Invasion of the Drones
They may soon be delivering your pizza, but drones raise serious issues about privacy, safety, and even war. p. 6
THE GOOGLE

Google employees have traveled the world photographing incredible landmarks—from the pyramids in Egypt to the Great Barrier Reef near Australia. The images help to create Google Street View, which displays photos of places on Google Maps, such as streets, museums, and parks. Usually the camera is mounted on top of a car. But recently, the company used a camel to capture images of a vast desert in the Middle East.

For three days, a camel named Raffia trekked around the Liwa Oasis in the United Arab Emirates (see map). Raffia wore a special backpack called a Trekker that has a camera with 15 lenses so it can...

EXTREME MAPPING

Google employees have also mounted cameras on bikes, boats, and even snowmobiles to photograph the world for Street View.

1. U.S.
2. LIWA OASIS
3.

1. CANADA: AUYUITTUQ Last summer, Google Trekker captured Canada’s glaciers and polar ice.
2. ARIZONA: GRAND CANYON This was one of the first locations captured by the Trekker.

16 | Civil War Times
This year marks the 150th anniversary of the end of the U.S. Civil War. Our mock newspaper gets you up to date with the events of the day. 

ONLINE Watch our video.

20 | Debate: Should School Start Later?
Check out two sides of the debate over start times.

ONLINE Vote in our debate.

22 | Lava Alert!
Teens in Hawaii work to save their school from fiery lava.

ONLINE Play the Mapman™ Game.

24 | The Back Page
Analyze the cartoons.
CAMEL

Take 360-degree photos. A camel handler and a team of Google staffers walked alongside Raffia for three hours each day, stopping for food, water, and rest breaks along the way.

The project allows people to explore remote locations and get a sense of what it would be like to be there, says Google’s Gina Sciglano.
**IN THE NEWS**

**ROBO PENGUIN**

Antarctica’s emperor penguins aren’t crazy about humans, which makes it difficult for scientists who study the birds to get close.

French scientist Yvon Le Maho tried something different. Instead of having a human approach the penguins, he sent in a small rover on wheels. That didn’t work either.

“Emperor penguins huddle together because they have no [other] territorial defense. So when they see the rover approaching, they get very stressed,” Le Maho says. “We thought, what if you camouflage the rover—disguise it as a chick?”

That did the trick. The disguised rover’s black-and-white head and fluffy gray body look enough like a baby emperor penguin to fool the birds, which accept the little visitor as one of their own.

Equipped with a camera or other high-tech device, the rover allows scientists to monitor and gather data without ruffling any feathers.

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**VAMPIRE MYSTERY**

When people in 17th- and 18th-century Poland buried suspected vampires, they put sickles around the corpses’ necks or placed rocks on their jaws to prevent them from rising from the dead.

At first, scientists believed that people thought the dead were immigrants—and as outsiders, were likely to become vampires.

But a recent test found that the “vampires” were locals. Professor Lesley Gregoricka of the University of South Alabama examined the dental enamel from six “vampire skeletons.” The enamel revealed that the suspected blood-suckers had grown up eating local plants.

Gregoricka now thinks the dead were suspected of becoming vampires because they may have had cholera, which was blamed on the supernatural.

“They believed people would return from the dead, feed on living individuals, and cause the disease to spread,” she told The New York Times.
HUNGER GAMES SALUTE

The three-finger salute from the Hunger Games is catching fire in Thailand. Students in the Southeast Asian nation are flashing the salute—a symbol of defiance against the authoritarian government in the series—to show their opposition to the country’s military leaders.

Last spring, the Thai military staged a coup that forced the nation’s democratically elected prime minister from power. *(A coup is a sudden takeover of a government.)* Since then, the military has clamped down on free speech, arresting hundreds of critics and banning the salute.

“The Mockingjay movie reflects what’s happening in our society,” says Nachacha Kongudom, a 21-year-old protester who was detained by police last fall. “When people have been suppressed for some time, they... want to resist and fight for their rights.”

ROCKET RIDE

Oversleep? If you could hitch a ride on this school bus, you’d never be late for social studies again. The bus, named “School Time,” is fitted with a jet engine. It can rocket down the road at 367 miles per hour, leaving 80-foot flames in its wake.

But don’t expect School Time to pick you up for school anytime soon. That’s not why Paul Stender, a self-taught engineer from Indiana, built the yellow hot rod. Stender likes to visit schools around the country to talk to kids about the bus and inspire them to take an interest in engineering.

“We’re trying to get kids out from behind their video games,” he tells JS. “It’s important... to have active hobbies and interests to keep busy.”

You might even say learning new things can be a blast.

YOUR TURN

How long would it take you to get to class in “School Time”? Here’s how you do it:

\[
\text{Time} = \frac{\text{Distance}}{\text{Rate}}
\]
Invasion of the

These unmanned aircraft may soon be delivering pizza to your doorstep, but drones also raise some serious questions

The residents of Lickdale, Pennsylvania, are used to the sound of aircraft buzzing overhead. With a National Guard base located nearby, aircraft regularly transport troops to and from the base.

