Children's TECHNOLOGY REVIEW EXCHANGE

CTREX

January 2019

Let's get ethical!

Tools to help you find and flag ethical children's interactive media

Plus

Scratch 3.0
Jim Marggraff on
Connecting Dots

Learn about **Concrete** p. 3

On the cover: Fiete World — an easy to play, ethical, nicely illustrated treat from Germany. Read the review on page 6.

Denotes "Editor's Choice."

January 2019
Children's Techology News

Warren Buckleitner

I want to connect some dots to see how we can use technology for impact -- and to improve the world. Jim Marggraff, in his Dust or Magic talk "Connecting Dots - Technology for Impact." Watch his talk, at https://youtu.be/TjEwDASHpAE

BACK IN 2012, JIM MARGGRAFF STARTED THINKING ABOUT EYES ...
This was after he met a neurologist struggling to use Radio Shack technology to help a "locked in" patient. Being locked in means that you are unable to physically move, except for your eyes. Jim approached the problem using his past experiences with interface design at LeapFrog, developing paper-based interactive interfaces for his Smart Globe, LeapPad and the FLY pen. Could these ideas work with the human eye? In is November 4, 2018 talk at Dust or Magic, Jim describes how he started working on what he calls a PTS, or problem to solve -- to "transfer intent into action, through your eyes." If you have an hour, watch Jim's talk. It's good inspiration at the top of a new year... to listen to a lifelong learner, who has started six companies, and assesses his progress. You'll also learn about his recent work on some larger, global issues, including the creation of a VR movie that lets you that the point of view of a teddy bear, in the arms of a young refugee girl. The video is called "One Small Act" https://youtu.be/U-nNnszxjnY. One of his guiding values in his most recent work with refugees is that "violence is not a sustainable means of conflict resolution." Watch Jim's talk, at https://youtu.be/TjEwDASHpAE

SCRATCH 3.0 IS RELEASED
So'long Flash plugins, hello touch screens. Mitch Resnick's team at MIT has released a future-oriented version that Scratch, with some powerful features, better group management features and the ability to run old projects. Read the review in this issue.

DON'T MISS THE ED GAMES EXPO
Sponsored by the Department of Education, this year's free Ed Games Expo will display 130 products. These includes 15 Virtual Reality Exhibits, including HoloLab Champions by Schell Games and Scuba Adventure by Killer Snails. Many of these projects were funded by SBIR and other government programs across 25 offices. Dates are January 7-8, 2019 at the Kennedy Center in Washington DC. More details at http://bitly.com/2F7XpB2

LITTLECLICKERS: CONCRETE
What can stop a river and hold up a skyscraper? It's not superman -- it's concrete -- an ancient substance that's easy to take it for granted. How much do you know about concrete? Is it the same thing as cement? Do you know the where the world's largest concrete structure is, or how much a bag of cement costs? Start working with concrete, on page 3, or at www.littleclickers.com/concrete

Dust or Magic

Save the Date!
www.dustormagic.com

Nov 3-5, 2019 • Institute The 19th Annual fall institute is on the books.

5 (or so) sites & 10 videos

Concrete

Read this column online, with links, at **www.littleclickers.com/concrete**

What can stop a river and hold up a skyscraper?
It's not superman -- it's concrete -- an ancient substance that's easy to take for granted. How much do you know about concrete? Is it the same thing as cement? Do you know the where the world's largest concrete structure is, or how much a bag of cement costs? Let's find out...

1. How long has concrete been around? Various forms of concrete can be found in the Egyptian pyramids, as well as ancient Rome. The first concrete-like substance was found in the Middle East, used by builders in 1300 BC. Learn concrete's history at http://www.rumford.com/articlemortar.html

2. Is "cement" the same as "concrete?" No. Concrete is a mixture of sand, crushed rocks and cement. Cement is a fine grey powder made up of calcium, silicon, iron, and aluminum. It reacts with water to bind sand and rocks together, into a single lump of hard rock. Learn about the chemistry of concrete, at http://bitly.com/2FbTOC7

3. How long does concrete last? At http://bitly.com/2F6DXE6 you'll learn that the concrete in the Hoover Dam is expected to last 10,000 years. The Pantheon-- an amazing round building in Rome, has a concrete roof that is 2000 years old and is doing just fine.

4. Do artists use concrete? Yes! It can be molded, carved or cast, there are many fun project ideas. See https://www.etsy.com/market/concrete_art for example.

