful side-scrolling worlds using a rag doll character. Levels can be saved and posted for others to try. It is rare to find a game that can both teachers and gamers like so much. Developed in the UK by Media Molecule Ltd. for Sony Computer Entertainment America. Video: [http://youtu.be/sineUK\\_zt\\_k](http://youtu.be/sineUK_zt_k)

**The Infinite Arcade** (\$2.99 on iPad), for ages 7-up lets you make basic versions of five varieties of classic video games (like Space Invaders or Pong) by dragging and dropping items onto your iPad screen and pressing "go." After you create a player profile (name and avatar), you choose one of five game templates: pinball, ball & paddle, platformer, maze and (our favorite) a blank screen.

**Super Mario Maker** (\$60 on Wii U) is a great first game making option, as long as you have a Wii U with the Wii U GamePad controller. You can freely drag and drop parts of your own side-scrolling challenges into place. You can then blend enemies, traps and items into unexpected twists, like Piranha Plant-shooting cannons, and power-up-tossing Lakitus. Video: <https://youtu.be/FOSLBncYzYI>

## PROGRAM A ROBOTIC

**Think & Learn Code-A-Pillar** (\$50) can pull up to 15 snap-together segments, although only eight come with the starter kit. They can be combined in anyway move forward, left, right, or wait and play a tune. Once the links are in place, you press the "GO" button to execute the commands - a rather sluggish process. You can send the Code-A-Pillar a short distance (about 5 feet) or place targets on the floor and try to see how close you can come to the goal. The base kit includes 8 segments plus the motorized head. Video: <https://youtu.be/D8E61NeJ05g>



**COJI** (\$60 on iPad, Android, iPhone) is a small rolling robot with a small color screen for a face. After you pair the robot to your tablet or phone, you can program both the emotions as well as the movements. Besides a touch sensor on the head, COJI can react to physical stimulation, such as tilting and

## What, Exactly, is Coding?

It's a fair question. Highly publicized efforts like the "hour of code" and OLPC give the illusion that if you give a child a machine and a good computer language, they can be Bill Gates. The reality is that "coding" is a multi-faceted concept that is more accurately described as a Higher Order Thinking (HOT).

Many activities fall into this category, including writing, composing music, creating a play and so on. It is accurate to think of Beethoven or Mozart as early coders, who used musical notation as their language for "programming" a group of musicians.

Computers can both accelerate or slow the HOT potential. An addicting video game like Angry Birds and or Minecraft can remove hours of time from a child's prime waking learning hours. It's not that they're not learning from these activities. It's more that they may be missing out on some more powerful "coding" types of experiences. That's why balance is so important when introducing Coding experiences.

It's useful to revisit the ideas of Seymour Papert, who viewed computers as a way to help children construct their own knowledge. Papert, a student of Jean Piaget, understood how a computer language could provide the ideal garden for planting some big ideas. Many commercial products and apps today have strayed from this idea, by reducing the "code" to nothing more than moving a dog through a maze, to get a bone.

Real coding is really higher order thinking activity, that has roots in several curriculum areas; especially math. But it also has elements of problem solving, communication, language, art and music. The best coding experiences tie all this abstract work to things that are meaningful.

*Papert, S. (1980). Mindstorms: Children, computers, and powerful ideas. Basic Books, Inc. <http://dl.acm.org/citation.cfm?id=1095592>*



"'Mobile technology is for kids.' I specifically said it that way because when we did LOGO, we'd say 'Computers are for kids'." So said Hal Abelson during this impromptu interview at the MIT Media Lab. Abelson, who programmed Turtle Geometry for Seymour Papert, is the product lead for MIT App Inventor. Josh Sheldon is the Director of Strategic Programs - MIT App Inventor and a Project Manager for the Scheller Teacher Education Program at the MIT Media Lab. <https://youtu.be/lcZlmGHJ8mw>

shaking. The movements are fast and responsive on a hard surface. A tablet is required, plus the ability to download the accompanying app.

**Osmo Coding** (\$75 for iPad). The magic is in the tiny mirror, which fits onto your iPad so that your iPad's front camera can "see" the objects sitting on the table in front of it. In this case, it sees as set of 19 tiles, which you use to help a hungry creature (Awbie) through a maze to collect strawberries.

The puzzles are well-designed, and the physical parts have a nice magnetic "snap" to them, making this a truly tangible experience. We wished there was a sandbox element to the activity, where you could freely explore with the coding parts.

Video: <https://youtu.be/jPNBh3lwCY4>

**LEGO Mindstorms EV3** (\$350 on iPad, iPhone, Android, Windows, Mac OSX) has been around forever. The most recent kit mixes building opportunities with some unnecessary complexity -- not to mention a hefty price. The brain of the system is the EV3 (short for evolution 3). About the size of a very fat bar of soap, the controller block comes with a one-color LCD screen and a primitive arrow-key menu system. We had hoped to find a touch screen interface and rechargeable batteries. Oh well... perhaps EV4.

**WeDo Robotics** (\$40 - \$130 on Windows, Mac OSX). Designed for schools to give children an introduction to robotics, WeDo Robots is a software/hardware bundle that requires a newer Macintosh or Windows computer with a free USB port. The kit is more affordable than LEGO Mindstorms, and makes it easier to zoom in on specific programming concepts. Besides the programming experience, children can better understand working with simple machines, gears, levers, and pulleys. The \$40 software features a drag-and-drop icon-based interface. The \$130 Construction Set includes 158 pieces -- including a motor, tilt sensor, motion sensor and USB hub. The third component is the Activity Pack (\$130), a CD-ROM that features 12 activities which integrate with the WeDo software. The activities are based on four themes: Amazing Mechanisms, Wild Animals, Play Soccer, and Adventure Stories. The Activity Pack allows for installation on all computers in a single school or institution.

**BB-8** (\$150 on iPad, iPhone, Android). The size of a baseball, this

## Did you know...

The LEGO Mindstorm concept represents the continuation of the philosophical marriage between LEGO and the similarly named programming language, Logo (with an o) that originally started 35 years ago.

That's when LEGO's Kjeld Kirk Kristiansen contacted MIT's Seymour Papert (following the publication of Mindstorms), in which he discussed the LOGO (Turtle programming) language.

This conversation led to the 1988 release of an "intelligent brick" designed to "bring LEGO creations to life via computer programming" (according to a current LEGO press release).

In 1998, a mainstream edition of the controller brick was released, called LEGO Mindstorms RCX; a highly regarded product by our testers. The Mindstorms concept started to become stale, however, and other DIY programming options started to come to market.

From an educational/learning point of view, it is fair to raise the question -- does all this "snap together" follow the step-by-step instructions really have anything to do with robotics? LEGO purists might be critical of this point. A child using these kits might spend time following **somebody else's ideas** to complete a very cool robot, rather than coming up with their own. And once they are built, it is important that they take the extra step to program the brick, instead of just using a drive-around toy. On the other hand, creativity and structure can be good partners.