Still, the residents were surprised by what happened on the afternoon of April 3 of last year. A curious-looking airplane slammed into the ground next to an elementary school. Fortunately, school was out for the day and no one was hurt.

The aircraft turned out to be a drone, or unmanned aerial vehicle, operated by the U.S. military.

In Lickdale and across the United States, drone sightings are becoming a lot more common. They're now being used by everyone from farmers and scientists to Hollywood directors and police departments.

Amazon hopes to use drones to deliver packages within 30 minutes of your order. Food may soon be flying too. A pizzeria in Brooklyn, New York, recently did a test delivery of a pizza using a drone. And drones could soon be delivering emergency medical supplies, fighting fires, and protecting endangered animals in Africa from attacks by poachers.

"The uses are limited only by the imagination," says Colin Guinn of 3D Robotics, a major U.S. drone manufacturer.

But the increasing use of drones also raises some important issues. Here's a look at three major areas of concern.

Safety

In the past few months, dozens of near-misses have occurred between drones and planes, including several at airports in New York, Los Angeles, and Washington, D.C. There's even a scary new term—"flyaways"—to describe drones that escape their operators' control and crash.

The RQ-7B is the type of drone that crashed near a school in Pennsylvania. It is 11 feet long and weighs 375 pounds.

The aircraft is used for scouting out targets, spying, and getting information about battlefields. It can recognize vehicles from 8,000 feet above ground.
because of software glitches, wind gusts, or operator error. Many flyaways end with the drones smashing into buildings or trees.

Twenty states already regulate drones. New federal rules are expected to require operators to have a license, and to fly drones only during daylight hours, below 400 feet, and within their sight.

“It’s kind of like the early days of the automobile, with people speeding and not knowing what they were doing,” says Arthur Holland Michel of the Center for the Study of the Drone at Bard College in New York. “Everyone is holding their breath that there won’t be a horrendous incident like a drone getting sucked into the engine of a jet.”

**Privacy**

Legal experts are concerned about the potential for drones to violate people’s right to privacy under the Fourth Amendment to the U.S. Constitution. The amendment protects individuals against “unreasonable searches and seizures.” That means police must either get a court-issued warrant or have “probable cause” to search people or their property.

But the Framers couldn’t have imagined a police drone hovering overhead: Does that constitute an “unreasonable search”?

“We don’t want the government hovering over our cities and towns 24/7 and tracking everywhere that everyone goes,” says Jay Stanley of the American Civil Liberties Union.

**Warfare**

Drones have already transformed modern warfare. Sitting in front of a video screen at a military base in the U.S., drone operators use joysticks to pilot drones over targets thousands of miles away. In 2002, the CIA began employing large armed drones to shoot missiles at suspected terrorists in Afghanistan and Iraq. The U.S. has also used drones to conduct strikes in countries where it has not been at war, including Yemen, Somalia, Libya, and Pakistan.

Drones have several advantages over manned aircraft. Drones can stay aloft for several days. They can be equipped with video cameras and listening devices that can closely monitor what’s happening on the ground.

Their strikes can also be extremely precise. A drone strike can kill a person in one room of a house and spare the lives of people in other rooms. Their precision means there’s less of a chance of innocent civilians being killed. There have, however, been cases of drone attacks killing civilians along with the intended target.

—Hugh Westrop

**Words to Know**

- **probable cause** *(n)*: a requirement that police have adequate reason for conducting a search
- **civilian** *(n)*: a person who does not work for the military, a police force, or the government

U.S. troops ready an RQ-7B Shadow for takeoff at Hurlburt Field in Florida.

**What rules should be required for the use of drones?**
2015: Ten News
Your guide to understanding this year's headlines

ISIS
That’s short for the Islamic State of Iraq and Syria. ISIS is a radical Sunni Muslim group that has seized parts of Iraq and Syria. It wants to establish a country governed by strict Islamic law, using terrorist tactics to accomplish its goals. ISIS recently beheaded several Americans and Europeans it had captured. The group is also known as ISIL (the Islamic State of Iraq and the Levant) and IS (the Islamic State).

Sunnis & Shias
The two major sects of Islam. When the prophet Muhammad, Islam’s founder, died in 632 A.D., his followers disagreed over who should be their next leader. Most followed Muhammad’s father-in-law. They became Sunnis. Others followed his son-in-law. They became Shias. The vast majority of Muslims are Sunnis, but Shias are the majority in some countries, including Iraq and Iran.

PERCENT OF MUSLIMS WORLDWIDE

Obamacare
The nickname for President Barack Obama’s health-care legislation, the Affordable Care Act. Obamacare started as a negative term used by its critics. But the term is now widely used, even by Obama himself. The Affordable Care Act was approved by Congress in 2010 without a single Republican vote. The most controversial part of the law is the “individual mandate,” which requires all Americans to have health insurance or pay a penalty.

