

Ready or not.. here comes the

Five technologies that will change how the next generation lives and learns



On the cover: Bell Nexis flying air taxi. See our video tour from CES, inside.

## Children's Technology Review February 2019

Volume 27, No. 2 Issue 229

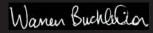
Disney Coloring World CellRobot Computer Touch Kit Harry Potter Magic Wand Coding Kit

Mabot Moji Moji Miku Baby Monitor Sago Mini Zoo\* Sir Dapp! Game Show Specdrums



\* Denotes "Editor's Choice."

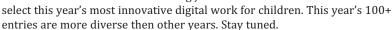
# February 2019 Children's Technology News Waren Buchbillon



"We live in an extraordinary age ... In all of the four-billion-year history of the human family, there is only one generation priveleged to live through this unique transitional moment: that generation is ours." Carl Sagon, at http://bitly.com/2StSv7Q

### COMING IN YOUR MARCH CTR: THE BOLOG-NARAGAZZI DIGITAL AWARDS

I'm writing this from Bologna Italy, where I'm about to meet with the hard working jurors to



LITTLECLICKERS: FIVE PRODUCTS THAT WILL CHANGE HOW WE LIVE AND

Our friend Alan Kay is fond of saying "The best way to predict the future is to invent it." See page 3 to learn more, via teacher selected links and YouTube videos.

## Ready or not, here comes the future!

Set aside all the bad news about how Facebook and Google uses your personal information, and take a look around on a macro level. If you're reading this, you a member of an exclusive club that belongs to the first generation with more "firsts" than any other. We're entering a once-in-a-lifetime renaissance, driven by amazing microprocessor driven technology. We're the first to make a call from a cell phone, use a GPS find an airport, or chat with a smart speaker. As one of the few early childhood educators on the floor of this year's CES show, I asked myself "how can these new technologies create happier, healthier children? Can we use these tools help more children live up to their genetic potential?" This article is a result. The first step is to be aware of the new technologies. Here's what I saw https://youtu.be/zco3gdihibM, along with my thoughts about how the next generation might be affected.

### Having a baby?

Remember those grainy blobs that were generated by yesterday's ultrasounds? I saw a DIY ultrasound kit for home use that can show the babies facial features. And once your baby arrives, there are now a variety of bluetooth connected monitors that can track vital sounds, from anywhere. For feeding, a smart bluetooth bottle can measure temperators and track amounts <a href="https://youtu.be/7cIUIwNizo">https://youtu.be/7cIUIwNizo</a>. See the Miku baby monitor <a href="https://youtu.be/MJjxR7wkfDY">https://youtu.be/MJjxR7wkfDY</a>. Or, if you're a working mom, tiny, powerful, rechargeable batteries have given working mothers an inthe-bra breast pump.

Continued on page 4.





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



## Children's Technology Review February 2019

Volume 27, No. 2 Issue 229

Editor Warren Buckleitner, Ph.D., (warren@childrenstech.com) [WB]

Director of Code Matthew DiMatteo [MD]

Editorial Director Ellen Wolock, Ed.D.

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**PUBLISHER INFORMATION** Children's Technology Review<sup>™</sup> (ISSN 1555-242X) is published monthly (12 issues) by Active Learning Associates, Inc. Send address changes or new subscriptions to *Children's Technology Review™*, 126 Main Street, Flemington, NJ 08822 or circulation@childrenstech.com. Use of this publication for any commercial publishing activity without prior written permission is strictly prohibited. Readers are subject to the TERMS OF USE found at http://childrenstech.com/disclaimer

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Our friend Alan Kay is fond of saying "The best way to predict the future is to invent it." No where is this more true than the CES show, held each January in Las Vegas. Here are five cool inventions we spotted that help us better understand what lies ahead.

**1. A flying electric schoolbus.** Well sort of. Thanks to avances in drone-like multirotor technologies, not to mention stronger batteries and GPS navigation, we're only a few years away from flying shuttles that can take off and land in a driveway or parking lot. Learn more about the Bell Nexis, at <a href="http://www.bellflight.com/company/innovation/nexus">http://www.bellflight.com/company/innovation/nexus</a>