# Dust or Magic

*Keep the conversation going! Don't miss the 16th Edition of Dust or Magic NJ, to be held November 4-6, 2016 in in Lambertville, NJ*

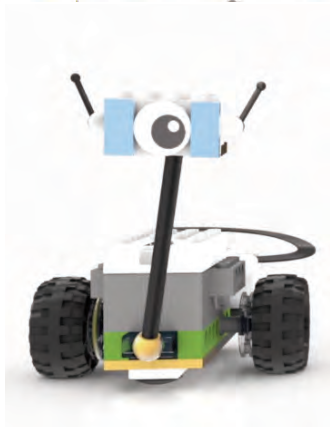


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speedy self-propelled Star Wars branded Sphero is controlled with your tablet or phone. The most striking new feature is the magnetic head, which glides on the top of the rolling ball -- just like the movie BB-8, only on a much smaller scale (the movie version looks to be about the size of a beach ball). A more accurate name is mini-BB-8. The process of charging and syncing the BB-8 to your tablet with Bluetooth LE (Low Energy) is easy. The app is nicely designed, offering more features than previous Spheros we've tested. The BB-8 is tricky to steer but fast. There's also a high novelty effect with this toy that will fade in a few days. Video <https://youtu.be/v08TIt5JCLA>



**Dash & Dot Wonder Pack** (\$280 on iPad, Android) is our favorite robot/programming combination. Dash -- the main robot -- is a responsive, programmable toy that works with your Android or iOS tablet. You download the free app and sync it via Bluetooth to control how it moves or lights up. You can also snap LEGO blocks onto either robot or attach your phone to a holder, turning the robot into a mobile recorder. Dot is the cheaper round ball. The two robots have the ability to interact with one another. Dash alone is \$180; accessories are sold separately. <https://youtu.be/iyUb4aDGL4E>

## APPS THAT REINFORCE CODING-RELATED CONCEPTS

**Attributes by Math Doodles**, (\$2.99 on iPad) has seven mind-bending math activities, one of which deals with if/then statements; a core coding concept. There's always a challenge, and children feel in control of the experience. Need to know: The if/else activity is especially useful for beginning programming settings. Video: [https://youtu.be/zNoRttm\\_44c](https://youtu.be/zNoRttm_44c)

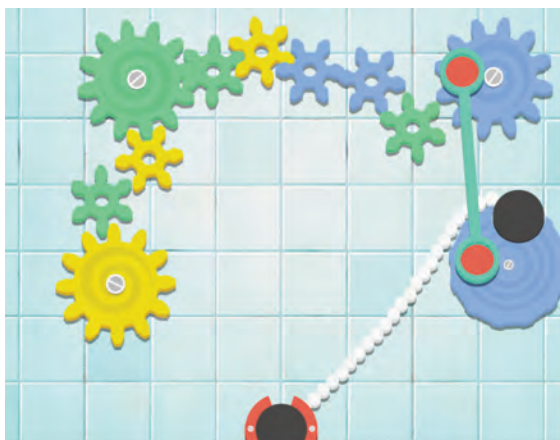
**Crazy Gears**, (\$1.99 on iPad, iPhone, iPod Touch) is a leveled problem solving physics game lets children freely manipulate gears, chains, rods, pulleys and more to pull themselves to the next level. There are 61 puzzles, each with the same objective -- to pull up a cover over screen.

There's plenty of opportunities for making mistakes (also known as debugging) to see how different mechanisms affect one another when constructing a machine. For example, you find that adding a third gear will change the direction of rotation, and larger gears have less force. The parts snap together easily and there are often multiple ways to solve a problem.

According to parent guide materials, "Crazy Gears was conceived as a tribute to mathematician and educational technologist,

Seymour Papert, in hopes of providing children with the inspiration to discover and understand the physical properties of mechanisms found in their everyday lives."

Video [https://youtu.be/UfU\\_5ZHgqbA](https://youtu.be/UfU_5ZHgqbA)



**The Everything Machine** (\$2.99 on iPad). Turn the power of your iPad inside out. The idea is a good one -- to give children pretty much unvarnished control over the technology inside an iPad or iPhone. That means the microphone, cameras, accelerometers and bluetooth connections. The app comes with a simple drag and drop programming language and tutorials, making it easy to make a motion or sound

## Constructing a Coder: A Developmental Gameplan for Introducing Children to Programming

When you look at programming (or coding) through a human development lens, it starts to come into focus. In order to code, you need to mentally manipulate symbols and relationships (sometimes called variables) in your mind. This requires -- at the very least -- the ability to hold one variable in memory, while your mental processor chews on something else. Children are in the preoperation and concrete operational stages -- but at age 11 or 12, they suddenly have a Mindstorm. Think about it... you suddenly have this powerful new tool sitting on your shoulders, that is just itching for a new challenge.

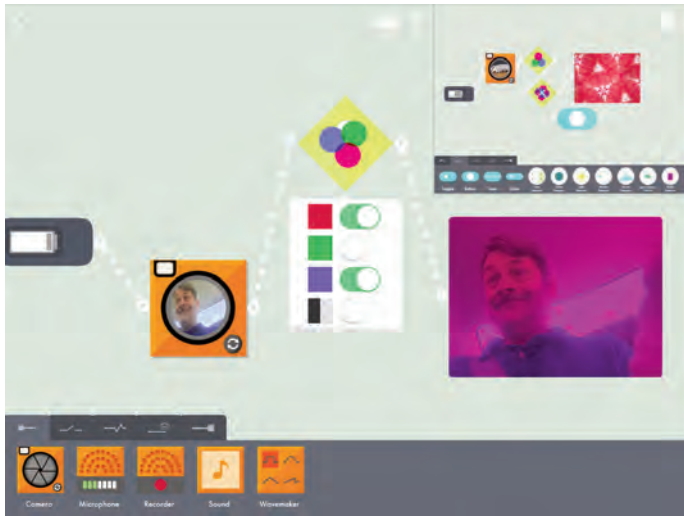
**PRESCHOOL** (ages 2 to 4) Lots of informal time to play with apps and toys that introduce coding concepts. Use apps that let them create and share work with others.

**EARLY ELEMENTARY** (ages 5 to 8) Here's where you can use the dozens of pre-programming apps, that let you "program" a route through a maze, using visual commands. Give children the chance to take, edit and organize sound files, photos and videos. They can start controlling and programming robots, like Dash and Dot.

**UPPER ELEMENTARY** (ages 7-12) is the ideal time to introduce Scratch 2.0, to give a taste of a "serious" language, where work can be mashed up, re-used and shared. Keep an eye on Swift Playgrounds as well, if you're interested in Apple products. Introduce Arduino boards and other types of DIY electronic kits, but make sure they're more the "follow the recipe" experiences.

**MIDDLE AND HIGH SCHOOL** (ages 13-up) is the right time to let children work with Unity or Swift. These tools will let them make, publish, and perhaps even sell their own app, for real. This type of authentic publishing, and the feedback that comes with it, can be incredibly motivating and useful.

activated camera, for example. The tool box includes all sorts of items and functions that can be freely mixed and matched on a white screen. There are camera filters, voice distorters, sound and light detectors, timers, and color changers ... we counted 48 total. This app uses the following Apple technologies: iOS Frameworks + Plugins, AVFoundation (video + audio), Audio Units,



MultipeerConnectivity, Core Animation, OpenGL, CoreImage, and WatchKit. The idea is if adult programmers can have these tools, why not kids?