Executive Order
An order from the president that has the power of a law. President Obama issued a controversial executive order last November. It allows some undocumented immigrants whose children were born in the United States to stay in the country temporarily. Executive orders are often controversial because they allow presidents to take action without the approval of Congress, which is responsible for making laws.
**Lame Duck**

An elected official whose power decreases after being defeated for re-election, not running again, or because term limits won't allow another run. Why a lame duck? Because it’s weak and can’t keep up with the rest of the flock. U.S. senators and representatives who weren’t re-elected in November were considered lame ducks during the last few weeks of their terms, which ended earlier this month. Even though President Obama has two years left in office, some people already consider him a lame duck.

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**Sanctions**

Severe economic restrictions used by one government to punish another. The U.S. and several European nations recently imposed sanctions against Russia in response to President Vladimir Putin’s annexation of Crimea, a region in Ukraine (see pp. 10-11). In recent years, the U.S. and its allies have also imposed sanctions against Iran to force it to stop its suspected nuclear weapons program.

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**Minimum Wage**

The lowest hourly rate an employer can legally pay its workers. The federal minimum wage is $7.25 per hour, but 29 states and Washington, D.C., have set their minimums higher. President Obama supports increasing the federal minimum wage to $10.10 an hour. Advocates say raising the minimum wage would help Americans struggling to make ends meet. Opponents say it would hurt the economy by discouraging businesses from hiring more workers or by leading them to raise prices.

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**Gridlock**

When intersections get so jammed that cars can’t move in any direction, it’s called gridlock. The term has also become a metaphor for inaction in Washington. In recent years, the atmosphere in the capital has become so divisive that Democrats and Republicans can’t seem to work together to solve problems. As a result, Congress and the president aren’t getting much done.

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**Dreamers**

The nickname for young, undocumented immigrants who were brought to the U.S. as kids. They’re known as “Dreamers” because under the proposed Dream Act, they would have been given legal status and a path toward citizenship. The Dream Act didn’t make it through Congress, and the issue of how to handle the nation’s 11 million undocumented immigrants remains controversial.

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**Lobbyists**

People paid to persuade lawmakers and other public officials to act or vote in a certain way. Corporations, foreign countries, unions, environmental groups, and other organizations hire lobbyists to promote their causes. For example, an environmental group might hire a lobbyist to urge Congress to adopt clean-energy policies. Lobbyists also try to influence public opinion.

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_image of Iranian President Hassan Rouhani

---

_image of people marching for the Dream Act

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_rebecca zissou_
Few world leaders have been called more names than President Vladimir Putin of Russia. He has been described as a ruthless dictator trampling on democracy and “the most dangerous man in the world.” And his increasingly authoritarian rule has some people calling him “Czar Putin,” suggesting that he’s acting like Russia’s imperial rulers of the past.

To many Russians, however, Putin is a hero—a strongman who has restored Russia to its past greatness as a world power. He cultivates this macho image by riding a horse shirtless, posing with tigers, and showing off his judo skills. In a recent poll, 87 percent of Russians supported Putin and his policies.

Love him or hate him, Putin is casting an increasingly long shadow on the world, even as Russia faces a slew of challenges, including a looming economic crisis.

**Putin’s Rise**

Putin was born in the Soviet Union, the massive Communist country that was America’s fierce rival during the Cold War (1945-91). Like heavyweight fighters, the two

**Words to Know**

- **authoritarian** (adj): requiring people to obey strict rules or laws that restrict personal freedom
- **annexation** (n): the act of taking control of another country or territory
nations vied against each other for power and influence around the world. Each nation had nuclear weapons aimed at the other, and war was a constant threat.

As the U.S. economy grew and prospered, the Soviet Union faltered. In 1991, the country collapsed and dissolved into 15 independent nations. Russia, the largest of the former Soviet republics, entered a decade of chaos. Adjustment to a capitalist system was difficult, and the economy suffered. Poverty and crime were rampant.

In 2000, Putin was elected to his first term as president. He served two terms but was prohibited by law from running for a third consecutive term in 2008. Although he stepped down, he continued to call the shots as prime minister. In 2012, Putin won his third term as president in a disputed election.

In his early years in office, he cracked down on crime and the economy improved, fueled by the country’s vast oil reserves. Russia also seemed to be on its way to becoming a democracy.

Over time, however, Putin tightened his grip on Russia. He began to limit freedom of expression and freedom of the press. He jailed opponents, including the members of an all-female punk band who’d been singing anti-Putin songs.

As he took more control at home, Putin sought to restore Russia’s image on the world stage. In 2008, he sent troops into neighboring Georgia in response to a conflict over two small regions with Russian ties. The world was outraged but did little about it.

Last summer, Putin alarmed the world with Russia’s annexation of Crimea, a part of Ukraine.