- **2. Airbag for riding your bike.** Everyone knows -- it's no fun to fall off a bike. What there were a special jacket with sensors that could tell if you were falling, and fill up with air right before impact? Learn more about this technology, at <a href="http://bitly.com/2Db0ECP">http://bitly.com/2Db0ECP</a>.
- **3. Language translator earpiece** Waverly Labs displayed an earpiece for pilots that allows them to understand an interpret up to 15 languages in real time -- using speech recognition. The cool thing is that we spotted several models. Soon we'll all be able to afford them. Learn more at <a href="http://bitly.com/2DfcCwG">http://bitly.com/2DfcCwG</a>
- **4. A bluetooth solar beehive**. The CoCoon behife <a href="https://www.beelife.fr">https://www.beelife.fr</a> uses solar power and heat or cool a beehive as sensors monitor the conditions inside. You can get an alert on your phone if something is needed. Now that's sweet!
- **5. Self-powered Emergency Signal Device**. Developed by Hanyang University, this floating signal device produces it's own electricity using the movement of the waves, so that it's LED light will never go out. Learn more about the Korean inventor, at <a href="http://bitly.com/2DeGHwE">http://bitly.com/2DeGHwE</a>







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### APPLICATION: Design your own Tesla

Few cars have more futuristic than the all-electric, mostly self driving Tesla. Visit <a href="http://bitly.com/2SxQmIa">http://bitly.com/2SxQmIa</a> where you can design your car using a series of options that include engine power, color, wheels and electronics. As you select each option, the price changes automatically, and you can see how much your monthly payments would be. Just don't click "buy." Your parents might get mad.

## **Welcome to the Future on YouTube**



Want more? Here's a video playlist that

https://www.youtube.com/playlist?list=PLcBVHzUUEKwmBohkXsv2beEIPjl0s-V5F

## Ready or not: Here comes the future... (cont'd)

### Health

We've grown used to taking a child's temperature with light, and car seats, vaccines, and modern medical procedures increase your babies chance of growing into a teen (I think disposible diapers are still pretty amazing). The next generation of medical gear on display included better, faster mobility devices and medical-grade information gathering bracelets. Of course all this information gives new parents new ways to worry -- as we monitor their sleeping patterns with an app, or follow their route to school using a GPS.

#### Learning

We've been able to hand a curious child a search engine for over a decade, but recent advances in mobile devices have made the effect more pronounced. Case in point -- Google's next generation touch screen Chromebooks. I spotted a laptop designed specifically for 3D holographic material, and Qi technology desks for quick charging. No more plugs, cords or hassles. It's fun to visualize libraries and classrooms with 8K resolution walls which could make it possible to turn a classroom into an underwater submarine, a space station on Mars or a webcam view from the North Pole. See the Samsung Wall <a href="https://youtu.be/JEdPeK-RfeI">https://youtu.be/JEdPeK-RfeI</a>. Some students could benifit from on-the-fly translation earbuds that could turn a teacher's mumble into crystal clear speech in the language of choice.

#### Assessment

For better or for worse, a modern baby is being tracked by a swarm of cameras and cookies (of the browser variety). The "worse" part of this equation has been well documented, but what about the "better" use of this information? For example, why couldn't a teacher see a child's facebook information, to better understand a child? They might spot an early sign of giftedness that can be flagged and nurtured. When it comes to instructional settings, more information is good.

### **Transportation**

Think how the jet engine has made the world smaller by connecting more people. Now think about how ride sharing services like Lyft and Uber have created app driven on-demand access to transportation. Mix in the technology inside a self driving vehicle, and take your toy drone's ability to fly on a windy day. All of these technologies come together in the Bell Nexus air taxi. A prototype was on display that makes it easy to imagine how a fleet of self flying shuttles might soon get our children to school. It's very likely our Grandchildren will ask us what it was like to pilot our own cars, as a crash-prone humans.

### But wait, there's more!

Sensors, magnets, bluetooth and batteries are creeping into all sorts of devices that can help our children live and learn in the next decade. I saw a shoe that dials 911 if you fall down and a bike helmet that turns into an airbag. A latchkey kid will no longer need a key, because door locks can now use fingerprints or a voice signature for entry. A child's voice will also command the kitchen sink to deliver an exact cup of water (no waste) and your refrigerator will send you a daily shopping list that reminds you that your milk will expire in three days.

None of the above is science fiction. In fact every item I've mentioned was on display at this year's CES, and most were on display in the 2019 CES Hall of Innovation (see the video tour, at <a href="https://youtu.be/zco3gdihibM">https://youtu.be/zco3gdihibM</a>).

As the adults responsible for the next generation, we must keep a watchful eye on these emerging technologies. It's helpful to remember that child development theories always dictate how a technology can help or harm a child. There's never been a more important time to have this knowledge, and thoughtfully apply it to something untested.