5. What is the world's largest concrete structure? At http://bitly.com/2F9QtmU you can read about the Three Gorges Dam in China. It was made out of 21 million cubic yards of concrete -- five times the size of the Hoover Dam. That's enough concrete to build a five highways across the USA. Learn more about the concrete in the Hoover Dam at https://on.doi.gov/2F6uEVA

WHILE THE DAM IS EXPECTED TO LAST FOR CENTURIES, ENGINEERS PREDICT THE STRUCTURE COULD LAST FOR MORE THAN *10,000* YEARS.

APPLICATION: Make a concrete casting
Start with about $14 and a strong parent to take you to a building supply store. Pick up a bag of pure Portland Cement (named after the Isle of Portland, in England) and store it in a dry place. It will weigh 94 pounds, so get some help, and remember that cement dust is bad for you. Mix the one part cement powder with about three parts sand, and some gravel (or marbles!); along with enough water so the goop can pour into a mold. Make a handprint or drop in some coins, or scratch a design with a stick before your cement hardens. Here are more ideas http://bitly.com/2F7Zs8u. If you happen to own a kiln and a rock crusher, you can make your own concrete. Learn how at http://bitly.com/2F63NYG.

Concrete on YouTube

Want more? Here's a video playlist that go along with this column:
https://www.youtube.com/playlist?list=PLcBVHzUUEKwkRvcbR-4ZGdUQnDBPrrglW

Let's Get Ethical

New tools to help you find and flag ethical interactive media for children by Warren Buckleitner

"It's easy to say, 'It's not my child, not my community, not my world, not my problem.' Then there are those who see the need and respond. I consider those people my heroes." Fred Rogers

The quote above is displayed prominently in the Fred Rogers Center exhibit at St. Vincent College in his home town of Latrobe PA. It's a great quote, and it was selected from the thousands to be put into the steel letters of his memorial.

For me, being a hero for Fred means doing a thorough job reviewing children's software. Over the past few years, this job has become more difficult, as the number of new products has increased, while the number of ethical publishers has decreased.

Back in 1968, Fred Rogers started a challenging career in television to use the medium to "make goodness attractive" for all children. That was back when televisions that were the size of washing machines. Although the children's media landscape has changed dramatically, Fred Rogers' values have not. In my study of children's interactive media, I've found that Fred's attributes for quality in children's media transfer well to today's touch screens and game consoles. So, based on the principles upon which he designed his Neighborhood, I created a Fred Rogers rubric with quality attributes: ethical, honest, empowering, child paced, supportive of relationships and well crafted.

THE PTS (PROBLEM TO SOLVE)
How do we increase the time every child spends with quality, ethical interactive content? That's our PTS, or Problem To Solve (thanks Jim Marggraff).

The cause of the problem today is that children's media has become dominated by technology companies who don't understand child development; namely Apple, Google and Amazon. We're not assuming that the people at these companies are bad or have a desire to harm children. But they are competitive marketers who encourage publishers to increase subscriptions and onboarding activities, to increase revenue.

A child using a digital device can easily fall into a slippery web of commercialism. In short, the concept of "free" is contaminating the digital media well, diluting the inherent potential of the technology as a quality media delivery system. Work on this rubric started after I taught a class at TCNJ on The Methods of Fred Rogers. [Note that while I work with the Fred Rogers Center as a Senior Fellow, this work is my own, and it in know way represents an endorsement of either the Fred Rogers Company or the Fred Rogers Center].

A THREE STEP SOLUTION
Here is a three-step strategy to address the PTS (problem to solve) -- to increase the amount of time children spend with quality interactive media.
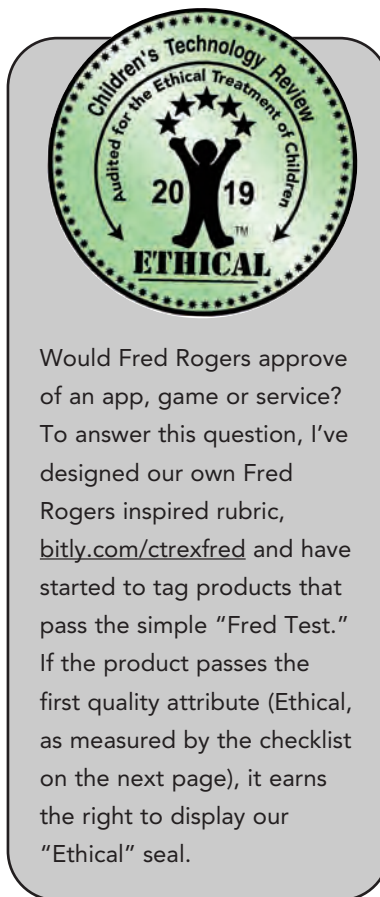
Would Fred Rogers approve of an app, game or service? To answer this question, I've designed our own Fred Rogers inspired rubric, bitly.com/ctrexfred and have started to tag products that pass the simple "Fred Test." If the product passes the first quality attribute (Ethical, as measured by the checklist on the next page), it earns the right to display our "Ethical" seal.