A New Cold War?
The U.S. and Europe have warned Putin about aggression against his neighbors. But Putin has not budged, leading both the U.S. and the European Union to impose sanctions on Russia aimed at hurting its economy. The new chilled atmosphere between Russia and the West has led to fears that a new Cold War is developing. The tensions also make it harder for the U.S. and Russia to work together on many important issues: the civil war in Syria, fighting terrorism, and preventing Iran from developing nuclear weapons.

Putin’s push to strengthen Russia, however, has hit an economic roadblock. The recent drop in oil prices has been great news for the U.S. but bad news for Russia’s economy. It’s now likely that Russia will slip into a recession.

How will sanctions and a struggling economy affect Putin? He may feel compelled to change his aggressive, anti-Western stance. But he could do just the opposite, and try to divert attention from economic problems at home with further mischief abroad.

If Putin runs for president again in 2018 and serves until 2024, he could end up ruling Russia for 24 years.

—Charles Pidcock

What point is the cartoonist trying to make about Putin’s strength today? Do you agree?
A Short, Sweet History of Chocolate

1519
Montezuma, the Aztec ruler, serves a cocoa drink called xocoatl (shoh-KWAH-tul), which means "bitter water," to Spanish conquistador Hernán Cortés [left]. Cortés likes it enough to take it back to Spain with him.

Mid-1500s to Mid-1600s
With cinnamon and vanilla added to reduce the bitterness, the cocoa drink becomes a treat for Spain’s nobility. It later becomes popular throughout Europe—still only as a beverage and for the elite.
A CHOCOLATE SHORTAGE?

Why the world's favorite treat could get a lot more expensive—and harder to find

The next time you're eating a piece of chocolate, slow down and savor every bite. There could come a day when this relatively cheap treat is a lot more expensive and harder to find. That's because the rate at which people are gobbling up chocolate far outpaces the rate at which farmers can produce cocoa, its key ingredient.

Cocoa is the powder or paste made from dried, crushed cocoa beans, the seeds of the cacao (kuk-KOW) tree. You can wolf down a chocolate bar in seconds, but cocoa beans are a labor-intensive crop that is difficult to grow.

Last fall, two major chocolate companies—Mars Chocolate, based in New Jersey, and Barry Callebaut, based in Switzerland—issued a warning. If people keep eating so much chocolate, they said, there won't be enough to go around.

That day could arrive sooner than you think. In 2013, the world consumed about 77,000 tons more cocoa than was produced. The two chocolate makers estimate that the global cocoa deficit could reach 1.1 million tons by 2020, and 2.2 million tons by 2030.

**Choconomics**

Like all products, chocolate is subject to the law of supply and demand, a basic principle of economics. When demand (the amount people want to buy) is greater than supply (the amount available), prices tend to rise. When supply is greater than demand, prices tend to fall. Demand for cocoa has exceeded supply for the last two years. When manufacturers have to pay more for raw materials, sooner or later they pass the costs on to consumers. That happened last summer, when Hershey's announced an 8 percent price hike, its first price increase since 2011. Other chocolate companies followed suit.

Despite the cocoa shortage, shoppers probably haven't noticed any reduction in chocolate-flavored products in stores. So far, food makers have been able to keep up. That's because cocoa-processing companies still have stockpiles to keep candy and food makers supplied. But those reserves are dwindling.

**Words to Know**

- **deficit (n):** an amount that is less than the amount needed; a shortage
- **economics (n):** the science of how people produce, sell, and buy goods and services

**1847**

An English company blends cocoa and sugar to make the first edible solid chocolate. Milk chocolate is invented 29 years later, when Daniel Peter of Switzerland adds powdered milk for a less bitter taste.

**1890s**

Pennsylvanian Milton Snavely Hershey perfects a formula for the mass production of milk chocolate into edible bars. His "Hershey bar" transforms chocolate from an expensive candy for the wealthy to one most people can afford.

**Today**

Hershey's sells a lot of chocolate—about $7 billion worth in 2013—most of it in the U.S. Mars, the world's biggest candy maker, had nearly $18 billion in sales the same year.
Supply Is Down...

Why not just plant more cacao trees? That’s easier said than done. Most cacao trees are grown on small family farms in poor countries. Forty percent of the global cocoa bean supply comes from Côte d’Ivoire alone (see p. 15).

Unlike growing corn or wheat, which can be planted in vast fields and harvested with machinery, harvesting cacao is a slow, painstaking process, all of it done by hand.

A cacao tree can produce up to 70 pods a year, each of which must be cut down and chopped open. The seeds are then collected and cleaned of the gooey white pulp that surrounds them. Those seeds—cocoa beans—are dried (see photo below) and fermented for at least a week. Then the farmer bags the beans and ships them to companies that process the beans into the powder, paste, and liquid forms used by food and candy makers.

More trees would require more workers, but few cacao farmers can afford to pay a crew’s wages. Instead, many rely on much cheaper slave labor (see sidebar below).