### **CES Innovation Award Categories**

The Innovation Awards program at CES contains products on display during the show, that were nominated by a panel of jurors (technology journalists and consultants, by vote). This year there were 28 award categories described at <a href="https://www.ces.tech/Events-Programs/Innovation-Awards/Honorees.aspx">https://www.ces.tech/Events-Programs/Innovation-Awards/Honorees.aspx</a>, and listed here:

### **3D Printing**

Any 3D printing device, accessory, software, platform, or any electronic device that facilitates the use of additive manufacturing technologies.

### Accessibility

Products and services with innovative features that enable ease of use by disabled persons to improve accessibility for seniors and persons with disabilities, regardless of cognitive, mobile, hearing, or visual abilities.

### **Computer Accessories**

Products designed to enable, enhance, connect, power and/or maintain desktop or portable computer systems.

### **Computer Hardware and Components**

All desktop and notebook computer systems and internal components, including tablets, E-Readers and mobile computing devices.

### **Computer Peripherals**

Products designed to connect to and extend the functionality of desktop or portable computer systems.

### **Cybersecurity and Personal Privacy**

Products that serve to protect, enhance, manage, or analyze digital security.

### Digital Imaging/Photography

Products designed to enhance the visual experience and/or allow the user to capture, store and edit still images or video.

### **Embedded Technologies**

Silicon chips and integrated components designed to provide functionality to finished products or sub-assemblies.

### Fitness, Sports and Biotech

Products designed to test, monitor, or analyze the health, wellbeing, fitness and/or medical condition of an individual or provide therapeutic benefit. Products must have significant electronic functionality as a central part of the items operation.

### Gaming

Products (hardware) designed to allow one or more users to interact with electronic games.

### Headphones

Devices that allow users to listen to audio content, such as music, radio, video, TV, gaming and/or telephone conversations. The devices may incorporate microphones for user voice response or input, and do not have to be designed for use with any specific type of device.

### High Performance Home Audio/Video

Separate audio components and speakers that provide for optimal performance and sound reproduction. Items are typically produced in limited quantities and are often handcrafted.

### **Home Appliances**

Products that have a primary function of being used in the home, including major and portable appliances. Products technology may provide home heating and cooling, comfort, aesthetics, convenience, food storage and preparation, and/or cleaning. Products should have significant electronic functionality as a central part of the items operation.

# Home Audio/Video Components and Accessories

Systems and/or speakers designed to provide playback, storage and/or distribution of audio and video signals and content in the home, as well as products designed to enable, enhance, connect, and/or maintain home audio/video systems and components.



The Samsung Samsung Family Hub has cameras inside so you don't need to open the door.

sophisticated monitoring and control over the building's functions, and/or enable users to maintain a wired or wireless data network. May also include products and software that provide for remote or conditional access.

### Software and Mobile Apps

Programs or operating systems meant to be used on a computer system or mobile device, whether being distributed for free or at a cost.

### Sustainability and Eco-Design

Innovative features incorporated into products that make them safe for the environment, e.g., efficient and clean energy use; manufacturing processes that reduce use of harmful environment substances (e.g., lead, mercury); durability/end of-life (reuse, refurbish, remanufacture, recycle); resource conservation.

### Tech for a Better World

Vehicle Intelligence and Self-

Products that share a common goal or ability to impact the world in a positive way, whether domestically, or on a faraway corner of the globe. Products may be of any type or category, as long as they share the theme of positive societal and/or global impact.

### In-Vehicle Audio/Video

Products and components designed to be part of an in-vehicle audio and video system.

### **Portable Media Players and Accessories**

Well as the accessories for enabling, enhancing, connecting, carrying, and/or maintaining them.

### **Robotics and Drones**

Consumer drones, consumer UAVs and other unmanned systems that are able to fly, move, or otherwise be operated from a remote location. May include secondary features such as photo/video recording, movement of materials, mapping, way-finding, search/rescue, or other capabilities.

### **Smart Cities**

With 70 percent of the world's population forecast to live in cities by 2050, the need for sustainable, livable world cities is essential for a prosperous future. The smart city/community concept promotes a specific vision of modern urban development and acknowledges the growing importance of information technology in economic competitiveness.

### **Smart Energy**

Devices designed to facilitate the powering and/or charging of consumer electronic products.

### **Smart Home**

Products and accessories that provide a home's inhabitants with

### **Driving Technology**

Automotive products and services that integrate technology into the driving experience, whether by enhancing safety, providing navigational aid, improving the passenger experience, or providing/enabling driverless functionality.

