

# 2014: Welcome to the



*Even without flying cars, some of today's top tech trends exceed the imaginative dreams of 20th-century science fiction writers.*

# Future

## SNAPSHOT

- Consumers soon may give up their smartphones in favor of smart watches and other wearable tech.
- “Smart” technology now extends to major appliances, home security systems and much more.
- While prohibitively expensive now, 3-D printing soon could be a revolutionary technology.



**It's been 25 years** since writer and director Robert Zemeckis released “Back to the Future, Part II,” a 1989 film starring Michael J. Fox that predicted life in the 21st century. Since then, a few of the outlandish inventions the movie proposed *have* become realities, including video communication (such as Internet-based programs Skype and Facetime), video games that don't require a handheld controller (such as the Xbox Kinect) and even the self-lacing sneakers worn by Fox (Nike produced these in 2008 in very limited quantities, mostly as a novelty).

Of course, some of the most coveted predictions (such as hoverboards, flying cars and time travel itself) have yet to make an appearance in the consumer marketplace. But what might be more exciting is that many of the inventions that *have* come to fruition in the past 25 years—smartphones, tablets and biometrics, just to name three—were beyond the imaginations of most of the wildest dreamers of the 1980s.

Given that we still have nearly two years until the fateful day that Marty McFly appeared in our era—his date of arrival in the movie was October 22, 2015—there's still time to outshine director Robert Zemeckis' vision for these early years of the 21st century. Some once-unthinkable products are just now starting to be developed, others are being introduced to a convenience-hungry public, while still others are gaining in popularity with consumers. Let's take a look at what the future—near and distant—holds.



## Wearable Technology

The most popular innovations of the past decade arguably have been items that you can hold in your hands. But the most recent consumer tech advances easily could be confused with bold fashion choices, if you're not paying attention.

Take, for example, *smart watches*, which some experts consider the biggest tech trend of the past year. These little gadgets strap onto your wrist and, much like smartphones, alert you to text messages and e-mails and control the music you're listening to, all via Bluetooth technology. (Don't worry, they display the time, too.) The leader of this pack is the Pebble, which was catapulted into production through interest and monies raised via the crowdfunding website Kickstarter.

With a quick look at the numbers, there's no denying that the demand for smart watches is sky-high—within two hours of posting its proposal details online, the makers of the Pebble watch raised \$100,000 from the general public pledging to fund its production. Within six days, it reached \$4.7 million. At the end of the month, more than 68,000 individuals had pledged \$10.2 million to get the Pebble on the market, making it the number-one project in Kickstarter history. (See more about crowdfunding and Kickstarter—a technological revelation all on its own—on page 8.)

Pebble isn't the only smart watch company getting in on the action. Both Google and Apple are on the verge of releasing their own versions, while Samsung and Sony, not to mention many lesser-known companies, also have jumped on the bandwagon. At present, the most significant criticism of smart watches is their aesthetics, which have many trendnistas shying away—for now. Typical grumblings about short battery life also are being voiced.

Another piece of wearable technology, just introduced in 2013, is *Google Glass*. Don't be mistaken—there are no lenses in these glasses, and they won't help your eyesight at all (although Google is reportedly in talks with sunglasses retailers to provide shades). What they *will* do is allow you to take photos and videos, video chat, make phone calls, search Google and get turn-by-turn navigation via a small transparent display that rests right above your right eye. Cleverly, the tech editors at CNET.com described it as, "If



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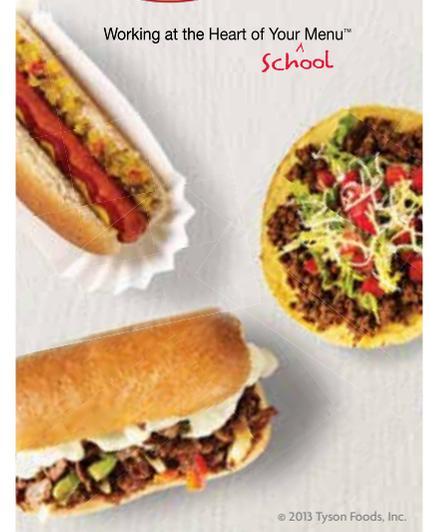


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## Consumer Tech Talk

- 44% of U.S. homes have at least one tablet computer.
- 55% of American homes have a smartphone; this is up from 36% in mid-2010.
- The average American spends 130 minutes a day using smartphones and tablets, compared to 120 minutes a day watching a conventional TV.
- The average cell phone user looks at his or her phone 150 times a day.



Source: 2013 Consumer Electronics Show

Kinect and Siri had a baby and raised it among a family of smartphones, it would be Google Glass.”

At press time, relatively few people have had the chance to try out these wearable computers with optical head-mounted displays. Reports indicate that a consumer version will be released sometime early this year.

Another piece of noteworthy wearable technology is a *brainwave-sensing headband called Muse*, from the company Interaxon. It contains six sensors that monitor your brain activity with the goal of determining the time of day your brain works the best, the length of peak concentration ability and how you best de-stress or “turn off your brain.” For those interested

in video games, the *Oculus Rift headset*, another Kickstarter project that’s set to be released to consumers sometime in 2014, has the gamer wearing what looks like an oversized pair of goggles to provide immersion in a virtual reality video game—well, *that* sounds a lot like something that just might have appeared in the “Back to the Future” film franchise.

## Home Improvement

Who *hasn’t* been in this situation: You let dinner cook on the stove a little too long, and it’s started to burn. The smoke from the pan immediately sets off the smoke detectors. While you’ve eliminated the threat from any imminent danger, you can’t

get the smoke detector to stop wailing.