1. Finding. Effectively with the January 2019 issue of CTR, we'll start formally screening new products our Fred Rogers rubric, which is part of our new CTREX Flex Rubric system. One of the six items on this rubric is "Ethical" This simple rubric can help publishers self-assess products, and it will be used by our expert reviewers as they rate products.

2. Funding. Making quality children's media isn't cheap, but like Fred Rogers, we're not ready to compromise on quality. Why shouldn't our children have access to the best developers, making the best art, music and narration? But quality isn't cheap. We're exploring joining forces with a foundation to create a F.R.E.D. Fund (Fund to Rejuvenate Ethical Digital Media (for children). This fund was inspired by the work of Fred Rogers, but has no formal connection with either the Fred Rogers Company or the Fred Rogers Center.

3. Supporting a Market. Money is the oxygen for sustained growth. We want to make it easy for App stores to make a profit by selling ethical products. Our seal will be an independent marker of trust that we hope will be one of many to flag ethical content. Once parents trust the products they buy in the "ad free" or "ethical" section of the app store, they'll buy more products. As demand increases, so will supply, creating a viable commercial market.

"Removing all the bad in the world is impossible. So the only remaining option is to create more good." Josh Albright, TCNJ Student, member of the first "Methods of Fred Rogers" class.

What does it mean to treat a child ethically?
It's pretty simple. Ask yourself "would I let my own child spend time with this experience?" If the answer is "yes" you're probably dealing with an ethical experience.

Using our Flex rubric system, we can check every product we review to make sure there is a clear boundary between commercial content and the child's space, which Fred Rogers called "sacred ground."

We understand that defining "ethical" is a subjective process, and that children's media is complex. There are many ways to do ethical monetization in the form of ads, IAP and subscriptions. It's fair game for a publisher to display news of other apps as long as there is a reasonable age gate an proper, developmentally appropriate labeling. Once inside the child's experience, there can be no other agendas at work. No selling, teasing, or manipulative behavior.

What is "Ethical?"

Unpacking the Ethical Quality Attribute

The age-old golden rule works well when thinking about making a children's interactive media product, namely "do unto the children of others as you would have them do to your own." Google's original corporate motto also works ... "don't be evil."

As reviewers we must teach ourselves to tune into even the most subtle signs that a child is being manipulated for some other purpose other than for education or entertainment, and flag products accordingly. Here are some symptoms of bad practice (aka "evil") we've noted in our reviewer's notebook.

1. Mixes play with selling. Intentionally puts items for sale in the play space. This needs to be sacred ground, and publishers should respect this.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

2. Holds work hostage. These experiences create a context that says "you have to pay up or you'll loose your work." This is a common practice in the business world. An income tax program might keep last year's records locked until you buy the current year's software. This might be OK for an adult, but is less ethical for children, especially if the app is keeping scores or creative work.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

3. Uses a "candy lane." It's common practice for food markets to place candy within reach of a child, to increase begging behavior when the parents are busy, and the money is out. Ethical stores give parents a "no candy lane" option, and apps can too, by building in options to turn off display ads or tempting IAP.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

4. Uses a timer to pressure a decision. Apps use time, either to let a child pay to eliminate waiting or advancing, or to save progress.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

5. Mixes selling and informing. Evil practice blurs commercial content.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

6. Contains blind alleys. These are point of purchase messages that hide the exit icon, making it difficult to get back to the play without passing through the store.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

7. Primes the pump, or sets the stage, for buying. Apps may use a fake currency (like gems) that is initially free and given to children, but then links this currency to real money, without clear links to the actual cost, presented in a developmentally appropriate way.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

8. Does not discourage accidental purchases with intential confusion. We've seen IAP items that cannot be refunded that cost up to $99.99, along with special incentives and splashy labels.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

9. Uses an intentionally weak parental gate. Merely entering any date or swiping with two fingers is not good enough to keep a motivated child from making a purchase.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

10. Removes adult control over the experience. Evil products remove the control over a child's exposure to IAP, and intentionally contain easy parental gate features.
      High ___ Medium ___ Low ___ Not Applicable ___ Comments:

Feature Reviews and New Releases

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.