Cacao farmers also have to cope with plant diseases and insects that destroy crops. According to the International Cocoa Organization (ICCO), such blights cause “losses as high as 30 percent to 40 percent of global production.” Frosty pod rot, a plant disease caused by a fungus, has stricken West African cacao crops in recent years. Unusually dry weather in Côte d’Ivoire (also known as Ivory Coast) and Ghana has also been a factor.

...and Demand Is Up

As these problems keep the global cocoa supply down, the global demand for chocolate is skyrocketing. One reason is that food companies keep coming up with new uses for cocoa. Chocolate seems to be everywhere these days, from chocolate cheddar cheese and chocolate pizza to chocolate-covered bacon, pretzels, and potato chips.

Another factor is the new and fast-growing middle class in China, the world’s most populous nation. People there are developing a taste for many Western goods—including all things chocolate.

But so far, the Chinese, who eat only about 3.5 ounces of chocolate per capita (per person) per year, are no match for Western Europeans, who devour the most chocolate per capita (see p. 15). Americans eat about 12 pounds per capita a year.

The Bottom Line

Even with cocoa supplies tight in recent years, the chocolate industry takes in about $110 billion a year and is investing in future production. Mars, the world’s top-selling chocolate maker, just opened a state-of-the-art chocolate factory in Topeka, Kansas. Even when times are hard, people find a way to satisfy a sweet tooth. As Mike Wittman, a Mars executive, says, “Consumers really enjoy their small indulgences.”

—Kathy Wilmore

Slaves to Chocolate

Lying to desperately poor parents in West Africa with false promises of a better life, slavers buy children and send them to cacao farms. Instead of earning wages as promised, the kids—most are 11 to 16, but some are younger—are forced to work 80 to 100 hours a week. They’re provided with only the barest minimum of food and other necessities.

It’s hard to be certain how many children are suffering this fate, but CNN reports that there may be as many as 800,000 in Côte d’Ivoire alone.

Harvesting cocoa beans is dangerous work. Harvesters use sharp, heavy machetes to cut pods from cacao trees, then to hack them open to get at the seeds. A slip of the wrist can lead to terrible wounds. Children suffer such wounds more often than adults.

Child trafficking and slave labor are violations of international law. In 2001, major cocoa- and chocolate-producing companies agreed to work together to abolish such practices, but the problem persists. The current goal is to reduce the worst violations by 70 percent by 2020.

YOUR TURN

Which is more responsible for the rising demand for cocoa: candy and food companies or shoppers? Why?
Cocoa: Who Grows It, Who Eats It

Top 5 Producers

<table>
<thead>
<tr>
<th>Country</th>
<th>Cocoa Beans Produced (Tons)</th>
<th>Per Capita GDP*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Côte d’Ivoire</td>
<td>1,730,000</td>
<td>$1,800</td>
</tr>
<tr>
<td>2. Ghana</td>
<td>920,000</td>
<td>$3,500</td>
</tr>
<tr>
<td>3. Indonesia</td>
<td>425,000</td>
<td>$5,200</td>
</tr>
<tr>
<td>4. Nigeria</td>
<td>240,000</td>
<td>$2,800</td>
</tr>
<tr>
<td>5. Brazil</td>
<td>210,000</td>
<td>$12,100</td>
</tr>
</tbody>
</table>

Top 5 Consumers

<table>
<thead>
<tr>
<th>Country</th>
<th>Chocolate Consumed (LB/Per Capita)</th>
<th>Per Capita GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Switzerland</td>
<td>23.4</td>
<td>$54,800</td>
</tr>
<tr>
<td>2. Germany</td>
<td>21.4</td>
<td>$39,500</td>
</tr>
<tr>
<td>3. Norway</td>
<td>20.5</td>
<td>$55,400</td>
</tr>
<tr>
<td>4. Austria</td>
<td>18.1</td>
<td>$42,600</td>
</tr>
<tr>
<td>5. United Kingdom</td>
<td>17.6</td>
<td>$37,300</td>
</tr>
</tbody>
</table>

Questions

1. All the top chocolate-consuming countries are part of which continent?
2. How much chocolate was eaten in 2012 in the country with the highest per capita GDP?
3. How many tons of cocoa beans in total were produced by the African countries labeled?
4. Which top consumer is northernmost?
5. Ghana produced how many more tons of beans than the top producer in Asia?
6. Which producing country is the wealthiest?
7. U.S. per capita GDP of $52,800 is closest to that of which country listed?
8. Which country has a per capita GDP about 22 times that of Côte d’Ivoire?
9. Why might top producers be so poor?
10. All the top-producing countries are near the equator. What does that tell you about the type of climate needed for growing cacao trees?
Yesterday, Confederate Gen. Robert E. Lee surrendered his Army of Northern Virginia to Union Gen. Ulysses S. Grant in this Virginia village. After four bloody years and the death of more than 750,000 soldiers on both sides, Lee's defeat all but ends the attempt of 11 Southern states to secede from the Union—America's Civil War.