### **Video Displays**

Devices whose primary purpose is the display of video content, excluding items marketed and sold primarily as computer monitors.

### Virtual and Augmented Reality

Products (hardware) designed to allow one or more users to interact with electronic games and/or provide or facilitate a virtual or augmented reality experience.

### **Wearable Technologies**

Electronic devices typically worn by the user that utilize sensors for navigation, information-gathering and transmission, or other sensory enhancements.

### **Wireless Devices, Accessories and Services**

Smartphones and other items marketed primarily for the ability to provide wireless calling capability. The products in this category, in addition to having voice calling features, may also incorporate wireless data and custom app support, built-in cameras and many other features.



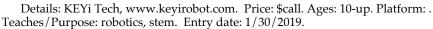
# Feature Reviews and New Releases

FEBRUARY 2019

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.

### CellRobot

This snap-together modular robotics system follows a human body metaphor. The idea is that just like the cells in our bodies work together to create life and function, CellRobot is made up of individual robotic "cells" (round balls) that are put together to form functional robots. The HEART, CELL, Functional Cell and X-Cell are the four types of cells that make up each CellRobot. Cells can be attached together by the connectors on each cells' surfaces. To connect, face two cells together and gently twist. The HEART supplies power to the entire robot and provides a signal connection to your smartphone or tablet. It has eight connectors for you to choose from on its surface. The CELL is the basic module of CellRobot. Every CELL is a servo rotation system with an independent MCU (Microprogrammed Control Unit), which makes variable morphology possible. The two hemisphere of the BASE can do a 360 degree relative rotation, once connected to HEART, each cell can be directed to move in any direction and angle you wish. Functional Cell enables your CellRobot to become more practical. They act as add-ons to regular modules, allowing the robot to evolve and accomplish any task with the invention of these functional parts. Wheel is created for movement. It enables CellRobot to move faster. With Wheel, you are able to create a vehicle; Vision contains a wide angle wireless surveillance camera, and the X-CELL is the functional module you can create by yourself using an open hardware and software API.





This is the larger of two build-your-own computers that are powered by a Raspberry Pi 3 (1.2GHz quad Cortex A53 - 64bit

RAM and 1GB CPU). This kit includes a touch screen and rechargeable batteries. The computer is designed for internet use, for use with services like YouTube, Whatsapp and Google Docs. It comes pre-programmed with Minecraft and Scratch. An illustrated color instruction book walks you through each part of the process.

Details: Kano, https://kano.me. Price: \$280. Ages: 8-up. Platform: iPad, iPhone, Android, Kindle. Teaches/Purpose: STEM, computer science, programming, coding. Entry date: 1/22/2019.





## **Disney Coloring World**

This is a subscription-based coloring experience (about \$20/year) that mixes a well designed set of creative tools with five dynamic sticker playgrounds, and a strong dose of Disney. Theme packs include Mickey Mouse, Beauty and the Beast, Wreck It Ralph, Cars and many princess characters. Compared to other coloring apps, this one is excellent, with a powerful set of coloring tools and the ability to undo steps and save work. You can freely scribble, paint or sketch over the black-line masters. A magic fillin tool to reveals the original "correct" coloring. Once you finish, your character is turned into a sticker that can be placed in one of the sticker playgrounds, where a tap can launch a hidden effect, and you can zoom in or out. The Disney templates remove opportunity to make your own character. A blank page would be wonderful addition to this app. Because it's a subscription model, we suspect that there will be additional clusters of content in the future. The key question is how many Disney characters do you want to fill in and/or scribble over to merit a subscription? Once you color yo character, it is turned into a sticker that is placed inside a very cool dollhouse-style world. The more you color, the more characters you can unlock. This app is free to download, but doesn't let you do anything unless it is unlocked with a temporary password which signs you up as a paid subscriber. To cancel, you have to go into account settings. So you download a large (940 MB) app, but don't really get anyt that is actually free. Rather, it should be labeled as a MCOBC "must cancel or be Sup charged" experience.

Details: Touch Press, www.touchpress.com. Price: \$free trial; \$20/year . Ages: Platform: . Teaches/Purpose: coloring, creativity, Disney. Rating (1 to 5 stars): 3.7 stars. Entry date: 1/15/2019. []



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Well Crafted 10

## Harry Potter Magic Wand Coding Kit

Insert two AAA batteries into the handle of this snap together magic wand and connect to your phone, computer or tablet via bluetooth to program different spells. As you move the wand, you see the outline of your movements on your screen. The real magic of this kit is in the sensors that can capture detailed motion information.that you snap into the handle. These include 9 axis accelerometers paired to an LED and a rumble feature. The batteries work for up to six hours of operation.