ABCmouse Mastering Math

First launched in 2017, ABCmouse Mastering Math is a game-based adaptive early learning app. The app can auto level, so if a child is struggling, you can get formative feedback and scaffolding to supplement instruction and correct misconceptions.

Details: Age of Learning, Inc., www.ABCmouse.com. Price: $60/year. Ages: 3-5. Platform: iPad, iPhone, Android. Teaches/Purpose: mathematics. Entry date: 5/26/2018.

Fiete World

This is a silky smooth "dollhouse" style app that uses a globe navigation scheme, making it easy to jump between five themed play worlds. On one large island, you can cook, garden or care for animals in three different homes. Or you can hop onto one of four vehicles (pirate ship, fishing boat, tractor or helicopter) to visit a pirate's island or lighthouse, for dress up play or beach-themed adventures. The app borrows from the Toca Life play pattern, in that you can move any item or character into another part of the app, and multi-touch is supported so that more than one child can play at the same time. You can't record audio or video, however. Fiete, the pirate, shows up as one of the characters, in this nicely crafted, open ended language experience. Specific challenges include: a treasure hunt, drive the pirate ship, cut down trees with a chain saw, make fire, plant a garden, repair a tractor, bake cakes, deliver packages, make a picnic. Developed in Cologne Germany.

Details: Ahoiii Entertainment UG, www.fiete-app.com. Price: $2.99. Ages: 4-8. Platform: iPad, iPhone. Teaches/Purpose: language, co-op play. Rating (1 to 5 star 4.8 stars. Entry date: 1/1/2019. []

Rubric used	Fred Rogers
Ethical	9
Honest	10
Empowering	10
Child Paced	10
Supportive of Inter-Personal	10
Well Crafted	9

96.67 %

Gabriel's Seeds

This is freemium software designed for "creating, sharing, and playing learning apps." The resulting experience resembles electronic flashcards.

Details: Gabriel I.S., http://www.gabrielsseeds.eu
. Price: $free. Ages: 3-11. Platform: . Teaches/Purpose: math, logic, writing. Entry date: 1/16/2018.


Select images in order of played sounds

Ocean Wonders

This app turns your tablet into an ocean encyclopedia with a conservation slant and a rather clunky interface with a tiny font (in some places) that is hard to read or touch.

But the content is interesting. There are five parts to the app -- the first part is a free download, the rest is available as IAP. The app was designed using Adobe Photoshop CC and Illustrator. The main menu is called the "index sphere" which shows how much of the content is available. Content includes 500+ pages of content, which includes videos and a multiple-choice quiz.

Details: Earth Matterz Edutainment LLP, https://www.oceanwonders.in. Price: $free and $1.99 per section. Ages: 11-18. Platform: . Teaches/Purpose: science, oceanography. Entry date: 6/22/2018.
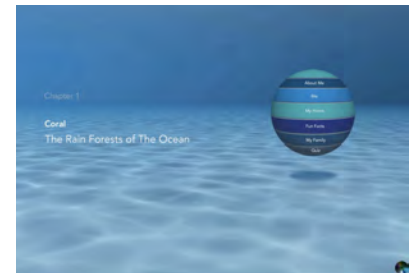
Peg and Pog

This is a well designed, playful language experience for early readers in multiple languages. The interface resembles a Toca Boca app, so it is easy to use and understand. Content includes eight high interest enviroments that you construct, one tap at a time (each item appears on the screen,with it's verbal label). As a result, the experience helps children discover object/language relationships, in a playful way. The illustrations and sounds are excellent. We only tested the English version (other versions are in French, Spanish, Portuguese and Mandarin). There are no in-app purchases or 3rd party advertising, and no Wi-Fi is required. We appreciated the diversity in characters, with one appearing in a wheelchair.