## “REAL” PROGRAMMING

Here are some serious tools, complete with their own publishing and sharing ecosystems, that let you make projects, upload code, access the source code of other programmers, and share ideas that can be downloaded and altered. We recommend starting with Scratch or App Inventor in the elementary years before graduating to Swift or Unity.



**Scratch 2.0**, (\$free on Windows, Mac OSX, Chromebooks), for ages 6-up is our favorite all around early coding experience for children. Don't start with Scratch Jr. Instead start children on Scratch. Version 2.0 is completely browser

based (so there is no software to install). Scratch was the first product to turn commands into color coded jigsaw-puzzle pieces, that snap together. This visual system successfully lowered the barrier of entry for programmers. Visit <http://scratch.mit.edu/> for more information.

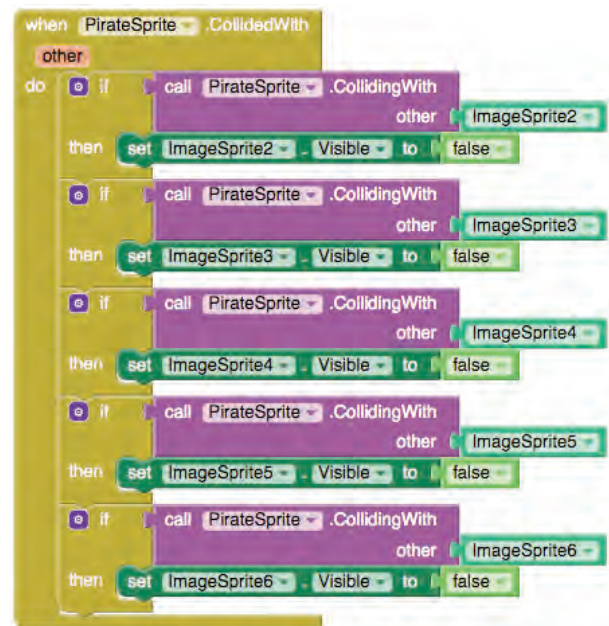
**MIT App Inventor** (\$free on Android, Windows, Mac OSX, Chrome for ages 8-up. Formerly called App Inventor for Android, this is a designed "to make it easy to do real-time programming." It is available as a free download from <http://appinventor.mit.edu/> for Android-based devices (that means not for iPad). It is not nearly as popular as Scratch, however, there are some important open source ideas in the DNA of this coding option. Unlike Scratch, it is designed See the interview with the Hal Alberson, on of the people who helped create Logo, at <https://youtu.be/JcZlmGHJ8mw>

**Swift Playgrounds**, (\$free on iPad) for ages 8-up. Coming Fall 2016 for iPad, along with iOS 10, Swift Playgrounds is a touch-based programming language designed in 2014 specifically for iOS, MacOS, WatchOS, TVOS and Linux. It is designed to work with Apple's Cocoa and Cocoa Touch frameworks, and plays well with Objective-C and Xcode. You can't use Swift for other platforms, like you can with Unity. Swift Playgrounds contains both puzzles and challenges. Both start easy and get harder, as new functions are introduced. In the first challenge, you move a creature named "Byte" through a maze. Swift Playgrounds will be free as of Fall 2016 and will work with iPads running iOS 10.

**Roblox** (\$free and by subscription for Windows, Mac OSX) is both an online community for kids ages 8-16 and a set of game generation tools. The Roblox site ([www.roblox.com](http://www.roblox.com)) contains a collection of homemade games that vary widely in quality. You can find platformers, RPGs (role playing games), FPSs (first person shooters), racing, and simulations. All use the same physics-based sandbox world and incorporate MMO conventions like Minecraft or Second Life. If you are looking for fun, free-to-play web games, you may be better off looking elsewhere, but for creative kids interested in learning about making their own games, Roblox is a possibility.

**Unity** (\$free to start, works on multiple platforms) for ages 12-up. Ready to make your own app? Want to use the tools that the professionals use? Unity is the cross-platform "game engine" or coding language used to make many of the apps and games we review. It was first developed by the San Francisco-based Unity Technologies. It's cross-platform compatibility is a strength, because a programmer can reuse the same code, sound and graphics for different platforms (e.g., for both iOS and Android) with minimal tweaking.

First announced only for OS X in 2005 (according to Wikipedia), it has since grown to 21 platforms (2016), and it is the default software development kit (SDK) for the Wii U. These platforms include iOS and Oculus 3D. The SDK (Software Development Kit) is free to download, but licensed versions are available as a subscription. For a serious game designer, Unity is a good language to learn, but it can take a huge investment in time. Many children graduate from Scratch and move into a program like Unity, to make "real apps."







# Feature Reviews and New Releases

JULY 2016

*Here's an alphabetical listing of both the feature reviews (with ratings) and the new and future releases. "Entry Date" refers to the date we first learned of the product.*

## Adventures of Mountain Pony, The

This is a "digital storybook" about a singing pony and his band who travel through the Old West, and through time, seeking adventure, knowledge, and their next gig. The music from this app can be purchased separately

<https://itunes.apple.com/us/album/adventures-mountain-pony-soundtrack/id1074522022>

Details: Jon Abrams, [www.mountainpony.com](http://www.mountainpony.com). Price: \$1.99. Ages: 5-9. Platform: iPad. Teaches/Purpose: reading, language. Entry date: 6/16/2016.



## Batman Unlimited: Gotham City's Most Wanted

This is a nicely crafted animated "storybook adventure app" that would make a good language enrichment experience, especially for a Batman fan. The illustrations and narration are excellent and the background music is richly orchestrated, making the experience a delight for both the eyes and the ears.

Content includes ten chapters in which you try to figure out who is behind a Gotham City crime wave. Each chapter has an activity related to the story, the quality of these activities varies. You get to drive the Bat Mobile in a lane changing game, or dodge tall buildings in the Bat Glider. The text (available in four languages) is highlighted as it is read. If you like hand drawn comic graphics and aren't expecting realism you'll like this app. But if you're looking for an action game, keep looking.

Details: StoryToys, [www.storytoys.com](http://www.storytoys.com). Price: \$3.99. Ages: 7-up. Platform: iPad, iPhone, Apple TV. Teaches/Purpose: reading, language, language experience, fine motor skills. Rating (1 to 5 stars): 4.6 stars. Entry date: 5/31/2016. [WB]



Ease of Use	10	92%
Educational	9	
Entertaining	8	
Design Features	9	
Good Value	10	



## Busy Water

A 100-level problem solving game with an open-ended "build mode" that lets you design your own levels to share with others.

This app has Apple Watch and Apple TV extensions that offer very different experiences, but share the common mission of increasing socialization.

The Watch app is a trivia game for parents and children. Ppoints earned on the Watch are sent to the iPhone or tablet game to be redeemed on fun hats & masks for Archie the fish.