In recent months, Grant had managed to encircle Lee's army in central Virginia and cut off its supplies. Yesterday, unable to retreat from Appomattox or feed his tired, hungry men, Lee saw that the fight was lost.

"There is nothing left for me to do but to go and see Gen. Grant," he said, "and I would rather die a thousand deaths."

The commanders arranged to meet in the afternoon at a local home. (See "Wilmer's Wetrd War"). Lee was the first to get there. When Grant arrived, he asked the officers who had come with him to wait outside while he spoke privately with Lee. After a few moments, the men were ushered into the parlor where Lee and Grant sat in silence.

"We walked in softly and arranged ourselves quietly about the sides of the room," said Lt. Col. Horace Porter. It was "very much as people enter a sick chamber when they expect to find the patient dangerously ill."

In this somber atmosphere, Grant wrote out the terms of the surrender. They allow Lee's approximately 28,000 soldiers to go home, "not to be disturbed." Lee signed the agreement. Then, suddenly, it was all done. The two rivals stood and shook hands. Outside, Lee tipped his hat and "rode off to break the sad news to the brave fellows whom he had so long commanded," Porter said.

For Grant, aides say, the victory is tinged with a sense of loss. Yesterday, the general interrupted a celebration by his men. "The Rebels are our prisoners," he said. "We do not want to exult over their downfall."

While pockets of Confederate resistance still remain in the South, officials expect that they will soon follow Lee's example and lay down their arms. The war is over.
ENTIRE SOUTH IN RUINS

Gen. Ulysses S. Grant has let Gen. Robert E. Lee’s tired and defeated men go home in peace. Yet for many of them, there might not be much to go home to.

In cities like Richmond, Virginia, and Atlanta, Georgia, ashes and rubble clog the streets. In the countryside, fields once full of cotton have been burned to stubble. Houses, stables, plows, horses and cows, railroad tracks and bridges are all gone in many places.

Most of the war’s battles were fought in the South, causing much of the devastation. But Southerners especially blame Union Gen. William T. Sherman. Last November, Sherman led his army on a march through Georgia to the Atlantic Ocean and then up through South and North Carolina. On the way, his soldiers destroyed farms, crops, and anything else in their path that they thought would contribute to the Southern war effort. Sherman also set tens of thousands of slaves free, further ruining farmers’ livelihoods.

To Sherman, this hard war was the only way to crush the rebellion. “We cannot change the hearts of those people,” Sherman wrote to Grant. “But we can . . . make them so sick of war that they will stop fighting.

Sherman’s strategy worked. But it has left a scar among Southerners that will take a long time to heal. “Before they came here, I thought I hated them as much as was possible,” said Georgia native Emma Florence LeConte. “Now I know there are no limits to the feeling of hatred.”

FRED D: GIVE US THE VOTE!

Are black Americans truly free? The Emancipation Proclamation freed the South’s slaves and the newly passed 13th Amendment, if ratified, will abolish slavery. But abolitionist Frederick Douglass says that “liberty is a mockery” if the black man can’t vote. “Without this, you might as well almost retain the old name of slavery for his condition,” he insists.
A LONG, BRUTAL WAR

History may judge Robert E. Lee to be one of the greatest generals of all time. But in the end, his Army of Northern Virginia was ground down by sheer numbers and the grim determination of Ulysses S. Grant.

At first, the South had reason to be optimistic. Confederates seized Fort Sumter in Charleston Harbor, South Carolina, in April 1861 without a casualty. That July, in the war’s first major battle, Union troops at Bull Run in Virginia were shocked by the Rebels’ victory. It was going to be a long war.

The South was ready. In mid-1862, the brilliant Gen. Thomas “Stonewall” Jackson and his small army outran and humiliated Union forces in Virginia’s Shenandoah Valley. Confederate victories at Fredericksburg and Chancellorsville, both in Virginia, further stumped the North.

But when Jackson was killed at Chancellorsville in May 1863, it was a terrible blow for the South. That July, Union forces turned back Lee’s attempted invasion of the North at Gettysburg, Pennsylvania. The epic three-day battle may have been the turning point of the war.

Then came Grant. Given overall command of the Northern armies in March 1864, Grant relentlessly pursued Confederate forces through Virginia. In battle after battle, his losses were staggering—40,000 soldiers at Cold Harbor alone last June. Newspapers in both the North and the South called him “butcher Grant.”

But Grant had the numbers. About 2.1 million men served in the Union Army, to only 800,000 in the South. The North’s industrial might also dwarfed the South’s.

Late last year, Grant laid siege to Petersburg, Virginia, an important link to the railroads that supplied Lee’s troops. The Confederates were trapped through a long winter. By spring, scores of hungry, demoralized soldiers were deserting every day.

Finally, on April 1, Union forces cut off Petersburg’s last railroad line. Lee retreated, abandoning the Confederate capital of Richmond and fleeing west. His last attempt to elude Grant, and sustain the great rebellion, came quietly to an end yesterday at Appomattox.★

TRUE CONFESSIONS

HE WAS A SHE!