Details: Kano, https://kano.me. Price: \$100. Ages: 8-up. Platform: iPad, iPhone, Android, Windows, Mac OSX, Kindle. Teaches/Purpose: STEM, computer science, coding, Harry Potter. Entry date: 1/22/2019.



### **Mabot**

This snap together robotics kit that costs a lot -- but also does a lot. Mabot (My Robot) was shown at CES 2019, and is scheduled to be released in the USA as another entry into the crowded snap together and program robotics category.

The round parts are impressive -- inspired by the functions of a human body. There's a brain (with the controller and ability to communicate with a tablet via bluetooth), joints (round joint/motors for motion), eyes and ears (sensors for light and sound), and muscles (lithium-ion batteries that can be recharged with a standard USB-mini plug). Different connectors snap into the round parts to give the kit the ability to connect with standard-sized LEGO blocks. There are two apps for controlling or programming your projects. In the demonstration, the apps worked on iOS devices. No firm release date for the USA was provided. This kit is not cheap -- at \$850, it is out of range for many. Keep your eye on this one.

Details: Shenzhen Bell Creative Science and Education Co., Ltd., www.bellrobot.com/. Price: \$850. Ages: 8-up. Platform: . Teaches/Purpose: Programming, robotics, creativity. Entry date: 1/15/2019.



## Miku Baby Monitor

This baby monitor can track sound, motion, breathing and sleep patterns using a down-facing camera. An app is required, along with your smartphone. Parents can watch or listen in on their child from their smart phone. Technology includes a quadcore processor, two Ole Wolff speakers and a two-way microphone interface allowing you to sing or talk to your child from any location. The device tracks room temperature, humidity, motion, sleep patterns, breathing rate and sound.

Details: Miku, https://mikucare.com/. Price: \$400. Ages: 0-3. Platform: . Teaches/Purpose: a baby monitor that tracks vital signs. Entry date: 1/24/2019.



## Moji Moji

An artistic collection of six letter-themed games. A parental control dashboard lets you track a child's progress. Moji Moji was developed by Gakko, a New York/Japan based education design studio.

Details: Gakko, www.gakkoproject.com. Price: \$2.99. Ages: 3-5. Platform: . Teaches/Purpose: language, phonics. Entry date: 5/8/2018.



### Sago Mini Zoo

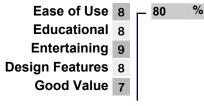
This freestyle sandbox app lets you freely drag and drop 24 animal characters in a playful zoo setting. The app supports multi-touch so several children can play together at one, and there are many things to explore. These include a balance beam teeter totter for comparing weights, lots of food to feed to the animals, hats, and vehicles to drive from place to place. This is a great starter app for a child that could give them something to talk about. Part of the Sago Mini Playset.

Details: Sago Mini, www.sagomini.com. Price: \$3.99. Ages: 2-5. Platform: . Teaches/Purpose: starter app, creativity, language, logic. Rating (1 to 5 stars): 4.8 stars. Entry date: 1/21/2019. []



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







## Sir Dapp! Game Show

This ambitious app is a mixture of quality, homemade animations and music, designed to give children some ideas about manners. Sir Dapp, the narrator, and some animal characters are in a game show. The idea is to help the contestants win points by answering multiple-choice questions about manners.

Categories include "Sight What's Polite", "Historically Rude", "Keeping it Clean", and "Trivia Soup." There are short musical animations that pop up between the questions. The app was created by Jeanne Marie Tidwell in Florida, USA. Some interface improvements would help this app. Picking a category of questions can be confusing because the categories resemble one another; and you don't know where you are in the question stream. You also can't adjust the music, which tends to loop. Created for Crystal Tree Group by Night & Day studios.

Details: Crystal Tree Group, http://crystaltreegroup.com/. Price: \$3.99. Ages: 5-7. Platform: . Teaches/Purpose: trivia, reading, language experience. Rating (1 to 5 stars): 4 stars. Entry date: 1/15/2019. []

## **Specdrums**

What if you could hear colors? Specdrums are small expensive silicon rings with embedded motion and light sensors that can 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 as long as your phone or tablet is nearby. The rings cost \$64.99 for one-ring and \$99.99 for two-rings, with product shipping the week of January 15. Each ring contains a small rechargeable battery that lasts about 2 hours. 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.