The Apple TV version is called "Busy Water Aquarium." It turns your TV into a giant aquarium with a pet fish that needs to be fed and taken care of. Stand by for a complete review, after we've downloaded all the versions.

Details: Edoki Academy, [www.edokiacademy.com](http://www.edokiacademy.com). Price: \$call. Ages: 6-up. Platform: iPad, Apple TV, iPhone, Apple Watch. Teaches/Purpose: logic, problem solving, spatial relations. Entry date: 6/30/2016.





## COJI

Release date: Fall 2016. COJI (Coding with Emojis) is a rolling robot with a small color screen for a face. After you pair the robot to your tablet or phone, you can program both the emotions as well as the movements. Besides a touch sensor on the head, COJI can react to physical stimulation, such as tilting and shaking. The movements are fast and responsive on a hard surface. A tablet is required, plus the ability to download the accompanying app.

Details: Wowwee, . Price: \$60. Ages: 6-up. Platform: iPad, Android, iPhone. Teaches/Purpose: programming, coding. Entry date: 6/27/2016.



## Count Along Register

Coming in the Fall of 2016. This is a talking cash register designed to introduce early money skills as they explore colors, vocabulary, food sorting, number recognition and counting.

Details: LeapFrog, [www.leapfrog.com](http://www.leapfrog.com). Price: \$19.99. Ages: 2-up. Platform: Smart Toy. Teaches/Purpose: early math, money, counting. Entry date: 6/8/2016.



## Curious George Train Adventures

Control the speed of a train through the first set of 10 of 40 levels, in this simple problem solving game designed to introduce children to basic mechanics.

The first level is Tiki-themed, different levels (sold as in-app purchases for \$.99 each) have other tempting themes (Frosty Wonderland, Zany Meadows and Space Spectacular). The objective is to control the speed of a train using a spring-loaded throttle. The train is loaded with supplies. If you don't slow down, the supplies spill, and you lose points. The activity forces you to think specifically about one attribute - speed - as you watch each approaching challenge. The challenges vary and some work nicely with two children. One might hold the throttle, while the other swipes to clear the path.

The first download includes 25% of the content. You must pay for the rest with IAP. The STEM claims are over-stretched. You get to raise bridges and open gates, but the physics of the game are not realistic (you don't speed up as you go down steep hills, for example). Still, the basic concept is valid; with some slight changes this could be a great app.

Details: Houghton Mifflin Interactive, [www.hminet.com](http://www.hminet.com). Price: \$1.99 plus IAP. Ages: 5-up. Platform: iPad, iPhone. Teaches/Purpose: fine motor control, machines, problem solving, cooperation. Rating (1 to 5 stars): 4 stars. Entry date: 6/7/2016. [WB]



Ease of Use	9	80%
Educational	8	
Entertaining	8	
Design Features	8	
Good Value	7	





## DreamWorks Dinotrux: Trux it Up!

Jump into a high energy rock quarry and interact with five Dinotrux creatures, as seen in the Netflix series from DreamWorks.

The transformer-like truck/dino machines look amazing, and the convergence of two high interest topics (construction machines and dinosaurs) works like a charm, despite some clumsy control mechanics that require a learning curve.

Your mission is to help your DinoTrux rebuild their home crater. You do this by working at each station - to breakup and throw giant rocks, move them around, grind them up, and stack them. The Dinotrux must be maintained by with spray painting, matching shapes and racing through a track. Some of the activities work with multi-touch, although this is mostly a one player experience. The sum total of all the activities makes this app a good problem solving activity.

Don't mix this up with the free app with a similar title, that is not nearly as well designed.

Note: App may have a lengthy install and the load times are lengthy. Need to know: there are several apps that come up in both iTunes and Google Play under the search term "DinoTrux." This review refers to the Fox and Sheep release, which costs \$3.99 and has no in-app purchases, or other gimmicks.

Details: Fox and Sheep GmbH, [www.foxandsheep.com](http://www.foxandsheep.com). Price: \$3.99. Ages: 6-8. Platform: iPad, iPhone. Teaches/Purpose: fine motor, memory, logic, classification. Rating (1 to 5 stars): 4.5 stars. Entry date: 6/13/2016. [WB]



Ease of Use	8	90%
Educational	8	
Entertaining	10	
Design Features	9	
Good Value	10	



## Finding Dory: Just Keep Swimming

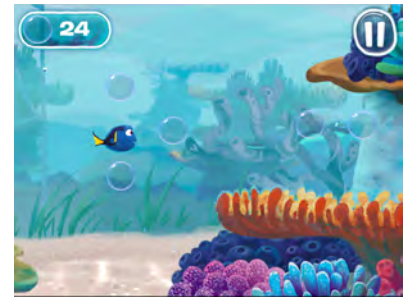
There's plenty of beautiful, slippery, addicting fun in this maze game, featuring Dory the witty and forgetful fish from Finding Nemo.

Dory follows your finger as you guide her through a series of 11 mazes to collect bubbles. Each maze has a different theme and is well designed. You may be chased by a giant squid, or you might have to dodge a child's hand who tries to grab you.

The app presents a good fine-motor, problem solving experience with a dash of strategy. You have to unlock each level to advance, and the final two levels are "coming soon" making us think this might be a "Paymium" apps. But the amount of content you get for \$3.99 is well worth the price. We also like how you can go back to the levels you've already solved for a replay, to see if you can best your time.

Need to know: Make sure children know that they can "pause" at any point. This is a one-player game. Created by Seven2 for Disney Digital Books using Unity 5.3.4.

Details: Disney Consumer Products and Interactive Media, [www.disneyinteractive.com](http://www.disneyinteractive.com). Price: \$3.99. Ages: 6-10. Platform: iPad, Android, Kindle. Teaches/Purpose: fine motor skills, strategy, memory. Rating (1 to 5 stars): 4.6 stars. Entry date: 6/13/2016. [WB]



Ease of Use	9	92%
Educational	8	
Entertaining	10	
Design Features	10	
Good Value	9	



## Gigglebug's Face Race

Turn your iPad into an silly photo booth, with prompts for expressions. The app makes a great social mixer or language experience. Teachers or librarians, put this app on your big screen during a large group for an excellent icebreaker.

After you turn on your front camera, pick one of four cartoon "Gigglebugs." Your goal is to copy expressions and emotions from animated characters. The more accurately you match your expressions with the Gigglebug, the higher your score. We liked how the app automatically snaps the series of photos when it senses when your face is lined up (it looks for your eyes, cheeks, teeth, tongue and tilt of the head).

Obviously, there's some sophisticated face recognition going on behind the scenes. Pictures can be saved automatically. There is minimal reading. The narration can be set for UK English, Finnish or Swedish. Created in Finland with funds from Creative Europe.