Lt. Harry T. Buford looked like your average young Confederate soldier, down to his black mustache. But looks can be deceiving. Civil War Times recently uncovered Buford’s deepest secret—he is a she!

Buford was really the creation of Loreta Janeta Velazquez. Born in Cuba and educated in New Orleans,
LINCOLN: RESTORING THE UNION

News of Lee’s surrender has hit Washington like a thunderclap. Great crowds have swarmed the grounds of the White House in celebration. President Abraham Lincoln has promised to address the nation tomorrow night. Certainly, no one needs to tell him that although the Union has been saved, another equally hard task faces him—to reconstruct, or restore, the United States.

The president has already addressed the issue with his Proclamation of Amnesty and Reconstruction in December 1863. Aides say Lincoln’s message to the states of the South remains much the same today: To again join the U.S., they must be loyal to the country’s laws and, finally, end the institution of slavery.

“I shall not attempt to retract or modify the Emancipation Proclamation,” Lincoln told Congress. His words have been bolstered by the 13th Amendment to the Constitution, passed by Congress in January. Outlawing slavery for good, the amendment is likely to be ratified by three-quarters of the states and become part of the Constitution this year.

In other words, there is no going back to the old South. Congress hailed Lincoln’s first plan of reconstruction. But will Radical Republicans, who grumble about being tougher with the South, be satisfied?

In his second inaugural address last month, Lincoln made it clear he will welcome the South back “with malice toward none.” He continued: “Let us strive to finish the work we are in, to bind up the nation’s wounds . . . and cherish a just and lasting peace among ourselves.” Americans everywhere can tell you that won’t be easy.

Louisiana, Velazquez always dreamed of being a soldier. But women aren’t allowed in the Army. So she created a special uniform to make herself look like a man, including six wire-net shields under her uniform to make herself look bulkier. A fake mustache added to the effect. As Buford, Velazquez fought in the First Battle of Bull Run and the Battle of Ball’s Bluff, both in Virginia. But at the Battle of Shiloh in Tennessee, she was injured by shrapnel and a doctor discovered her secret.

Her closest shave came back in New Orleans, when she was suspected of being a Union spy. Cleared of those charges, she was nevertheless fined—for impersonating a man.

Velazquez says she was “elated . . . at the prospect . . . of being able to prove myself as good a fighter as any of the gallant men who had taken up arms in behalf of the cause of Southern independence.”

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Should School Start Later?

Delaying the opening bell could have big benefits, but it could also interfere with after-school sports and clubs

Are you dragging yourself out of bed to get to school? About 40 percent of American high schools start classes before 8 a.m., and more than 20 percent of middle schools start at 7:45 a.m. or earlier.

Studies show that starting school later—even by half an hour—has major health and academic benefits. The American Academy of Pediatrics recently recommended that middle and high schools delay their opening bells to 8:30 a.m. or later so kids can get more sleep.

But some people argue against letting students hit the snooze button. Opponents say starting classes later in the day is expensive for school districts and cuts into time for extracurricular activities and homework.

Do schools need a wake-up call when it comes to start times?

Let Teens Sleep In

Jilly Dos Santos, a senior at Rock Bridge High School in Columbia, Missouri, had trouble getting up for her school’s 7:50 a.m. start time.

“I was habitually 10 minutes late for school, and it was disruptive,” she tells JS.

After learning that administrators were planning to move the first bell even earlier, Jilly organized a social media campaign that convinced her school to start later—at 8:55 a.m.

“I have no issues getting up now,” she says. “Things aren’t so rushed and stressful. I’m not a zombie for part of the day.”

A too-early start to the school day can deprive kids of much-needed sleep. According to the National Sleep Foundation, 59 percent of sixth- through eighth-graders and 87 percent of high school students in the United States aren’t getting the recommended 8.5 to 9.5 hours of sleep a night.

Studies show that well-rested teens get better grades, have higher standardized test scores, and miss fewer days of school. They also have a lower risk of being in car accidents and have fewer health problems, such as depression, mood changes, and being overweight.

So why don’t kids just hit the sack earlier? It’s not that simple, says Danny Lewin, a sleep specialist at Children’s National Health System in Washington, D.C.

“Adolescents have a deeply programmed biological [clock] to go to bed later and wake later,” he tells JS. As kids get older, their sleep-wake cycle shifts so it’s difficult for them to turn in before 11 p.m. Teens are wired to be night owls, he says.

Complaints from sleepy students have prompted many schools, from Kissimmee, Florida, to Jackson Hole, Wyoming, to push back their start times. Next fall, classes at McLean High School in Virginia will start about 40 minutes later.

Sophomore Melanie Pincus is looking forward to the extra sleep. “I hope to have more energy at school,” she tells JS.