Release: AppStore 02/21/2018; Google Play/Amazon 09/06/2018

Details: Kenikeni, https://kenikeni.com. Price: $2.99. Ages: 3-5. Platform: . Teaches/Purpose: reading, language. Rating (1 to 5 stars): 4.8 stars. Entry date: 12/11/2018. []

Ease of Use	9	96 %
Educational	9	
Entertaining	10	
Design Features	10	
Good Value	10	

PeKay's Little Author

An iPad application for creating your own storybook, featuring a pig named PeKay and his friends. You can make up to 108 storybooks. Created by Tamie Asakura, with programming by Eiji Suihara.

Details: Good Grief Inc., http://www.pekay.jp/. Price: $4.99. Ages: 4-8. Platform: . Teaches/Purpose: creativity, book making, writing, art, language. Entry date: 2/20/2018.

Praktiki

Praktiki uses speech recognition to help children practice reading, by using speech to text. There are options for French, English, Spanish, Portuguese, and Russian, and you can put in your own words or short phrases. The app collects statistics.

Details: EMANSO Technologies, Inc., . Price: $3.99. Ages: . Platform: . Teaches/Purpose: . Entry date: 1/3/2019.

Scratch 3.0

It's been five years since the last major Scratch update.This latest (Jan 2019) version was made in HTML/Javascript, meaning it is (for the first time) Flash Free, and it can work with touch interfaces. This is a big step into the future. Yet, based on our testing, Scratch 3.0 is also backward compatible with previous Scratch projects... and that's great news. So you have nothing to loose, and a lot to gain.

What's new? The larger button interface offers more sprites, a the sound editor gives you more audio options. This edition runs better on tablet-based browsers, although native apps for both iOS and Android are planned. There are 40 language options. No code functions -- or blocks -- have been removed, but some commands have been changed or moved under "extensions" folder. These extensions let you work with hardware specific products like LEGO or micro:bit. We can expect this library of extensions to grow over time.

In order to work with touch devices (namely touch screen Chromebooks, Wind Surface laptops, and tablets) some of the blocks are bigger. The paint editor now h "eraser" that works in vector mode, with more options for selecting and adjusting colors, and you get more control over vector points (curve handles and point mod and layers. Other features include new gradient controls, the ability to trim or time shift sound, and a better tutorial.

Scratch 3.0 is designed to work in any modern browser on a variety of platforn for the first time including touch devices like tablets. We tried it using Safari on an iPad without problems. There is also an offline version offline editor called Scratch Desktop in case there is no Wi-Fi.
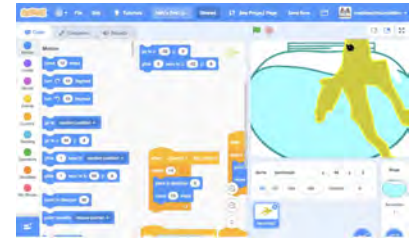
The bottom line? This new version of Scratch will insure it will have a long and healthy future.

Details: MIT Media Lab, www.media.mit.edu. Price: $0. Ages: 6-up. Platform: Windows, Mac OSX, Chrome. Teaches/Purpose: programming, debugging, logic, math, science, STEM. Rating (1 to 5 stars): 4.9 stars. Entry date: 1/4/2019. []

Rubric used	Fred Rogers	
Ethical	10	100 %
Honest	10	
Empowering	10	
Child Paced	10	
Supportive of Inter-Personal	10	
Well Crafted	10	

Specdrums

What if you could hear colors? Specdrums are small silicon rings with embedded motion and light sensors, that transmit sound information when they touch a color. The sounds come from your smart phone or tablet. The rings use bluetooth to interact with your phone, and the apps use Bluetooth MIDI -- so just about any sound is possible. The rings cost $64.99 for one-ring and $99.99 for two-rings, with product shipping the week of January 15. The app is called Specdrums Mix, and it runs on iOS or Android. Customizable sounds that allow users to explore the beats of a drum, the pings of a keyboard or the unique sounds of 100-plus other instruments, all with their fingertips.

Details: Sphero, www.gosphero.com. Price: $65. Ages: 7-up. Platform: . Teaches/Purpose: music, creativity, fine motor. Entry date: 1/6/2019.

Stampy the Wizard

This interactive claymation adventure has limited interactivity and a rudimentary interface. In the hide-and-seek themed story, Stampy, the grumpy old wizard, is woken early by a noisy bird. You help me teach the bird a lesson by finding his wand (embedded in each scene). The scenes have limited interactive features. There are three modes: 'Read and Play', 'Read to Me' or 'Read by Myself.'