Details: Gigglebug Entertainment, <http://www.gigglebugentertainment.com/>. Price: \$free. Ages: 4-up. Platform: iPad, iPhone. Teaches/Purpose: emotions, facial control, expressions, emotions. Rating (1 to 5 stars): 4.7 stars. Entry date: 2/18/2016. [WB]



Ease of Use	9	94%
Educational	9	
Entertaining	10	
Design Features	9	
Good Value	10	





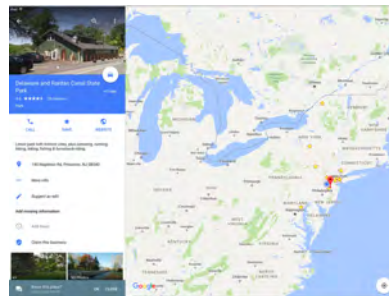
## Google Maps

Anyone knows that Google Maps can help you get to your destination. It's also an ideal geography teaching aide. The first step is to download the free app on your child's tablet (there are free versions for both iOS and Android). Next, save on data costs by using the "offline map feature", where you download your child's home region. Note that you'll need to use a Google account for this feature.

Now, as you drive your child can view scrolling maps, or help you find landmarks or navigation. If the device is online, they can help you monitor live traffic re-routing, or search through current bus and train schedules. They might also bookmark favorite restaurants, and photos of landmarks. Children can also save places you want to, or often visit, and quickly find them later from any computer or device. Other amazing features to try include the topographic maps (so they can see when you are going uphill) or the Street View feature.

As of Spring 2016 (version 4.20.1), Google Maps includes maps of 220 countries and territories, transit schedules, maps for 15,000 cities, and business information on over 100 million places.

Details: Google, Inc., [www.google.com](http://www.google.com). Price: \$free. Ages: 7-up. Platform: iPad, iPhone, Android. Teaches/Purpose: maps, geography. Rating (1 to 5 stars): 4.8 stars. Entry date: 6/28/2016. [WB]



<b>Ease of Use</b>	8	95%
<b>Educational</b>	10	
<b>Entertaining</b>	N	
<b>Design Features</b>	10	
<b>Good Value</b>	10	



## Heads Up! Kids

This is the children's version of the Ellen DeGeneres quiz game, where you hold your device up to your forehead and ask your friends to give you clues. The game is fun and it works, but there are some minor quarks to note. In addition, your child will be tempted by the additional decks that are sold for \$.99 each as an IAP. This is a "paymium" app, meaning you have to pay a dollar to download the app and a starter set of content, then pay more for each content pack. If you were to download every content pack, it would cost about \$10.

After you choose a topic, your tablet (or phone) displays the clues, and keeps time. You tilt down for a correct answer or up to pass...the goal is to get as many correct guesses as possible. As you might imagine, the children's version contains generic topics. In the version we downloaded the decks included Around Town, the Letter A, Who Am I, The Letter B, Animal Kingdom and Around the House.

The art is stylized in some of the decks, and sometimes vague (e.g., the farmer's hat was strange). But it is possible to include a word clue as well. We preferred the clear photos used in the Household Items deck.

Weaknesses to note: The screen orientation jumps between vertical and horizontal, and there is no way to interrupt a game and start over, other than to let the timer run out. We also didn't like the way the app forces you to start your camera and record a video of the session. Parents may not want every game recorded, and the option to toggle this on/off should be included in the app.

You'll also note that an Internet connection is required to download some of the included decks. So start this app in advance of a road trip, and make sure you have all the content on your device.

The bottom line is that the kids version successfully brings a highly social play pattern to any group of children. This is a high social experience, and there is no limit to the size of group that can play, and a teacher could plug his or her device into a big screen to quiz and enter group of children. The Kids version was developed for Warner Bros. by Impending and Boinx Software. The game was created by the staff of the Ellen DeGeneres Show.

Details: Warner Brothers Interactive Entertainment, [www.warnerbros.com](http://www.warnerbros.com). Price: \$0.99 with IAP. Ages: 12-up. Platform: iPad, iPhone, Android. Teaches/Purpose: language, problem solving, social interaction. Rating (1 to 5 stars): 4.4 stars. Entry date: 5/31/2016. [WB]



<b>Ease of Use</b>	9	88%
<b>Educational</b>	9	
<b>Entertaining</b>	10	
<b>Design Features</b>	7	
<b>Good Value</b>	9	







## Hopscotch (3.0)

Hopscotch, the first touch screen early coding experience, has been running on the iPad for three years. This year's (May 2016) edition (3.0.1) has two noteworthy features: the interface has been reworked for smaller phone-sized screens, and it is now possible to download or share projects with others, as long as you register (you are prompted for a user name, password and email address).

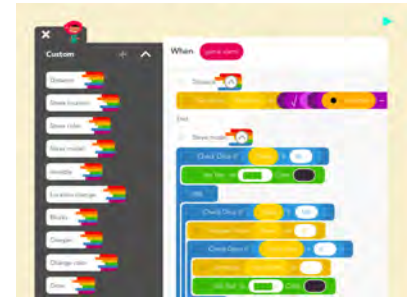
These new community features make Hopscotch more "Scratch-like." That also means it's easy to participate in a community of coders to share ideas and projects.

Like Scratch, you start by adding one or more sprites to the screen. Once you have a sprite, your next job is to tell it what to do when the "Play" button is touched. You can add as many sprites as you like, or put in a text based sprite in case you want to have writing on the screen.

To make your first program, you drag blocks onto a programming area and decide how many steps you want to move. Like Scratch, the programming blocks can be easily moved around and reordered. Because they are color coded, you start to understand that they have different functions. There are six types of variables: Movement (move, rotate, change x by, change y by, set rotation, set position and set speed); Drawing (leave a trail, set line color, set line width, clear); Control Flow (repeat/end, wait); Appearance (scale by, set opacity, change costume, bring to front, send to back); Variables (set variable, change variable); and Math (random).

We're still wondering how Hopscotch is funded. The current price is "free", so what's the catch?. Visit [www.gethopscotch.com](http://www.gethopscotch.com)

Details: Hopscotch Technologies, Inc., [www.gethopscotch.com](http://www.gethopscotch.com). Price: \$free. Ages: 7-up. Platform: iPad, iPhone. Teaches/Purpose: programming, logic, creativity, coding. Rating (1 to 5 stars): 4.8 stars. Entry date: 12/3/2013. [WB]



Ease of Use	9	95%
Educational	10	
Entertaining	N	
Design Features	9	
Good Value	10	



## KinderTEK Math

Dry, individualized, carefully leveled math drills come to the iPad in this early math curriculum. All of the elements of programmed instruction are present: guided practice, feedback, ongoing assessment, lots of talkative support, and virtual stickers. As children count their way through the levels, they earn rewards, while teachers and parents can track the progress in the "Grownups" section. Specific math objectives include constructing a number line, sequencing numerals, identifying missing numerals, quantity discrimination, addition and subtraction (within 5).

The basic package (for \$.99), which we reviewed, can track up to 30 children. Teachers must set up a profile for each child, and the app uses an unconventional password system (you have to remember a sequence of three animals).

Need to know: the interactivity is frozen when the narrator speaks, which prevents a child from advancing through the problems. This will decrease engagement and prevent a child with math competency from advancing at his or her rate. This rigid approach results in a low CTREX rating. The curriculum is sold in either basic or pro formats delivery, management, and data options.