Rise and Shine

Not everyone is in favor of earlier start times. Many school districts say they would present big challenges.

The Issaquah School District in Washington State recently decided not to change its first bells, which
ring at 7:40 a.m. for middle school and 7:25 a.m. for high school.

“We had a committee work on the problem for two years, and they couldn’t come to a recommendation to change the start times,” says L. Michelle, the executive director of communications for the district. “A later release time can really upset things.”

For Issaquah and many other school districts, transportation is a huge obstacle. Many districts use the same buses for elementary, middle, and high schools. Changing start times—and bus schedules—can raise safety issues.

“We would be having elementary kids at the bus stop early, in the dark, or even walking home in the dark,” Michelle tells JS.

A later start, say opponents, also interferes with some teens’ part-time jobs and disrupts after-school sports and clubs.

That’s why Ben Zebrowski-Rocheleau, a seventh-grader at Forsythe Middle School in Ann Arbor, Michigan, doesn’t mind getting up early for class. His school recently considered starting later but decided against it.

“A later school day would interfere with tennis and possibly baseball,” Ben tells JS. His current schedule allows him to see friends after school and still have time for homework.

And then there’s the cost. Issaquah, for example, would need to buy new buses and build a garage for them. For some school districts, the costs could run into the millions.

Plus, says Mateo Perpetuo, a seventh-grader from Monroe, Connecticut, not all kids have trouble getting up in the morning.

“I feel energized after breakfast,” he tells JS.

To get plenty of ZZZ’s, experts recommend that kids limit their use of electronic devices at night. Kids also need to establish routines so they go to bed earlier—no matter when the first bell rings.

—Lisa M. Herrington

**Your Turn**

Which statements best support the arguments for and against later start times?
Imagine that a 2,000-degree river of molten lava is creeping through your town, threatening to destroy everything in its path. Within minutes, the lava engulfs a house, filling the air with smoke so thick you’re left gasping for breath. Every day, the lava inches closer to your school—and there’s nothing anyone can do to stop it.

That’s what life is like for students at the Hawaii Academy of Arts and Science (HAAS) in Pahoa, a small town on the Big Island of Hawaii. This summer, the Kilauea (kee-lah-WAY-ah) volcano started to erupt from a new opening, sending lava straight toward HAAS.

“We’re under a lot of stress,” says Stella Javier, a 15-year-old sophomore. “A lot of people are panicking.”

But the students aren’t just standing by. They recently launched a social media campaign called Hope for HAAS to raise money to rebuild their school if it’s damaged by the lava. So far, the teens have raised more than $1,000.

“I love this school,” Stella tells JS. “It’s nice to see that people are helping out.”

Living With Lava
Stella and her classmates are used to volcanic eruptions. Kilauea, a shield volcano, has been erupting since 1983. Shield volcanoes rarely have the violent eruptions that cone-shaped volcanoes do. Instead, lava flows out slowly.

The lava from Kilauea usually heads south, into the Pacific Ocean. But this time, it’s flowing northeast, toward Pahoa—and HAAS.
Questions

1. Hawaii has how many main islands?
2. What’s the Big Island’s official name?
3. What is Pahoa’s approximate elevation?
4. The Hawaii Academy of Arts and Science is about how many straight-line miles from Kilauea?
5. Kilauea is in which elevation range?
6. Hawaii’s capital is on which island?
7. Which city is located at approximately 22°N, 159.5°W?
8. Which body of water separates the Big Island and Maui?
9. In which direction would you travel to get from Lanai to Kauai?
10. Which island has two areas that are more than 10,000 feet above sea level?

The lava has been crawling across the Big Island at a rate of about 15 to 30 feet per hour. It’s driven dozens of people from their homes, smothered farmland, and produced vog, a haze of volcanic smog that can cause headaches and sore throats, and make it hard to breathe.

Volcanoes may be dangerous, but Hawaii wouldn’t exist without them. Millions of years ago, magma from deep within Earth burst through openings in the seafloor. Over time, the hot liquid rock cooled and hardened. It built up in the Pacific Ocean, forming the Hawaiian Islands.

Today, Kilauea’s lava flows continue to add coastline to the Big Island—and threaten Hawaiians. There’s no way to predict when the eruptions will stop.

“You can’t really tell what’s going to happen next,” says Stella. “It’s really suspenseful.”

—Rebecca Zissou
Analyze the Cartoons

In the not-so-distant future, we may see drones everywhere: delivering food, fighting fires—maybe even babysitting your little brother or sister. Here are two cartoonists’ takes on drones. Study the cartoons. Then answer the questions.

1. Describe what is happening in each cartoon.
2. What point is the cartoonist trying to make by having a drone crash into the U.S. Constitution?
3. What might be some advantages and disadvantages of using a drone as a babysitter?

WRITING PROMPT
Should police officers be required to obtain a warrant (permission from a judge to conduct a search) to use drones to take photos and collect other information? Write a one-page essay explaining your answer, using facts as supporting evidence.

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