Details: Red Chain Games Ltd, www.redchaingames.com. Price: $1.99. Ages: 4-12. Platform: iPad, iPhone. Teaches/Purpose: reading, spatial relations. Rating (1 to 5 stars): 3.2 stars. Entry date: 12/11/2018. []

Ease of Use	6	64 %
Educational	8	
Entertaining	7	
Design Features	5	
Good Value	6	

Toca Kitchen Sushi

This is a play cooking simulation for all platforms that includes something rare for a Toca Boca app... a confusing interface. But the idea is fun, and there are a lot of choices, so children will probably work at figuring out the controls.

You're the chef at a seaside sushi restaurant, helping to prepare sushi dishes by slicing squid, fish and asparagus, or silly things like candy canes. You can feed your ingredients to your customers raw, or us cooking tools to , to be rolled in a sheet of seaweed. Each dish is eaten by one of several customers who have different reactions to each dish.

Ingredients include rice, tuna, avocado, asparagus, squid, salmon, and exotic (fictional) items like candy canes. There's also a vegan setting.

Don't overlook the shape machine and the rolling mat options, as well as the cutting board where your fingertip becomes the knife. After you craft your Sushi, it is feed to a customer with a quick gulp, and very little understandable feedback. Our testers found the interface to be confusing, and wanted more feedback on their work. As is, the creation process seems random.

Details: Toca Boca, http://tocaboca.com/. Price: $3.99. Ages: 4-12. Platform: iPad, iPhone, Android, Kindle. Teaches/Purpose: cooking, cause and effect. Rating (1 to 5 stars): 3.5 stars. Entry date: 12/6/2018. []

|		
Ease of Use	6	70 %
Educational	7	
Entertaining	6	
Design Features	8	
Good Value	8	

Train Code Visually

Designed by a professor, this is a train track builder experience designed to introduce programming concepts. The idea is good -- the implementation rather rudimentary.

Executing a program means starting the engines and watching the trains move about the tracks. Each engine represents a separate thread so a multithreaded program is just train tracks with multiple trains. Cars attached to an engine are variables/memory. Wooden blocks that rest on cars are the values of the variables. There are several sets of wooden blocks that represent different data types in Train including numbers, colors, letters, binary, and dinosaurs. Program control is provided by forks ("wyes") and physcial loops in the track which implement if/then and while/loop logic. Stations in Train allow wooden blocks to be operated on including adding a value to memory (adding a block to a car), freeing memory (removing a block from a car), incrementing, decrementing, addition, subtraction, multiplication, and division. Wyes include greater than, less than, equal, lazy, sprung, prompt, and random. Slingshot and catapult station remove blocks from cars and place them on the ground as a form of output. "Magic" tunnels act as goto statements allowing for the creation of functions. Programs are created in Train by simply drawing them on the screen. The app is both browser based and avialable for iOS.

Details: Sean Megason, http://www.train-hub.org/. Price: $free. Ages: 8-14. Platform: iPad, iPhone, Windows, Mac OSX, Steam. Teaches/Purpose: Logic, coding. Entry date: 11/20/2018.
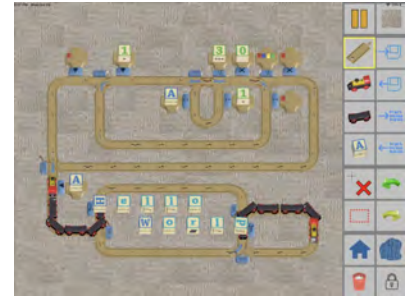
Wonderland: Little Mermaid

The start of a new series of four apps featuring a rather sugary "wonderland" theme. As with the other My Town apps, every item can be touched or moved around, and the design is solid.

In this case, you meet the little mermaid's family and friends at the underwater village. There are 14 locations to freely explore including the mermaids house, mermaid restaurant, mermaid daycare and the pirate's sunken ship. There are nine mermaids with customizable tails, hair, and clothing and lots of cooking, dress up and makeup. This world will connect to any other Wonderland games, and multi-touch lets you play with friends on the same device. Like the Toca Life apps, there is no winning or losing.

Details: My Town Games, http://www.my-town.com. Price: $2.99. Ages: 4-8. Platform: . Teaches/Purpose: language, creativity. Entry date: 7/31/2018.