KinderTEK was developed as a collaborative effort between the Center on Teaching and Learning at the University of Oregon and Concentric Sky, Inc. <https://concentricsky.com/>

Details: University of Oregon Digital Press, <http://ctl.uoregon.edu/>. Price: \$.99. Ages: 4-5. Platform: iPad. Teaches/Purpose: math, counting, logic, addition, subtraction (up to 5). Rating (1 to 5 stars): 3.3 stars. Entry date: 6/10/2016. [WB]



Ease of Use	7	66%
Educational	7	
Entertaining	6	
Design Features	6	
Good Value	7	



## LeapStart

This new platform will be in stores in time for back to school 2016. Marking a step (or hop) back from Android-based tablets, LeapFrog (who was purchased last fall by Hong Kong based VTech) is hopping back in time to the golden days of the best-selling LeapPad (as in the cartridge based book reader). LeapStart is described as an "interactive workbook" with the interactivity delivered via a stylus.

There are two platforms, one for Preschool (with a fatter stylus) and one for Kindergarten & 1st Grade. Each is compatible with the LeapStart activity books - no cartridges are required. The starter set is \$40, and you can purchase 16 additional books for \$13.

Release date: August 2016.

Details: LeapFrog, [www.leapfrog.com](http://www.leapfrog.com). Price: \$40. Ages: 3-6. Platform: LeapPad, Smart Toy. Teaches/Purpose: school readiness, phonics, reading, math. Entry date: 6/8/2016.



## Learn & Groove Musical Mat

Coming this fall, this is a large (4 feet) vinyl floor mat designed to encourage children to "move, dance, and play music." There are 3 modes of play.

Details: LeapFrog, [www.leapfrog.com](http://www.leapfrog.com). Price: \$29.99. Ages: 2-6. Platform: Smart Toy. Teaches/Purpose: movement, gross motor development, music. Entry date: 6/8/2016.



## Love2Learn Elmo

This noisy toy/app combination lets you customize what Elmo says, using your smart device and a bluetooth connection. In terms of storage and language, this is some powerful technology that is sadly doesn't stray far from the typical early learning fare. The exception is the "Parent Helpers" section where Elmo talks about daily routine events, like brushing teeth and potty time.

Powered by four AA batteries, Elmo's mouth moves when he talks. After you sync the app, he knows 35 minutes of content, with 350 responses.

You can put in your child's favorite colors, animals and foods. There are three different learning stages and five different subjects. Elmo has touch sensors in his nose, hands and belly, and accelerometers know if he's upside down or not. The app, called Love 2 Learn Elmo, requires a Bluetooth enabled, Apple or Android smart device.

Details: Hasbro, . Price: \$70. Ages: 3-6. Platform: Smart Toy. Teaches/Purpose: colors, shapes, personal skills, potty training. Entry date: 6/24/2016.







## Magic Store Math

Apply addition and subtraction as you purchase magic items. The game is divided into 15 weeks and gradually becomes harder as it progresses. Fast and accurate calculations are required to unlock the next week of content.

Once a week has been completed you are shown how you did. Feedback includes the total time and errors and given 1-3 stars according to how you did. To reach 3 stars you must complete the week in a very good time as well as not making any errors. At the start of the game the Magic Store only includes 8 items. However, you get to choose 1-3 new items for the store each week as a reward.

Details: Gebo Kano ehf., [www.gebokano.com](http://www.gebokano.com). Price: \$2.99. Ages: 8-up. Platform: iPad. Teaches/Purpose: . Rating (1 to 5 stars): 3.7 stars. Entry date: 6/6/2016. []



Ease of Use	7	74%
Educational	8	
Entertaining	8	
Design Features	7	
Good Value	7	

## MegaPro Calculator 5000

Here's a great idea...turn a traditional calculator into a visual math illustrator, where the numerals are shown as rows of beads. This makes it easier for you to visualize how place value works as you enter the numerals for the math problem you're working on.

Note that this app is specifically designed for addition and subtraction problems with two addends, with sums of less than 1000. It's also a utility (no bells or whistles). Testers noted that the beads were too small to see on smaller devices. For an early math learner (ages 5 to 7) this app is a good tool to have installed on your child's tablet.

Need to know: Comes with a nice tutorial. Created by a father (Chris Ternoey) for his children.

Details: The Megapro Foundation, [www.megaproCalc.com](http://www.megaproCalc.com). Price: \$free. Ages: 6-9. Platform: iPad. Teaches/Purpose: math, addition, subtraction. Rating (1 to 5 stars): 4.5 stars. Entry date: 6/16/2016. [WB]



Ease of Use	8	90%
Educational	9	
Entertaining	N	
Design Features	9	
Good Value	10	

## Melody the Musical Turtle

Coming in the Fall of 2016: a turtle-themed toy with ten activities that prompts toddlers to find numbers and colors, repeat sequences from memory, and create tunes by pressing the light-up buttons on the shell. Some of the games are designed for two or more children, for co-op play.

Details: LeapFrog, [www.leapfrog.com](http://www.leapfrog.com). Price: \$19.99. Ages: 2-4. Platform: Smart Toy. Teaches/Purpose: music. Entry date: 6/8/2016.





## Minecraft RC Ghost Quadcopter

We wouldn't recommend this specialized theme drone, which takes a character out of Minecraft (the Nether-dwelling Ghast) and lets you fly it around the room. Why? There are better flying drones for the price, that do a better job at flying.

This drone comes with an RC (Radio Controlled) remote control and can make 360-degree turns in the air.

Details: Mattel, . Price: \$80. Ages: 8-up. Platform: Smart Toy. Teaches/Purpose: an RC flying toy. Entry date: 6/16/2016.



## Minecraft: Educational Edition

Somebody put a school, complete with blackboards - inside Minecraft. Designed specifically for classroom use in supporting existing curriculum goals, Minecraft: Educational Edition lets up to 30 students play in the same world, without the need for a separate server. They can also work in pairs or small groups, meeting in a single world.

Features include a Camera and Portfolio (to collect screen captures for evidence of learning); Non-Player Characters (so a teacher can build in a guide for students to give instruction, or link to outside references); Chalkboards (to give instructions or reminders, in three sizes).

Sample lessons include "City Planning for Population Growth", "Exploring factors and multiples", and "Effects of Deforestation." Learn more at [www.education.minecraft.net](http://www.education.minecraft.net). Release date: September 2016.

Note that you must have an active Office 365 account in order to use this product.

Details: Microsoft, . Price: \$1 - \$5 per student/year.. Ages: 7-up. Platform: Windows 10, Mac OSX, Chrome, Internet Site. Teaches/Purpose: logic, language, spatial relations, social gaming. Entry date: 6/9/2016.

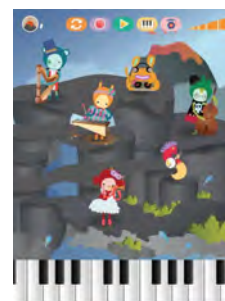


## Mussila - Musical Monster Adventure

Mussila is a 64 level musical instrument quiz that starts easy and gets more challenging. The art is original and the musical instruments sound authentic, but the interface is cluttered and confusing. It's hard to know where you are or what you're supposed to do.