Enter Nest Protect, the tech product that provides a solution to a problem you didn’t realize you had. The *dual smoke alarm and carbon monoxide detector* talks to you—rather than screeching so loudly that your neighbors wonder if they should be calling 911—alerting you to the problem, where it is and allowing you to turn off the alarm simply by waving at it. When the detector needs a new battery, it doesn’t subject you to a series of maddening chirps; instead, the gadget sends a reminder to your smartphone.

Along similar lines, recent technology can protect your home by allowing you to use your smartphone to lock and unlock your front door. These “*smart locks*” use Bluetooth technology to allow your front door to recognize your phone and unlock the door to let you in—no more fumbling for keys when your hands are full of groceries! It also lets you set up times to allow visitors to enter your home, such as if a friend is coming over to walk your dog; monitor when they arrived and how long they stayed. What if you lose your phone? No worries, a web app allows you to wipe data clean, so thieves can’t take advantage.

There’s no shortage of *other “smart” technologies* being applied to the home. Check out smart refrigerators, which keep track of ingredients stored inside and offer up coupons and recipes; a washer and dryer that run when they sense your electricity rates are lowest; or the oven that can be controlled via smartphone so you never again have to worry about forgetting to turn it off when you leave the house.

However, one of the most revolutionary (and perhaps, the scariest, depending on how you look at it) innovations currently in development might someday reside in your garage: *the driverless car*. Named one of 2014’s top five trends by the Consumer Electronics Association (CEA), driverless cars already are legal in three states (California, Nevada and Florida), though

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With each innovation, dreams gain a new foundation for the next leap.

it's unlikely you've seen them on the road. Not surprisingly, Google is one of the biggest players in this game—the company's test cars have logged more than half a million miles and suffered only two accidents (both when human drivers were behind the wheel). But according to CEA, nearly every major vehicle manufacturer is developing its own driverless car, as well.

But are we *really* ready to give up control of the wheel? Apparently, yes—a CEA survey found that 79% of individuals who were asked reported that they were willing to be a passenger in an autonomous car, as long as they could take control at any time. In the youngest sector polled, ages 18 to 24, an astounding 98% are just fine with riding shotgun in such a car. It might not be the flying car featured in “Back to the Future,” but it's certainly a major step along that road!

## On the Job

Even if you avoid the latest tech gadgets in your personal life, it's only a matter of time before they invade your work environment. The school nutrition profession already has seen innovations such as **biometrics, tablets and apps** making a difference in cafeterias and kitchens, but other technology looms larger in various industries.

Take, for example, advancements in **robotics**, especially in manufacturing. In America, a trend toward increased automation sometimes is criticized for reducing job opportunities available to a blue-collar workforce. In other countries, like Japan (with a negative population growth in which the death rate is higher than the birth rate), robotics have been essential in

supplementing a dwindling labor pool.

Of course, in this context, we aren't referring to humanoid robots. But that doesn't mean that such varieties don't exist! Honda's ASIMO (Advance Step in Innovative Mobility) has been in development since 1986; in 2011, the company revealed the latest version of ASIMO, the first autonomous humanoid robot, which can walk on its own, recognize faces and voices and handle objects of varying fragility through sensors on its “hands.”

While we might not see robots serving meals in school cafeterias anytime soon, two other pieces of developing technology could have more of a direct effect on your life. The first comes in the form of **Google Fiber**, a new fiber-optic communication infrastructure that claims to offer Internet speeds up to 100 times faster than that of other providers, but with a comparable price tag. Beyond the added convenience this will offer to you in surfing the Internet, experts say it could have implications for health care (such as video doctor's visits), digital education and the digital entertainment industry (including online gaming and streaming video). It's hard to say when Google Fiber might come to your area; right now, it's only available in a handful of cities (Kansas City, Mo., Kansas City, Kan., and Provo, Utah; Austin, Texas, is coming soon).

Finally, we come to **3-D printing**, a technology that's gaining more and more mainstream references, including an ongoing plot line on the TV drama “Grey's Anatomy,” a recent profile on “CBS Sunday Morning” and heated political debates about the personal manufacture of operable 3-D guns. Maybe

you've even seen or benefitted from it in action; some dentist offices are using this type of technology to create crowns and inlays right in the office while you wait. But how does it work?

It starts with a virtual blueprint that designs the product you plan to print; those who aren't skilled in computer-aided design (CAD) or animation software can download or request custom designs from companies already in existence. When the blueprint is sent to a 3D printer, the item is constructed by adding materials in layers approximately 0.1 millimeters thick. You choose the materials, which can range from plastic to metal and more.

Of course, 3D printing has its drawbacks, namely the price: It ranges from \$1,000 to \$60,000, depending on the printer's specific capabilities. CNET says that the technology has a few years to go before it becomes a mainstream consumer tool, but as it is refined, its potential could be nothing short of revolutionary.

## What's Next?

For generations, imaginative minds have tried to predict the marvels of a near and distant future. With each innovation since the Industrial Age, these dreamers gain a new foundation for the next leap. (*Got a horseless carriage? Hey, I bet, one day, we'll make it fly!*) So, with all the technology that we take for granted today, plus the new innovations bubbling up in creative young minds right this minute—what's next? As this magazine hits mailboxes in January, the 2014 Consumer Electronics Show will be underway in Las Vegas—we are sure to get a preview then! **SN**

**Kelsey Casselbury** is associate editor of School Nutrition. Her techie husband already owns a Pebble smart watch, has asked for Google Glass for a birthday present and has requested that they move to Kansas City to be closer to the home of Google Fiber. Illustrations by **iStockphoto.com** and **jjunlimited.com**.

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