In the story, you travel with the Mussila band and participate in jam sessions with musical monsters. You unlock instruments by identifying instruments based on their sounds and by defining rhythms and melodies. You can then use your instruments in a recording studio. Content includes 12 instruments.

Details: Rosamosi, [www.mussila.com](http://www.mussila.com). Price: \$5.99. Ages: 6-12. Platform: iPad, iPhone. Teaches/Purpose: music appreciation, sounds of the orchestra. Rating (1 to 5 stars): 3.1 stars. Entry date: 6/6/2016. [WB]



Ease of Use	7	62%
Educational	8	
Entertaining	6	
Design Features	5	
Good Value	5	



## Osmo Coding

The idea of turning commands into puzzle parts that only fit together in one way dates back to the first days of LEGO Mindstorms, and later Scratch. Many programs now use this idea. But this is the first to use tangible puzzle parts that you can physically move around on a tabletop. The magic is in the tiny mirror which fits onto your iPad, your iPad's front camera can "see" the objects sitting on the table in front of it. In this case it sees a set of 19 tiles, which you use to help a hungry creature (Awbie) through a maze to collect strawberries. The puzzles are well-designed, and the physical parts have a nice magnetic "snap" to them, making this a truly tangible experience.

Weaknesses to note: The kit won't work with non-standard sized iPads (like the iPad Pro), and you'll need to take your iPad out of any protective casing in order to fit the mirror over the top. We also noticed that the continuous use of the camera drains the iPad's battery, so you may want to have a charger nearby. The app download is free, but won't work unless you have the \$75 coding kit. We wished there was a sandbox element to the activity, where you could freely explore with the coding parts.

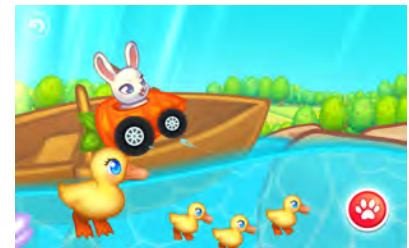
Details: Tangible Play, [www.playosmo.com/](http://www.playosmo.com/). Price: \$75. Ages: 5-7. Platform: iPad (regular sized only). Teaches/Purpose: coding, logic, math, counting, number lines. Entry date: 6/7/2016.



## Pet Friends Park Racing

Four animals (Agent Rabbit, Sir Duckling, Grumpy Kitten and Dogster) race in the park. There are 12 levels that must be unlocked in sequence. The levels start easy and get harder. There is no actual "racing" or steering. You touch the screen, your animal moves. It is possible to toggle on the music and sounds. As you race, ads pop up on the screen. After each level you are asked to rate the game. This app tries in every way to be "cute" but there's not much to do except avoid the ads.

Details: Tiny Lab Productions, <http://tinylabproductions.com/>. Price: \$free with ads. Ages: 2-4. Platform: Android. Teaches/Purpose: fine motor control. Rating (1 to 5 stars): 2.3 stars. Entry date: 6/28/2016. [WB]



Ease of Use	5	46%
Educational	4	
Entertaining	6	
Design Features	4	
Good Value	4	

## Read - Kids Learn to Read and Write in 20 Easy Lessons

Every once-in-a-while an app comes along to remind you how far we've come from the days of mega-corporations who sell curriculum by way of books. This \$3 app contains a set of 20 basic, cut-and-dry, English phonics instructions, presented using mastery learning techniques with clear rewards. The content comes from free, open-source sources. All the narration and phonics work is artificial - by way of your tablet's built-in speech synthesizer. We liked the non-watered down look of the interface, however. This app feels like a serious app - with no kidification - and it is easy to get started.

From a teaching and curriculum point of view, there is evidence of some hasty work and easy to measure pedagogy, all built around 100 site words. The speech synthesis could be better, and you can't control the rate of the presentation. So if you already know some of your letters, things can be very boring. The letter "a" is displayed using a font that is not used in most early learning curriculum, which some teachers won't like, and the entire experience is dry. But this app delivers as promised - despite some rough edges, it's way better than a curriculum like Writing to Read.

There are two accents (American, British) with 20 lessons, 120 exercises and 150 interactive stories with step-by-step progression. The app is designed for the first time users.

Details: Olivier Romanetti, [www.onetreehillstudio.com](http://www.onetreehillstudio.com). Price: \$2.99. Ages: 4-7. Platform: . Teaches/Purpose: phonics, letters, reading, language. Rating (1 to 5 stars): 4.1 stars. Entry date: 6/28/2016. [WB]



Ease of Use	9	83%
Educational	8	
Entertaining	N	
Design Features	7	
Good Value	9	





## Ready, Jet, Go! Space Explorer

Turn your tablet into an animated, rather chatty planetarium, with a scavenger hunt style game and the ability to color in constellations. You can either freely explore a real-time sky by moving your device, or start a chase game where you try to find where Jet is hiding by listening to clues (e.g., "If you can find this constellation's belt, you've found me."). Every time you find Jet you earn a badge. Progress is saved automatically for one player.

Content includes 300 planet and constellation facts and the ability to point your device to the sky and explore to see real world positions of constellations and planets. We especially liked how the real sky is represented in the app. We were less enthused about the lack of details given for each planet. You can't zoom in for a close look at the surface of the moon, for example, and there are only two trivia style questions provided for many items. In addition, the fact based hint system could be helped if there were also direction-based clues (e.g., "I'm hiding to your right"). Despite these wrinkles, the content is playful and solid and you certainly can't argue with the price. \$free.

This app is based on the PBS KIDS animated series Ready, Jet, Go! (produced by Wind Dancer). It was designed for PBS Kids by Two Moos. More info at <http://www.pbskids.org/readyjetgo>

Details: PBS Kids, [www.pbskids.org](http://www.pbskids.org). Price: \$free. Ages: 6-8. Platform: iPad, iPhone, Android. Teaches/Purpose: science, space, astronomy, Solar System, stars and constellations

. Rating (1 to 5 stars): 4.2 stars. Entry date: 5/15/2016. [WB]



Ease of Use	9	84%
Educational	8	
Entertaining	8	
Design Features	7	
Good Value	10	

## Swift Playgrounds

Swift Playgrounds is designed to "make learning Swift interactive and fun" for both children and adults. We like the fact that Swift is a "real" language, that can be used to make actual apps. The programming language was designed in 2014 for creating touch screen apps for iOS, macOS, watchOS, tvOS and Linux. It is designed to work with Apple's Cocoa and Cocoa Touch frameworks, and plays well with Objective-C and Xcode. Swift Playgrounds breaks the code into visual parts, and contains puzzles and challenges that start easy and get harder as new functions are introduced. In the first challenge, you move a creature named "Byte" through a maze. Features include a new programming popup keyboard with one-touch functions, designed specifically for Swift. This new initiative raises some interesting questions.

- What's the motive? Obviously Apple would like to insure a child's first coding experience happens on their platform. After all, they will be the next generation of app makers. We suspect this is a very smart long term investment.

- How does Swift Playgrounds compare to App Inventor for Android, Scratch, and "real" tools like Unity? We'll tell you after we have a chance to test it, The release is this Fall 2016 with iOS 10. See also Unity 3D.

Read the entire Apple press release: <http://www.apple.com/pr/library/2016/06/13Swift-Playgrounds-App-Makes-Learning-to-Code-Easy-Fun.html>

Details: Apple, [www.apple.com](http://www.apple.com). Price: \$free. Ages: 8-up. Platform: iPad (iOS 10 required). Teaches/Purpose: coding, programming, creativity, logic, math. Entry date: 6/13/2016.





## Tappy Alphabet

This is a simple, crudely designed touch and hear type of alphabet app. You see the 26 letters, each with four animated routines. You can toggle between upper and lower case. The design is not responsive (the routines can't be interrupted).

Details: TaqTeq. Price: \$1.99. Ages: 2-6. Platform: iPad, iPhone, Android, Kindle. Teaches/Purpose: early reading, the alphabet, upper/lower case. Rating (1 to 5 stars): 3.1 stars. Entry date: 6/8/2016. [WB]



Ease of Use	9	82%
Educational	8	
Entertaining	6	
Design Features	4	
Good Value	4	

## Think & Learn Code-A-Pillar

Coding...for preschoolers? Sure, as long as you rethink your definition of coding. Our testers liked playing with this noisy bug for a while, although they grew tired of it quickly. How could it be better? If the bug could both process commands and move faster it would be more fun. Despite these issues, this toy makes the most basic form of programming very concrete.

The Code-A-Pillar can pull up to 15 snap together segments, although only eight come with the starter kit. They can be combined in anyway move forward, left, right, or wait and play a tune.

Once the links are in place, you press the "GO" button to execute the commands - a rather sluggish process. You can send the Code-A-Pillar a short distance (about 5 feet) mission, or place targets on the floor and try to see how close you can come to the goal. The base kit includes 8 segments plus the motorized head. Each part blinks and the head contains lights, sounds and blinking eyes. Two plastic targets are included (a start and a go). These targets have no function - a sticky note could do the same thing.

Additional 3 segment expansion packs are sold separately for \$15 each, as follows.

Master Moves: Repeat the previous segment's action 1-5 times, turn left 180 degrees and turn right 45 degrees.

Silly Sounds & Lights command segments: Sleepy sound and light effects, wacky sound and light effects, and light up fun with music.

Basic command segments: Forward 3 feet, turn left 90 degrees, turn right 90 degrees.

This is the headline act for the series of "Think and Learn" toys. Runs on 4 AA batteries. See the Toy Fair introduction here: <https://youtu.be/DoRdZOHyoA4>

Details: Fisher-Price, Inc., [www.fisher-price.com](http://www.fisher-price.com). Price: \$50. Ages: 3-6. Platform: Smart Toy. Teaches/Purpose: STEM, coding. Rating (1 to 5 stars): 4.1 stars. Entry date: 2/17/2016. [WB]



Ease of Use	9	82%
Educational	9	
Entertaining	7	
Design Features	8	
Good Value	8	



## Thomas & Friends TrackMaster Thomas' Sky-High Bridge

This is the biggest Thomas TrackMaster set you can buy (3' tall and about 8' long). It does a lot of entertaining, but the highlight is the spiral lift, ramp and jump. The kit includes one motorized, battery operated Thomas train. Other characters appear in the set, including Harold the Helicopter.

The parts were inspired by the Thomas & Friends DVD, The Great Race, (sold separately). This type of toy leaves little to the imagination. Spend the \$100 on blocks, crayons and clay instead and let a child represent the train themes in the movie.

Details: Mattel, . Price: \$100. Ages: 3-up. Platform: Smart Toy. Teaches/Purpose: a "watch me" toy. Not much imagination here. . Entry date: 6/24/2016.



## Tyco Terra Climber Radio Control Vehicle

Release date: Fall 2016. This rugged RC vehicle is designed to climb stair steps. The insect-like vehicle has a two foot long tail for balance, giving it the ability to move over things up to eight inches high. These might include piles of rocks or other rough ground. Includes a remote and 9.6v rechargeable batteries.

Details: Mattel, . Price: \$100. Ages: 8-up. Platform: Smart Toy. Teaches/Purpose: an RC vehicle. Entry date: 6/24/2016.



## Unity (Programming language)

Ready to make your own app? Want to use the tools that the professionals use? Unity is a cross-platform "game engine" or coding language used to make many of the apps and games we review. It was first developed by the San Francisco-based Unity Technologies. Cross-platform means it is compatible with many competing platforms, so a programmer can reuse the same code, sound and graphics to make an app work on both iOS or Android with tweaking.

First announced only for OS X in 2005 (according to Wikipedia), Unity has since grown into both 3D and VR (virtual reality) for 21 platforms (2016), and it is the default software development kit (SDK) for the Wii U. These platforms include iOS and Oculus 3D. The SDK (Software Development Kit) is free to download, but licensed versions are available as a subscription. The Pro version is \$100/year/seat.

For a serious game designer, Unity is a good language to learn, but it can take a huge investment in time. Many children graduate from a language like Scratch and move into a program like Unity, to make "real apps." See also Swift.

Details: Unity Technologies, [www.unity3d.com](http://www.unity3d.com). Price: \$free to start. Ages: 12-up. Platform: iPad, iPhone, Android, Kindle, Windows, Mac OSX, Nintendo DS, Nintendo 3DS, Vita, PlayStation 4, Wii, Wii U, Chrome, Xbox 360, Xbox One. Teaches/Purpose: coding, programming. Entry date: 7/1/2016.







## Very Hungry Caterpillar, The: Creative Play

Make your own Very Hungry Caterpillar with this well designed, collage-making and drawing app. At the core of this app are 40 sheets of virtual colored tissue paper designed by children's literature legend, Eric Carle (author of such classics as Brown Bear and The Very Hungry Caterpillar).

Once you've picked a pattern, you can carve out bits of paper with your fingertip, for mixing, matching or layering. An additional set of pen and pencil tools help you color and paint, for finer details, or for free drawing.

Our testers needed help finding the trash can, and some were also frustrated when they tried to connect the layers of paper... both minor issues. Once you make a project, it's not possible to re-open it for editing. But you can see it as a graphic file.

If you're lucky enough to have an iPad Pro with an Apple Pencil, this app really shines. Work can be saved in a personal gallery or exported to your photo gallery or social media.

Details: Storytoys, [www.storytoys.com](http://www.storytoys.com). Price: \$2.99. Ages: 4-up. Platform: iPad. Teaches/Purpose: art, creativity, children's literature, Eric Carle. Rating (1 to 5 stars): 4.6 stars. Entry date: 6/20/2016. [WB]



<b>Ease of Use</b>	8	93%
<b>Educational</b>	10	
<b>Entertaining</b>	N	
<b>Design Features</b>	9	
<b>Good Value</b>	10	